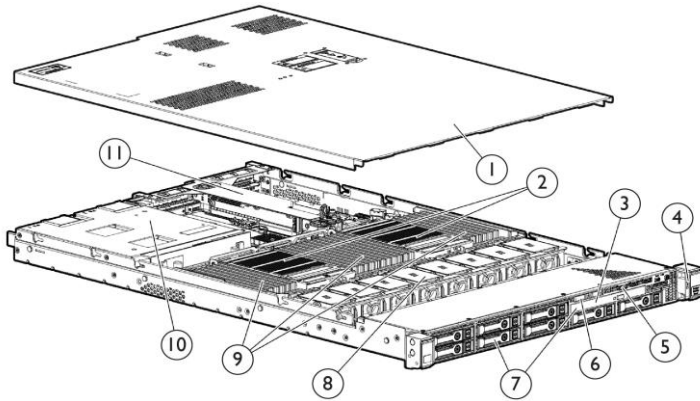


## Overview

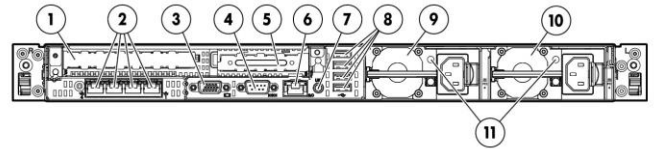
**HP ProLiant DL360p Generation 8 (Gen8) - Carrier Grade Supplement**

NEBS (GR-63-CORE & GR-1089-CORE) and ETSI certified.

Performance driven compute with storage density - ideal for enterprise applications. Industry leading performance, efficiency, capacity and reliability. Enterprise enhanced design for all workloads with versatility for future requirements. A space conscious 2-processor server with industry leading feature sets. Built to protect your investment and extend the life with reliability, accessibility and serviceability features designed in.

**Front View:**

1. Hood Cover
2. Up to two Intel® E5-2600 Series processors
3. Optical Disk Drive Bay
4. Active Health and Network Status LEDs
5. Video connector (requires Front Video Adapter Kit)
6. Slide-out System Insight Display (SID)
7. Hard Drive Bays
8. Removable hot-plug fan modules for easy serviceability
9. 24 DIMM slots: DDR3 Registered (RDIMM), Load Reduced (LRDIMM) or Unbuffered (UDIMM) memory
10. Redundant Hot Plug Power Supplies (upgradeable option)
11. Removable Riser Cage assembly for 2 x PCIe 3.0 Slots

**Rear View:**

1. PCIe 3.0 Full-height/half length x16 expansion slot
2. FlexibleLOM ports (Shown: 4 ports 1Gb each /Optional: 2 ports 10Gb each)
3. Video connector
4. Serial connector
5. PCIe 3.0 Low Profile x8 expansion slot
6. iLO Management Engine NIC connector
7. Unit ID LED/button
8. 4 USB connectors
9. Power supply bay 2 (Shown populated: Optional Power Supply for Redundant Power)
10. Power supply bay 1 (Primary Power Supply)
11. Power Supplies Health/Activity Indicators

## 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

**E5-2600 v2 series Processors****Base Processors**

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

Intel® Xeon® E5-2640 v2 (2.0GHz/8-core/20MB/7.2GT-s QPI/95W, DDR3-1600, HT, Turbo2-3/3/3/3/3/4/5)

Intel® Xeon® E5-2630 v2 (2.6GHz/6-core/15MB/7.2GT-s QPI/80W, DDR3-1600, HT, Turbo2-3/3/3/3/4/5)

Intel® Xeon® E5-2620 v2 (2.1GHz/6-core/15MB/7.2GT-s QPI/80W, DDR3-1600, HT, Turbo2-3/3/3/3/4/5)

**Performance Processors**

**NOTE:** All support up to 1866MHz DDR3 memory speeds.

Intel® Xeon® E5-2680 v2 (2.8GHz/10-core/25MB/8.0GT-s QPI/115W, DDR3-1866, HT, Turbo2-3/3/3/3/3/4/5/6/7/8)

Intel® Xeon® E5-2670 v2 (2.5GHz/10-core/25MB/8.0GT-s QPI/115W, DDR3-1866, HT, Turbo2-4/4/4/4/4/4/5/6/7/8)

Intel® Xeon® E5-2660 v2 (2.2GHz/10-core/25MB/8.0GT-s QPI/95W, DDR3-1866, HT, Turbo2-4/4/4/4/4/4/5/6/7/8)

Intel® Xeon® E5-2650 v2 (2.6GHz/8-core/20MB/8.0GT-s QPI/95W, DDR3-1866, HT, Turbo2-4/4/4/4/5/6/7/8)

**E5-2600 series Processors****Base Processors**

**NOTE:** All support up to 1333MHz DDR3 memory speeds.

Intel® Xeon® E5-2640 (2.50GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2630 (2.30GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

**Performance Processors**

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

Intel® Xeon® E5-2670 (2.60GHz/8-core/20MB/8GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2667 (2.90GHz/6-core/15MB/8GT-s QPI/130W, DDR3-1600, HT, Turbo2-3/3/3/4/5/6)

Intel® Xeon® E5-2665 (2.40GHz/8-core/20MB/8GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2660 (2.20GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)

Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-4/4/5/5/5/7/8/8)

**NOTE:** HT indicates that the processor model supports Intel® Hyper-Threading Technology.

**NOTE:** Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 8, 7, 6, 5, 4, 3, 2 and 1 cores active.

**NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

**NOTE:** Up to 2 processors supported. Mixing different processor models is not supported.

**NOTE:** For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, and x = L for low power SKUs.

# QuickSpecs

## HP ProLiant DL360p Generation 8 (Gen8) Carrier Grade Supplement

### Standard Features

#### Cache Memory

One of the following depending on Model

25MB (1x25MB) Level 3

**NOTE:** For Ten-core processors.

20MB (1x20MB) Level 3

**NOTE:** For Eight-core processors.

15MB (1x15MB) Level 3

**NOTE:** For Six-core processors.

5MB (1x5MB) Level 3

**NOTE:** For Dual-core processors.

**NOTE:** All processor models above list the L3 Cache associated with that particular processor.

#### Chipset

Intel® C600 Series Chipset

Intel® E5-2600 and E5-2600 v2 Processor Families

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

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

#### Upgradeability

Upgradeable to two processors (20 Cores)

Up to 24 DIMM slots available for higher Memory capacity

Up to 8 SFF Hard Drive Bays; Or 4 LFF or 10 SFF Drive Bay (optional through CTO below)

FlexibleLOM slot for 1Gigabit or 10 Gigabit Ethernet or QDR/FDR InfiniBand networking options

2 PCIe 3.0 I/O slots for additional communications and storage expansion

Redundant Power Supply

Optical Drive Bay (8 SFF)

#### On System Management Chipset

HP iLO (Firmware: HP iLO 4)

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

#### Memory Protection

Advanced ECC

Online Spare

Lock-step

#### Memory

One of the following depending on Model

Type

HP SmartMemory

DDR3 Registered (RDIMM)

DIMM Slots Available

24 (12 DIMM slots per processor /4 channels per processor/3 DIMMs per channel)

Maximum Capacity (RDIMM)

256GB (16 x 16GB@1600MHz)

**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. 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 12 DIMM slots are available. When populating with two processors 24 DIMM slots are available. For maximum speed on some memory options on 16 DIMM slots may be populated.

**NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 1600MHz, 1333MHz, or 1066MHz. 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).

#### Expansion Slots

#### Expansion Slots

#### Technology

#### Bus

#### Connector

#### Form Factor

#### Notes



## Standard Features

#		Width*	Width		
1	PCIe 3.0	x8	x8	Low profile slot	Activated when installed with processor 1
2	PCIe 3.0	x16	x16	Half-length, full-height slot	Activated when installed with processor 1

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

**NOTE:** Two PCIe 3.0 expansion slots: (1) Half-length, full-height slot and (1) low-profile slot.

## 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:

- 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).

<b>Internal Storage Devices</b>	Diskette Drive	None	
	Optical Drive	Optional DVD-ROM, DVD-RW <b>NOTE:</b> This option available with all 8SFF or 4LFF drive models.	
	Hard Drives	None ship standard	
	Hard Drive Bays	8 SFF drive bays total with Optical drive bay	
<b>Maximum Internal Storage</b>	Hot Plug SFF SAS	7.2TB	8 x 900TB
	Hot Plug SFF SAS SSD	6.4TB	8 x 800GB
<b>Interfaces</b>	Serial	1	
	Video	1 Front Mini-Video connector/ 1- Rear standard video (not active simultaneously) <b>NOTE:</b> Mini-video connector requires Front Video Adapter Kit (PN 655915-B21).	
	FlexibleLOM Network	Some models come standard with 4 x 1GB ports while others come with 2 x	

## Standard Features

Ports	10GB ports (See HP Networking section below for more details and options).
HP iLO Remote Management Network Port	1Gb Dedicated
SD slot	1 Internal secure
USB 2.0 Ports	7 total: 4 rear, 2 front, 1 internal (secure)

## Industry Standard Compliance

ACPI 2.0b Compliant  
 PCIe 3.0 Compliant  
 PXE Support  
 WOL Support  
 Microsoft® Logo certifications  
 USB 2.0 Compliant

## Server Power Cords

All Pre-configured Models servers ship with a high voltage server to PDU power cord.  
**NOTE:** HP ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cord that connects to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to power distribution units (PDUs) in data center racks and now ship standard with a PDU 6-foot C-14 to C13 power cord (A0K02A). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the 6-foot NEMA 5-15 to C13 power cord must be ordered separately (AF556A). See Power Cords section for Worldwide Power Cord options.

## Power Specifications

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

**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)

## 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

## Standard Features

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

6 fan modules ship standard in 1 processor models

8 fan modules ship standard in 2 processor models

The DL360p Gen8 will support up to 8 fans with fan redundancy built in. One fan rotor failure will place server in degraded mode but fully functional. Two fan rotor failures could provide warning and imminent server shutdown.

**NOTE:** The processor option kit contains 2 additional fan modules, when upgrading from a 1 processor to two processor models.

**Required Cabling**

For required cabling information, refer to the Web site at: [www.hp.com/servers/dl360p-gen8](http://www.hp.com/servers/dl360p-gen8)

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

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

**NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: <http://www.hp.com/go/ossupport> and our driver download page <http://www.hp.com/support/DL360pGen8>

**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

1U Rack form factor

8 SFF Bay Version:

1.7" (4.32cm) Height x 17.11" (43.47cm) Width x 27.5" (69.85cm) 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

## Standard Features

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 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

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

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## Standard Features

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>

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### Security

Power-on password  
Serial interface control  
Administrator's password

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### 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>

**High Performance Clusters**

## HP Cluster Platforms

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

## Optional Features

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, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

**HP Enterprise Configurator**

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

## Service and Support

## Service and Support

**HP Technology Services for Industry Standard Servers**

HP Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HP to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

**Protect your business beyond warranty with HP Care Pack Services**

HP Care Pack Services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.

## Optimized Care

**Supports maintaining servers at optimum performance availability****HP Proactive Care with 6 hour call-to-repair commitment, three year Care Pack Service**

HP Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. This Care Pack Service combines three years' proactive reporting and advice with our highest level reactive coverage and enhanced escalation management, HP's 24x7, six hour call-to-repair hardware commitment. HP is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable servers. Service includes 24x7 collaborative software support for leading industry standard software running on your HP ProLiant server.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

## Standard Care

**Service recommendation that maintains high level of server availability****HP Proactive Care with 24x7 coverage, three year Care Pack Service**

HP Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to HP. This Care Pack Service combines three years' proactive reporting and advice with our 24x7 coverage and enhanced escalation management, four hour hardware response time and two hour call back for software questions on leading industry standard software running on your HP ProLiant server.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

## Related Services

**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>

**Factory Express 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. 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>.

**Data Privacy Services**

Protect your data through better media management. HP Data privacy services help manage and protect sensitive data to reduce the risk of unauthorized access to private information and help meet compliance requirements. Our retention services allow you to keep drives and other devices upon failure, our removal services provide convenient data sanitization and our recovery services allow you

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## Service and Support

to safely retire IT assets and capture any remaining value from the hardware.  
[www.hp.com/services/dataprivacy](http://www.hp.com/services/dataprivacy)

Additional HP Care Pack services can be found at: <http://www.hp.com/go/cpc>

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### Get connected to HP to improve your support experience

Prevent problems with innovative, automated monitoring tools and proactive services. Combining Proactive Care Services with our remote support technology such as Insight Online provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit:  
[www.hp.com/go/proactiveinsightexperience](http://www.hp.com/go/proactiveinsightexperience)

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### 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.

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### 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>

## 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 DL360p Gen8 8 SFF Configure-to-order Server <span style="float: right;">654081-B21</span> <b>Factory Integrated Model ships with:</b> 2 x HP Smart Socket Guides for fast processor installation Drive Cage - 8-Small Form Factor 24 DIMM slots for RDIMM, LRDIMM, UDIMM and HDIMM SmartMemory installation (1) FlexibleLOM connection point: (see Step2: HP FlexibleLOM NIC section below for NIC choices to populate the embedded connector) Smart Array P420i Controller (Cache connection for 512MB, 1GB and 2GB FBWC options) I/O slots - 2 Slots come standard: <ul style="list-style-type: none"> <li>• Slot 1 - Full-Height/Half-Length x 16 PCIe 3.0</li> <li>• Slot 2 - Low Profile x 8 PCIe 3.0</li> </ul> System Fans - 6 (2 additional fans included with second processor) USB - 4 Rear, 2 Front, 1 Internal 1 Internal SD slot On System Server Management Processor - HP iLO 4 (embedded) SID - System Insight Display(Active Health Indicator) Power Supply not included - choose from Power Options section <b>NOTE:</b> With new options available for Networking solutions and Rack Rail Kits these options are no longer standard on-board with this Model Part Number. Please see the Networking and HP Rack Options below for optional required options.
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**Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)**

<b>HP Processors</b>	<b>NOTE:</b> If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21. <b>Base Processors</b> <b>NOTE:</b> All support up to 1333MHz DDR3 memory speeds. HP DL360p Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) Processor Kit <span style="float: right;">654782-L21/B21</span> HP DL360p Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) Processor Kit with screwdown heat sink <span style="float: right;">745736-L21/B21</span> <b>Performance Processors</b> <b>NOTE:</b> All support up to 1600MHz DDR3 memory speeds. HP DL360p Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) Processor Kit <span style="float: right;">654786-L21/B21</span> HP DL360p Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) Processor Kit with screwdown heat sink <span style="float: right;">745742-L21/B21</span> HP DL360p Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) Processor Kit <span style="float: right;">666029-L21/B21</span> HP DL360p Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) Processor Kit with screwdown heat sink <span style="float: right;">745740-L21/B21</span> HP DL360p Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) Processor Kit <span style="float: right;">654784-L21/B21</span>
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## Configuration Information - Factory Integrated Models

HP DL360p Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) Processor Kit with screwdown heat sink	745738-L21/B21
HP DL360p Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) Processor Kit	654772-L21/B21
HP DL360p Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) Processor Kit with screwdown heat sink	745719-L21/B21
HP DL360p Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) Processor Kit	654776-L21/B21
HP DL360p Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) Processor Kit with screwdown heat sink	745723-L21/B21

## HP Memory

**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. 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:** LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM. Only RDIMMs have been NEBS certified with the DL360p.

**Registered DIMMs (RDIMMs)**

**NOTE:** The following memory is supported by the E5-2600 v2 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713983-B21
HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708639-B21
HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21

**Registered DIMMs (RDIMMs)**

**NOTE:** The following memory is supported by the E5-2600 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21

**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the [Online DDR3 Memory](#)

## Configuration Information - Factory Integrated Models

Configuration Tool: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**NOTE:** Depending on the memory configuration and processor model, 1600MHz and 1333MHz memory may operate at a lower speed. Please see the "Memory" section later in this document and the Online Memory Configuration Tool for details at [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**NOTE:** For additional memory rules and guidelines, see the "Memory" section later in this document.

**NOTE:** PC3L is a low voltage memory.

**NOTE:** Intel E5 E5-2620 processor does not support LV DIMMs running at 1.35V. The HP RBSU can be changed to run at 1.5V.

**NOTE:** Not all Intel E5 processor series support 1600MHz or 1333MHz speeds. Memory speed is a function of the processor QPI speed.

## HP Networking

**FlexibleLOM Adapters**

**NOTE:** The HP ProLiant DL360p Gen8 server requires one FlexibleLOM to be installed in the FlexibleLOM slot. The choice is one of the from the "HP Networking" or "HP InfiniBand" sections. The FlexibleLOM Adapters in these two sections are Factory Integrated Options (FIO) only since this server requires a FlexibleLOM in the configuration. The FlexibleLOM Adapters listed in Step 4 are for upgrades or changes from the original FlexibleLOM and the part numbers are different.

**NOTE:** FLR Indicates new HP FlexibleLOM Adapter for rack server series.

HP Ethernet 1Gb 4-port 331FLR FIO Adapter

684208-B21

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

684210-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 750W Common Slot Platinum Plus Hot Plug Power Supply Kit

656363-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 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**

## HP Rack Kits

**NOTE:** Gen8 rail kits have changed significantly from prior generation rail kits. Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen8 server.

**NOTE:** Rail kits are optional for Gen8 and are no longer included standard with the server. Customers have the option to purchase their server without a rail kit.

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## Configuration Information - Factory Integrated Models

**NOTE:** See HP Rack Options in Additional Options section of this QuickSpecs for rack kit choices.

**Caution:** HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

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<b>HP Insight Software</b>	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE

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

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



## Core Options

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

## HP Processors

**NOTE:** Customers who have DL360p Gen8 servers with E5-2600 processors and want to upgrade to E5-2600v2 processors will need to contact their HP representative for a list of SKUs that are compatible with that system.

**NOTE:** If two processors are desired, select the second from the options below.

## E5-2600 v2 series Processors

## Base Processors

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

HP DL380p Gen8 Intel® Xeon® E5-2640v2 (2.0GHz/8-core/20MB/95W) Processor Kit	715219-B21
HP DL380p Gen8 Intel® Xeon® E5-2630v2 (2.6GHz/6-core/15MB/80W) Processor Kit	715220-B21
HP DL380p Gen8 Intel® Xeon® E5-2620v2 (2.1GHz/6-core/15MB/80W) Processor Kit	715221-B21

## Performance Processors

**NOTE:** All support up to 1866MHz DDR3 memory speeds.

HP DL380p Gen8 Intel® Xeon® E5-2680v2 (2.8GHz/10-core/25MB/115W) Processor Kit	715215-B21
HP DL380p Gen8 Intel® Xeon® E5-2670v2 (2.5GHz/10-core/25MB/115W) Processor Kit	715216-B21
HP DL380p Gen8 Intel® Xeon® E5-2660v2 (2.2GHz/10-core/25MB/95W) Processor Kit	715217-B21
HP DL380p Gen8 Intel® Xeon® E5-2650v2 (2.6GHz/8-core/20MB/95W) Processor Kit	715218-B21

## E5-2600 series Processors

## Base Processors

**NOTE:** All support up to 1333MHz DDR3 memory speeds.

HP DL380p Gen8 Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/95W) Processor Kit	662246-B21
HP DL380p Gen8 Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/95W) Processor Kit	662248-B21
HP DL380p Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) Processor Kit	662250-B21

## Performance Processors

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

HP DL380p Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) Processor Kit	662240-B21
HP DL380p Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) Processor Kit	666509-B21
HP DL380p Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) Processor Kit	662242-B21
HP DL380p Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) Processor Kit	662244-B21
HP DL380p Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) Processor Kit	662224-B21

**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. 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)

## HP Processors

**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:

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

**NOTE:** LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM,

## Core Options

## UDIMM and LRDIMM.

**Registered DIMMs (RDIMMs)**

**NOTE:** The following memory is supported by the E5-2600 v2 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713981-B21
HP 4GB (1x4GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708637-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713983-B21
HP 8GB (1x8GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	731765-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708639-B21
HP 8GB (1x8GB) Single Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	731761-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit	713985-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-14900R (DDR3-1866) Registered CAS-13 Memory Kit	708641-B21

**Registered DIMMs (RDIMMs)**

**NOTE:** The following memory is supported by the E5-2600 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21

**NOTE:** This memory kit available as a Factory Integrated Option only.

**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).

**NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: [www.hp.com/go/proliant-energy-efficient](http://www.hp.com/go/proliant-energy-efficient)

**NOTE:** PC3L is a low voltage memory

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<b>HP Optical Drives</b>	HP 9.5mm SATA DVD ROM JackBlack Optical Drive	652238-B21
	HP 9.5mm SATA DVD RW JackBlack Optical Drive	652241-B21

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**HP Hard Drives**

**NOTE:** The HP ProLiant DL360p 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 and activity indicators as well as caution indicators for "Do Not 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

## Core Options

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
HP300GB 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

**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)

**12G SAS Hot Plug SFF (2.5-inch) Enterprise Drives**

HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781518-B21
HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785069-B21
HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781516-B21
HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785067-B21

**12G SAS Mainstream Endurance Hot Plug SFF (2.5-inch) Enterprise Mainstream H2 Solid State Drives**

HP 1.6TB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779176-B21
HP 800GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779172-B21
HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779168-B21
HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 Solid State Drive	779164-B21

**6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives**

HP 1.6TB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	757339-B21
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**6G SATA ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives**

HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691866-B21

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

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

**Hard Drive Kits**

**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.

HP Small Form Factor Hard Drive Blank Kit	666987-B21
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## Core Options

## HP Networking

**Gigabit Ethernet Adapters**

HP NC365T 4-port Ethernet Server Adapter	593722-B21
HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
HP Ethernet 1Gb 2-port 332T Adapter	615732-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. See cables/options below.

HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
HP Ethernet 10Gb 2-port 561T Adapter	716591-B21
HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21

**FlexibleLOM Adapters**

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

HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter	629142-B21

**SFP+**

HP X132 10G SFP+ LC LR Transceiver	J9150A
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**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 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
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**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
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**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:** Two optional DC cableskits are available: A5S97A (1.3 meter DC cable kit) and A5S98A (2.0 meter DC cable kit)

**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)

## 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.

<b>HP Insight Software</b>	<b>HP Insight Control</b>	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	C6N31A
	<b>NOTE:</b> Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.	
	<b>NOTE:</b> 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.	
	<b>NOTE:</b> Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: <a href="http://www.hp.com/go/insightupdates">http://www.hp.com/go/insightupdates</a> .	
	<b>NOTE:</b> For additional license options please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html">http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html</a>	
	<b>HP Integrated Lights-Out (iLO) Advanced for ProLiant</b>	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	<b>NOTE:</b> For additional license options please see the QuickSpecs at: <a href="http://h18004.www1.hp.com/products/quickspecs/14276_div/14276_div.html">http://h18004.www1.hp.com/products/quickspecs/14276_div/14276_div.html</a>	
	<b>NOTE:</b> For more information, visit: <a href="http://www.hp.com/go/ilo">http://www.hp.com/go/ilo</a>	
<b>High Performance Clusters</b>	<b>HP Cluster Management Utility</b>	
	HP Insight Cluster Management Utility 1yr 24x7 Flexible License	QL803B
	HP Insight Cluster Management Utility 3yr 24x7 Flexible License	BD476A
	<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.	
	HP Insight Cluster Management Utility Media	BD477A
	<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> .	
<b>HP I/O Accelerator Options</b>	HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673646-B21
	HP 3TB G2 FH/HL PCIe ioDrive2 IO Accelerator for ProLiant Servers	721458-B21
	<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>	
<b>HP Security</b>	HP Trusted Platform Module Option	488069-B21
	<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	

## Additional Options

Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: [www.hp.com/go/TPM](http://www.hp.com/go/TPM).

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

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

HP 1U Security Bezel Kit 664918-B21

**HP Storage Controllers 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

**Host Bus Adapter**

HP H221 PCIe 3.0 SAS Host Bus Adapter 729552-B21

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

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

**HP Power Cords**

HP C13 - C14 WW 250V 10A Gray 0.7m Jumper Cord A0K03A

HP C13 - C14 WW 250V 10A Gray 1.37m Jumper Cord A0K04A

HP C13 - C14 WW 250V 10Amp 2.0m Jumper Cord A0K02A

HP C13 - C14 WW 250V 10A Gray 3.0m Jumper Cord A0K06A

HP C13 - Nema 6-15P US 250V 15A JP 3.6m Power Cord A0N33A

HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord AF556A

HP C13 - C14 WW 250V 10Amp Flint Gray 2.0m Jumper Cord AF573A

**HP Uninterruptible Power Systems HP DirectFlow Three Phase UPS Power Unit (1U UPS)**

**NOTE:** #0D1 will appear after the part number on the sales order if HP factory integration is indicated.

HP R12000 DirectFlow - 1U Rackmount Uninterruptible Power System G9Y75A

HP R12000 DirectFlow - POD 1U Rackmount Uninterruptible Power System AF478A

**Input/Output Module Options for 1U UPS**

**NOTE:** Choose one I/O Module per UPS.

**NOTE:** #0D1 will appear after the part number on the sales order if HP factory integration is indicated.

HP 30A 400-415 Volt Three Phase NA R10000 DirectFlow UPS IEC309 Input/Output Module AF489A

HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS L22-30 Input/Output Module AF491A

HP 30A 480 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module AF492A

HP 30A 400-415 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module G9Y76A

**NOTE:** All Input/Output Modules support dual output outlets except the AF484A.

**HP Tower UPS**

## Additional Options

**HP T750 G4 UPS Models**

HP T750 G4 NA/JP Uninterruptible Power System	J2P85A
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**HP T1000 G4 UPS Models**

HP T1000 G4 NA/JP Uninterruptible Power System	J2P86A
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**HP T1500 G4 UPS Models**

HP T1500 G4 NA/JP Uninterruptible Power System	J2P87A
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**HP Rack/Tower UPS****HP R/T2200 G4 UPS Models**

HP R/T2200 G4 NA/JP Uninterruptible Power System	J2R00A
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**HP R/T3000 G4 UPS Models**

HP R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System	J2R01A
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HP R/T3000 G4 High Voltage NA/JP Uninterruptible Power System	J2R02A
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**HP R1500 G4 Uninterruptible Power Supply (UPS)**

HP R1500 G4 NA Uninterruptible Power System	J2Q99A
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**HP Rack Options****HP LCD8500 1U Rackmount Console Kit Models**

HP LCD8500 1U US Rackmount Console Kit	AF630A
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HP LCD8500 1U US TAA Rackmount Console Kit	AF645A
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**HP LCD8500 1U Rackmount Console Kit Options**

HP Kit LCD 1.83m Latch Display Port Cable	G7T29A
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HP Location Discovery Services LCD8500 Kit	TL052A
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HP Rack LED Light Kit	BW939A
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**HP Server Console Switches**

HP 0x1x8 G3 KVM Console Switch	AF651A
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HP 0x2x16 G3 KVM Console Switch	AF652A
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HP TAA 0x2x16 G3 KVM Console Switch	AF653A
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HP USB Remote Access Key for G3 KVM Console Switches	AF650A
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**Rail Kits**

**NOTE:** Gen8 rail kits have changed significantly from prior generation rail kits. Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen8 server.

**NOTE:** Rail kits are optional for Gen8 and are no longer included standard with the server. Customers have the option to purchase their server without a rail kit.

Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

HP 1U Small Form Factor Ball Bearing Rail Kit	663201-B21
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**NOTE:** For SFF models.

**NOTE:** HP 1U Small Form Factor Ball Bearing Gen8 Rail Kit ships standard with some BTO Preconfigured Channel Models.

**HP USB and SD options****HP Enterprise Mainstream Flash Media Kits for Memory Cards**

HP 8GB SD Enterprise Mainstream Flash Media Kit	726113-B21
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HP 32GB SD Enterprise Mainstream Flash Media Kit	700136-B21
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**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13971\\_div/13971\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13971_div/13971_div.html)

## Additional Options

## HP Care Pack Services

## Proactive Care

**NOTE:** Collaborative Support plus Proactive services delivered by the onshore, local language Advanced Solution Center (ASC), end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware software revision management, proactive scans and incident trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience.

HP 3 year 4 hour 24x7 ProLiant DL36x(p) Proactive Care Service	U2Z86E
HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL36x(p) Proactive Care Service	U2Z89E
HP 3 year 6 hour Call To Repair 24x7 ProLiant DL36x(p) Proactive Care Service	U2Z92E
HP 3 year 6 hour Call To Repair 24x7w/Defective Media Retention ProLiant DL36x(p) Proactive Care SVC	U2Z95E
HP 3 year 4 hour 24x7 ProLiant DL36x(p) with Insight Control Proactive Care Service	U3N59E
HP 3 year 4hr 24x7 with Defective Media Retention DL36x(p) with Insight Control Proactive Care SVC	U3N62E
HP 3 year 6 hour Call To Repair 24x7 ProLiant DL36x(p) with Insight Control Proactive Care Service	U3N65E
HP 3yr 6hrCallToRepair 24x7w/Defective Media Retention DL36x(p) w/Insight Control Proactive Care SVC	U3N68E
HP 3 year 4-Hour 24x7 with Comprehensive Defective Material Retention DL36x(p) ProactiveCare Service	U9A53E
HP 3 year 24x7 6-HourCalltorepair ComprehensiveDefectiveMaterialRetention DL36x(p) ProactiveCare SVC	U9A56E
HP 3 year 4-Hour 24x7 w/Comprehensive Defective Material Retention DL36x(p) with IC ProCare Service	U9A71E
HP 3year 24x7 6-HourCall-to-repair ComprehensiveDefectiveMaterialRetention DL36x(p) w/ IC ProCareSVC	U9A74E

## Installation Services

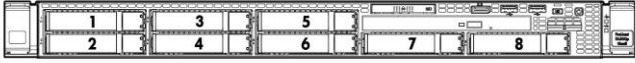
**NOTE:** Reduce the time required to get your system up and running and help minimize disruptions to your business.

HP Install ProLiant DL36x(p) Service	U4506E
HP Startup ProLiant DL36x(p) Service	U4507E

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



### Storage



- 1-8 8 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays with Optical Media Bay option available for this configuration

# QuickSpecs

## HP ProLiant DL360p Generation 8 (Gen8) Carrier Grade Supplement

### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D)	8 SFF and 10 SFF	1.7 x 17.1 x 27.5 inches (4.32 x 43.47 x 69.85 cm)
		4 LFF	1.7 x 17.1 x 29.5 inches (4.32 x 43.47 x 74.67 cm)
<b>Weight</b> (approximate)	<b>Maximum</b> (all hard drives, power supply, and processor installed)	8 SFF	42.3 lb (19.2 kg)
		10 SFF	42.3 lb (19.2 kg)
		4 LFF	45.6 lb (20.7 kg)
<b>Minimum</b> (one hard drive, power supply, and processor installed)			32 lb (14.51 kg)
	<b>Input Requirements</b> (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC
		Rated Input Current	4.5 Amps (at 120VAC) to 2.2 Amps (at 240 VAC)
<b>BTU Rating</b>	Rated Input Frequency	50 to 60 Hz	
	Maximum	1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC)	
<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)	
		750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC)	
	Maximum Peak Power	460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)	
		750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC)	
<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</b> (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.	
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.	
<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).	

## Technical Specifications

**Acoustic Noise**

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

**Idle (Note 1)**

LWAd	5.1 B Average Bystander
LpAm	35.8 dBA

**Operating**

LWAd	5.4 B Average Bystander
LpAm	39.9 dBA

**Idle (Note 2)**

LWAd	5.2 B Average Bystander
LpAm	38 dBA

**Operating**

LWAd	5.9 B Average Bystander
LpAm	41.6 dBA

**NOTE:** Configuration tested included two Intel E5-2640, 2.5GHz processors, one 500GB SAS HDD, eight system fans, two 4GB RDIMM's 1333MHz, one 460W power supply.

**NOTE:** Configuration tested included two Intel E5-2640, 2.5GHz processors, four 500GB SAS HDD, eight system fans, sixteen 4GB RDIMM's 1333MHz, one 460W power supply, P421 HDD controller PCI card with 1GB cache.

**NOTE:** Values are subject to change without notification and are for reference only.

**NOTE:** Performance of system, options, and ancillary equipment will vary depending on the system configuration.

**NOTE:** Levels presented do not account for non-Hewlett-Packard installed hardware.

**Emissions Classification (EMC)**

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

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

**HP iLO 4 On System Management****Architecture**

PCI Express based health and remote management ASIC

**Processor**

Embedded ARM processor core operating at 400MHz

**Upgradeability**

Firmware upgradeable via Flash ROM

**Video Support**

1920 x 1200 (16 bpp) DVR max resolution

**Interfaces**

HP iLO Dedicated\* Network connection (10/100/1000 Mbps) on ML, DL and SL systems

\*Optional Module on some servers

HP iLO Shared Network connection (10/100/1000 Mbps) on ML, DL and SL systems

HP iLO Network connection (10/100 Mbps) to Onboard Administrator (with 10/100/1000 Mbps uplink) to BladeSystem link is 1Gbps

## Technical Specifications

<b>Memory</b>	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>NOTE:</b> For customers using Protected Mode, please use the Java based version of Integrated Remote Console. Microsoft Internet Explorer 7
<b>Command Line Support</b>	Firefox Extended Support Release (ESR) 10 (on supported Windows and Linux systems) Firefox 3.6 (on supported Windows and Linux systems) Secure Shell and serial port access Secure Socket Layer Secure Shell version 2
<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

<b>HP Smart Array P420i Controller</b>	<b>Dimensions</b>	Embedded
	<b>Disk Drive and Enclosure Interface - Transfer rate</b>	6Gb/s SAS (Serial Attached SCSI) 6Gb/s SATA (Serial ATA)
	<b>SAS Connectors</b>	2 internal 4X connectors
	<b>Cache Memory Speed</b>	512MB FBWC - DDR3-1333MHz with 40-bit wide bus, 1 GB or 2 GB FBWC DDR3-1333MHz with 72-bit wide bus
	<b>Server Interface</b>	x8 PCIe 3.0 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 512MB ECC protected flash back write cache 72-bit 1GB FBWC or 72-bit 2GB FBWC
	<b>Logical Drives Supported</b>	Zero Memory, Up to 2 logical volumes (8SFF or 4LFF physical drives) 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:

## Technical Specifications

- 512 MB FBWC and Smart Array Advanced Pack License key option upgrades
- 1G or 2GB FBWC and Smart Array Advanced Pack License key option upgrades

RAID 5, 5+0 (Distributed Data Guarding)

**NOTE:** A minimum of 512 MB cache is required to enable RAID 5, 5+0 support

RAID 1+0 (Striping & Mirroring)

RAID 0 (Striping), RAID 1 (Mirroring)

**HP Ethernet 1Gb 4-port 331FLR Adapter**
**HP Flexible Network Technology**

HP FlexibleNet Technology consists of replaceable network solutions to meet the customers require now or in the future.

**NOTE:** Part of the DL360p Gen8 platform is the HP FlexibleLOM. The FlexibleLOM comes in multiple versions and is a removable card system similar to PCI cards. Shown here are the technical specifications for the HP Ethernet 1Gb 4-port 331FLR Adapter on most DL360p Gen8 BTO Entry, Base and Performance models.

**Network Interface Compatibility**

10Base-T/100Base-TX/1000Base-TX

IEEE 802.3 10Base-T

IEEE 802.3ab 1000Base-T

IEEE 802.3u 100Base-TX

IEEE 802.3ad 1000Base-TX

IEEE 802.1p 100Base-TX

IEEE 802.1q 100Base-TX

**Data Transfer Method Chipset**

PCI Express, four lanes (x4)

BCM5719

**Network Transfer Rate**

10Base-T (Half-Duplex) 10 Mb/s

10Base-T (Full-Duplex) 20 Mb/s

100Base-TX (Half-Duplex) 100 Mb/s

100Base-TX (Full-Duplex) 200 Mb/s

1000Base-TX (Half and Full-Duplex) 2000Mb/s

**Connector**

Two RJ-45

**Cable Support**

10Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m)

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

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

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

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

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on

# QuickSpecs

## HP ProLiant DL360p Generation 8 (Gen8) Carrier Grade Supplement

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### Technical Specifications

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.

## Summary of Changes

Date	Version History	Action	Description of Change:
09-Feb-2015	From Version 5 to 6	Added	New Hard Drives, DirectFlow UPS, Rack and Tower G4 Models, LCD8500 1U Rackmount Models and Options were added to the Additional Options section.
		Changed	HP Uninterruptible Power Systems, HP Rack Options, and HP Care Pack Services in Additional Options section were revised.
01-Nov-2014	From Version 4 to 5	Changed	Updated Service and Support
30-May-2014	From Version 3 to 4	Changed	Changes made to the Overview, Standard Features, Configuration Information - Factory Integrated Models, Core Options, Additional Options, and Storage sections.
13-Dec-2013	From Version 2 to 3	Changed	Changes made to the Processors sections in the Standard Features and the Configuration Information sections.
18-Oct-2013	From Version 1 to 2	Changed	Changes made to the Additional Options Section - HP Storage Controllers

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