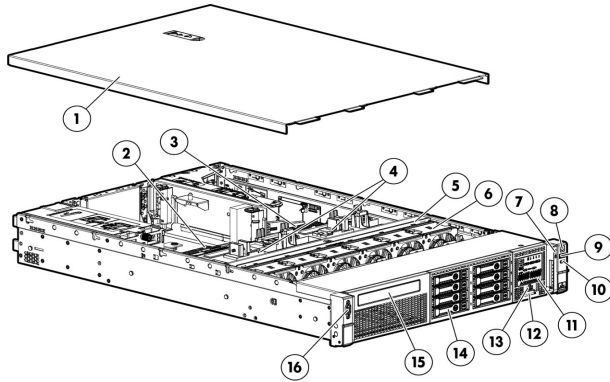


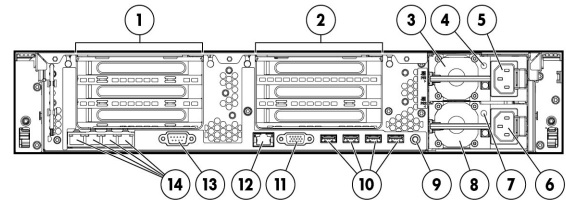
### Overview

With enhanced innovations in performance, feature flexibility, and management capabilities, the DL385p Gen8 is the price/performance choice for your virtualization, database, and high performance computing workloads.



#### Front View:

1. Quick removal access panel
2. Second AMD Processor
3. First AMD Processor
4. (24) DDR3 DIMM slots
5. Air Baffle
6. Hot-plug fans, full N+1 redundancy
7. Health LED
8. Power On/Standby button & system power LED button
9. USB connector
10. UID LED
11. Systems Insight Display
12. Asset Tag
13. USB connector
14. 8 SFF HDD Bays
15. Optional Slim Optical Bay
16. Video connector



#### Rear View:

1. PCIe Slots (Slots 1-3 top to bottom)
2. PCIe Slots (Slots 4-6 top to bottom)
3. Power supply 1
4. Power supply 1 Power LED
5. Power supply 1 Power connection
6. Power supply 2 Power connection
7. Power supply 2 Power LED
8. Power supply 2
9. UID LED
10. USB connectors (4)
11. Video connector
12. iLO connector
13. Serial connector
14. FlexibleLOM ports (Shown: 4 ports 1Gb each-Port 1-4 starting Right to Left)

### 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

##### Sixteen-Core Processors

AMD Opteron™ 6284SE (2.7GHz/16-core/16MB/140W TDP) Processor

AMD Opteron™ 6282SE (2.6GHz/16-core/16MB/140W TDP) Processor

AMD Opteron™ 6278 (2.4GHz/16-core/16MB/115W TDP) Processor

AMD Opteron™ 6276 (2.3GHz/16-core/16MB/115W TDP) Processor

AMD Opteron™ 6274 (2.2GHz/16-core/16MB/115W TDP) Processor

AMD Opteron™ 6272 (2.1GHz/16-core/16MB/115W TDP) Processor

AMD Opteron™ 6262HE (1.6GHz/16-core/16MB/85W TDP) Processor

##### Twelve-Core Processors

AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W TDP) Processor

AMD Opteron™ 6234 (2.4GHz/12-core/16MB/115W TDP) Processor

##### Eight-Core Processors

AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W TDP) Processor

AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W TDP) Processor

##### Quad-Core Processors

AMD Opteron™ 6204 (3.3GHz/4-core/16MB/115W TDP) Processor

**NOTE:** Mixing different processor models is not supported.

**NOTE:** All processors support up to 1600MHz DDR3 memory speeds.

---

#### Cache Memory

16MB (2x8MB) Level 3

---

#### Chipset

AMD SR5690 Northbridge and SP5100 Southbridge

---

#### Upgradeability

Upgradeable to 2 processors

Up to 24 DIMM slots available for higher memory capacities

FlexibleLOM connector for 1Gb or 10Gb networking options

8SFF (plus optional upgrade of 8SFF for up to 16SFF drives—requires second Smart Array) and other Models with 8LFF, 12LFF, or 25SFF hard drive bays

Optional 3-slot PCIe 2.0 riser (x16, x8, x8)

**NOTE:** The second processor must be installed to take advantage of the optional 3-slot riser.

Redundant Power Supply

Optical Drive (available on 8SFF and 8LFF Models only)

---

#### On System Management Chipset

HP iLO (Firmware: HP iLO 4)

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

### Standard Features

**Memory Protection**      Advanced ECC  
Online Spare

---

**Memory**  
One of the following  
depending on Model

Type	HP SmartMemory DDR3 Load Reduced(LRDIMM) and Registered (RDIMM)
DIMM Slots Available	24 (12 DIMM slots per processor/4 channels per processor/3 DIMMs per channel)
Storage Centric Model	16GB (2x8GB) PC3-10600R (DDR3-1333) Registered DIMMS
Dedicated Workload Model	32GB (4x8GB) PC3-10600R (DDR3-1333) Registered DIMMS
Maximized Consolidation Model	32GB (4x8GB) PC3-10600R (DDR3-1333) Registered DIMMS
Maximum Capacity (LDIMM)	768GB (24 x 32GB LRDIMM @ 800MHz)
Maximum Capacity (RDIMM)	128GB (8 slots x 16GB RDIMM @1600MHz) <b>NOTE:</b> Requires 2nd processor installed

**NOTE:** HP memory from previous generation servers may not provide the same performance with the HP ProLiant DL385p Gen8 Servers as HP SmartMemory will.

**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:  
[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

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

**NOTE:** Depending on the memory configuration, the memory speed may run at 1600MHz, 1333MHz, 1066MHz or lower. Please see Memory Population Table or the Online Memory Configuration Tool at:  
[www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

---

**Network Controller**  
One of the following  
depending on Model

HP ProLiant Gen8 servers offer a new networking technology - FlexibleLOM. The HP ProLiant DL385p Gen8 server offers the customer the choice of 1 Gigabit and/or 10 Gigabit networking solutions. For additional details see the Networking Section of this document. Only one FlexibleLOM may fit on a single server - see PCIe solutions for additional networking.

HP Ethernet 1Gb 4-port 331FLR Adapter

---

### Standard Features

#### Expansion Slots

PCIe Riser #1 (Standard)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	1	PCIe 2.0	X8	X16	5	Full Length, Full Height Slot	For Processor 1
	2	PCIe 2.0	X8	X8	8	Half Length, Full Height Slot	For Processor 1
	3	PCIe 2.0	X4	X8	11	Half Length, Full Height Slot	For Processor 1

\* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

\*\* Indicates the number of physical electrical lanes running to the connector.

**NOTE:** When populating the second optional riser slot, the second processor must be installed.

PCIe Riser #2 (Optional - Requires 2nd Processor)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	4	PCIe 2.0	X16	X16	65	Full length, full height slot	For Processor 2
	5	PCIe 2.0	X8	X16	68	Half length, full height slot	For Processor 2
	6	PCIe 2.0	X8	X8	71	Half length, full height slot	For Processor 2

\* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

\*\* Indicates the number of physical electrical lanes running to the connector.

**NOTE:** When populating the second optional riser slot, the second processor must be installed.

#### HP Server ROM

HP ROM (Read Only Memory) is now digitally signed using HP's Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

HP ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.

HP ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

HP's ProLiant ROM is used to configure the following:

### Standard Features

- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (Integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration (using the HP ROM-Based Setup Utility (RBSU)).

**NOTE:** For further information, please refer to HP's RBSU (ROM based setup utility) user guide: [www.hp.com/support/rbsu](http://www.hp.com/support/rbsu).

### Storage Controller One of the following depending on Model

Storage Centric Model	HP Smart Array P420i/512MB FBWC (RAID 0/1/1+0/5/5+0)
Dedicated Workload Model	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0)
Maximized Consolidation Model	HP Smart Array P420i/2GB FBWC (RAID 0/1/1+0/5/5+0)

### Internal Storage Devices

Diskette Drive	None
Optical Drive	Optional: DVD-ROM, DVD-RW <b>NOTE:</b> Not Available on 12LFF or 25SFF Models.
Hard Drives	None ship standard
Drive Bays One of the following depending on Model	Storage Centric Model      12-LFF drive bays Dedicated Workload Model    8-SFF drive bays total with options for DVD OR optional second 8-SFF drive bay set (total of 16SFF drive bays, no DVD) <b>NOTE:</b> Optional 2nd 8-SFF drive kit requires 2nd Smart Array Controller (PCIe) for support recommend HP Smart Array P420 PCI card). Maximized Consolidation Model    25-SFF drive bays total <b>NOTE:</b> HP ProLiant DL385p series servers offer both LFF and SFF versions. The optical drive bay is not available with +8SFF drive bay upgrade, 12-LFF, or 25-SFF drive bay models. <b>NOTE:</b> 8-LFF, 12-LFF, and 25-SFF versions are not upgradeable options from the standard 8SFF model, or vice versa. <b>NOTE:</b> All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit. These part numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server. <b>NOTE:</b> All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

### Standard Features

<b>Maximum Internal Storage</b>	Hot Plug SFF SAS	25.0TB	25 x 1TB (on 25 SFF Drive Bay Models)
	Hot Plug SFF SATA	25.0TB	25 x 1TB (on 25 SFF Drive Bay Models)
	Hot Plug LFF SAS	36.0TB	12 x 3TB (on 12 LFF Drive Bay Models)
	Hot Plug LFF SATA	36.0TB	12 x 3TB (on 12 LFF Drive Bay Models)
	Hot Plug SFF SAS SSD	20.0TB	25 x 800GB (on 25 SFF Drive Bay Models)
	Hot Plug LFF SATA SSD	4.8TB	12 x 400GB (on 12 LFF Drive Bay Models)

**NOTE:** Storage capacities may vary depending on Models/Drive Cages and Hard Drives selected.

<b>Interfaces</b>	Serial	1 (Back)
	Video	2 (1 front, 1 back) not active simultaneously
	FlexibleLOM Network Ports	All pre-configured models come standard with 4 x 1GB ports (See HP Networking section below for more details and options)
	HP iLO Remote Management Network Port	1 Gb Dedicated
	SD Slot	1 Internal Secure
	USB 2.0 Ports	Up to 8 total: up to 2 front, 4 back, 2 internal

<b>Industry Standard Compliance</b>	ACPI 2.0b Compliant
	PCIe 2.0 Compliant
	PXE Support
	WOL Support
	Microsoft® Logo certifications
	USB 2.0 Compliant

<b>Server Power Cords</b>	High voltage power cord ships standard with all part numbers.
	<b>NOTE:</b> HP ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cords (227099-001) that allow connection to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU 6-foot C-14 to C13 power cord (142258-001). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the 12-foot NEMA 5-15 to C13 power cord must be ordered separately. Also available: 110 volt 6-Foot NEMA 5-15p to C13 (AF556A).

<b>Power Specifications</b>	To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a> .
-----------------------------	---

**NOTE:** Power Specification and Technical Content for supported power supplies can be found at: [http://h18000.www1.hp.com/products/quickspecs/14209\\_div/14209\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

### Standard Features

#### Common Slot Power Supply

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in three power output options - 460W, 750W, and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

HP CS Platinum Plus power supplies are required when enabling HP's Intelligent Power Discovery (IPD) solution. IPD is the first technology to create an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's IPD solution, go to [www.hp.com/go/ipd](http://www.hp.com/go/ipd).

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP Power Advisor can be accessed at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

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

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

**NOTE:** Power Specification and Technical Content for supported power supplies can be found at: [http://h18000.www1.hp.com/products/quickspecs/14209\\_div/14209\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

---

#### System Fans

One of the following depending on Model

2P Models have (6) (N+1 redundancy standard)

1P Models have (4) (N+1 redundancy standard)

---

#### Required Cabling

For required cabling information, refer to the HP Web site at: [www.hp.com/servers/dl385p-gen8](http://www.hp.com/servers/dl385p-gen8)

---

### 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: <http://www.hp.com/support/DL385pGen8>

#### Graphics

Integrated Matrox G200 video standard

- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)

#### Form Factor

One of the following depending on Model

2U Rack form factor

**NOTE:** All pre-configured BTO Models ship with Ball-Bearing sliding rails and cable management arm. Any customer configured models must select appropriate Rail Kits when configuring.

8 SFF Drive Bay Version:

3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 27.5" (69.85 cm) Length

8 LFF Drive Bay Version:

3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94cm) Length

12 LFF Drive Bay Version:

3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94cm) Length

25 SFF Drive Bay Version:

3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 27.5" (69.85 cm) Length

#### On System Management

HP iLO Management Engine

HP iLO Management Engine is a complete set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 Servers. HP iLO Management Engine portfolio includes:

- **HP iLO:** The HP iLO management processor is the core **foundation for HP iLO Management Engine**. **HP iLO for HP** ProLiant servers simplify server setup, engage health monitoring, power and thermal control, and promote remote administration for HP ProLiant ML, DL, BL and SL servers. Furthermore with the new HP iLO is the ability to access, deploy, and manage your server anytime from anywhere with your Smartphone device.
- **HP Agentless Management:** With HP iLO Management Engine in every HP ProLiant Gen8 server, the base hardware monitoring and alerting capability is built into the system (running on the HP iLO chipset) and starts working the moment that a power cord and an Ethernet cable is connected to the server.
- **HP Active Health System:** HP Active Health System is an essential



### Standard Features

component of the HP iLO Management Engine. It provides: Diagnostics tools/scanners wrapped into one; Always on, continuous monitoring for increased stability and shorter downtimes; Rich configuration history; Health and service alerts; Easy export and upload to Service and Support.

- **HP Intelligent Provisioning (previously known as SmartStart):** HP Intelligent Provisioning offers the ability for out-of-the box single-server deployment and configuration without the need for media.

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

#### HP Insight management software

HP Service Pack for ProLiant (SPP)

HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) version 5 provide a new, comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling all firmware to be updated online and integrating firmware and system software updates in one operation HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support on each Service Pack for ProLiant.

The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM version 5 and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application has been re-written to provide a more straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP will recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HP SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment.

**NOTE:** The Service Pack for ProLiant (which includes HP SUM 5) can be downloaded from [www.hp.com/go/spp/download](http://www.hp.com/go/spp/download). More information can be found: [www.hp.com/go/spp](http://www.hp.com/go/spp) and <http://www.hp.com/go/hpsum>

### Standard Features

#### Security

Power-on password  
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

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](http://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 Matrix Operating Environment

The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business.

The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).

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

HP iLO Advanced License for ProLiant Servers

HP iLO management processors for HP ProLiant Gen8 servers virtualizes system controls to help simplify server setup, engage health monitoring and power and thermal control, and promote remote administration. HP iLO functions out-of-the-box without additional software installation and functions regardless of the servers' state of operation. Basic system board management functions, diagnostics, and essential Lights-Out functionality ships standard across all HP ProLiant Gen8 rack, tower and blade servers. The HP iLO can be accessed from any location via a web browser and works hand-in-hand with HP Systems Insight Manager, Insight Control, and HP Matrix Operating Environment, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service to the business.

Advanced functionality, such as graphical remote console, multi-user collaboration, and video record/playback can be activated with the optional HP iLO Advanced or HP iLO Advanced for BladeSystem licenses. The Advanced licensed features offer sophisticated remote administration of servers in dynamic data center and remote locations and can help significantly reduce cost associated with IT-related travel and unplanned downtime.

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

### Optional Features

#### High Performance Clusters

HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. <a href="http://www.hp.com/go/clusters">http://www.hp.com/go/clusters</a>
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. <a href="http://www.hp.com/techservers/clusters/ucp/index.html">http://www.hp.com/techservers/clusters/ucp/index.html</a>
HP Insight Cluster Management Utility	HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of 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. <a href="http://www.hp.com/go/cmu">http://www.hp.com/go/cmu</a>
HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported option to HP Insight CMU, for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform LSF workload scheduler and Platform Application Center, as well as the HP-MPI parallelization library. <a href="#">HP HPC Linux Value Pack</a>

#### HP Insight Online

HP Insight Online is a new addition to the HP Support Center for one stop, secure access to product and HP support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. [www.hp.com/go/insightonline](http://www.hp.com/go/insightonline)

#### Factory Express Portfolio for Servers and Storage

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, EVA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

### Optional Features

#### **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. Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for their business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help deliver high levels of application availability through proactive service management and advanced technical response

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 support recommendations - **Optimized Care, Standard Care, and Basic Care** - available for each product group. Such support solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support recommendations for servers, storage, networking and software designed to meet your specific needs.

All three service recommendations include support services from the broader portfolio of Foundation Care and Proactive Care services.

---

#### Optimized Care

##### **Optimized Care : 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.pdf>

###### **HP Installation and Startup for Insight Control Software / HP SIM**

Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) 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, Proactive Care**

Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your call and end to end until resolved, delivering a single point of contact for you. Helping you to resolve your hardware and software issues and minimizing downtime in your business critical environment.

**Additional Services:** Factory Express, Education Services, Proactive Select - 30 Credit Package

### Service and Support

#### Standard Care

**Standard Care : Service recommendation 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.pdf>

**HP Installation and Startup for Insight Control Software / HP SIM**

Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) 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, Collaborative Support**

Provides problem resolution support across the stack of HW, firmware, and HP and 3rd party SW. In case the issue is with 3rd party SW, HP does known issue resolution. If HP cannot solve the issue, it will contact the third-party vendor and create a problem incident on your behalf.  
<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-8232ENW.pdf>

**Additional Services:** Software support service with 24X7 availability with a 2 hour response, Training courses on Microsoft, Linux (Red Hat and SUSE), VMware, and HP Insight Software, 10 Proactive Select Credit package, Factory Express  
<http://www8.hp.com/us/en/business-services/it-services.html?compURI=1078865>

---

#### Basic Care

**Basic Care: 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.pdf>

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

Provides you with rapid remote support and if required an HP authorized technical engineer will be on site 24X7 begin hardware maintenance service within 4 hours of the service request being logged  
<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf>

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

Provides remote 3-year software support service that delivers comprehensive software services, including access to HP technical resources and software updates  
<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf>

**Additional Services:** Factory Express, Education Services, Proactive Select - 10 Credits

---

#### Insight Remote Support

Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more  
<http://www.hp.com/go/insightremotesupport>

---

### Service and Support

#### HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more <http://www.hp.com/go/hpsc>

HP's Support Center Mobile App\* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

\*HP' Support Center Mobile App is subject to local availability

---

#### Warranty / Service Coverage

For ProLiant servers and storage systems, the services cover HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

---

#### 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:** All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit.

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

### Storage Centric Models

HP ProLiant DL385p Gen8 6212 1P 16GB-R P420i/512 Hot Plug 12 LFF 750W PS Server 642137-xx1	<b>Processor(s)</b>	(1) AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W TDP) Processor
	<b>Cache Memory</b>	16MB (2x8MB) Level 3
	<b>Memory</b>	16GB (2x8GB) PC3-10600R (DDR3-1333) Registered DIMMS <b>NOTE:</b> Up to 24 DIMM slots available with 2nd Processor installed (12 DIMM Slots per processor).
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 331FLR Adapter
	<b>Storage Controller</b>	HP Smart Array P420i/512MB FBWC (RAID 0/1/1+0/5/5+0)
	<b>Hard Drive</b>	None ship standard; includes 10 LFF hard drive blanks, 2 open drive bays for drives
	<b>Internal Storage</b>	12 LFF SAS/SATA HDD Bays
	<b>Optical Drive Bay</b>	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)
	<b>PCI-Express Slots</b>	3 PCIe slots <b>NOTE:</b> 3 additional PCIe slots available with optional PCIe Riser Cage #2- requires second processor.
	<b>Power Supply</b>	(1) HP 750W CS Platinum Plus Hot Plug Power Supply (94% Efficient)
	<b>Fans</b>	(4) (N+1 redundancy standard)
	<b>Management</b>	HP iLO Management Engine (standard) Optional: HP Insight Control
	<b>Form Factor</b>	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

### Pre-configured Models

#### Dedicated Workload Models

**NOTE:** This Model is Energy Star Certified.

<p><b>HP ProLiant DL385p Gen8 6238 2P 32GB-R P420i Hot Plug 8 SFF 750W PS Server</b> 642136-xx1</p>	<p><b>Processor(s)</b> <b>Cache Memory</b> <b>Memory</b></p>	<p>(2) AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W TDP) Processors 16MB (2x8MB) Level 3 32GB (4x8GB) PC3-10600R (DDR3-1333) Registered DIMMS <b>NOTE:</b> Up to 24 DIMM slots available with 2nd Processor installed(12 DIMM Slots per processor).</p>
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 331FLR Adapter
	<b>Storage Controller</b>	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0)
	<b>Hard Drive</b>	None ship standard; includes 6 SFF hard drive blanks, 2 open drive bays for drives
	<b>Internal Storage</b>	8 SFF SAS/SATA HDD Bays Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays (requires additional PCI controller)
	<b>Optical Drive Bay</b>	Optional Slim Optical Bay (SATA DVD-RW /ROM Optical Drive)
	<b>PCI-Express Slots</b>	6 PCIe slots <b>NOTE:</b> Includes PCIe Riser Cage #2.
	<b>Power Supply</b>	(2) HP 750W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)
	<b>Fans</b>	(6) (N+1 redundancy standard)
	<b>Management</b>	HP iLO Management Engine (standard) Optional: HP Insight Control
	<b>Form Factor</b>	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

#### Maximized Consolidation Models

**NOTE:** These Models are Energy Star Certified.

<p><b>HP ProLiant DL385p Gen8 6272 2P 32GB-R P420i Hot Plug 25 SFF 750W PS Server</b> 642135-xx1</p>	<p><b>Processor(s)</b> <b>Cache Memory</b> <b>Memory</b></p>	<p>(2) AMD Opteron™ 6272 (2.1GHz/16-core/16MB/115W TDP) Processors 16MB (2x8MB) Level 3 32GB (4x8GB) PC3-10600R (DDR3-1333) Registered DIMMS <b>NOTE:</b> Up to 24 DIMM slots available with 2nd Processor installed(12 DIMM Slots per processor).</p>
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 331FLR Adapter
	<b>Storage Controller</b>	HP Smart Array P420i/2GB FBWC (RAID 0/1/1+0/5/5+0)
	<b>Hard Drive</b>	None ship standard; includes 23 SFF hard drive blanks, 2 open drive bays for drives
	<b>Internal Storage</b>	25 SFF SAS/SATA HDD Bays
	<b>Optical Drive Bay</b>	None Available
	<b>PCI-Express Slots</b>	6 PCIe slots <b>NOTE:</b> Includes PCIe Riser Cage #2.
	<b>Power Supply</b>	(2) HP 750W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)

### Pre-configured Models

<b>Fans</b>	(6) (N+1 redundancy standard)
<b>Management</b>	HP iLO Management Engine (standard) Optional: HP Insight Control
<b>Form Factor</b>	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

---

<b>Country Code Key</b>	xx = 00	U.S.
	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:** Factory Integrated Models must start with a CTO Server.

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

**NOTE:** All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

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

<b>HP Models</b>	HP ProLiant DL385p Gen8 8 SFF Configure-to-order Server	653203-B21
	<b>Factory Integrated Model ships with:</b> Drive Cage - 8-SFF Drive Bays available (See hard drives in Section 4 for options) SID-Systems Insight Display Included 24 DIMM slots for RDIMM or LRDIMM memory installation Smart Array P420i Controller w/ Zero Memory (ZM) I/O slots - 3 Slots come standard: <ul style="list-style-type: none"><li>• Slot 1 - FL/FH x8 PCIe 2.0 (x16 connector)</li><li>• Slot 2 - HL/FH x8 PCIe 2.0 (x8 connector)</li><li>• Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)</li><li>• Additional PCIe Slots may be added with the 2nd Riser Cage option.</li></ul> System Fans - 4 standard (2 additional fans included with second processor) Drive Cage - 8SFF (drive blanks installed dependent on number of drives ordered) USB - 4 Rear, 2 Front, 2 Internal, 1 SD slot HP iLO Management Engine (iLO4) <b>NOTE:</b> Smart Array Cache options, Hard drives, Optical drives, Flexible NICs*, Power Supply* and Rail/CMA Kits not included in the base configuration - choose these from Steps 2 or 4 below in Options section. Additional 8-SFF Drive option requires additional HP Smart Array Controller. * This is a required selection.	
	HP ProLiant DL385p Gen8 8 LFF Configure-to-order Server	669804-B21
	<b>Factory Integrated Model ships with:</b> Drive Cage - 8-LFF Drive Bays available (See hard drives in Section 4 for options) Pop Out SID-Systems Insight Display Included 24 DIMM slots for RDIMM or LRDIMM memory installation Smart Array P420i Controller w/ Zero Memory (ZM) I/O slots - 3 Slots come standard: <ul style="list-style-type: none"><li>• Slot 1 - FL/FH x8 PCIe 2.0 (x16 connector)</li><li>• Slot 2 - HL/FH x8 PCIe 2.0 (x8 connector)</li><li>• Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)</li><li>• Additional PCIe Slots may be added with the 2nd Riser Cage option.</li></ul> System Fans - 4 standard (2 additional fans included with second processor) Drive Cage - 8LFF (drive blanks installed dependent on number of drives ordered) USB - 4 Rear, 2 Front, 2 Internal, 1 SD slot HP iLO Management Engine (iLO4) <b>NOTE:</b> Smart Array Cache options, Hard drives, Optical drives, Flexible NICs*, Power	

### Configuration Information - Factory Integrated Models

Supply\* and Rail/CMA Kits not included in the base configuration - choose these from Steps 2 or 4 below in Options section.

\* Required selection.

HP ProLiant DL385p Gen8 12 LFF Configure-to-order Server

669805-B21

#### Factory Integrated Model ships with:

Drive Cage - 12-LFF Drive Bays available (See hard drives in Section 4 for options)

NO SID-Systems Insight Display Included

24 DIMM slots for RDIMM and LRDIMM memory installation

Smart Array P420i Controller w/ Zero Memory (ZM)

I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x8 PCIe 2.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 2.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional PCIe Slots may be added with the 2nd Riser Cage option.

System Fans - 4 standard (2 additional fans included with second processor)

USB - 4 Rear, 2 Front, 2 Internal, 1 SD slot

HP iLO Management Engine (iLO4)

**NOTE:** Smart Array Cache options, Hard drives, Optical drives, Flexible NICs\*, Power Supply\* and Rail/CMA Kits not included in the base configuration - choose these from Steps 2 or 4 below in Options section.

\* Required selection.

HP ProLiant DL385p Gen8 25 SFF Configure-to-order Server

669803-B21

#### Factory Integrated Model ships with:

Drive Cage - 25-SFF Drive Bays available (See hard drives in Section 4 for options)

NO SID-Systems Insight Display Included

24 DIMM slots for RDIMM, LRDIMM, and UDIMM memory installation

1 FlexibleLOM connector (see Step2: HP Flexible NIC section below for NIC choices to populate the embedded connector)

Smart Array P420i Controller w/ Zero Memory (ZM)

I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x8 PCIe 2.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 2.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selection from the "PCI Information and Options" subsection

System Fans - 4 standard (2 additional fans included with second processor)

Drive Cage - 12LFF (drive blanks installed dependent on number of drives ordered)

USB - 4 Rear, 2 Front, 2 Internal, 1 SD slot

HP iLO Management Engine (iLO4)

**NOTE:** Smart Array Cache options, Hard drives, Optical drives, Flexible NICs\*, Power Supply\* and Rail/CMA Kits not included in the base configuration - choose these from Steps 2 or 4 below in Options section.

\* Required selection.

### Configuration Information - Factory Integrated Models

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

##### HP Processors

**NOTE:** All processors support up to 1600MHz DDR3 memory speeds.

##### Sixteen-Core Processors

HP DL385p Gen8 AMD Opteron™ 6284SE (2.7GHz/16-core/16MB/140W) FIO Processor Kit	686879-L21
HP DL385p Gen8 AMD Opteron™ 6282SE (2.6GHz/16-core/16MB/140W) FIO Processor Kit	654712-L21
HP DL385p Gen8 AMD Opteron™ 6278 (2.4GHz/16-core/16MB/115W) FIO Processor Kit	686881-L21
HP DL385p Gen8 AMD Opteron™ 6276 (2.3GHz/16-core/16MB/115W) FIO Processor Kit	654714-L21
HP DL385p Gen8 AMD Opteron™ 6274 (2.2GHz/16-core/16MB/115W) FIO Processor Kit	654716-L21
HP DL385p Gen8 AMD Opteron™ 6272 (2.1GHz/16-core/16MB/115W) FIO Processor Kit	654718-L21
HP DL385p Gen8 AMD Opteron™ 6262HE (1.6GHz/16-core/16MB/85W) FIO Processor Kit	654728-L21

##### Twelve-Core Processors

HP DL385p Gen8 AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W) FIO Processor Kit	654722-L21
HP DL385p Gen8 AMD Opteron™ 6234 (2.4GHz/12-core/16MB/115W) FIO Processor Kit	654724-L21

##### Eight-Core Processors

HP DL385p Gen8 AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W) FIO Processor Kit	654726-L21
HP DL385p Gen8 AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W) FIO Processor Kit	654720-L21

##### Quad-Core Processors

HP DL385p Gen8 AMD Opteron™ 6204 (3.3GHz/4-core/16MB/115W) FIO Processor Kit	677551-L21
--	------------

##### HP Memory

**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is recommended. For additional information, please see the HP SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html) (Worldwide)

##### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647871-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647877-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647883-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647873-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647879-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672633-B21

##### Load Reduced DIMMs(LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647885-B21
---	------------

### Configuration Information - Factory Integrated Models

#### Ultra Low Voltage DIMMs (ULVDIMM)

HP 4GB (1x4GB) Single Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit 647869-B21

HP 8GB (1x8GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit 647875-B21

HP 16GB (1x16GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit 647881-B21

**NOTE:** HP memory from previous generation servers may not provide the same performance with the HP ProLiant DL385p Gen8 Servers as HP SmartMemory will.

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

**NOTE:** Depending on the memory configuration, the memory speed may run at 1600MHz, 1333MHz, 1066MHz or lower. Please see Memory Population Table or the Online Memory Configuration Tool at: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

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

#### HP Networking

##### FlexibleLOM Adapters

**NOTE:** The HP ProLiant DL385p Gen8 server requires one FlexibleLOM to be installed in the FlexibleLOM slot.

HP Ethernet 1Gb 4-port 331FLR FIO Adapter 684208-B21

HP Ethernet 10Gb 2-port 530FLR-SFP+ FIO Adapter 684210-B21

HP FlexFabric 10Gb 2-port 554FLR-SFP+ FIO Adapter 684213-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs).

#### HP Power Supplies

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

**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](http://www.hp.com/go/hppoweradvisor).

##### HP Common Slot Platinum Plus Power Supply Kits

**NOTE:** The following Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit 656362-B21

HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit 656363-B21

HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit 656364-B21

##### HP Common Slot Gold Power Supplies

**NOTE:** The following Power Supplies offer 92% efficiency.

HP 460W Common Slot Gold Hot Plug Power Supply Kit 503296-B21

HP 750W Common Slot Gold Hot Plug Power Supply Kit 512327-B21

##### HP Common Slot -48VDC Power Supplies

HP 750W Common Slot -48VDC Hot Plug Power Supply Kit 636673-B21

**NOTE:** The HP 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.

### Configuration Information - Factory Integrated Models

**NOTE:** Option Kits for AC power supplies include the power supply and one PDU IEC cable.

**NOTE:** Power Specification and Technical Content for supported power supplies can be found at:

[http://h18000.www1.hp.com/products/quickspecs/14209\\_div/14209\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

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

#### HP Rack Kits

**NOTE:** Rail kits are optional for Gen8 and are no longer included standard with the server (except pre-configured/BTO Models). The customer has the choice to not include rail kits with their server purchase, but it is recommended.

**NOTE:** HP 2U Ball Bearing Rail Kits provide full serviceability of the server while in the Rack and include a CMA. HP 2U Friction Rail Kits ARE NOT serviceable in the Rack and must be removed from the rack and do not include CMA.

**NOTE:** Additional HP Rack Kit options can be found in the "Additional Options" section of this QuickSpecs. Only FIO options are listed here.

**Caution:** Due to the size and weight of some servers HP recommends that a minimum of two people is required for all HP Rack Server installations. Please refer to your Rail Installation Kit instructions for proper tools and number of people to use for any installation.

**NOTE:** To assist in the installation of multiple servers into the rack an optional installation Service Spares tool (SPS-Tool Rack Installation 695539-001) is available by contacting your local services representative.

HP 2U Friction Gen8 Rail FIO Kit

663476-B21

**NOTE:** No in-rack serviceability.

#### HP Insight Software

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License

582765-B21

### Step 4: Choose Additional Options for Factory Integration

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



### Core Options

**NOTE:** Some options may not be integrated at the factory. Contact your local sales representative for additional information.

<b>HP Unique Options</b>	HP 380/385 Gen8 8-SFF Cage/Bkpln Kit <b>NOTE:</b> With upgrade of 8SFF Cage/Bkpln, there is no Optical Drive support. <b>NOTE:</b> With upgrade of 8SFF Cage/Bkpln, an additional storage controller is required. Please go to the Storage Controller section for options available.	662883-B21
	HP DL385p Gen8 x16 2x8 PCI-E Riser Kit <b>NOTE:</b> 2nd Riser Cage requires 2nd Processor.	653214-B21

### HP Processors

#### Sixteen-Core Processors

**NOTE:** All support up to 1600MHz DDR3 memory speeds

HP DL385p Gen8 AMD Opteron™ 6284SE (2.7GHz/16-core/16MB/140W) Processor Kit	686879-B21
HP DL385p Gen8 AMD Opteron™ 6282SE (2.6GHz/16-core/16MB/140W) Processor Kit	654712-B21
HP DL385p Gen8 AMD Opteron™ 6278 (2.4GHz/16-core/16MB/115W) Processor Kit	686881-B21
HP DL385p Gen8 AMD Opteron™ 6276 (2.3GHz/16-core/16MB/115W) Processor Kit	654714-B21
HP DL385p Gen8 AMD Opteron™ 6274 (2.2GHz/16-core/16MB/115W) Processor Kit	654716-B21
HP DL385p Gen8 AMD Opteron™ 6272 (2.1GHz/16-core/16MB/115W) Processor Kit	654718-B21
HP DL385p Gen8 AMD Opteron™ 6262HE (1.6GHz/16-core/16MB/85W) Processor Kit	654728-B21

#### Twelve-Core Processors

HP DL385p Gen8 AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W) Processor Kit	654722-B21
HP DL385p Gen8 AMD Opteron™ 6234 (2.4GHz/12-core/16MB/115W) Processor Kit	654724-B21

#### Eight-Core Processors

HP DL385p Gen8 AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W) Processor Kit	654726-B21
HP DL385p Gen8 AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W) Processor Kit	654720-B21

#### Quad-Core Processors

HP DL385p Gen8 AMD Opteron™ 6204 (3.3GHz/4-core/16MB/115W) Processor Kit	677551-B21
--	------------

**NOTE:** Up to 2 processors supported in all models.  
**NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

### Core Options

#### HP Memory

**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is recommended. For additional information, please see the HP SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)  
(Worldwide)

#### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647871-B21

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647877-B21

HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647883-B21

HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647873-B21

HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647879-B21

HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 672633-B21

#### Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647885-B21

#### Ultra Low Voltage DIMMs (ULVDIMM)

HP 4GB (1x4GB) Single Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit 647869-B21

HP 8GB (1x8GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit 647875-B21

HP 16GB (1x16GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit 647881-B21

**NOTE:** HP memory from previous generation servers may not provide the same performance with the HP ProLiant DL385p Gen8 Servers as HP SmartMemory will.

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

**NOTE:** Depending on the memory configuration, the memory speed may run at 1600MHz, 1333MHz, 1066MHz or lower. Please see Memory Population Table or the Online Memory Configuration Tool at: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

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

#### HP Optical Drives

HP 12.7mm Slim SATA DVD ROM JackBlack Optical Drive 652232-B21

HP 12.7mm Slim SATA DVD RW JackBlack Optical Drive 652235-B21

#### HP Hard Drives

**NOTE:** The HP ProLiant DL385p Gen8 Smart Storage solutions are equipped with entirely re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HP Qualified Hard Drives and Solid State Drives. These new carriers provide status, location and activity indicators as well as caution indicators for "Do Not

### Core Options

Remove".

**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 with SmartDrive SFF (2.5-inch) Enterprise Drives**

HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21

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

HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21

#### **SAS Hot Plug SmartDrive LFF (3.5-inch) Enterprise Drives**

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652620-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652615-B21

#### **SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives**

HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

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

[http://h18000.www1.hp.com/products/quickspecs/12244\\_div/12244\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html)  
(Worldwide)

#### **6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives**

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21

#### **6G SATA Hot Plug with SmartDrive LFF (3.5-inch) Midline (MDL) Drives**

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21

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

[http://h18000.www1.hp.com/products/quickspecs/13021\\_div/13021\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html)  
(Worldwide)

#### **6G SAS MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives**

HP 800GB 6G SAS MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653109-B21
--	------------

### Core Options

HP 400GB 6G SAS MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653105-B21
HP 200GB 6G SAS MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	658478-B21
<b>6G SAS SLC Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives</b>	
HP 400GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653082-B21
HP 200GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653078-B21
<b>3G SATA MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives</b>	
HP 400GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653120-B21
HP 200GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653118-B21
HP 100GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653112-B21
<b>3G SATA MLC Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives</b>	
HP 400GB 3G SATA MLC LFF (3.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653126-B21
HP 200GB 3G SATA MLC LFF (3.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653124-B21
HP 100GB 3G SATA MLC LFF (3.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653122-B21
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html">http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html</a> (Worldwide)	
<b>Hard Drive Kits</b>	
<b>NOTE:</b> All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.	
HP SFF Gen8 Hard Drive Blank Kit	666987-B21
HP LFF Gen8 Hard Drive Blank Kit	666986-B21
HP 380/385 Gen8 8-SFF Cage/Bkpln Kit	662883-B21

### Core Options

#### HP Networking

##### Gigabit Ethernet adapters

HP NC112T PCI Express Gigabit Server Adapter	503746-B21
HP NC365T 4-port Ethernet Server Adapter	593722-B21
HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
HP Ethernet 1Gb 2-port 361T Adapter	652497-B21

##### 10 Gigabit Ethernet Adapters

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

**NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.

HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21

##### FlexibleLOM Adapters

HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter	629142-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs)

##### SFP+

HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC SR Transceiver	J9150A

#### HP InfiniBand

QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21
HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA	592520-B21
HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter	649281-B21

**NOTE:** For the following two InfiniBand Adapters, only 1 FlexibleLOM can be added to the server, which is selected in Step 2 for the "Configuration Information - Factory Integrated Models" section. These two options are for upgrade or change from original configuration.

HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter	649282-B21
HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter	649283-B21

**NOTE:** FLR Indicates new HP FlexibleLOM Adapter series.

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/13078\\_div/13078\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html)

#### HP I/O Expansion Options

HP DL385p Gen8 x16 2x8 PCI-E Riser Kit	653214-B21
--	------------

**NOTE:** 2nd Riser Cage requires 2nd Processor.

### Core Options

#### HP Power Supplies

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

**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](http://www.hp.com/go/hppoweradvisor).

#### HP Common Slot Platinum Plus Power Supply Kits

**NOTE:** The following Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21

#### HP Common Slot Gold Power Supplies

**NOTE:** The following Power Supplies offer 92% Efficiency.

HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21

#### HP Common Slot -48VDC Power Supplies

**NOTE:** The following Power Supplies offer 92% Efficiency.

HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21
--	------------

**NOTE:** The HP 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.

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

**NOTE:** Power Specification and Technical Content for supported power supplies can be found at:

[http://h18000.www1.hp.com/products/quickspecs/14209\\_div/14209\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

---

#### HP Graphic Options

HP 150W PCI-E Power Cable Kit	669777-B21
-------------------------------	------------

### 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 Technical Support and Updates Single Server License 452148-B22

HP Insight Management Media Kit 436222-B21

**NOTE:** HP Insight Management Media Kit contains DVDs without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.

#### HP Insight Control Server Deployment

HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License T9082AAE

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

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

**NOTE:** 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 Management 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](http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html)

#### HP Insight Control for Linux

HP Insight Control for Linux including 1yr 24x7 Support Electronic License TC213AAE

HP Insight Control for Linux including 1yr 24x7 Support Single Server License TC209A

HP Insight Control for Linux Media Kit TC208A

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

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

**NOTE:** Electronic 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](http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html)

### Additional Options

<b>HP iLO Advanced License</b>	<b>HP Integrated Lights-Out (iLO) Advanced for ProLiant Remote Management</b> HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License <b>NOTE:</b> For more information, visit: <a href="http://www.hp.com/go/ilo">http://www.hp.com/go/ilo</a> .	512485-B21
--------------------------------	--	------------

### High Performance Clusters

<b>HP Cluster Management Utility</b>	HP Insight Cluster Management Utility 1yr 24x7 Flexible License HP Insight Cluster Management Utility 3yr 24x7 Flexible License <b>NOTE:</b> These part numbers can be used to purchase one certificate for multiple licenses and support 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. Customer also will receive a support agreement.	QL803B BD476A
<b>HP HPC Linux Value Pack</b>	HP Insight Cluster Management Utility Media <b>NOTE:</b> For additional license kits please see the QuickSpecs at: <a href="http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html">http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html</a> HP High Performance Computing Linux Value Pack 1 Processor Flexible License <b>NOTE:</b> 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 <b>NOTE:</b> This part number can be used to purchase media including software and documentation, which will be delivered to the customer. <b>NOTE:</b> For additional license kits please see the QuickSpecs at: <a href="http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html">http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html</a>	BD477A TC293B TC294A

### HP I/O Accelerator Options

HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers <b>NOTE:</b> A low-profile PCI bracket is included for use in low-profile slots.	600278-B21
HP 320GB Multi Level Cell PCIe ioDrive for ProLiant Servers <b>NOTE:</b> A low-profile PCI bracket is included for use in low-profile slots.	600279-B21
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 ioDrive Duo for ProLiant Servers <b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html">http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html</a> (Worldwide)	641027-B21



### Additional Options

#### HP Security

<p>HP Trusted Platform Module Option</p> <p><b>NOTE:</b> 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: <a href="http://www.hp.com/go/TPM">www.hp.com/go/TPM</a>.</p> <p><b>NOTE:</b> ProLiant OS pre-installed units will come with the partition required for TPM deployment.</p> <p><b>NOTE:</b> The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.</p>	<p>488069-B21</p>
<p>HP 2U Security Bezel Kit</p>	<p>666988-B21</p>

#### HP Storage Controllers

#### SAS Controllers

##### Smart Array P222 Controller

HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller	631667-B21
---	------------

##### Smart Array P420 Controller

HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller	631670-B21
HP Smart Array P420/2GB FBWC 6Gb 2-ports Int SAS Controller	631671-B21

##### Smart Array P421 Controller

HP Smart Array P421/1GB FBWC 6Gb 2-ports Ext SAS Controller	631673-B21
HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller	631674-B21

##### Smart Array P822 Controller

HP Smart Array P822/2GB FBWC 2-ports Int/4-ports Ext SAS Controller	615418-B21
---	------------

#### Optional Upgrades

HP 1GB P-series Smart Array Flash Backed Write Cache	631679-B21
HP 2GB P-series Smart Array Flash Backed Write Cache	631681-B21
HP 512MB P-series Smart Array Flash Backed Write Cache	661069-B21
HP Smart Array Advanced Pack 2.0 No Media 1 Server 1yr 24x7 Support Software	BC377A
HP Smart Array Advanced Pack 2.0 No Media Electronic Lic 1yr 24x7 Support Software	BC390AAE
<b>NOTE:</b> RAID 6, 6+0 may be enabled with a combination of one cache upgrade and one Smart Array Advanced Pack from the options above.	

#### HP Cable Options

HP DL38x/DL360 Gen8 Embedded SATA Cable Kit	664009-B21
HP Mini SAS Straight to Straight 37in Cable Assembly	662897-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:  
[http://h18000.www1.hp.com/products/quickspecs/14227\\_div/14227\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14227_div/14227_div.html)  
 (Smart Array P222 Controller)  
[http://h18000.www1.hp.com/products/quickspecs/14228\\_div/14228\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14228_div/14228_div.html)  
 (Smart Array P420 Controller)

### Additional Options

[http://h18000.www1.hp.com/products/quickspecs/14229\\_div/14229\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14229_div/14229_div.html)  
(Smart Array P421 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13200\\_div/13200\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html)  
(Smart Array Advanced Pack)

#### Host Bus Adapter

HP H220 Host Bus Adapter 650933-B21

HP H221 Host Bus Adapter 650931-B21

HP H222 Host Bus Adapter 650926-B21

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

[http://h18004.www1.hp.com/products/quickspecs/14336\\_div/14336\\_div.html](http://h18004.www1.hp.com/products/quickspecs/14336_div/14336_div.html)  
(HBA 220)

[http://h18004.www1.hp.com/products/quickspecs/14222\\_div/14222\\_div.html](http://h18004.www1.hp.com/products/quickspecs/14222_div/14222_div.html)  
(HBA 221)

[http://h18004.www1.hp.com/products/quickspecs/14337\\_div/14337\\_div.html](http://h18004.www1.hp.com/products/quickspecs/14337_div/14337_div.html)  
(HBA 222)

#### SCSI HBA

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

**NOTE:** Please see the following QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/12566\\_div/12566\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html)  
(SC11Xe HBA)

---

### 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/storage/SPOCK>

HP DAT 160 SCSI External Tape Drive Q1574A

HP DAT 160 SAS Internal Tape Drive Q1587A

HP 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 Smart Array P222 Controller (631667-B21) recommended.

HP LTO-4 Ultrium 1760 SCSI External Tape Drive EH922A

HP LTO-5 Ultrium 3280 SAS Internal Tape Drive EH899A

**NOTE:** Connection using HP Smart Array P222 Controller (631667-B21) recommended.

HP LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rackmount EJ014A

**NOTE:** Connection using HP Smart Array P222 Controller (631667-B21) recommended.

HP LTO-5 Ultrium 3000 SAS External Tape Drive EH958A

HP MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library BL537A

**NOTE:** Connection using HP Smart Array P222 Controller (631667-B21) recommended.

HP MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library AK378A

**NOTE:** Connection using HP Smart Array P222 Controller (631667-B21) recommended.

HP MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library AK380A

### Additional Options

#### HP Storage Options

#### Storage 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 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AP769A

HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AP770A

#### Emulex Fibre Channel HBAs

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AJ762A

HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ763A

#### QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AK344A

HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ764A

#### Converged Network Adapter

HP CN1100E Dual Port Converged Network Adapter BK835A

HP CN1000Q Dual Port Converged Network Adapter BS668A

#### HP Disk Storage Systems Modular Smart Arrays

HP P2000 G3 10GbE iSCSI MSA Dual Controller LFF Array System AW596A

HP P2000 G3 10GbE iSCSI MSA Dual Controller SFF Array System AW597A

HP P2000 G3 iSCSI MSA Dual Controller LFF Array System BK830A

HP P2000 G3 iSCSI MSA Dual Controller SFF Array System BK831A

HP P2000 G3 MSA FC Dual Controller LFF Modular Smart Array System AP845A

HP P2000 G3 MSA FC Dual Controller SFF Modular Smart Array System AP846A

HP P2000 G3 MSA FC/iSCSI Dual Combo Controller LFF Array AW567A

HP P2000 G3 MSA FC/iSCSI Dual Combo Controller SFF Array AW568A

HP P2000 G3 SAS MSA Dual Controller LFF Array System AW593A

HP P2000 G3 SAS MSA Dual Controller SFF Array System AW594A

**NOTE:** Please see the QuickSpecs for additional options and configuration information at: [http://h18000.www1.hp.com/products/quickspecs/13551\\_div/13551\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13551_div/13551_div.html)

#### Disk Enclosures

#### HP D2000 Disk Enclosures

HP D2600 Disk Enclosure AJ940A

HP 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](http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html)

### Additional Options

#### HP Uninterruptible Power Systems **HP Rack-mountable UPS**

##### **HP R1500 G3 Uninterruptible Power Supply (UPS)**

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

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

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

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14059\\_div/14059\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_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](http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html)  
(Worldwide)

##### **R5000 Uninterruptible Power System (UPS)**

HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System AF461A

HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System AF460A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14109\\_div/14109\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html)  
(Worldwide)

##### **R7000 Uninterruptible Power System (UPS)**

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System AF462A

HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System AF463A

HP R5KVA and R7KVA 3U Extended Runtime Module AF464A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14110\\_div/14110\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html)  
(Worldwide)

**NOTE:** For additional information on HP Uninterruptible Power Systems please go to:

[www.hp.com/servers/rackups](http://www.hp.com/servers/rackups).

**NOTE:** For additional information on sizing your server, please reference:

<http://www.upssizer.com>.

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

#### HP Power Distribution Units

##### **Monitored PDUs**

##### **HP Monitored Power Distribution Unit: Full Rack Version**

HP 17.3kVA 24A Dual Three Phase NA/JP Monitored Power Distribution Unit AF503A

HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit AF504A

HP 16.6kVA 40A Dual Input Single Phase NA/JP Monitored Power Distribution Unit AF505A

HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit AF506A

### Additional Options

HP 22.1kVA 16A Dual Input Three Phase INTL Monitored Power Distribution Unit	AF507A
HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit	AF508A
HP 14.7kVA 32A Dual Input Single Phase INTL Monitored Power Distribution Unit	AF509A
HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF510A

#### **HP Monitored Power Distribution Unit: Half Rack Version**

HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF914A
HP 7.3kVA 32A Single Input Three Phase INTL Intelligent Modular Power Distribution Unit	AF536A
HP 17.3kVA 48A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF916A
HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF915A
HP 22kVA 32A Single Input Three Phase INTL Monitored Power Distribution Unit	AF917A

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

[http://h18000.www1.hp.com/products/quickspecs/12118\\_div/12118\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html)

#### **Modular PDUs 1U/0U**

**NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 G2 and 9000 series racks).

HP 2.8kVA 24A Low Voltage NA/JP Modular Power Distribution Unit	252663-D71
HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit	252663-B24
HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit	252663-D72
HP 8.3kVA 40A High Voltage INTL Modular Power Distribution Unit	252663-B21
HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit	252663-D73
HP 8.3kVA 40A High Voltage NA/JP Core Modular Power Distribution Unit	252663-D75
HP 4.9kVA 24A High Voltage NA/JP Core Modular Power Distribution Unit	252663-D74
HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit	252663-B31
HP 9.2kVA 40A High Voltage INTL Modular Power Distribution Unit	252663-B32
HP 9.2kVA 40A High Voltage INTL Core Modular Power Distribution Unit	252663-B34
HP 7.3kVA 32A High Voltage INTL Core Modular Power Distribution Unit	252663-B33
HP 22kVA 32A Three Phase INTL Core Modular Power Distribution Unit	AF518A

**NOTE:** For additional information on HP Power Distribution Units including accessories please go to: [www.hp.com/go/pdu](http://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](http://www.hp.com/products/powercords).

**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](http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html)  
(Worldwide)

### Additional Options

<b>HP Intelligent Power Distribution Units (iPDU)</b>	<b>iPDU Core Units</b>	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
	HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
	HP 11.4kVA 16A 415V Three Phase L22-20 NA Core Intelligent Power Distribution Unit	AF900A
	HP 17.3kVA 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit	AF902A
	HP 17.3kVA 24A 415V Three Phase IEC309 NA Core Intelligent Power Distribution Unit	AF901A
	HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
	HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
	HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A
	HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
	HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
	HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit	AF538A
	<b>iPDU Kits with Standard Extension Bars</b>	
	HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit	AF531A
	HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit	AF532A
	HP 7.3kVA 32A Single Phase INTL Intelligent Modular Power Distribution Kit	AF534A
	<b>iPDU Extension Bars</b>	
	HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html">http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html</a> (Worldwide)	

### HP Rack Options

#### HP USB Keyboard and Mouse

HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33

### Additional Options

HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3
HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63

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

[http://h18000.www1.hp.com/products/quickspecs/13972\\_div/13972\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_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](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](http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html)  
(Worldwide)

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

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

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

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

#### Rail Kits

**NOTE:** Rail kits are optional for Gen8 and are no longer included standard with the server(except pre-configured/BTO Models). The customer has the choice to not include rail kits with their server purchase, but it is recommended.

**NOTE:** HP 2U Ball Bearing Rail Kits provide full serviceability of the server while in the Rack and include a CMA. HP 2U Friction Rail Kits ARE NOT serviceable in the Rack and must be removed from the rack and do not include CMA.

**Caution:** Due to the size and weight of some servers HP recommends that a minimum of two people is required for all HP Rack Server installations. Please refer to your Rail Installation Kit instructions for proper tools and number of people to use for any installation. To assist in the installation of multiple servers into the rack an optional

### Additional Options

installation Service Spares tool (SPS-Tool Rack Installation 695539-001) is available by contacting your local services representative.

HP 2U Large Form Factor Ball Bearing Gen8 Rail Kit 663480-B21

**NOTE:** HP 2U Ball Bearing Rail Kits provide full serviceability of the server while in the Rack and include a CMA. HP 2U Friction Rail Kits ARE NOT serviceable in the Rack and must be removed from the rack and do not include CMA.

HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit 663478-B21

**NOTE:** HP 2U Ball Bearing Rail Kits provide full serviceability of the server while in the Rack and include a CMA. HP 2U Friction Rail Kits ARE NOT serviceable in the Rack and must be removed from the rack and do not include CMA.

### HP USB and SD options

HP USB 2-Button Optical Scroll Mouse DC172B

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

HP 3 year 24x7 24 hour Call to Repair ProLiant DL38x(p) Hardware Support UP717E

HP 3 year 4 hour 13x5 ProLiant DL38x(p) Hardware Support U4544E

HP 3 year 4 hour 24x7 ProLiant DL38x(p) Collaborative Support U1J30E

HP 3 year 4 hour 24x7 ProLiant DL38x(p) Hardware Support U4545E

HP 3 year 4 hour 24x7 ProLiant DL38x(p) Proactive Care Service U2Z50E

HP 3 year 4 hour 24x7 ProLiant DL38x(p) with Insight Control Proactive Care Service U3N23E

HP 3 year 6 hour 24x7 Call to Repair ProLiant DL38x(p) Hardware Support U4546E

HP 3 year Next business day ProLiant DL38x(p) Collaborative Support U1J24E

HP 3 year Next business day ProLiant DL38x(p) Proactive Care Service U2Z44E

HP 3 year Next business day ProLiant DL38x(p) with Insight Control Proactive Care Service U3N17E

HP 3 year Support Plus 24 Insight Control ProLiant DL38x(p) Service UM812E

HP 3 year Support Plus 24 Microsoft ProLiant DL38x(p) Service U4557E

HP 3 year Support Plus 24 SuSE ProLiant DL38x(p) Service U6312E

HP 4 year 24x7 24 hour Call to Repair ProLiant DL38x(p) Hardware Support UP718E

HP 4 year 4 hour 13x5 ProLiant DL38x(p) Hardware Support U8101E

HP 4 year 4 hour 24x7 ProLiant DL38x(p) Hardware Support U8118E

HP 4 year 6 hour 24x7 Call to Repair ProLiant DL38x(p) Hardware Support U9738E

HP 4 year Next business day ProLiant DL38x(p) Hardware Support UA010E



### Additional Options

HP 5 year 24x7 24 hour Call to Repair ProLiant DL38x(p) Hardware Support	UP719E
HP 5 year 4 hour 13x5 ProLiant DL38x(p) Hardware Support	U8067E
HP 5 year 4 hour 24x7 ProLiant DL38x(p) Hardware Support	U8084E
HP 5 year 6 hour 24x7 Call to Repair ProLiant DL38x(p) Hardware Support	U9737E
HP 5 year Next business day ProLiant DL38x(p) Hardware Support	UA009E
HP Install ProLiant DL38x(p) Service	U4554E
HP Installation of ProLiant Add On/In Options Service	UH745E
HP Startup ProLiant DL38x(p) Service	U4555E
HP Installation and Startup for Insight Control Server Deployment - previously Rapid Deployment Pack	U5683E

**NOTE:** For more information, customer/resellers can contact:

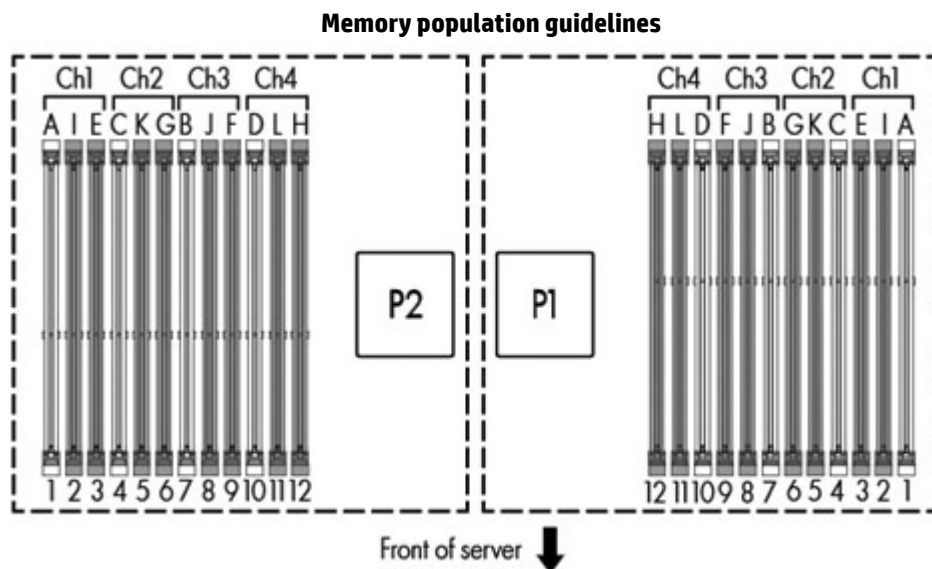
<http://www.hp.com/services/carepack>

### Memory

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

#### Memory Subsystem Architecture

Each AMD Opteron family processor socket contains four memory channels that support three DIMMs each for a total of twelve (12) DIMM per installed processor or a grand total of twenty-four (24) DIMMs for the server. Up to 32GB capacity DIMMs are supported for 768GB of memory (24 DIMM slots x 32GB per DIMM).



#### General Memory Population Rules and Guidelines:

- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible.
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel. Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor
- RDIMMs operating at either 1.35V or 1.5V may be mixed in any order, but the system will power them at the higher voltage.
- RDIMMs and LRDIMMs are supported up to 3 DIMMs per channel.
- The AMD Opteron™ 6200 processor does not support DIMMs at 1.35V. Using the HP RBSU, 1.35V DIMMs can be changed to operate at 1.5V.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- The maximum memory speed is a function of the memory type and memory configuration.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- HP memory from previous generation servers is not qualified on the DL385p Gen8 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html).
- For memory population rules and additional memory guidelines, please see the DL385p Gen8 user guide at <http://www.hp.com/support>.

### Memory

<b>DL385p Gen8 Supported Memory Bandwidth and Capacity</b>							
DIMM Type	Registered DIMMS						Load Reduced (LRDIMMs)
DIMM Rank	Single Rank (1R)			Dual Rank (2R)			Quad Rank (4R)
DIMM Capacity	4GB	4GB	8GB	8GB	16GB	16GB	32GB
DIMM Native Speed (MHz)	1333	1600	1600	1333	1333	1600	1333
Voltage	LV/ULV	Std	Std	LV/ULV	LV	Std	SLV
<b>SLOTS THAT CAN BE POPULATED</b>							
24 slot servers	24	24	24	24	24	24	24
<b>MAXIMUM CAPACITY (GB)<sup>1</sup></b>							
24 slot servers	96	96	192	192	384	384	768
<b>POPULATED DIMM SPEED (MHz)</b>							
1 DIMM Per Channel	1333	1600	1600	1333	1333	1600	1333
2 DIMM Per Channel	1333	1300	1300	1333/1066 <sup>2</sup>	1333	1333	1333
3 DIMM Per Channel	1066/800	1066	1066	800/667 <sup>3</sup>	800	1066	800
<sup>1</sup> Maximum capacity will vary based on individual server platform.							
<sup>2</sup> Ultra Low Voltage 8GB and 16GB dual rank operate at 1066MT/s speed in 2 DPC configurations.							
<sup>3</sup> Ultra Low Voltage 8GB and 16GB dual rank operate at 667MT/s speed in 3 DPC configurations							

#### DIMM slot and configuration diagram

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

When one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F ...

When two processors are installed, install DIMMs in sequential alphabetic order: CPU1-A, CPU2-A, CPU1-B, CPU2-B, CPU1-C, CP2-C

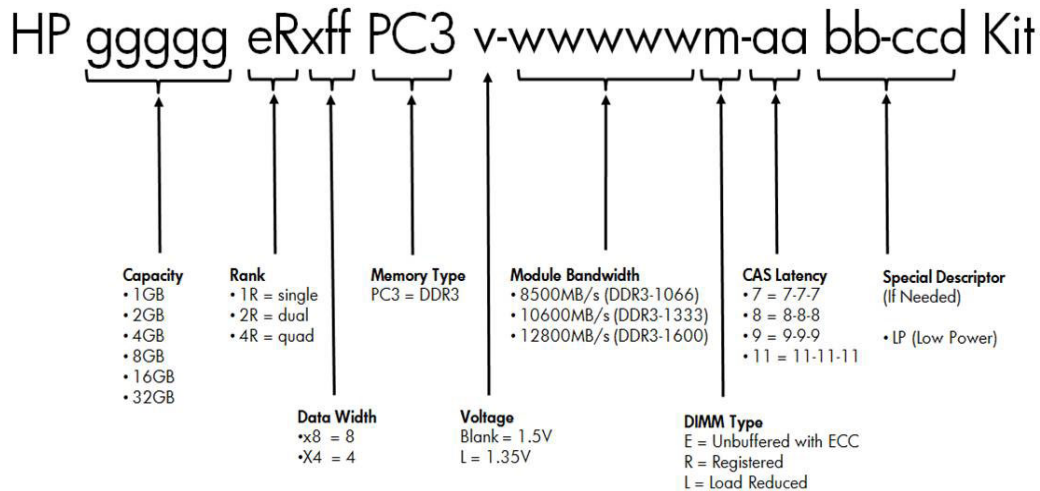
### Memory

24 DIMM SLOTS (12 per CPU node)					
	slot #	population order	slot #	population order	
Chnl 1	1	A	1	A	Chnl 1
	2	I	2	I	
	3	E	3	E	
Chnl 2	4	C	4	C	Chnl 2
	5	K	5	K	
	6	G	6	G	
<b>CPU1</b>			<b>CPU2</b>		
Chnl 3	7	B	7	B	Chnl 3
	8	J	8	J	
	9	F	9	F	
Chnl 4	10	D	10	D	Chnl 4
	11	L	11	L	
	12	H	12	H	

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

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

#### DDR3 memory options part number decoder



### Memory

Following are memory options available from HP:

#### HP Memory

**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is recommended. For additional information, please see the HP SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html) (Worldwide)

#### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647871-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647877-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647883-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647873-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647879-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672633-B21

#### Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647885-B21
---	------------

#### Ultra Low Voltage DIMMs (ULVDIMM)

HP 4GB (1x4GB) Single Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647869-B21
HP 8GB (1x8GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647875-B21
HP 16GB (1x16GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647881-B21

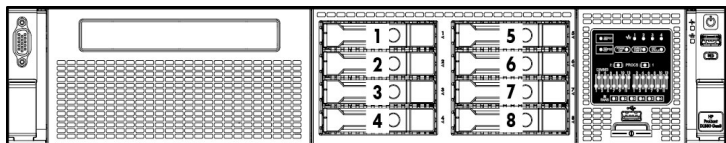
**NOTE:** HP memory from previous generation servers may not provide the same performance with the HP ProLiant DL385p Gen8 Servers as HP SmartMemory will.

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

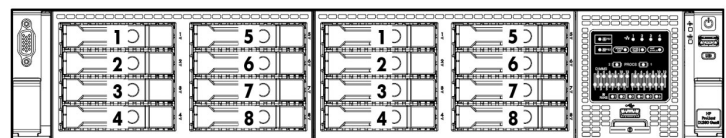
**NOTE:** Depending on the memory configuration, the memory speed may run at 1600MHz, 1333MHz, 1066MHz or lower. Please see Memory Population Table or the Online Memory Configuration Tool at: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

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

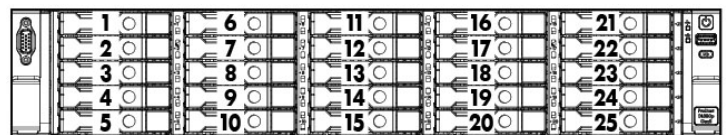
### Storage



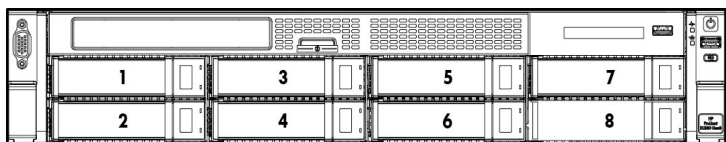
1-8 Eight SFF SAS hot plug drive bays



1-8, Sixteen SFF SAS hot plug drive bays. Built-In Smart Array manages first 8 drives. Requires 2nd Smart Array Controller for second option of 8 drives.  
 1-8 Array Controller for second option of 8 drives.  
**NOTE:** This configuration does not support optical drive.



1-25 Twenty Five SFF SAS hot plug drive bays  
**NOTE:** This configuration does not support SID or optical drive.



1-8 Eight LFF SAS hot plug drive bays.  
**NOTE:** This configuration supports a pop-out SID.



1-12 Twelve LFF SAS hot plug drive bays  
**NOTE:** This configuration does not support SID or optical drive.

### External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
D2600 Disk Enclosure	Up to 4	External	HP Smart Array P222 Controller
	Up to 8	External	HP Smart Array P421 Controller
			HP Smart Array P822 Controller
D2700 Disk Enclosure	Up to 4	External	HP Smart Array P222 Controller
	Up to 8	External	HP Smart Array P421 Controller
			HP Smart Array P822 Controller

### Maximum Storage Capacity - (with D2700, SAS/SATA HDD)

Internal	16TB (16 x 1TB SAS/SATA SFF with addition 8 SFF drive cage)
External	200TB (200 x 1TB SAS SFF)
Total	216TB

### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D) (with bezel)	SFF Drives: 3.44 x 17.54 x 27.50 in (8.73 x 44.55 x 69.85 cm) LFF Drives: 3.44 x 17.54 x 29.50 in (8.73 x 44.55 x 74.93 cm)		
	<b>Weight</b> (approximate)	Maximum (all LFF hard drives, power supply, and processor installed)	61.00 lb (27.66 kg)	
		Minimum (one SFF hard drive, power supply, and processor installed, ODD not installed)	41.0 lb (18.59 kg)	
	<b>Input Requirements</b> (per power supply)	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)	
		<b>BTU Rating</b>	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)
	<b>Power Supply Output</b> (per power supply)	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)	

### Technical Specifications

		<p>For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)</p> <p>For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC)</p> <p>For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC)</p> <p>For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)</p>
	Maximum Peak Power	
<b>System Inlet Temperature</b>	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 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).
<b>Relative Humidity (non-condensing)</b>	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.
<b>Altitude</b>	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
<b>Acoustic Noise</b>	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). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. <b>NOTE:</b> The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	<b>Idle</b>	
	LWAd	5.5 B
	LpAm	37 dBA
	<b>Operating</b>	



### Technical Specifications

	LWAd	5.5 B
	LpAm	37 dBA
<b>Emissions Classification (EMC)</b>	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.

<b>HP iLO 4 On System Management</b>	<b>Architecture</b>	PCI Express based health and remote management ASIC
	<b>Processor</b>	Embedded ARM processor core operating at 400MHz
	<b>Upgradeability</b>	Firmware upgradeable via Flash ROM
	<b>Video Support</b>	1920 x 1200 (16 bpp) DVR max resolution
	<b>Interfaces</b>	HP iLO Dedicated* Network connection (10/100/1000 Mb/s) on rack, tower and SL systems
		<a href="#">*Optional Module on some servers</a>
		HP iLO Shared Network connection (10/100/1000 Mb/s) on rack, tower and SL systems
	<b>Memory</b>	HP iLO network connection to blades (100 Mb/s) to Onboard Administrator (with 10/100/1000 Mb/s uplink) on blade systems
		16 MB Flash 256 MB DDR 3 with ECC (112 MB after ECC and video)
	<b>Operating System Support</b>	For information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: <a href="http://www.hp.com/go/ossupport">http://www.hp.com/go/ossupport</a>
<b>Client System Support</b>	For information on Client System Support, please visit the HP iLO Feature Comparison Site at: <a href="http://www.hp.com/go/compareilo">www.hp.com/go/compareilo</a>	
<b>Client Browser Support</b>	Microsoft Internet Explorer 9	
	<b>NOTE:</b> For customers using Protected Mode, please use the Java based version of Integrated Remote Console.	
	Microsoft Internet Explorer 8	
<b>Command Line Support</b>	<b>NOTE:</b> For customers using Protected Mode, please use the Java based version of Integrated Remote Console.	
	Microsoft Internet Explorer 7	
	Firefox Extended Support Release (ESR) 10 (on supported Windows and Linux systems)	
	Firefox 3.6 (on supported Windows and Linux systems)	
<b>Command Line Support</b>	Secure Shell and serial port access	
	Secure Socket Layer	
	Secure Shell version 2	

### Technical Specifications

<b>Security</b>	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
<b>Directory Support Services</b>	Active Directory v1.0 (Windows 2003)
<b>Driver Support</b>	HP ProLiant iLO 4 Management Controller Driver Package
<b>Management protocols supported</b>	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML

### HP Smart Array P420i Controller

<b>Dimensions</b>	Embedded
<b>Disk Drive and Enclosure Interface - Transfer Rate</b>	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
<b>SAS Connectors</b>	2 internal 4X connectors
<b>Cache Memory Speed</b>	DDR2-800MHz with 40 or 72-bit wide bus
<b>Server Interface</b>	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
<b>SAS Speed</b>	(8) 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
<b>Cache Memory</b>	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 Zero Memory, Up to 2 logical volumes (8 physical drives)
<b>Logical Drives Supported</b>	Up to 64 logical drives with cache
<b>Host Memory Addressing</b>	64-bit, supporting greater than 4GB server memory space
<b>RAID Support</b>	RAID 6, 6+0 (Advanced Data Guarding) <b>NOTE:</b> RAID 6, 6+0 can be enabled with one of the following combinations: <ul style="list-style-type: none"><li>• 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades</li><li>• 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades</li><li>• 1G FBWC and Smart Array Advanced Pack License key option upgrades</li></ul> RAID 5, 5+0 (Distributed Data Guarding) <b>NOTE:</b> 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)

### Technical Specifications

<b>HP Ethernet 1Gb 4-port 331FLR Adapter</b>	<b>Network Interface</b>	10Base-T/100Base-TX/1000Base-TX		
	<b>Compatibility</b>	EEE 802.3 10Base-T		
		IEEE 802.3ab 1000Base-T		
		IEEE 802.3u 100Base-TX		
		IEEE 802.3ad 1000Base-TX		
		IEEE 802.1p 100Base-TX		
		IEEE 802.1q 100Base-TX		
	<b>Data Transfer Method</b>	PCI Express, four lanes (x4)		
	<b>Number of Ports</b>	4		
	<b>Controller</b>	BCM5719		
	<b>Network Transfer Rate</b>	10Base-T (Half-Duplex)	10 Mb/s per port, 40 Mb/s Combined	
		10Base-T (Full-Duplex)	20 Mb/s per port, 80 Mb/s Combined	
		100Base-TX (Half-Duplex)	100 Mb/s per port, 400 Mb/s Combined	
100Base-TX (Full-Duplex)		200 Mb/s per port, 800 Mb/s Combined		
1000Base-TX (Half Duplex)		1000Mb/s per port, 4000 Mb/s Combined		
1000Base-TX (Full Duplex)		2000Mb/s per port, 8000 Mb/s Combined		
<b>Connector</b>	Two RJ-45			
<b>Cable Support</b>	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)		
	10/100/1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)		

<b>HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter</b>	<b>Network Interface</b>	10Base-T/100Base-TX/1000Base-TX		
	<b>Compatibility</b>	EEE 802.3 10Base-T		
		IEEE 802.3ab 1000Base-T		
		IEEE 802.3u 100Base-TX		
		IEEE 802.3ad 1000Base-TX		
		IEEE 802.1p 100Base-TX		
		IEEE 802.1q 100Base-TX		
	<b>Data Transfer Method</b>	PCI Express, four lanes (x4)		
	<b>Controller</b>	BCM57810S		
	<b>Network Transfer Rate</b>	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		
<b>Connector</b>	Two SFP+			
<b>Cable Support</b>	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)		

### Technical Specifications

100Base-TX Category 5 or higher UTP;  
up to 328 ft (100 m)

1000BaseTX Category 5 or higher UTP;  
up to 328 ft (100 m)

#### Environment-friendly Products and Approach

#### End-of-life Management and Recycling

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

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

---

© Copyright 2012 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

Microsoft and Windows NT are US registered trademarks of Microsoft Corporation.

AMD, the AMD Arrow logo, AMD Opteron™, and combinations thereof, are trademarks of Advanced Micro Devices, Inc.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

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