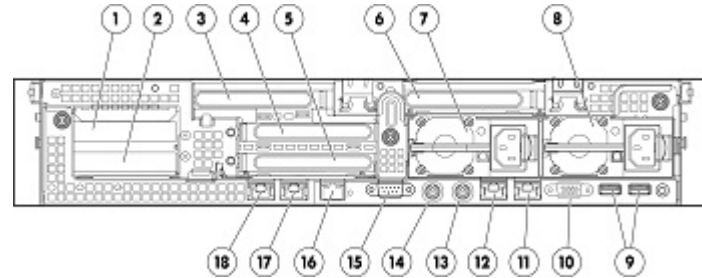
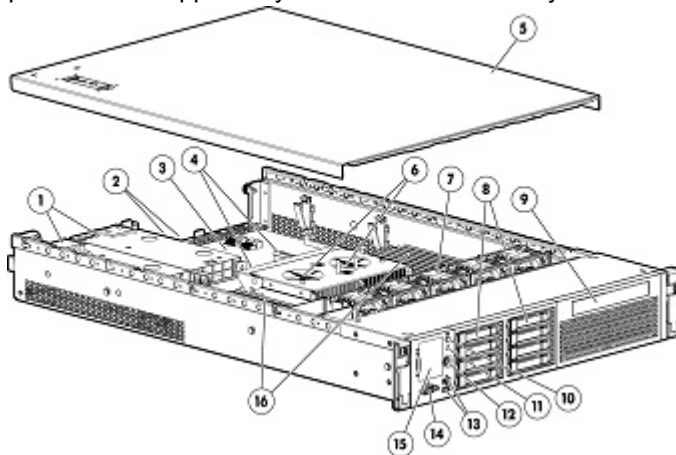


Overview

As the leading 2P 2U AMD rack server, the HP ProLiant DL385 G7 is designed with virtualization in mind, yet flexible and expandable to support any business need in many environments from corporate datacenters to sophisticated SMBs.



Front View:

1. Redundant Power Supplies
2. Two HP NC382i Dual Port Multifunction NICs
3. SD Card Reader
4. PCI Riser Slots
5. Quick Removal Access Panel
6. AMD Opteron Processors (up to 2)
7. Hot Plug Redundant Fans
8. Hard Drive Bays
9. Slimline Optical bay
10. UID LED Button
11. Health LED
12. Power On/Standby Button and System Power LED
13. USB Connectors (2)
14. Video Connector
15. System Insight Display
16. Twenty-four sockets for DDR3 Memory

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. iLO3 connector
17. NIC 3 Connector
18. NIC 4 Connector

What's New

- New 6G SAS Hot Plug Solid State Drives, 3G SATA, and 6G SAS Hard Drives
- New UPS product support

Standard Features

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

Processor

One of the following depending on Model

Twelve-Core Processors

AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/105W) Processor
AMD Opteron™ 6176SE (2.3GHz/12-core/12MB/105W) Processor
AMD Opteron™ 6176 (2.3GHz/12-core/12MB/80W) Processor
AMD Opteron™ 6174 (2.2GHz/12-core/12MB/80W) Processor
AMD Opteron™ 6172 (2.1GHz/12-core/12MB/80W) Processor
AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/65W) Processor

Eight-Core Processors

AMD Opteron™ 6140 (2.6GHz/8-core/12MB/80W) Processor
AMD Opteron™ 6136 (2.4GHz/8-core/12MB/80W) Processor
AMD Opteron™ 6134 (2.3GHz/8-core/12MB/80W) Processor
AMD Opteron™ 6128 (2.0GHz/8-core/12MB/80W) Processor
AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/65W) Processor
AMD Opteron™ 6128HE (2.0GHz/8-core/12MB/65W) Processor

NOTE: Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: <http://www.amd.com/powernow>.

NOTE: Up to 2 processors supported. High Performance Model configurations include two processors, 16GB system memory, 1G storage controller memory, FBWC, DVDRW, ICE license, Redundant 750W Power Supplies, and 6 hot plug redundant fans.

Cache Memory	12MB (1 x 12MB) Level 3 cache memory
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Chipset	AMD SR5690 Northbridge and SP5100 Southbridge
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Upgradeability	Upgradeable to two processors
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Memory Protection	Advanced ECC Online Spare
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Standard Features

Memory

One of the following depending on Model

Type	DDR3 Registered (RDIMM) and Unbuffered (UDIMM)
	NOTE: If only one processor is installed, only half of the DIMM slots are available.
Standard (Performance Models)	16GB (8 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Standard (Base Models)	8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Standard (Entry Models)	4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Standard (High Efficiency Models)	4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Maximum (RDIMM)	512GB
Maximum (UDIMM)	64GB

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.

Network Controller

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)

NOTE: 1GB of memory is sufficient to support up to eight Total Ports. 2GB of memory is required if nine or more Total Ports have been selected.

Expansion Slots

NOTE: Up to 6 PCI slots (PCIe slots are Gen 2). Standard BTO riser with PCIe (1) x8 FL/FH, (2) x4 HL/FH. Optional second risers with PCIe (1) x8, (2) x4; or a PCIe/PCI-X mixed riser with (2) PCI-X, (1) x8; or a x16 225w PCIe riser with (1) x16; or a (2) x8 Dual Port 10GbE riser.

Primary Riser (Standard)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	1	PCI-e Gen2	x8	x16	6	Full Length/Full Height	
	2	PCIe Gen2	x4	x8	12	Half length, full height	
	3	PCIe Gen 2	x4	x8	15	Half length, full height	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector

NOTE: Only single wide cards are supported

PCIe Riser (Optional Secondary)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	4	PCIe Gen2	x8	x16	18	Full Length/Full Height	
	5	PCIe Gen2	x4	x8	24	Low Profile	
	6	PCIe Gen2	x4	x8	27	Low Profile	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector

NOTE: Only single wide cards are supported

PCIe/PCI-X Riser (Optional Primary)	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
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Standard Features

1	PCI-X	64-bit	N/A	7	Full length, Full height
2	PCI-X	64-bit	N/A	7	Half Length, Full Height
3	PCIe Gen 2	x8	x8	11	Half Length, Full Height

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector

NOTE: Only single wide cards are supported

NOTE: PCI-X support is limited to PCI-X cards only

PCIe/PCI-X (Optional Secondary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
4	PCI-X	64-bit	N/A	19	Full Length/Full Height	
5	PCI-X	64-bit	N/A	19	Low Profile	
6	PCIe Gen2	x8	x8	23	Low Profile	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector

NOTE: Only single wide cards are supported

NOTE: PCI-X support is limited to PCI-X cards only

x16 PCIe Riser (Optional Primary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe Gen2	x16	x16	6	Full Length/Full Height	Supports up to 225W

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector

NOTE: Only single wide cards are supported

x16 PCIe Riser (Optional Secondary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe Gen2	x16	x16	18	Full Length/Full Height	Supports up to 225W

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector

NOTE: Only single wide cards are supported

(2) x8 PCI-E Riser (Optional Primary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe Gen2	x8	x16	6	Full Length/Full Height	
2	PCIe Gen2	x8	x16	9	Half length, full height	

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector

NOTE: Only single wide cards are supported

NOTE: The shared network port is only supported in the secondary riser connector

(2) x8 PCI-E Riser (Optional Secondary)

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
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Standard Features

4	PCIe Gen2	x8	x16	18	Full Length/Full Height
5	PCIe Gen2	x8	x16	21	Low Profile

NOTE: Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

NOTE: Bus width - Indicates the number of physical electrical lanes running to the connector

NOTE: Only single wide cards are supported

NOTE: The shared network port is only supported in the secondary riser connector

Storage Controller One of the following depending on Model

Entry Models:	HP Smart Array P410i/Zero Memory Controller
Base Models:	HP Smart Array P410i/256 MB Controller
High Performance Models:	HP Smart Array P410i/1G FBWC Controller

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

NOTE: RAID 6 and 60 requires purchase of HP Smart Array Advanced Pack (516471-B21).

Internal Storage Devices

Diskette Drive	None
Optical Drive One of the following depending on Model	None Standard HP Slim SATA DVD RW Optical Drive (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.
Hard Drives	None Standard
Hard Drive Bays	Standard (8) small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives <ul style="list-style-type: none"> • Optional second drive cage for additional (8) SFF drive bays (total 16) • Optional cage for (6) Large Form Factor SAS/SATA hard drive bays

Maximum Internal Storage

Hot Plug SFF SAS	16TB	16 x 1TB (with optional SFF drive cage)
Hot Plug LFF SAS	18TB	6 x 3TB (with optional LFF drive cage)
Hot Plug SFF SAS SSD	12.8TB	16 x 800GB (with optional SFF drive cage)

Interfaces

Serial	1
Video	2 (1 front, 1 back)
Network RJ-45 (Ethernet)	4
iLO3 remote management port	1
Keyboard	1
Pointing Device (Mouse)	1
Graphics	1
USB 2.0 Ports	6 (2 front, 2 back, 2 inside - one for internal tape) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html

Standard Features

Industry Standard Compliance	ACPI 2.0 Compliant PCIe 2.0 Compliant PCI 2.2 Compliant WOL Support Microsoft® Logo certifications USB 2.0 Support
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Server Power Cords **NOTE:** If customers require a local power cord, they can check the power cord matrix for the appropriate county specific sku. Please see the following power cord matrix for details: <http://www.hp.com/go/powercordmatrix>

Common Slot ProLiant 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 power supplies that allow you to right-size power supplies for your server configuration. 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 power wattage options to choose from - 460W, 750W, and 1200W - 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 (www.hp.com/go/hppoweradvisor) to decide the "Right-Size" for your configuration. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant.

It is highly recommended that you use the HP Power Calculator in defining the "Right-Size" power supply for your needs.

HP's ProLiant Common Slot Power supplies (460W & 750W) meet multiple Energy Efficiency Initiatives including Climate Savers Computing Initiative GOLD, ECOS Consulting 80PLUS GOLD, and plans on offering models that meet the Energy Star for Server requirements when they are published.

HP's ProLiant Common Slot Power supplies (1200W, 750W & 460W) meet multiple Energy Efficiency Initiatives including Climate Savers Computing Initiative Platinum and ECOS Consulting 80PLUS Platinum Power Supply requirements.

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

NOTE: Pre-Configured Performance models include two power supplies; Pre-Configured Base and Entry models include one power supply. On CTO models, power supply must be selected from available options.

System Fans Hot plug fans ship standard, N+1 fully redundant (3+1) for 1 processor, (5+1) for 2 processors

NOTE: Processor option kits include 2 additional fans when upgrading to 2 processors.

Required Cabling For required cabling information, refer to the HP Web site at: www.hp.com/servers/dl385g-7.

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 Solaris](#)
[VMware](#)
[Citrix XenServer](#)

NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page www.hp.com/support/DL385G7.

Graphics

Integrated ATI ES1000

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

NOTE: Maximum resolution available via iLO3 remote console is 1280 x 1024 (for 32 bit color) and 1600 x 1200 (DVR max resolution).

Form Factor

Rack (2U), (3.5-inch)

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:

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

The foundation pack includes:

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

SmartStart version supported (minimum): SmartStart 8.40.

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

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

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

Standard Features

Intelligent Manageability

HP Systems Insight Manager software
SmartStart
Management Agent
Redundant ROM
Remote Flash ROM
ROM-Based Setup Utility (RBSU)
Integrated Management Log
Automatic Server Recovery (ASR)
Dynamic Sector Repairing (with Smart Array controller)
Drive Parameter Tracking (with Smart Array controller)
Pre-Failure Warranty (covers processors, SAS hard drives and memory)

Security

Power-on password
Keyboard password
QuickLock, Network Server Mode
Serial interface control
Administrator's password

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

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

Optional Features

HP Insight management software

HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console.

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

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

HP Insight Dynamics for ProLiant

HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location.

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

High Performance Clusters

HP Cluster Platforms

HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and Novell SLES, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. <http://www.hp.com/go/clusters>.

HP HPC Interconnects

High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. <http://www.hp.com/techservers/clusters/ucp/index.html>

HP Cluster Management Utility

HP Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. <http://www.hp.com/go/cmu>

HP HPC Linux Value Pack

HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported specially priced software bundle for the development and

Optional Features

deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform HPC Enterprise Edition suite of tools including the LSF workload scheduler, the HP-MPI parallelization library. Also included are the HP Unified Parallel C compiler and the HP Shmem library, as well as the execution environments for the libraries and compiler. [HP HPC Linux Value Pack](#)

Factory Express Portfolio for Servers and Storage

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

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

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

HP Enterprise Configurator

The HP eConfigure-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>.

Service and Support

Service and Support **HP Technology Services for Industry Standard Servers and BladeSystem**

Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

What HP ProLiant and BladeSystem Services can do for you

HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs:.

HP Technology Services meets business challenges with services offered in three packages - **Optimized Care Package, Standard Care Package, and Basic Care Package** - available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software.

Optimized Care

Optimized Care Package: Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN>

HP Installation and Startup for Insight Control Software

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers <http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf>

3-Year HP Critical Advantage

Provides end-to-end infrastructure support solution for business critical applications running on virtualized/x86 infrastructures, enabling the customers to cost effectively build, operate, and continuously improve their IT environment

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA3-1772ENW>

Additional Services: Microsoft or Linux or VMware education courses + Facility & technology environmental assessment services + Energy Efficiency Design, Factory Express

Service and Support

Standard Care

Standard Care Package: Package that maintains high level of server availability

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN>

HP Installation and Startup for Insight Control Software

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers <http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf>

3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service

Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf>

3-Year , HP 24x7 Software Support for Insight Control

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEEE.pdf>

Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up, and Software Support; Install and Startup Services for Insight Control; Microsoft or Linux or VMware education courses; +30 Proactive Select Credits, Factory Express

Basic Care

Basic Care Package: delivers minimum recommended support service level

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN>

HP Installation and Startup for Insight Control Software

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers <http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf>

3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers <http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf>

3-Year , HP 24x7 Software Support for Insight Control

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEEE.pdf>

Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); +10 Proactive Select Credits, Factory Express

Service and Support

Insight Remote Support The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.

For more information To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant>

Pre-configured Models

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

NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.

NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.

Performance Models

NOTE: Preconfigured Performance models save valuable deployment time at a discounted bundle price.

HP ProLiant DL385 G7 6174 2P 16GB-R P410i/1GB FBWC 8 SFF 750W RPS Perf IC Server 573087-xx1	Processor(s)	(2) AMD Opteron™ 6174 (2.2GHz/12-core/12MB/80W) Processors
	Cache Memory	12MB L3 cache
	Memory	16GB (8 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs NOTE: Total of 24 DIMM slots.
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/1GB FBWC Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	Optical Drive	Slim SATA DVD-RW Optical Drive
	Power Supply	(2) HP 750W Common Slot Gold Hot Plug Power Supplies
	Fans	6 Hot Plug Fully Redundant Fans
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
Form Factor	Rack (2U), (3.5-inch)	
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.	

HP ProLiant DL385 G7 6180SE 2P 16GB-R P410i/1GB FBWC SFF 750W RPS IC Server 636071-xx1	Processor(s)	(2) AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/105W) Processors
	Cache Memory	12MB L3 cache
	Memory	16GB (8 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs NOTE: Total of 24 DIMM slots.
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total)
	Storage Controller	HP Smart Array P410i/1GB FBWC Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	Optical Drive	Slim SATA DVD-RW Optical Drive
	Power Supply	(2) HP 750W Common Slot Gold Hot Plug Power Supplies
	Fans	6 Hot Plug Fully Redundant Fans
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
Form Factor	Rack (2U), (3.5-inch)	
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.	

Base Models



Pre-configured Models

HP ProLiant DL385 G7 6172 1P 8GB-R P410i/256 8 SFF 460W PS Base Server 573088-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Form Factor Warranty	(1) AMD Opteron™ 6172 (2.1GHz/12-core/12MB/80W) Processor 12MB L3 cache 8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs NOTE: Total of 24 DIMM slots. Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) HP Smart Array P410i/256MB Controller None ship standard Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays Not included on Base Model (1) 460W Common Slot Gold Hot Plug Power Supply 4 hot plug redundant fans Rack (2U), (3.5-inch) Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
HP ProLiant DL385 G7 6176 1P 8GB-R P410i/256 SFF 460W PS Server 636075-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Form Factor Warranty	(1) AMD Opteron™ 6176 (2.3GHz/12-core/12MB/80W) Processor 12MB L3 cache 8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs NOTE: Total of 24 DIMM slots. Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) HP Smart Array P410i/256MB Controller None ship standard Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays Not included on Base Model (1) 460W Common Slot Gold Hot Plug Power Supply 4 hot plug redundant fans Rack (2U), (3.5-inch) Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
HP ProLiant DL385 G7 6136 1P 8GB-R P410i/256 Hot Plug 1 SFF 460W PS Base Server 585335-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Form Factor Warranty	(1) AMD Opteron™ 6136 (2.4GHz/8-core/12MB/80W) Processor 12MB L3 cache 8GB (4 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs NOTE: Total of 24 DIMM slots. Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) HP Smart Array P410i/256MB Controller None ship standard Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays Not included on Base Model (1) 460W Common Slot Gold Hot Plug Power Supply 4 hot plug redundant fans Rack (2U), (3.5-inch) Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Pre-configured Models

Entry Models

HP ProLiant DL385 G7 6128 1P 4GB-R P410i/ZM 8 SFF 460W PS Entry Server 573089-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Form Factor Warranty	(1) AMD Opteron™ 6128 (2.0GHz/8-core/12MB/80W) Processor 12MB L3 cache 4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs NOTE: Total of 24 DIMM slots. Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) HP Smart Array P410i/Zero Memory Controller None ship standard Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays Not Included on entry model (1) 460W Common Slot Gold Hot Plug Power Supply 4 hot plug redundant fans Rack (2U), (3.5-inch) Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
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High Efficiency Models

HP ProLiant DL385 G7 6128HE 1P 4GB-U P410i/ZM 8 SFF 460W PS Efficiency Server 573090-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans Form Factor Warranty	(1) AMD Opteron™ 6128HE (2.0GHz/8-core/12MB/65W) Processor 12MB L3 cache 4GB (2 x 2GB) PC3-10600 (DDR3-1333) Unbuffered DIMMs Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) HP Smart Array P410i/Zero Memory Controller None ship standard Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays Not Included on HE model (1) 460W Common Slot Platinum Hot Plug Power Supply 4 hot plug redundant fans Rack (2U), (3.5-inch) Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
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HP ProLiant DL385 G7 6132HE 4GB-U P410i/ZM 8 SFF 460W 94 EFF PS Server 636076-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Power Supply Fans	(1) AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/65W) Processor 12MB L3 cache 4GB (2 x 2GB) PC3-10600 (DDR3-1333) Unbuffered DIMMs Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) HP Smart Array P410i/Zero Memory Controller None ship standard Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays Not Included on HE model (1) 460W Common Slot Platinum Hot Plug Power Supply 4 hot plug redundant fans
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Pre-configured Models

**Form Factor
Warranty**

Rack (2U), (3.5-inch)
Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

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 configurable product offerings and requirements.

NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.

NOTE: FIO indicates that this option is only available as a factory installable option.

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

HP Models	<p>HP ProLiant DL385 G7 SFF Configure-to-order Server 573122-B21</p> <p>Factory Integrated Model ships with:</p> <ul style="list-style-type: none"> (8) SFF Serial Attached SCSI (SAS) Drive Bays Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) HP Smart Array P410i/Zero Memory Controller PCI-Express Riser Cage One IEC Power cord Hot plug fans (fully redundant) NOTE: 4 fans one processor models; 6 fans two processor models Rack (2U), (3.5-inch)
	<p>HP ProLiant DL385 G7 LFF Configure-to-order Server 573123-B21</p> <p>Factory Integrated Model ships with:</p> <ul style="list-style-type: none"> (6) LFF Serial Attached SCSI (SAS) Drive Bays NOTE: LFF configuration does not support internal optical drive Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) HP Smart Array P410i/Zero Memory Controller PCI-Express Riser Cage One IEC Power cord Hot plug fans (fully redundant) NOTE: (4 fans one processor models; 6 fans two processor models) Rack (2U), (3.5-inch) NOTE: This option removes the optical media bay and 8 SFF drive bays

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

HP Processors	<p>NOTE: If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.</p> <p>Twelve-Core Processors</p> <ul style="list-style-type: none"> HP DL385 G7 AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/105W) FIO Processor Kit 636080-L21 HP DL385 G7 AMD Opteron™ 6176SE (2.3GHz/12-core/12MB/105W) FIO Processor Kit 585322-L21 HP DL385 G7 AMD Opteron™ 6176 (2.3GHz/12-core/12MB/80W) FIO Processor Kit 636082-L21 HP DL385 G7 AMD Opteron™ 6174 (2.2GHz/12-core/12MB/80W) FIO Processor Kit 585320-L21 HP DL385 G7 AMD Opteron™ 6172 (2.1GHz/12-core/12MB/80W) FIO Processor Kit 585324-L21 HP DL385 G7 AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/65W) FIO Processor Kit 636086-L21 <p>Eight-Core Processors</p> <ul style="list-style-type: none"> HP DL385 G7 AMD Opteron™ 6140 (2.6GHz/8-core/12MB/80W) FIO Processor Kit 636084-L21 HP DL385 G7 AMD Opteron™ 6136 (2.4GHz/8-core/12MB/80W) FIO Processor Kit 585326-L21
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Configuration Information - Factory Integrated Models

HP DL385 G7 AMD Opteron™ 6134 (2.3GHz/8-core/12MB/80W) FIO Processor Kit	585328-L21
HP DL385 G7 AMD Opteron™ 6128 (2.0GHz/8-core/12MB/80W) FIO Processor Kit	585330-L21
HP DL385 G7 AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/65W) FIO Processor Kit	636088-L21
HP DL385 G7 AMD Opteron™ 6128HE (2.0GHz/8-core/12MB/65W) FIO Processor Kit	585332-L21

HP Memory

NOTE: DIMM banks are active only when the corresponding processor socket is populated.

Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627808-B21
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627810-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593921-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593923-B21

NOTE: PC3L is a low voltage memory

HP Power Supplies

NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.

HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
HP 460W Common Slot Platinum Hot Plug Power Supply Kit	593188-B21
HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
HP 750W Common Slot Platinum Hot Plug Power Supply Kit	593831-B21
HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21
HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21

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

Configuration Information - Factory Integrated Models

Step 3: Choose Additional Factory Integratable Options

HP Storage Controllers	HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller	491191-B21
	HP Smart Array P410/ZM 2-ports Int PCIe x8 FIO SAS Controller	462860-B21
	HP Smart Array P410/256 BBWC 2-ports Int PCIe x8 FIO SAS Controller	491195-B21
	HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller	491193-B21
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HP Performance Packs	HP ProLiant DL385 G7 Performance models include the latest performance technologies and enterprise class availability features pre-installed for convenience and value. Performance packs include a 2nd processor, two additional fans, 1G/FBWC, a second 750W CS HE power supply and Insight Control (ICE) license. To complete the configuration of a Performance model, select the Slim SATA DVD-RW Optical Drive Kit (481043-B21).	
	HP DL385G7 6174 HPM FIO Perf Pack	585334-B21
	HP DL385G7 6180SE HPM FIO Perf Pack	636089-B21
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	582765-B21
	HP Insight Control for Linux including 1yr 24x7 Support ML/DL Bundle 1 Server FIO License	TC203A
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Step 4: Choose Additional Options for Factory Integration

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

Core Options

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

HP Unique Options	HP StorageWorks RDX160 Removable Disk Backup System DL Server Module NOTE: Mounts in DL385 G6 second drive cage slot (160GB of Disk Storage)	AP724A
	HP StorageWorks RDX320 Removable Disk Backup System DL Server Module NOTE: 320GB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (320GB of Disk Storage)	AP725A
	HP StorageWorks RDX500 Removable Disk Backup System DL Server Module NOTE: 500GB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (500GB of Disk Storage)	AP726A
	HP StorageWorks RDX750 Removable Disk Backup System DL Server Module NOTE: 750GB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (750GB of Disk Storage)	AW578A
	HP StorageWorks RDX1000 Removable Disk Backup System DL Server Module NOTE: 1 TB of disk capacity per data cartridge. NOTE: Mounts in DL385 G7 second drive cage slot (1 TB of Disk Storage)	BV848A
	HP DL385 G7 8 Small Form Factor (SFF) Drive Cage Kit	607248-B21

HP Processors

Twelve-Core Processors

HP DL385 G7 AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/105W) Processor Kit	636080-B21
HP DL385 G7 AMD Opteron™ 6176SE (2.3GHz/12-core/12MB/105W) Processor Kit	585322-B21
HP DL385 G7 AMD Opteron™ 6176 (2.3GHz/12-core/12MB/80W) Processor Kit	636082-B21
HP DL385 G7 AMD Opteron™ 6174 (2.2GHz/12-core/12MB/80W) Processor Kit	585320-B21
HP DL385 G7 AMD Opteron™ 6172 (2.1GHz/12-core/12MB/80W) Processor Kit	585324-B21
HP DL385 G7 AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/65W) Processor Kit	636086-B21

Eight-Core Processors

HP DL385 G7 AMD Opteron™ 6140 (2.6GHz/8-core/12MB/80W) Processor Kit	636084-B21
HP DL385 G7 AMD Opteron™ 6136 (2.4GHz/8-core/12MB/80W) Processor Kit	585326-B21
HP DL385 G7 AMD Opteron™ 6134 (2.3GHz/8-core/12MB/80W) Processor Kit	585328-B21
HP DL385 G7 AMD Opteron™ 6128 (2.0GHz/8-core/12MB/80W) Processor Kit	585330-B21
HP DL385 G7 AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/65W) Processor Kit	636088-B21
HP DL385 G7 AMD Opteron™ 6128HE (2.0GHz/8-core/12MB/65W) Processor Kit	585332-B21

NOTE: Second processor kits include additional two fans.

Core Options

HP Memory

NOTE: DIMM banks are active only when the corresponding processor socket is populated.

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

Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627808-B21
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627810-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593921-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593923-B21

NOTE: PC3L is a low voltage memory

HP Optical Drives

HP Slim 12.7mm SATA DVD-ROM Optical Drive	481041-B21
HP Slim 12.7mm SATA DVD-RW Optical Drive	481043-B21
NOTE: Included in performance models.	
HP Mobile USB DVDRW Drive US	BU516AA#ABA

HP Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

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

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

HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	619291-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
HP 300GB 6G SAS 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

Core Options

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 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	605835-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21
SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	625031-B21
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 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	625609-B21
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
HP 3TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	628059-B21
HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-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
NOTE: Please see the QuickSpecs for Technical Specifications and additional information:	
http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)	
SATA Hot Plug 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)

6G SAS Hot Plug Enterprise Performance Solid State Drives

HP 400GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive 632494-B21

HP 200GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive 632492-B21

6G SAS Hot Plug Enterprise Mainstream Solid State Drives

HP 800GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive 632506-B21

HP 400GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive 632504-B21

HP 200GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive 632502-B21

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

http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html
(Worldwide)

HP Networking

Gigabit Ethernet adapters

HP NC112T PCI Express Gigabit Server Adapter 503746-B21

HP NC360T PCI-E Dual Port Gigabit Server Adapter 412648-B21

HP NC365T 4-port Ethernet Server Adapter 593722-B21

HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter 394793-B21

HP NC373T PCI-E Multifunction Gigabit Server Adapter 394791-B21

HP NC375T PCI Express Quad Port Gigabit Server Adapter 538696-B21

HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter 458492-B21

10 Gigabit Ethernet adapters

NOTE: 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 Gigabit Server Adapter 468332-B21

HP NC523SFP 10Gb 2-port Server Adapter 593717-B21

HP NC550SFP Dual Port 10GbE Server Adapter 581201-B21

HP NC552SFP 10Gb 2-port Ethernet Server Adapter 614203-B21

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

HP InfiniBand

HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA 592520-B21

HP InfiniBand 4X DDR ConnectX-2 PCIe G2 Dual Port HCA 592521-B21

QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA 583211-B21

HP InfiniBand 4X DDR PCI-E 0 Memory Dual Port HCA 483513-B21

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

Core Options

HP I/O Expansion Options	HP DL385G5p PCI-E Riser Kit	494323-B21
	HP DL38X (2) x8 PCI-E Riser Kit	494326-B21
	NOTE: This riser card will support Qty 2 of 10Gbe NICs or can be used for 2 additional PCIe Gen2 cards.	
	NOTE: The shared network port is only supported in the secondary riser connection.	
	HP DL385 G7 x8/2x4 PCI-E Riser Kit	581783-B21
	HP DL385 G7 PCI-X Riser Kit	581785-B21

HP Power Supplies

NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at:

www.hp.com/go/hppoweradvisor

HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
HP 460W Common Slot Platinum Hot Plug Power Supply Kit	593188-B21
HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
HP 750W Common Slot Platinum Hot Plug Power Supply Kit	593831-B21
HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21
HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21

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

Additional Options

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

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

NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.

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 w/1yr 24x7 Supp ML/DL/SL Bundle Electronic 1 Svr LTU	TC203AAE
HP Insight Control for Linux including 1yr 24x7 Support Electronic License	TC213AAE
HP Insight Control for Linux including 1yr 24x7 Support Single Server License	TC209A
HP Insight Control for Linux Media Kit	TC208A

NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately.

NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: <http://www.hp.com/go/ic-linux> (click on Download button).

NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys.

NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html

HP Integrated Lights-Out (iLO) Advanced

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

Additional Options

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

High Performance Clusters

HP Cluster Management Utility

HP Cluster Management Utility Compute Node Flexible License

QL803A

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

HP Cluster Management Utility License and Media

433257-B21

NOTE: Order a minimum of one license per cluster to purchase media including software and documentation, which will be delivered to the customer, and also licenses CMU management. No license key is delivered or required.

NOTE: For additional license kits please see the QuickSpecs at:

http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html

HP HPC Linux Value Pack

HP High Performance Computing Linux Value Pack 1 Processor Flexible License

TC293B

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

HP High Performance Computing Linux Value Pack Media Kit

TC294A

NOTE: This part number can be used to purchase media including software and documentation, which will be delivered to the customer.

NOTE: For additional license kits please see the QuickSpecs at:

http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html

HP Drive Cage Options

HP DL385 G7 8 Small Form Factor (SFF) Drive Cage Kit

607248-B21

HP I/O Accelerator Options

HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers

600278-B21

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

HP 320GB Multi Level Cell PCIe ioDrive for ProLiant Servers

600279-B21

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

HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers

600281-B21

HP 640GB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers

600282-B21

HP 1.28TB Multi Level Cell PCIe IO Accelerator

641027-B21

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

http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html
(Worldwide)

Additional Options

HP Security - TPM

HP Trusted Platform Module Option

488069-B21

NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM.

NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.

NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

HP Storage Controllers SAS Controllers

HP Smart Array P212 Controller

HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller

462828-B21

HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller

462834-B21

HP Smart Array P410 Controller

HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller

462862-B21

HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller

462864-B21

HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller

578230-B21

HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller

572532-B21

HP Smart Array P411 Controller

HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller

462830-B21

HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller

462832-B21

HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller

578229-B21

HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller

572531-B21

HP Smart Array P812 Controller

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

487204-B21

Optional Upgrades

HP 256MB P-series Cache Upgrade

462968-B21

NOTE: Supported on HP Smart Array P212 Controller and HP Smart Array P410/Zero Memory Controller only.

HP 512MB P-Series Battery Backed Write Cache Upgrade

462967-B21

HP 650 mAh P-Series Battery

462969-B21

NOTE: To enable BBWC on the 256MB cache.

HP 512MB Flash Backed Write Cache

534916-B21

HP 1GB Flash Backed Cache

534562-B21

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

516471-B21

NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.

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

http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html
(Smart Array P212 Controller)

http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html
(Smart Array P410 Controller)

Additional Options

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 24 Bay 3Gb 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 Modular Smart Array SC08e 2-ports Ext PCIe x8 SAS Host Bus Adapter

614988-B21

NOTE: This is a 2 x4 External Port HBA

NOTE: This is only approved for the HP P2000 G3 SAS Modular Smart Array.

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

http://h18004.www1.hp.com/products/quickspecs/13651_div/13651_div.html

(SC08e 6Gb HBA)

SCSI HBA

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter

412911-B21

NOTE: Recommended HBA for SCSI tape drive connect.

NOTE: Please see the following QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html

(SC11Xe HBA)

HP Backup & Recovery Data Protector Express Software

HP Data Protector Express V5.0 for 1 Server E-LTU

TC330AAE

HP Data Protector Express V5.0 for 3 Servers E-LTU

TC331AAE

HP Data Protector Express V5.0 for 10 Servers E-LTU

TC332AAE

HP Basic Upgrade to Data Protector Express V5 for 1 Server E-LTU

TC333AAE

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

HP Tape Backup

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

HP StorageWorks DAT 320 USB in 1U Rack-mount Kit

AP835B

HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader

AK377A

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

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 Smart Array P212/Zero Memory Controller (462828-B21) recommended.

HP StorageWorks LTO-4 Ultrium 1760 SAS (1) in 1U Rack-mount Kit

EH946B

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

HP StorageWorks LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rackmount

EJ014A

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

Additional Options

HP StorageWorks 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL536A
HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library	AK378A
HP StorageWorks MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL537A
HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library	AK380A
HP StorageWorks MSL4048 2 LTO-5 Ultrium 3000 SAS Tape Library NOTE: Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	BL538A

HP Disk Backup

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

HP D2D Backup Systems with Backup Data Deduplication

HP StorageWorks D2D2502i Backup System NOTE: 1.5TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EJ001B
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HP StorageWorks D2D2504i Backup System NOTE: 3.0TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EJ002B
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HP StorageWorks D2D4004i Backup System NOTE: 3.0TB (expandable to 7.5TB) of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EH938A
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HP StorageWorks D2D4112 Backup System 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.	EH993B
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HP RDX Removable Disk Backup Systems USB

NOTE: Connect the USB tape power connector to the secondary SAS power connector on the system board. Refer to the hood label for SAS power connector locations on the system board.

NOTE: Mounts in DL385 G7 second drive cage slot.

HP StorageWorks RDX160 Removable Disk Backup System DL Server Module NOTE: Mounts in DL385 G6 second drive cage slot (160GB of Disk Storage)	AP724A
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HP StorageWorks RDX320 Removable Disk Backup System DL Server Module NOTE: 320GB of disk capacity per data cartridge.	AP725A
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HP StorageWorks RDX500 Removable Disk Backup System DL Server Module NOTE: 500GB of disk capacity per data cartridge.	AP726A
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HP StorageWorks RDX750 Removable Disk Backup System DL Server Module NOTE: 750GB of disk capacity per data cartridge.	AW578A
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HP StorageWorks RDX1000 Removable Disk Backup System DL Server Module NOTE: 1 TB of disk capacity per data cartridge.	BV848A
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Additional Options

HP Storage Options

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 PCIe 8Gb Fibre Channel Single Port Host Bus Adapter AP769A

HP StorageWorks 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter AP770A

HP StorageWorks 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter AP767A

HP StorageWorks 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter AP768A

Emulex Fibre Channel HBAs

HP StorageWorks 81E 8Gb Single Port PCI-e Fibre Channel Host Bus Adapter AJ762A

HP StorageWorks 82E 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter AJ763A

HP StorageWorks FC2142SR 4Gb PCIe Host Bus Adapter A8002A

HP StorageWorks FC2242SR 4Gb PCIe DC Host Bus Adapter A8003A

QLogic Fibre Channel HBAs

HP StorageWorks 81Q PCI-e Fibre Channel Host Bus Adapter AK344A

HP StorageWorks 82Q 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter AJ764A

HP StorageWorks FC1142SR 4Gb PCIe Host Bus Adapter AE311A

HP StorageWorks FC1242SR 4Gb PCIe DC Host Bus Adapter AE312A

SCSI HBA

HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter AH627A

NOTE: Recommended HBA for MSL SCSI Tape Library connect.

Converged Network Adapter

HP StorageWorks CN1000E Dual Port Converged Network Adapter AW520A

HP CN1000Q Dual Port Converged Network Adapter BS668A

NOTE: The CN 1000Q is not supported with HP DL385 x8/2x4 PCI-E riser kit (PN 581783-B21)

HP Modular Smart Array

MSA SAN Storage Arrays

HP StorageWorks MSA60 Array 418408-B21

NOTE: Please see the QuickSpecs for additional options and configuration information at:

http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html

HP StorageWorks MSA70 Array 418800-B21

NOTE: Please see the QuickSpecs for additional options and configuration information at:

http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html (Worldwide)

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

Additional Options

HP Uninterruptible Power Systems

HP Rack-mountable UPS

HP R1500 G2 UPS

HP R1500 G2 1440VA Low Voltage NA 1U Rackmount Uninterruptible Power System AF419A

HP R1500 G2 1440VA INTL 1U Rackmount Uninterruptible Power System AF418A

HP R1500 G2 1200kVA Low Voltage JP 1U Rackmount Uninterruptible Power System AF421A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html
(Worldwide)

HP R1500 G3 Uninterruptible Power Supply (UPS)

HP R1.5kVA G3 1U NA Uninterruptible Power System AF469A

HP R1.5kVA G3 1U JP/TW Uninterruptible Power System AF470A

HP R1.5kVA G3 1U INTL Uninterruptible Power System AF471A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html
(Worldwide)

HP Rack-Mountable R5500 UPS

HP R5500 6000VA INTL 3U Rackmount Uninterruptible Power System AF416A

HP R5500 5000kVA NA/JP 3U Rackmount Uninterruptible Power System AF426A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html
(Worldwide)

HP R/T3000 Uninterruptible Power System (UPS)

HP R/T3000 3300VA High Voltage NA/JPN 2U Rackmount Uninterruptible Power System AF453A

HP R/T3000 3300VA INTL 2U Rackmount Uninterruptible Power System AF454A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/13417_div/13417_div.html
(Worldwide)

HP R/T3000 G2 Uninterruptible Power System (UPS)

HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System AF466A

HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System AF467A

HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System AF468A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html
(Worldwide)

NOTE: Additional HP Uninterruptible Power Systems (UPS) are available for this equipment. For information on all HP UPSs and accessories please go to www.hp.com/products/ups (Worldwide)

NOTE: For additional information on sizing your HP UPS, please reference:

<http://www.upssizer.com>

NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link:

www.hp.com/products/powercords.

Additional Options

Power Distribution Units

HP Monitored Power Distribution Unit: Half Rack Version

HP Single Input 1 Phase 24A Monitored Power Distribution Unit	AF914A
HP Single Input 1 Phase 32A Monitored Power Distribution Unit	AF915A

HP Monitored Power Distribution Unit: Full Rack Version

HP Single Input 3 Phase 24A Monitored Power Distribution Unit	AF504A
HP Single Input 1 Phase 40A Monitored Power Distribution Unit	AF506A
HP Single Input 3 Phase 16A Monitored Power Distribution Unit	AF508A
HP Single Input 1 Phase 32A INT Monitored Power Distribution Unit	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 24A High Voltage Modular Power Distribution Unit	252663-D72
HP 40A High Voltage NA/JP Modular Power Distribution Unit	252663-D73
HP 32A High Voltage Modular Power Distribution Unit	252663-B31
HP 16A High Voltage Modular Power Distribution Unit	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.

NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link:
www.hp.com/products/powercords.

HP Intelligent Power Distribution Units (iPDU)

iPDU Core Units

HP 24A NA/JP Core Only Intelligent Modular Power Distribution Unit	AF520A
HP 24A 3 Phase NA/JP Core Only Intelligent Modular Power Distribution Unit	AF522A
HP 32A Intl Core Only Intelligent Modular Power Distribution Unit	AF525A
HP 16A 3 Phase Intl Intelligent Modular Power Distribution Unit	AF526A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html
 (Worldwide)

Additional Options

HP Rack Series

HP Rack 10000 G2 Series (Carbon/Graphite Metallic)

HP 10642 G2 Pallet Universal Rack AF001A

HP 10642 G2 Shock Universal Rack AF002A

HP 10642 G2 1200mm deep Shock Rack AF092A

HP 10647 G2 1200mm deep Shock Rack AF094A

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

NOTE: Please see the QuickSpecs for 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>.

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

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

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

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

HP Rack Options

Keyboards and Monitors

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor AZ870A

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

http://h18000.www1.hp.com/products/quickspecs/13731_div/13731_div.html
(Worldwide)

HP Server Console Switches

HP Server Console 0x2x8 Port Analog Switch AF616A

HP Server Console 0x2x16 Port Analog Switch AF617A

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

http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html
(Worldwide)

HP Server Console Switch G2 with Virtual Media & CAC

HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software AF618A

HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software AF619A

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

http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html
(Worldwide)

Additional Options

HP IP Console Switch G2 with Virtual Media & CAC

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

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

http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html
(Worldwide)

HP USB and SD Options

HP USB 04 Standard Keyboard	DT528A#ABA
HP 4GB Secure Digital High Capacity Flash Media Kit	580387-B21
NOTE: Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization .	
HP 2GB USB Flash Media Drive Key Kit	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.	

HP Care Pack Services Hardware Services Response On-site Service

HP 3 year 4 hour 13x5 ProLiant DL38x Hardware Support	U4544E
HP 4 year 4 hour 13x5 ProLiant DL38x Hardware Support	U8101E
HP 5 year 4 hour 13x5 ProLiant DL38x Hardware Support	U8067E
HP 3 year 4 hour 24x7 ProLiant DL38x Hardware Support	U4545E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 4 Years, Electronic	U8181E
HP 5 year 4 hour 24x7 ProLiant DL38x Hardware Support	U8084E

Hardware Services Call to Repair On-site Service

HP 3 year 6 hour 24x7 Call to Repair ProLiant DL38x Hardware Support	U4546E
HP 4 year Next business day ProLiant DL38x Hardware Support	UA010E
HP 5 year Next business day ProLiant DL38x Hardware Support	UA009E
HP 3 year 24x7 24 hour Call to Repair ProLiant DL38x Hardware Support	UP717E
HP 4 year 24x7 24 hour Call to Repair ProLiant DL38x Hardware Support	UP718E
HP 5 year 24x7 24 hour Call to Repair ProLiant DL38x Hardware Support	UP719E

Installation & Start-up Services

HP Install ProLiant DL38x Service	U4554E
HP Startup ProLiant DL38x Service	U4555E

Support Plus

HP 3 year Support Plus Microsoft ProLiant DL38x Service	U4556E
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Support Plus 24

HP 3 year Support Plus 24 Microsoft ProLiant DL38x Service	U4557E
HP 3 year Support Plus 24 SuSE ProLiant DL38x Service	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".

Memory configurations

- This server supports 2GB to 512GB of system memory using DDR3 2GB, 4GB, 8GB, 16GB and 32GB memory modules across 24 memory sockets.
- For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

Advanced ECC memory

- Advanced ECC memory is the memory protection mode for this server. In Advanced ECC, the server does not fail because of correctable memory errors. The server provides notification if the level of correctable errors exceeds a pre-defined threshold rate.
- Advanced ECC provides additional protection over standard ECC because it is possible to correct certain memory errors that would otherwise be uncorrectable and result in a server failure.
- Whereas standard ECC can correct single-bit memory errors, Advanced ECC can correct single-bit memory errors and multi-bit memory errors if all failed bits are on the same DRAM device on the memory module.

Online Spare memory

- Online Spare memory mode is a higher level of memory protection that complements Standard Memory mode with Advanced ECC. With Online Spare mode, a DIMM with a rank of memory at least as large as the other ranks in the system, or memory board, is designated as the Online Spare rank. If one of the other DIMMs exceeds a threshold rate of correctable memory errors, the affected rank of memory within that DIMM is taken offline and the data is copied to the Online Spare rank. This capability maintains server availability and memory reliability without service intervention or server interruption. The DIMM that exceeded the error threshold can be replaced at the customer's convenience during a scheduled shutdown. Online Spare reduces the chance of an uncorrectable error bringing down the system; however, it does not fully protect the system against uncorrectable memory errors.
- Online Spare mode is beneficial to businesses with sites that do not have IT staff available to service a failure, do not always have replacement memory readily available, or cannot bring down the server until a scheduled shutdown. The cost of implementation for Online Spare over Advanced ECC is the hardware cost of the extra DIMMs for the spare memory bank.
- The user configures the system for Online Spare mode through the RBSU3. Online Spare configuration requirements vary for each server series, but it does not require operating system support or special software beyond the System BIOS. However, if messaging and logging are desired at the console along with messages in HP Systems Insight Manager, an operating system must be used that has system management and agent support for Advanced Memory Protection.

Population order

- The two tables below represent the memory module population order for one processor. The population order for the other processor is identical. SR denotes Single Rank, DR denotes Dual Rank, and QR denotes Quad Rank.
- All memory modules must follow the population order shown in these two tables for both processors with the following exception:
- QR memory modules must be installed only in memory sockets 2, 5, 8, and 11, while following the population order for those memory sockets.

Processor memory socket	1	2	3	4	5	6
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	A	I	E	C	K	G
Processor memory channel	A	A	A	B	B	B

Processor memory socket	7	8	9	10	11	12
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	B	J	F	D	L	H
Processor memory channel	C	C	C	D	D	D

Population rules



Memory

When installing memory modules, observe the following population rules:

- Use only HP memory modules listed in this document.
- Advanced ECC is not available if x4 and x8 memory modules are mixed in channels (A and B), (C and D), or both, but standard ECC is still available. Advanced ECC is available if x4 and x8 memory modules are mixed in memory channels (A and C), (B and D), or both.
- No more than two UDIMMs may be installed per channel.
- Do not mix UDIMMs and RDIMMs within this server.

Population guidelines

While adhering to the memory population rules ("Population rules" - see above), performance can be improved by following the guidelines below:

- Memory modules may be installed one at a time per processor, but installing two at a time per processor provides for additional performance, installing four at a time per processor provides for better performance, and installing equal amounts of memory for both processors provides for best performance.
- Install all memory modules of the same speed on the same processor for best performance.
- Install all memory modules of the same voltage on the same processor for best power.

Memory bus speed

Depending on the quantity and native speed of memory modules installed, memory bus speeds can be 1333 MHz, 1066 MHz, 800 MHz, or 667 MHz. Memory bus speeds can be different for each processor.

To determine memory bus speeds, do the following:

Within RBSU, select the **Power Management Options** menu > **Advanced Power Management Options** menu > **Maximum Memory Bus Frequency** menu.

- Select one of the following menu options:
 - **Auto (default)** - The memory bus speed is set to what is shown in the following table. If the native speed of the installed memory module is slower than the memory bus speed, the memory bus speed is set to the memory module native speed

Memory modules per channel	QR	SR or DR	Memory module native speed	Memory bus speed (standard-voltage memory module)	Memory bus speed (low-voltage memory module)
1	-	1*	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1333 MHz	1066 MHz
1	1	-	QR 1066 MHz	1066 MHz	1066 MHz
2	-	2*	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1333 MHz	1066 MHz
2	1	1	SR 1333 MHz DR 1333 MHz DR 1066 MHz QR 1066 MHz	800 MHz	800 MHz
3	-	3 SR	SR 1333 MHz	1066 MHz	1066 MHz
3	-	3 DR	DR 1333 MHz DR 1066 MHz	1066 MHz	800 MHz
3	-	3 mixed	SR 1333 MHz DR 1333 MHz DR 1066 MHz	1066 MHz	800 MHz
3	1	2	SR 1333 MHz DR 1333 MHz DR 1066 MHz QR 1066 MHz	800 MHz	667 MHz

*These are the only configurations supported by UDIMMs. All configurations listed in this table are supported by RDIMMs. This table is for reference only.

Memory

- **800 MHz**-The memory bus speed is set to 800 MHz regardless of the quantity of memory modules installed, unless the table above reflects a slower memory bus speed.

NOTE: There may be more than one memory bus speed menu option.

NOTE: LVDIMM support is dependent on the ROM version

Memory Installation Examples

These memory installation examples show the memory sockets associated with the first processor only. If there is a second processor installed, like for a performance model, then these examples can be applied toward the memory sockets associated with the second processor also.

2 RDIMMs per processor

- Standard memory: 2x2GB RDIMMs (4GB per processor)
- Optional memory: Adding 10x8GB RDIMMs to standard memory (84GB per processor)
- Maximum memory: Replacing standard memory with 4x32GB QR RDIMMs and 8x16GB DR RDIMMs (maximum of 256GB per processor)

Processor memory socket	1	2	3	4	5	6
Standard Memory	2GB DR					
Optional Memory	2GB DR	8GB DR	8GB DR	8GB DR	8GB DR	8GB DR
Maximum Memory	16GB DR	32GB QR	16GB DR	16GB DR	32GB QR	16GB DR

Processor memory socket	7	8	9	10	11	12
Standard Memory	2GB DR					
Optional Memory	2GB DR	8GB DR	8GB DR	8GB DR	8GB DR	8GB DR
Maximum Memory	16GB DR	32GB QR	16GB DR	16GB DR	32GB QR	16GB DR

2 UDIMMs per processor

- Standard memory: 2x2GB UDIMMs (4GB per processor)
- Optional memory: Adding 6x4GB UDIMMs to standard memory (28GB per processor)
- Maximum memory: Replacing standard memory with 8x4GB UDIMMs (maximum of 32GB per processor)

Processor memory socket	1	2	3	4	5	6
Standard Memory	2GB DR					
Optional Memory	2GB DR		4GB DR	4GB DR		4GB DR
Maximum Memory	4GB DR		4GB DR	4GB DR		4GB DR

Processor memory socket	7	8	9	10	11	12
Standard Memory	2GB DR					
Optional Memory	2GB DR		4GB DR	4GB DR		4GB DR
Maximum Memory	4GB DR		4GB DR	4GB DR		4GB DR

4 RDIMMs per processor

- Standard memory: 4x2GB RDIMMs (8GB per processor)
- Optional memory: Adding 8x8GB RDIMMs to standard memory (72GB per processor)
- Maximum memory: Replacing standard memory with 4x32GB QR RDIMMs and 8x16GB DR RDIMMs (maximum of 256GB per processor)*

Processor memory socket	1	2	3	4	5	6
Standard Memory	2GB DR			2GB DR		
Optional Memory	2GB DR	8GB DR	8GB DR	2GB DR	8GB DR	8GB DR
Maximum Memory	16GB DR	32GB QR	16GB DR	16GB DR	32GB QR	16GB DR

Memory

Processor memory socket	7	8	9	10	11	12
Standard Memory	2GB DR			2GB DR		
Optional Memory	2GB DR	8GB DR	8GB DR	2GB DR	8GB DR	8GB DR
Maximum Memory	16GB DR	32GB QR	16GB DR	16GB DR	32GB QR	16GB DR

* If you have a 2P system and want the maximum memory of 512GB installed, you will need to replace all standard memory with 8x32GB QR RDIMMs and 16x16GB DR RDIMMs.

Following are memory options available from HP:

HP Memory

NOTE: DIMM banks are active only when the corresponding processor socket is populated.

Registered DIMMs (RDIMMs)

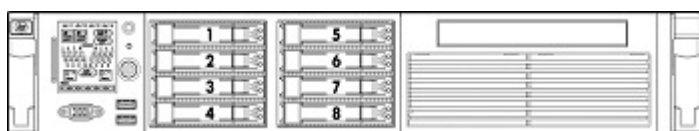
HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627808-B21
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627810-B21

Unbuffered with ECC DIMMs (UDIMMs)

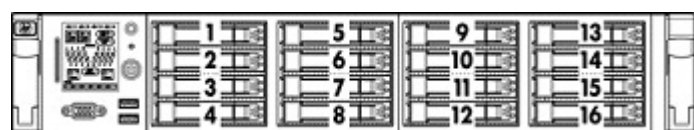
HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593921-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	593923-B21

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.
NOTE: This configuration requires a second controller or SAS Expander Card.



1-6 Six LFF SAS hot plug hard drive bays
NOTE: This configuration does not support optical drive.
NOTE: This configuration replaces SFF hard drive cage.

NOTE: Connect the SAS power cable from the primary drive cage (drive cage containing SFF drives 1-8 or LFF drives 1-6) to the primary SAS power connector on the system board. If a secondary drive cage (drive cage containing SFF drives 9-16) is installed, connect a SAS power cable from the secondary drive cage to the secondary SAS power connector on the system board. Refer to the hood label for SAS power connector locations on the system board.

Drive Support

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

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.

NOTE: IMPORTANT: Installation of both SAS and SATA hard drives or a mixture of SSDs and traditional hard drives in a single RAID volume is not supported.

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

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 10K	Up to 16	1-8	HP Smart Array P212/Zero Memory Controller
300GB 6G SAS 10K		1-16	HP Smart Array P212/256 MB Controller
146GB 6G SAS 15K		NOTE:	HP Smart Array P410/256 MB Controller
146GB 6G SAS 10K		Depending on	HP Smart Array P410/512 MB BBWC Controller
72GB 6G SAS 15K		Model	HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P812/512 BBWC Controller

Storage

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

	Quantity Supported	Position Supported	Controller
450GB 6G SAS 15K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller
300GB 6G SAS 15K			HP Smart Array P212/256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P812/512 BBWC Controller

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

	Quantity Supported	Position Supported	Controller
1TB 6G SAS 7.2K	Up to 16	1-8	HP Smart Array P212/Zero Memory Controller
500GB 6G SAS 7.2K		1-16	HP Smart Array P212/256 MB Controller
		NOTE:	HP Smart Array P410/256 MB Controller
		Depending on Model	HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P812/512 BBWC Controller

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

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 7.2K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller
1TB 6G SAS 7.2K			HP Smart Array P212/256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P812/512 BBWC Controller

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

	Quantity Supported	Position Supported	Controller
1TB 3G SATA 7.2K	Up to 16	1-8	HP Smart Array P212/Zero Memory Controller
500GB 3G SATA 7.2K		1-16	HP Smart Array P212/256 MB Controller
		NOTE:	HP Smart Array P410/256 MB Controller
		Depending on Model	HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P812/512 BBWC Controller

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

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller
1TB 3G SATA 7.2K			HP Smart Array P212/256 MB Controller
500GB 3G SATA 7.2K			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P812/512 BBWC Controller

Storage

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

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K	Up to 16	1-8 1-16	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller
		NOTE: Depending on Model	

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

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

SATA Hot Plug Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD 120GB 3.0G SATA SSD	Up to 16	1-8 1-16	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

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

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD 120GB 3.0G SATA SSD	Up to 6	1-6	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/512 BBWC Controller

6G SAS Hot Plug Enterprise Performance Solid State Drives

	Quantity Supported	Position Supported	Controller
200GB 6G SAS SLC SFF SSD 400GB 6G SAS SLC SFF SSD	Up to 16	1-8 1-16	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P411/256 MB Controller
		NOTE: Depending on Model	

Storage

HP Smart Array P411/512 MB BBWC Controller
 HP Smart Array P812/512 BBWC Controller

6G SAS Hot Plug Enterprise Mainstream Solid State Drives

	Quantity Supported	Position Supported	Controller
800GB 6G SAS MLC SFF SSD	Up to 16	1-8	HP Smart Array P212/Zero Memory Controller
400GB 6G SAS MLC SFF SSD		1-16	HP Smart Array P212/256 MB Controller
200GB 6G SAS MLC SFF SSD		NOTE: Depending on Model	HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P812/512 BBWC Controller

External Storage

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

Maximum Storage Capacity - (with MSA70)

Internal	16TB (16 x 1TB SAS SFF)
External	250TB (250 x 1TB SAS SFF)
Total	266TB

Tape and Disk Backup

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

	Position Supported	Controller	Controller Part Number
HP SCSI Tape Drives LTO-1 Ultrium 232	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21



Storage

LTO-2 Ultrium 448
 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 USB Tape Drives	External	USB 2.0 Port	N/A
DAT 40			
DAT 72			
DAT 160			
DAT 320			
1U USB Rack-Mount Kit			

HP SAS Tape Drives	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
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			

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

HP SCSI Tape Autoloaders	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
DAT 72x10 Autoloader			
1/8 G2 Autoloader			

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

HP SCSI Tape Libraries	External	HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter	AH627A
MSL2024			
MSL4048			
MSL8096			
MSL6000			

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

HP SAS Tape Autoloaders and Libraries	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
1/8 G2 Autoloader			
MSL2024			
MSL4048			
MSL8096			

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

HP Fibre Channel Tape Libraries	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
MSL2024			
MSL4048			
MSL8096			
MSL6000			

HP USB RDX	Internal or	USB 2.0 Port	N/A
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Storage

Removable Disk Backup System

External

RDX160
RDX320
RDX500
RDX750
RDX1TB

HP D2D Backup Systems, iSCSI

External

Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

D2D2500i
D2D4000i

HP D2D Backup Systems, Fibre Channel

External

Direct server attach is not supported, requires connection via SAN fabric. See: <http://www.hp.com/go/connect>

N/A

D2D4000fc

Power Specifications

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

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

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

Power Specifications

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

HP 1200W Common Slot Platinum Hot Plug 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)	10						
Maximum British Thermal Unit Rating (BTU-Hr)	3033	3375	4403	4403	4403	4403	4403

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

Power Specifications

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

- Click on "ProLiant Servers"
- Click on the Server of interest. Example: DL385 G7
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

Technical Specifications

System Unit	Dimensions (H x W x D) 3.38 x 17.54 x 27.25 in (8.59 x 44.54 x 69.98 cm) (with bezel)									
	Weight (approximate)	<table border="0"> <tr> <td style="padding-right: 20px;">Maximum (all hard drives, power supply, and processor installed)</td> <td style="padding-left: 20px;">60 lb (27.22 kg)</td> </tr> <tr> <td>Minimum (one hard drive, power supply, and processor installed)</td> <td>45.90 lb (20.81 kg)</td> </tr> </table>	Maximum (all hard drives, power supply, and processor installed)	60 lb (27.22 kg)	Minimum (one hard drive, power supply, and processor installed)	45.90 lb (20.81 kg)				
Maximum (all hard drives, power supply, and processor installed)	60 lb (27.22 kg)									
Minimum (one hard drive, power supply, and processor installed)	45.90 lb (20.81 kg)									
	Input Requirements (per power supply)	<table border="0"> <tr> <td style="padding-right: 20px;">Rated Line Voltage</td> <td style="padding-left: 20px;">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> </table>	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC	Rated Input Current	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)	Rated Input Frequency	50 to 60 Hz	Rated Input Power	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)
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Rated Input Power	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)									
	BTU Rating	<table border="0"> <tr> <td style="padding-right: 20px;">Maximum</td> <td style="padding-left: 20px;">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> </table>	Maximum	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)						
Maximum	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)									
	Power Specifications	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								
	Power Supply Output (per power supply)	<table border="0"> <tr> <td style="padding-right: 20px;">Rated Steady-State Power</td> <td style="padding-left: 20px;">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)</td> </tr> <tr> <td>Maximum Peak 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)</td> </tr> </table>	Rated Steady-State 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)	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)				
Rated Steady-State 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)									
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)									

Technical Specifications

		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	4.5 B
	LpAm	23 dBA	25 dBA
	Operating	1P SKU	2P SKU
	LWAd	5.3 B	5.6 B
	LpAm	36 dBA	38 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.

Technical Specifications

HP 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 (32bit and 64bit) Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit) Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Extended Systems Standard Edition, Enterprise Edition Red Hat Enterprise Linux 5.4 (32 bit and 64 bit) SUSE Linux Enterprise Server 11 (32bit and 64bit) SUSE Linux Enterprise Server 10 (32bit and 64bit) VMware ESX 4.0 VMware ESX 3.5.0
	Client System Support	Microsoft Windows 7 Microsoft Windows XP Professional Edition Microsoft Windows Vista Business and Ultimate Editions Red Hat Enterprise Desktop 5.00 SUSE Linux Enterprise Desktop 11 SUSE Linux Enterprise Desktop 10
	Client Browser Support	Microsoft Internet Explorer 8 Microsoft Internet Explorer 7 Microsoft Internet Explorer 6 Firefox 3.5 (on supported Windows and Linux systems) Firefox 3.0 (on supported Windows and Linux systems)
	Command Line Support	Secure Shell and serial port access Secure Socket Layer Secure Shell version 2
	Security	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

Technical Specifications

Smart Array P410i Controller	Dimensions	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal 4X connectors
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus
	Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
	SAS Speed	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (8 physical drives) Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) NOTE: RAID 6, 6+0 can be enabled with one of the following combinations: <ul style="list-style-type: none"> • 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades • 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades • 1G FBWC and Smart Array Advanced Pack License key option upgrades
		RAID 5, 5+0 (Distributed Data Guarding) NOTE: A minimum of 256 MB cache is required to enable RAID 5, 5+0 support
		RAID 1+0 (Striping & Mirroring)
		RAID 0 (Striping), RAID 1 (Mirroring)

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters	Network Interface Compatibility	10Base-T/100Base-TX/1000Base-TX	
		IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Controller	Broadcom5709C	
	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)	

Technical Specifications

**Environment-friendly
Products and
Approach****End-of-life
Management and
Recycling**

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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