

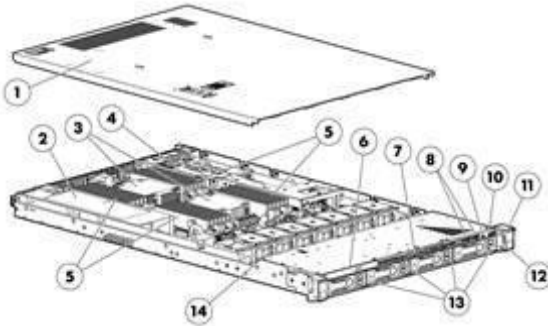
QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Overview

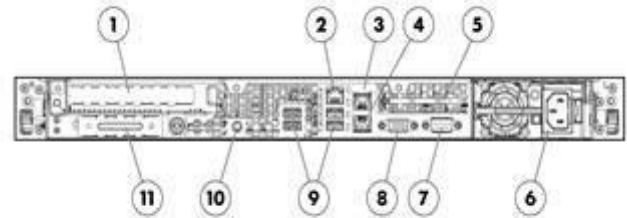
HP ProLiant DL160 Generation 8 (Gen8)

The HP ProLiant DL160 Gen8 is a dual-socket, high-performance, dense rack server with enhanced manageability and scalability suited for High Performance Computing (HPC) environments, web serving and other hyperscale environments.



Front View:

1. Access panel
2. Power supply (500 Watts multi-output - standard, common slot power supply factory installable options available)
3. Up to two Intel® Xeon® E5-2600 Series processors
4. FlexibleLOM slot
5. Up to 24 DIMM slots: DDR3 Registered (RDIMM), Load Reduced (LRDIMM) or Unbuffered (UDIMM) memory
6. Optical Disk Drive Bay
7. Serial label pull tab
8. (2) Front USB connectors
9. UID LED button
10. Power On/Standby button
11. Health LED
12. Aggregate network LED
13. Up to 4 LFF SAS/ SATA Hard drives
14. Up to seven Non hot plug redundant Fans



Rear View:

1. PCIe 3.0 I/O slot
2. Integrated Lights-Out Management Engine port
3. 1 GbE LAN port for NIC 1 (RJ-45)
4. 1 GbE LAN port for NIC 1 (RJ-45)
5. Torx tool
6. Power supply cable socket
7. Serial connector
8. Video connector
9. USB connectors
10. UID LED button
11. FlexibleLOM slot

What's New

- New HDD offering.

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

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

Eight -Core Processors

Intel® Xeon® E5-2680 (2.7GHz/8-core/20MB/8GT-s QPI/130W, DDR3-1600, HT, Turbo2-4/4/5/5/5/7/8/8)

Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/8GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/8GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2660 (2.2GHz/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)

Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/8.0 GT-s QPI/70W, DDR3-1600, HT, Turbo2-2/2/3/3/4/4/5/5)

Six-Core Processors

Intel® Xeon® E5-2667 (2.9GHz/6-core/15MB/8GT-s QPI/130W, DDR3-1600, HT, Turbo2- 3/3/3/4/5/6)

Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5)

Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5)

Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/8.0GT-s QPI/60W, 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)

Quad- Core Processors

Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/6.4GT-s QPI/80W)

Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W)

NOTE: Up to 2 processors supported.

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

NOTE: Turbo 2 indicates the maximum potential bin increments when using Intel® Turbo Boost Technology, with 8,7,6,5,4,3,2 and 1 cores active DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed (options for 1600, 1333, 1066MHz).

NOTE: For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

Cache Memory

One of the following depending on model

20MB (1x20MB) Level 3

NOTE: For Eight-core processors.

15MB (1x15MB) Level 3

NOTE: For Six-core processors.

10MB (1x10MB) Level 3

NOTE: For Quad-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 Chipset

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Standard Features

Intel® E5-2600 processor Family

NOTE: For more information regarding Intel® chipsets, please see the following URL:
<http://www.intel.com/products/server/chipsets/>

Upgradeability

Upgradeable to two processors (16 Cores)
 Up to 24 DIMM slots available for higher Memory capacity
 Up to 8 SFF Hard Drive Bays; Or 4 LFF Drive Bay
 2 PCIe Generation 3 IO slots for additional communications and storage expansion
 Optical Drive Bay

On System Management Chipset

HP iLO (Firmware: HP iLO 4)
NOTE: For more information, visit: <http://www.hp.com/go/ilo>.

Memory Protection

Advanced memory protection
 Lockstep Mode

Memory

One of the following depending on model

| Type | HP SmartMemory PC3-10600R Registered DDR3 (1333MHz) |
|---|--|
| DIMM Slots Available | 24 DIMM slots |
| Standard (Entry Models) | 4 GB (1 x 4 GB) RDIMM |
| Standard (Base Models) | 8 GB (2 x 4 GB) RDIMM |
| Standard (Performance / Energy Star Models) | 16 GB (4 x 4 GB) RDIMM |
| Maximum (RDIMM) | 384 GB (24 x 16 GB) |
| Maximum (LRDIMM) | 768 GB (24 x 32 GB) |
| Maximum (UDIMM) | 128 GB (16 x 8 GB) |

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

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.

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: <http://www.hp.com/go/ddr3memory-configurator>.

Network Controller

HP 361i Integrated Dual Port Gigabit Server Adapter

Expansion Slots

Technology

Bus Width

Connector Width*

Form Factor

Notes

1

PCIe 3.0

X16

x16

Half length, full height or Full length, full height

2

PCIe 3.0

X8

x8

Low Profile

Internal only

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

NOTE: In order to access expansion slot #2 (the low profile internal only slot), expansion slot #1 may only be populated with a half-length, full height form factor card. If full length card is installed on the slot #1, low



QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Standard Features

profile internal only slot will be inaccessible.

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: <http://www.hp.com/support/rbsu>.

Storage Controller

One of the following depending on model

| | |
|--------------------|---|
| Entry Models | HP Dynamic Smart Array B120i controller |
| Base Models | HP Dynamic Smart Array B120i controller |
| Performance Models | HP Smart Array P420/1GB FBWC controller |

NOTE: Available upgrades: 512MB FBWC for B120i, 2GB FBWC for P420 Controller/ 1GB FBWC controller

NOTE: HP Dynamic Smart Array B120i controller supports up to 3Gb/s speed in HP ProLiant DL160 Gen8. HP Smart Array controller is required in PCIe slot to achieve 6Gb/s.

Internal Storage Devices

| | |
|---|---|
| Diskette Drives | Via USB only |
| Optical Drives | Optional SATA 9.5mm DVD-ROM Optical Drive Optional SATA 9.5mm DVD RW Optical Drive |
| Drive Bays | Up to 4 Hot plug SAS/SATA 3.5" drives Up to 8 Hot plug SAS/SATA 2.5" drives |
| One of the following depending on model | |

Maximum Internal Storage

One of the following depending on model

| | | |
|-----------------------|--------|-----------|
| Hot Plug LFF SATA | 16.0TB | 4 x 4TB |
| Hot Plug LFF SATA SSD | 3.2TB | 4 x 800GB |
| Hot Plug LFF SAS | 16.0TB | 4 x 4TB |
| Hot Plug SFF SATA | 8.0TB | 8 x 1TB |
| Hot Plug SFF SATA SSD | 6.4TB | 8 x 800GB |
| Hot Plug SFF SAS | 9.6TB | 8 x 1.2TB |
| Hot Plug SAS SSD | 6.4TB | 8 x 800GB |
| Non-Hot Plug LFF SATA | 12.0TB | 4 x 3TB |
| Non-Hot Plug LFF SAS | 2.4TB | 4 x 600GB |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Standard Features

Interfaces

| | |
|-------------------------|--|
| Network RJ-45(Ethernet) | 2 NIC ports, 1 dedicated iLO port |
| Serial | 1 (Rear) |
| Pointing Device (Mouse) | 0 (via USB only) |
| Graphics | 2 VGA ports(1 rear, 1 front) |
| Keyboard | 0 (via USB only) |
| USB 2.0 Ports | 7 (two front, one internal, four rear) |

NOTE: In order to use internal USB port, the internal USB Cable Gen8 Kit (P/N: 662961-B21) is required. Please note that this is a Factory installable Only (FIO) option and cannot be bought standalone.

Industry Standard Compliance

ACPI 2.0 Compliant
PCIe 3.0 Compliant
PXE Support
WOL Support
Microsoft® Logo certifications
IPMI 2.0, SMASH CLP, DCMI 1.0 compliant
USB 2.0 Support

Server Power Cords

One 6' Highline (IEC-IEC) power cord ships standard

NOTE: HP ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cords that allow connection to 110V US wall outlets in a home or office. HP ProLiant DL servers are primarily connected to PDU's in data center racks and 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. If customers require a power cord, they can check the power cord matrix for the appropriate cord. Please see the following power cord matrix: <http://www.hp.com/go/powercordmatrix>.

Power Specifications

To review typical system power ratings, use the HP Power Advisor tool available at URL: <http://www.hp.com/go/proliant-energy-efficient> or <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_na/14209_na.html

Common Slot Power Supplies

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% 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.

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

NOTE: 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: <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

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Standard Features

independently tests power supply efficiency and publicly posts the results on 80Plus.org.

NOTE: Common Slot power supplies require a new power backplane kit (p/n: 662959-B21) for installation. The Common Slot power supply and power backplane kits must be factory installed - neither should be bought as a standalone option for HP ProLiant DL160 Gen8.

NOTE: 10GbE FlexibleLOM mandatorily need common slot power supply and are not supported with 500W multi-output power supply. These FlexibleLOM options require Aux power connector that comes with the common slot power supply. Please see the options section for specific details.

NOTE: Since DL160 Gen8 only has only one power supply slot, above mentioned power supplies will not be Hot Plug in case of DL160 Gen8.

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

System Fans

One of the following depending on model

5 non-hot plug redundant fans ship standard in 1P models

7 non-hot plug redundant fans ship standard in 2P models

NOTE: The processor option kit contains two additional fan modules when upgrading from one processor to two processor models.

Required Cabling

For required cabling information, refer to the Web site at: <http://www.hp.com/servers/dl160-Gen8>

Operating Systems and Virtualization Software Support for ProLiant Servers

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

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/DL160Gen8>.

Graphics

Integrated Matrox G200 video standard

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

HP iLO 4 On System Management Memory

- 16 MB Flash
- 256 MB DDR 3 with ECC (112 MB after ECC and video)

Form Factor

One of the following depending on model

Rack (1U), (1.75 in/4.45 cm)

8 SFF Models

1.7" (43.2mm) Height x 17.1" (434.6mm) Width x 27.5" (699mm) Length

4 LFF Models

1.7" (43.18mm) Height x 17.11" (434.6mm) Width x 29.5" (750mm) Length

On System Management

HP iLO Management

HP iLO Management Engine is a complete set of embedded management



QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Standard Features

Engine

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 and 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 Active Health System:** HP Active Health System is an essential component of the HP iLO Management Engine. It provides customers with: 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:** HP Intelligent Provisioning includes everything you need for painless system setup and deployment. All your HP Gen8 ProLiant servers and Gen8 ProLiant server blades are ready to set-up right out-of-the box. The firmware, drivers, and tools that you need to quickly get your systems online are embedded on a NAND flash chip on the server motherboard- no more SmartStart CDs or firmware DVDs needed. Intelligent Provisioning is agentless for improved performance, but you still have the ability to run agents if needed.
 - To start Intelligent Provisioning:
 - Press the F10 key during the ProLiant Gen8 server boot process (also known as power on self test or POST).
 - Please go to the Intelligent Provisioning website at <http://www.hp.com/go/intelligentprovisioning> for additional information and to view usage videos.
 - Use the Service Pack for ProLiant (SPP) at <http://www.hp.com/go/spp> to get firmware and software updates.

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

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Standard Features

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 <http://www.hp.com/go/spp/download>. More information can be found: <http://www.hp.com/go/spp> and <http://www.hp.com/go/hpsum>

Security

Power-on password
Setup password
Diskette boot control
Secure Sockets Layer (SSL)
Secure Shell (SSH)

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and parts replacement 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 Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

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. For more information, visit: <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>.

NOTE: HP Insight Control 7.2 introduces Insight Control server provisioning, a new capability ideal for multi-server OS and firmware provisioning to ProLiant and BladeSystem servers. Insight Control server provisioning is included and licensed as part of HP Insight Control. A media kit, "HP Insight Control server provisioning USB media kit" (# BD883A), including a USB, is available for customers who require a physical copy of the media loaded with Insight Control server provisioning software. Please note that this media kit is separate and in addition to the "HP Insight Management DVD media kit" (#C6N31A).

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 Scale-Out

The HP iLO Scale-Out license ideal for web/hosting/cloud service providers and High Performance Computing environments. This license is a specific subset of iLO Advanced functionality, provides fast remote access through Text Console via SSH, lower operational cost with Dynamic power capping, and faster time to resolution through Email-based Alerting and proactive notifications. With this newly designed HP iLO Scale-Out HPC customers now have a server management package solely design and priced for their massive data environments. HP iLO Scale-Out is available on all HP ProLiant Gen8 SL and BL and DL 160 servers. For more information, see: <http://www.hp.com/go/iLO/scale-out>

HP iLO Advanced

HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: <http://www.hp.com/go/iloadvanced>

HP OneView

The HP OneView architecture combines server, storage, and networking with control of datacenter environments into a single, integrated management platform. Architected to deliver lifecycle management for the complete Converged Infrastructure, it facilitates collaboration, removes friction,

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Optional Features

collapses cycle times, eliminates error-prone work, and accelerates time to value. HP OneView v1.0 combines management of servers and virtual connect with open integration to automate and customize existing tools and processes. With OneView, you'll work smarter—with greater visibility and control—and fully capitalize on the benefits of a Converged Infrastructure.

For more information on HP OneView management, see: <http://www.hp.com/go/oneview>.

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

Storage Software

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than HP storage software. Our storage software helps you reduce costs, simplify storage infrastructure, protect vital assets and respond faster to business opportunities.

Storage software that gets the job done:

- **Data Protection and Recovery Software**
Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**
HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.
- **Storage Resource Management Software (SRM)**
HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
- **Data Replication Software**
HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- **Storage Device Management Software**
Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HP StoreVirtual VSA**
With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

NOTE: For more information available Storage Software including QuickSpecs, please see: <http://www.hp.com/go/storage/software>.

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Optional Features

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. <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 Simple Configurator

SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Service and Support

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem

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 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>

Standard Care

Support recommendation that maintains high level of server availability

Foundation Care 24x7, three-year Care Pack Service

HP Foundation Care 24x7 connects you to HP 24 hours a day, seven days a week for assistance on resolving issues. Hardware onsite response within four hours if needed; collaborative software included in this Care Pack service provides troubleshooting assistance on industry leading software running on your HP server. Simplify your support experience and make HP your first call for hardware or software questions.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

Basic Care

Delivers minimum recommended support service level

Foundation Care NBD, three-year Care Pack Service

HP Foundation Care Next Business Day connects you to HP during business hours for assistance on resolving issues – features next business day hardware onsite response if needed and software call back within two hours. Collaborative software support is included and provides troubleshooting assistance on industry leading software running on your server. Simplify your support experience and make HP your first call for hardware or software questions.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

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>

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

Get connected to HP to improve your support experience

Connecting products to HP will help prevent problems with 24x7 monitoring, prefailure alerts, automatic call logging, and parts dispatch. With Connected products, you can have a dashboard to manage your IT anywhere, anytime, from any device.

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>



QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Service and Support

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>

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

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.

Entry Model

| | | |
|--|--|--|
| <p>HP ProLiant DL160 Gen8 E5-2603 1P 4GB-R SATA 4 LFF 500W PS Entry Server 662082-001</p> | <p>Processor(s) Cache Memory Memory</p> | <p>(1) Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W) 10MB (1 x 10MB) L3 cache 4GB (1 x 4GB DDR3-1333MHz RDIMMs) NOTE: Total of 24 DIMM slots</p> |
| | <p>Network Controller</p> | HP 361i Integrated Dual Port Gigabit Server Adapter |
| | <p>Storage Controller</p> | HP Dynamic Smart Array B120i controller NOTE: Provides data transmission speeds up to 3Gb/s. |
| | <p>Hard Drive</p> | None ship standard; includes 3 LFF hard drive blanks |
| | <p>Internal Storage</p> | Up to 4 large form factor drives |
| | <p>Optical Drive</p> | (1) (Optional: DVD-ROM, DVD-RW) |
| | <p>Power Supply</p> | 500W Platinum F10 Power Supply with Backplane (ships standard) |
| | <p>Fans</p> | (5) Non hot plug redundant fans |
| | <p>Management</p> | HP iLO Management Engine (standard) Optional: HP iLO Scale-Out or HP Insight Control |
| | <p>Form Factor</p> | 1U NOTE: Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. 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 |
| | <p>Warranty</p> | Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support (3-1-1 warranty in APJ) |

Base Model

| | | |
|---|--|---|
| <p>HP ProLiant DL160 Gen8 E5-2620 1P 8GB-R SATA 4 LFF 500W PS Base Server 662083-001</p> | <p>Processor(s) Cache Memory Memory</p> | <p>(1) Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) processor 15MB (1 x 15MB) L3 cache 8GB (2x4GB DDR3-1333MHz RDIMMs) NOTE: Total of 24 DIMM slots</p> |
| | <p>Network Controller</p> | HP 361i Integrated Dual Port Gigabit Server Adapter |
| | <p>Storage Controller</p> | HP Dynamic Smart Array B120i controller NOTE: Provides data transmission speeds up to 3Gb/s. |
| | <p>Hard Drive</p> | None ship standard; includes 3 LFF hard drive blanks |
| | <p>Internal Storage</p> | Up to 4 large form factor drives |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Pre-configured Models

| | |
|----------------------|---|
| Optical Drive | (1) (Optional: DVD-ROM, DVD-RW) |
| Power Supply | 500W Platinum FIO Power Supply with Backplane (ships standard) |
| Fans | (5) Non hot plug redundant fans |
| Management | HP iLO Management Engine (standard) Optional: HP iLO Scale-Out or HP Insight Control |
| Form Factor | 1U NOTE: Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation |
| Warranty | Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support (3-1-1 warranty in APJ) |

Energy Star- Performance Model

**HP ProLiant DL160 Gen8
E5-2640 2P 16GB-R P420
Hot Plug 8 SFF 500W PS
Perf Server**
662084-001

| | |
|---------------------------|--|
| Processor(s) | (2) Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) processor |
| Cache Memory | 15MB (1 x 15MB) L3 cache |
| Memory | 16GB (4x 4GB DDR3-1333MHz RDIMMs) NOTE: Total of 24 DIMM slots |
| Network Controller | HP 361i Integrated Dual Port Gigabit Server Adapter |
| Storage Controller | HP Smart Array P420/ 1G FBWC controller |
| Hard Drive | None ship standard; includes 7 SFF hard drive blanks |
| Internal Storage | Up to 8 small form factor drives |
| Optical Drive | (1) (Optional: DVD-ROM, DVD-RW) |
| Power Supply | 500W Platinum FIO Power Supply with Backplane (ships standard) |
| Fans | (7) Non hot plug redundant fans |
| Management | HP iLO Management Engine (standard) Optional: HP iLO Scale-Out or HP Insight Control |
| Form Factor | 1U NOTE: Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. 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 |
| Warranty | Server Warranty includes 3 year Next Day Parts replacement, 0-Years Labor, 0-Years Onsite support (3-1-1 warranty in APJ) |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Configuration Information - Factory Integrated Models

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

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

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

NOTE: Rail kits and cable management solutions are optional in CTO. See "Step 3: Choose Additional Factory Integratable Options" for details on ordering.

NOTE: The DL160 ships standard with the HP Dynamic Smart Array B120i Controller which provides support for up to 4 SATA drives (data transmission speeds up to 3Gb/s). Customers requiring more than 4 drives or SAS support are required to choose a HP Smart Array controller

NOTE: Power Supply not included - choose from Power Options section.

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)

| | | |
|------------------|---|------------|
| HP Models | HP ProLiant DL160 Gen8 SFF Configure-to-order Server | 666281-B21 |
| | Factory Integrated Model ships with: 2 x HP Smart Socket Guides for fast processor installation HP 361i Integrated Dual Port Gigabit Server Adapter Drive cage: Eight small form factor I/O Slots- Two std (1) FH/FL x16 PCIe 3.0 or (1) FH/HL x16 PCIe3.0 and (1)low profile x8 PCIe 3.0 (1)FlexibleLOM slot for networking upgrade (24) DIMM slots for DIMMs installation HP Dynamic Smart Array B120i controller (5) Non-hot plug redundant fans (7) USB ports-4 rear, 2 front, 1 internal HP iLO Management Engine (standard) Rack (1U), (1.75 in / 4.45 cm) Power supply not included- Please choose from the power supply option section in Step 2 below. | |
| | HP ProLiant DL160 Gen8 LFF Configure-to-order Server | 666282-B21 |
| | Factory Integrated Model ships with: 2 x HP Smart Socket Guides for fast processor installation HP 361i Integrated Dual Port Gigabit Server Adapter Drive cage: Four large form factor I/O Slots- Two std (1) FH/FL x16 PCIe 3.0 or (1) FH/HL x16 PCIe3.0 and (1)low profile x8 PCIe 3.0 (1)FlexibleLOM slot for networking upgrade (24) DIMM slots for DIMMs installation HP Dynamic Smart Array B120i controller (5) Non-hot plug redundant fans (7) USB ports-4 rear, 2 front, 1 internal HP iLO Management Engine (standard) Rack (1U), (1.75 in / 4.45 cm) Power supply not included- Please choose from the power supply option section in Step 2 below. | |
| | HP ProLiant DL160 Gen8 Non-hot Plug LFF Configure-to-order Server | 685622-B21 |
| | Factory Integrated Model ships with: 2 x HP Smart Socket Guides for fast processor installation HP 361i Integrated Dual Port Gigabit Server Adapter Drive cage: Four large form factor | |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Configuration Information - Factory Integrated Models

I/O Slots- Two std
(1) FH/FL x16 PCIe 3.0 or (1) FH/HL x16 PCIe3.0 and (1)low profile x8 PCIe 3.0
(1)FlexibleLOM slot for networking upgrade
(24) DIMM slots for DIMMs installation
HP Dynamic Smart Array B120i controller
(5) Non-hot plug redundant fans
(7) USB ports-4 rear, 2 front, 1 internal
HP iLO Management Engine (standard)
Rack (1U), (1.75 in / 4.45 cm)
Power supply not included- Please choose from the power supply option section in Step 2 below.

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

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_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, UDIMM and LRDIMM.

Registered DIMMs (RDIMMs)

| | |
|---|------------|
| 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 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit | 647899-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit | 690802-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647901-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit | 672631-B21 |

Unbuffered with ECC DIMMs (UDIMMs)

| | |
|---|------------|
| HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit | 669320-B21 |
| HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit | 647905-B21 |
| HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit | 669322-B21 |
| HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit | 647907-B21 |
| HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit | 669324-B21 |
| HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit | 647909-B21 |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Configuration Information - Factory Integrated Models

Load Reduction DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647903-B21

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

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

NOTE: For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>.

NOTE: PC3L is a low voltage memory.

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

HP Power Supplies

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

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

NOTE: HP ProLiant DL160 Gen8 has only one power supply slot, above mentioned power supplies will not be Hot Plug for DL160 Gen8.

HP 500W Platinum Factory Integrated Power Supply Kit with Backplane 656365-B21

NOTE: Since this power supply is not common slot it does not allow iPDU to obtain HP Location Discovery Services information. iLO Advanced Pack is required for Discovery Services in DL160 Gen8.

HP Common Slot Platinum Plus Power Supply Kits

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

NOTE: Common slot power supplies need an enablement kit(P/N: 662959-B21) in DL160 Gen8.

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

NOTE: Requires Power Backplane kit (p/n: 662959-B21).

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

NOTE: Requires Power Backplane kit (p/n: 662959-B21).

HP Common Slot -48VDC Power Supplies

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

NOTE: Requires Power Backplane kit (p/n: 662959-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: HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to <http://www.hp.com/products/powercords>

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

http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

Enablement Kit



QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Configuration Information - Factory Integrated Models

| | |
|--|------------|
| HP DL160 Gen8 FIO Power Backplane Kit | 662959-B21 |
| NOTE: When configuring the HP ProLiant DL160 Gen8 with a Common Slot power supply, the HP Power Backplane DL160 Gen8 FIO Kit (PN 662959-B21) must be used for proper installation. The Common Slot power supply and power backplane kit for the DL160 Gen8 must be factory installed and cannot be purchased as separate options. | |
| NOTE: Common Slot power supply is mandatory with 10Gigabit FlexibleLOM. | |
| NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html | |

Step 3: Choose Additional Factory Integratable Options

| | | |
|---|--|--------------------------|
| HP Insight Software | HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License | C6N36A |
| Converged Infrastructure Management Software | HP OneView with iLO Advanced - Server hardware required on same purchase order HP OneView for ProLiant DL Server incl 3yr 24x7 Supp FIO Bundle Physical 1 Svr Lic | E5Y43A |
| HP Optical Drives | HP 9.5mm SATA DVD-ROM JackBlack Optical Drive HP 9.5mm SATA DVD-RW JackBlack Optical Drive | 652238-B21 652241-B21 |
| HP USB and SD Options | HP Gen8 FIO Internal USB Kit NOTE: Required to enable the internal USB port. | 662961-B21 |
| HP Rack Options | HP 1U FIO Friction Rail Kit NOTE: Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation. NOTE: Additional Rack Options can be found in the "Additional Options" section of this QuickSpecs. | 663200-B21 |

Step 4: Choose Additional Options for Factory Integration

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

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

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

Eight-Core Processors

| | |
|--|------------|
| HP DL160 Gen8 Intel® Xeon® E5-2680 (2.7GHz/8-core/20MB/130W) Processor Kit | 662933-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) Processor Kit | 662932-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) Processor Kit | 662925-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) Processor Kit | 662924-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) Processor Kit | 662931-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/70W) Processor Kit | 668863-B21 |

Six-Core Processors

| | |
|--|------------|
| HP DL160 Gen8 Intel® Xeon® E5-2667 (2.9GHz/6-core/15MB/130W) Processor Kit | 662927-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/95W) Processor Kit | 662930-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/95W) Processor Kit | 662929-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) Processor Kit | 662928-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) Processor Kit | 662921-B21 |

Quad-Core Processors

| | |
|---|------------|
| HP DL160 Gen8 Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/80W) Processor Kit | 662923-B21 |
| HP DL160 Gen8 Intel® Xeon® E5-2603 (1.8GHz/4-core/10MB/80W) Processor Kit | 662922-B21 |

NOTE: Up to 2 processors supported. Energy Star - High Performance Model and Energy Star Certified configurations include two processors with 7 non- Hot Plug Redundant fans.

NOTE: For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

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_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, UDIMM and LRDIMM.

Registered DIMMs (RDIMMs)

| | |
|---|------------|
| 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 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit | 647899-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit | 690802-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647901-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 | 672631-B21 |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

Memory Kit

Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669320-B21

HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647905-B21

HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669322-B21

HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647907-B21

HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669324-B21

HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647909-B21

Load Reduction DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647903-B21

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

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

NOTE: For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>.

NOTE: PC3L is a low voltage memory.

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

HP Optical Drives

HP 9.5mm SATA DVD-ROM JackBlack Optical Drive 652238-B21

HP 9.5mm SATA DVD-RW JackBlack Optical Drive 652241-B21

HP Hard Drives

NOTE: HP ProLiant 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, 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.

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

HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 759212-B21

HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 759210-B21

HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive 759208-B21

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



QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

| | |
|---|------------|
| 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 Hot Plug LFF (3.5-inch) Midline (MDL) 512e Drives | |
| HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive | 765259-B21 |
| HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive | 765255-B21 |
| HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive | 765257-B21 |
| HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive | 765253-B21 |
| 12G SAS Hot Plug SmartDrive LFF (3.5-inch) Converter Enterprise Drives | |
| HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive | 765424-B21 |
| HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive | 737394-B21 |
| HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive | 737261-B21 |
| 12G SAS Hot Plug SFF (2.5-inch) SC 512e Drives | |
| HP 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive | 765466-B21 |
| HP 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive | 765464-B21 |
| 12G SAS Hot Plug LFF (3.5-inch) SC 512e Performance Drives | |
| HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive | 793671-B21 |
| HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive | 793669-B21 |
| 6G SAS Hot Plug SmartDrive SFF (2.5-inch) Enterprise Drives | |
| HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive | 718162-B21 |
| 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 |
| 6G 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 |
| 12G SAS Hot Plug SmartDrive LFF (3.5-inch) Converter Enterprise Drives | |
| HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive | 765424-B21 |
| HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive | 737394-B21 |
| HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive | 737261-B21 |
| 6G SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives | |
| HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive | 761477-B21 |
| HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive | 695510-B21 |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

| | |
|---|------------|
| 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 |
| 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 2.5in WI-PLP SCC SSD | |
| HP 1.2TB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804680-B21 |
| HP 800GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804674-B21 |
| HP 400GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804668-B21 |
| HP 200GB 6G SATA Write Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804642-B21 |
| HP 800GB 6G SATA Write Intensive-2 LFF 3.5-in LPC 3yr Wty Solid State Drive | 831725-B21 |
| 6G SATA 2.5in MU-PLP SCC SSD | |
| HP 1.6TB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804634-B21 |
| HP 800GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804628-B21 |
| HP 480GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 832417-B21 |
| HP 200GB 6G SATA Mixed Use-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804616-B21 |
| 6G SATA 2.5in RI-PLP SCC SSD | |
| HP 1.6TB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804608-B21 |
| HP 800GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804602-B21 |
| HP 480GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804596-B21 |
| HP 240GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804590-B21 |
| HP 120GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804584-B21 |
| HP 80GB 6G SATA Read Intensive-2 LFF 3.5-in SCC 3yr Wty Solid State Drive | 804578-B21 |
| 6G SATA 2.5in WI-PLP SC SSD | |
| HP 1.2TB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804677-B21 |
| HP 800GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804671-B21 |
| HP 400GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804665-B21 |
| HP 200GB 6G SATA Write Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804639-B21 |
| 6G SATA 2.5in MU-PLP SC SSD | |
| HP 1.6TB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804631-B21 |
| HP 800GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804625-B21 |
| HP 480GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 832414-B21 |
| HP 200GB 6G SATA Mixed Use-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804613-B21 |
| 6G SATA 2.5in RI-PLP SC SSD | |
| HP 1.6TB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804605-B21 |
| HP 800GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804599-B21 |
| HP 480GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804593-B21 |
| HP 240GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804587-B21 |
| HP 120GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804581-B21 |
| HP 80GB 6G SATA Read Intensive-2 SFF 2.5-in SC 3yr Wty Solid State Drive | 804575-B21 |
| 6G SATA Hot Plug with SmartDrive LFF (3.5-inch) Midline (MDL) Drives | |
| HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive | 753874-B21 |
| HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive | 693687-B21 |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

| | |
|---|------------|
| 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 |
| 6G SATA Non-hot Plug LFF (3.5-inch) Midline (MDL) Drives | |
| HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive | 628065-B21 |
| HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive | 659339-B21 |
| HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive | 659337-B21 |
| HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive | 659341-B21 |
| 6G SATA Hot Plug SFF (2.5-inch) SC 512e Drives | |
| HP 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive | 765455-B21 |
| HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive | 765453-B21 |
| 6G SATA Hot Plug LFF (3.5-inch) SC 512e Performance Drives | |
| HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive | 793667-B21 |
| HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drives | 793665-B21 |
| NOTE: Please see QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_na/13021_na.html (Worldwide) | |
| 12G SAS Hot Plug Value Endurance SFF (2.5-inch) Enterprise Value Solid State Drives | |
| HP 1.6TB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive | 762263-B21 |
| HP 800GB 12G SAS Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive | 762261-B21 |
| HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive | 791034-B21 |
| HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC 512e Enterprise 3yr Warranty Hard Drive | 748387-B21 |
| 12G SAS Hot Plug LFF (3.5-inch) SC HDD | |
| HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive | 793703-B21 |
| HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive | 793699-B21 |
| 12G SAS Hot Plug Value Endurance LFF (3.5-inch) Enterprise Value Solid State Drives | |
| HP 1.6TB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive | 762272-B21 |
| HP 800GB 12G SAS Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive | 762270-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 | 779172-B21 |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

| | |
|---|------------|
| Solid State Drive | |
| HP 400GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 | 779168-B21 |
| Solid State Drive | |
| HP 200GB 12G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream SC 3yr Wty H2 | 779164-B21 |
| Solid State Drive | |
| 12G SAS Hot Plug SFF (2.5-inch) SC Read/Write Intensive Solid State Drives | |
| HP 1.92TB 12G SAS Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive | 802891-B21 |
| HP 800GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive | 802586-B21 |
| HP 400GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive | 802582-B21 |
| HP 200GB 12G SAS Write Intensive SFF 2.5-in SC 3yr Wty Solid State Drive | 802578-B21 |
| 6G SATA Hot Plug LFF (3.5-inch) SC HDD | |
| HP 8TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive | 793695-B21 |
| HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive | 793683-B21 |
| 6G SATA Hot Plug Value Endurance SFF (2.5-inch) Enterprise Boot Solid State Drives | |
| NOTE: These drives support Gen8 servers only. | |
| HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive | 717965-B21 |
| HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive | 734360-B21 |
| 6G SATA Hot Plug MU-3 SFF (2.5-inch) SC Solid State Drives | |
| HP 1.92TB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 817011-B21 |
| HP 960GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816995-B21 |
| HP 480GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816985-B21 |
| HP 240GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816975-B21 |
| HP 120GB 6G SATA Mixed Use-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816965-B21 |
| 6G SATA Hot Plug RI-3 SFF (2.5-inch) SC Solid State Drives | |
| HP 3.84TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816929-B21 |
| HP 1.92TB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816919-B21 |
| HP 960GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816909-B21 |
| HP 480GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816899-B21 |
| HP 240GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816889-B21 |
| HP 120GB 6G SATA Read Intensive-3 SFF 2.5-in SC 3yr Wty Solid State Drive | 816879-B21 |
| 6G SATA Hot Plug LFF (3.5-inch) RI-3 SCC SSD | |
| HP 3.84TB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816933-B21 |
| HP 1.92TB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816923-B21 |
| HP 960GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816913-B21 |
| HP 480GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816903-B21 |
| HP 240GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816893-B21 |
| HP 120GB 6G SATA Read Intensive-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816883-B21 |
| 6G SATA Hot Plug LFF (3.5-inch) MU-3 SCC SSD | |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

| | |
|---|------------|
| HP 1.92TB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 817015-B21 |
| HP 960GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816999-B21 |
| HP 480GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816989-B21 |
| HP 240GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816979-B21 |
| HP 120GB 6G SATA Mixed Use-3 LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 816969-B21 |
| 6G SATA Value Endurance Hot Plug LFF (3.5-inch) Enterprise Boot Solid State Drives | |
| NOTE: These drives support Gen8 servers only. | |
| HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive | 718171-B21 |
| HP 80GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive | 734362-B21 |
| 6G SATA Hot Plug Value Endurance LFF (3.5-inch) Converter Enterprise Value M1 Solid State Drives | |
| HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive | 764945-B21 |
| HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive | 764943-B21 |
| HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive | 764941-B21 |
| HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty M1 Solid State Drive | 764939-B21 |
| 6G SATA Hot Plug Value Endurance LFF (3.5-inch) Converter Enterprise Value G1 Solid State Drives | |
| HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive | 756660-B21 |
| HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive | 756639-B21 |
| HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Converter ENT Value 3yr Wty G1 Solid State Drive | 756624-B21 |
| 6G SATA Hot Plug Value Endurance SFF (2.5-inch) Enterprise Value G1 Solid State Drives | |
| HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty G1 Solid State Drive | 756621-B21 |
| 6G SATA Hot Plug Value Endurance 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 |
| HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive | 717973-B21 |
| HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive | 739898-B21 |
| HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive | 717971-B21 |
| HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive | 739888-B21 |
| HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive | 717969-B21 |
| 6G SATA Value Endurance Hot Plug LFF (3.5-inch) Enterprise Value Solid State | |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

Drives

NOTE: These drives support Gen8 servers only.

| | |
|--|------------|
| HP 1.6TB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive | 757342-B21 |
| HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive | 718189-B21 |
| HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive | 739900-B21 |
| HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive | 718183-B21 |
| HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive | 739890-B21 |
| HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive | 718177-B21 |
| 6G SATA Hot Plug Light Endurance SFF (2.5-inch) Enterprise Light G1 Solid State Drives | |
| HP 960GB 6G SATA Light Endurance SFF 2.5-in SC Enterprise Light 3yr Wty G1 Solid State Drive | 756601-B21 |
| 6G SATA Hot Plug Light Endurance LFF (3.5-inch) Enterprise Light G1 Solid State Drives | |
| HP 960GB 6G SATA Light Endurance LFF 3.5-in SC Converter ENT Light 3yr Wty G1 Solid State Drive | 756604-B21 |
| 6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value M1 Solid State Drive | |
| HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive | 764929-B21 |
| HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive | 764927-B21 |
| HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive | 764925-B21 |
| HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive | 764923-B21 |
| 6G SATA Mainstream Endurance 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 |
| HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive | 691864-B21 |
| HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive | 691862-B21 |
| 6G SATA Mainstream Endurance Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives | |
| HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive | 691860-B21 |
| HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive | 691856-B21 |
| HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr | 691854-B21 |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

| | |
|---|------------|
| Wty Solid State Drive | |
| HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive | 691852-B21 |
| 6G SATA Non Hot-plug (2.5-inch) Value Enterprise Solid State Drives | |
| HP 120GB 6G SATA 2.5in VE Non Hot-plug Solid State Drive | 745794-B21 |
| 6G SATA Non-hot Plug SFF (2.5-inch) Read Intensive Solid State Drives | |
| HP 960GB 6G SATA Read Intensive SFF 2.5-in 3yr Wty Non-hot Plug Solid State Drive | 789163-B21 |
| HP 480GB 6G SATA Read Intensive SFF 2.5-in 3yr Wty Non-hot Plug Solid State Drive | 789153-B21 |
| HP 240GB 6G SATA Read Intensive SFF 2.5-in 3yr Wty Non-hot Plug Solid State Drive | 789143-B21 |
| 6G SATA Hot Plug LFF (3.5-inch) SC Read Intensive Solid State Drives | |
| HP 960GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 789157-B21 |
| HP 480GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 789147-B21 |
| HP 240GB 6G SATA Read Intensive LFF 3.5-in SC Converter 3yr Wty Solid State Drive | 789137-B21 |
| 6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives | |
| HP 960GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive | 789155-B21 |
| HP 480GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive | 789145-B21 |
| HP 240GB 6G SATA Read Intensive SFF 2.5-in SC 3yr Wty Solid State Drive | 789135-B21 |
| NOTE: Please see the QuickSpecs for Technical Specifications and additional information: | |
| http://h18000.www1.hp.com/products/quickspecs/14038_na/14038_na.html (Worldwide) | |
| Hard Drive Kits | |
| HP Small Form Factor Hard Drive Blank Kit | 666987-B21 |
| HP Large Form Factor Hard Drive Blank Kit | 666986-B21 |

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 2-port 332T Adapter | 615732-B21 |
| HP Ethernet 1Gb 4-port 331T Adapter | 647594-B21 |
| HP Ethernet 1Gb 2-port 361T Adapter | 652497-B21 |

10 Gigabit Ethernet Adapters

NOTE: No more than two 10GbE I/O devices are supported in a single ProLiant server.

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

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

| | |
|---|------------|
| HP 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 |
| HP Ethernet 10Gb 2-port 530T Adapter | 656596-B21 |
| HP Ethernet 10Gb 2-port 560SFP+ Adapter | 665249-B21 |
| HP Ethernet 10Gb 2-port 561T Adapter | 716591-B21 |

FlexibleLOM Adapters

| | |
|---|------------|
| HP Ethernet 1Gb 4-port 331FLR Adapter | 629135-B21 |
| HP FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter | 629138-B21 |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

| | |
|---|------------|
| HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter | 629142-B21 |
| HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter | 647581-B21 |
| HP Ethernet 1Gb 4-port 366FLR Adapter | 665240-B21 |
| HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter | 665243-B21 |
| HP Ethernet 1Gb 4-port 331FLR FIO Adapter | 684208-B21 |
| HP Ethernet 10Gb 2-port 530FLR-SFP+ FIO Adapter | 684210-B21 |
| HP Ethernet 10Gb 2-port 561FLR-T Adapter | 700699-B21 |
| HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter | 700751-B21 |
| HP FlexFabric 10Gb 2-port 533FLR-T Adapter | 700759-B21 |

NOTE: HP ProLiant DL160 Gen8 has a dedicated slot for FlexibleLOM. PCIe slots need not be consumed for installing FlexibleLOM.

NOTE: Please note that common slot power supply is mandatorily required with 10Gb FlexibleLOM and 10Gb Ethernet adapters. Common slot power supplies are factory installable only and cannot be bought as standalone option kit in HP ProLiant DL160 Gen8.

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

HP Secure Encryption

| | |
|--|----------|
| HP Secure Encryption No Media E-LTU per Drive | D8S85AAE |
| HP Secure Encryption No Media Flexible License per Drive | D8S84A |

NOTE: HP Secure Encryption is supported on the HP Smart Array P731m and the P230i as an option. HP Secure Encryption licensing is based on the number of physical drives requiring encryption.

NOTE: For more information about HP Secure Encryption, go to <http://www.hp.com/go/hpsecureencryption>.

HP InfiniBand

| | |
|---|------------|
| HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA | 592520-B21 |
| HP InfiniBand FDR 2-port 545QSFP Adapter | 702211-B21 |
| HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544QSFP Adapter | 649281-B21 |
| HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544FLR-QSFP Adapter | 649282-B21 |
| HP Infiniband QDR/Ethernet 10Gb 2-port 544FLR-QSFP Adapter | 649283-B21 |
| QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA | 583211-B21 |

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

HP Power Supplies

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

NOTE: Field upgrade is possible only from 460W Common Slot Power Supply to either of the below mentioned Common Slot Power Supplies. The 500W multi output power supplies are not field upgradable.

HP Common Slot Platinum Plus Power Supply Kits

NOTE: The following AC 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 |
|--|------------|

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Core Options

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: HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to <http://www.hp.com/products/powercords>

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

http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

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 Single Server License | C6N27A |
| | HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License | C6N28ABE |
| | HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License | C6N36ABE |
| | HP Insight Control Server Provisioning Media Kit | BD883A |
| | HP Insight Management Media Kit | C6N31A |
| | 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. | |
| | NOTE: HP Insight Control 7.2 introduces Insight Control server provisioning, a new capability ideal for multi-server OS and firmware provisioning to ProLiant and BladeSystem servers. Insight Control server provisioning is included and licensed as part of HP Insight Control. A media kit, "HP Insight Control server provisioning USB media kit" (# BD883A), including a USB, is available for customers who require a physical copy of the media loaded with Insight Control server provisioning software. Please note that this media kit is separate and in addition to the "HP Insight Management DVD media kit" (#C6N31A). | |

| | | |
|--------------------------------|---|------------|
| HP iLO Advanced License | HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates | BD505A |
| | HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License | 512485-B21 |
| | HP Integrated Lights-Out (iLO) | |
| | HP iLO Scale Out | |
| | HP Integrated Lights-Out Scale-Out 3yr 24x7 Tech Support and Updates Flex Quantity License | BD776A |
| | HP Integrated Lights-Out Scale-Out 1yr 24x7 Tech Support and Updates Flex Quantity License | BD778A |
| | HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Flex Qty E-LTU | BD776AAE |
| | HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates Flex Qty E-LTU | BD778AAE |
| | HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Tracking License | BD777A |
| | HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates Tracking License | BD779A |
| | NOTE: Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service. | |
| | NOTE: For additional license kits, including electronic delivery options, please see the iLO QuickSpecs at http://www.hp.com/go/iLO | |
| | NOTE: Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service. | |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

NOTE: For additional license kits, including electronic delivery options, please see the iLO QuickSpecs at <http://www.hp.com/go/iLO>

Converged Infrastructure Management Software

HP OneView

HP OneView with iLO Advanced

| | |
|--|----------|
| HP OneView incl 3yr 24x7 Supp Phys 1 Svr Lic | E5Y34A |
| HP OneView incl 3yr 24x7 Supp Flex Qty E-LTU | E5Y35AAE |
| HP OneView Media Kit Phys No Lic | E5Y37A |

HP OneView without iLO Advanced

| | |
|---|----------|
| HP OneView w/o iLO including 3yr 24x7 Support 1 Server LTU | P8B24A |
| HP OneView w/o iLO including 3yr 24x7 Support Flex Quantity E-LTU | P8B26AAE |
| HP OneView w/o iLO including 3yr 24x7 Support FIO 1 Server LTU | P8B31A |
| HP OneView w/o iLO Adv incl 3yr 24x7 Supp Phys 1 Svr Lic | E5Y38A |
| HP OneView w/o iLO Adv inc 3yr 24x7 Supp Flex Qty E-LTU | E5Y39AAE |

NOTE: For additional license kits please see the QuickSpecs at http://h18004.www1.hp.com/products/quickspecs/14621_na/14621_na.html

HP High Performance Clusters

HP Cluster Management Utility

| | |
|---|--------|
| HP Insight Cluster Management Utility 1yr 24x7 Flexible License | QL803B |
| HP Insight Cluster Management Utility for ConvergedSystem 3yr 24x7 Flexible License | G2E81A |
| HP Insight Cluster Management Utility 3yr 24x7 Flexible License | BD476A |

NOTE: 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 |
|---|--------|

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

NOTE: For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_na/12612_na.html

HP I/O Accelerator Options

Second Generation Accelerators

| | |
|--|------------|
| HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers | 673646-B21 |
|--|------------|

NOTE: When the Full length Graphic card is installed in the system, no additional PCIe slots is available and only embedded storage controller B120i is available for up to 4 SATA HDDs configuration

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/13587_na/13587_na.html

HP PCIe Workload Accelerator Options

Mainstream Endurance (ME) PCIe Workload Accelerators

| | |
|--|------------|
| HP 1.4TB HH/HL Mainstream Endurance (ME) PCIe Workload Accelerator | 729307-B21 |
| HP 700GB HH/HL Mainstream Endurance (ME) PCIe Workload Accelerator | 729305-B21 |

High Endurance (HE) PCIe Workload Accelerators

| | |
|--|------------|
| HP 700GB HH/HL High Endurance (HE) PCIe Workload Accelerator | 708090-B21 |
|--|------------|



QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

| | |
|--|------------|
| HP 350GB HH/HL High Endurance (HE) PCIe Workload Accelerator | 708088-B21 |
| Value Endurance (VE) PCIe Workload Accelerators | |
| HP 6.4TB FH/HL Value Endurance (VE) PCIe Workload Accelerator | 763840-B21 |
| HP 3.2TB HH/HL Value Endurance (VE) PCIe Workload Accelerator | 763838-B21 |
| HP 1.6TB HH/HL Value Endurance (VE) PCIe Workload Accelerator | 763836-B21 |
| HP 1.3TB HH/HL Value Endurance (VE) PCIe Workload Accelerator | 763834-B21 |
| Light Endurance (LE) PCIe Workload Accelerators | |
| HP 5.2TB FH/HL Light Endurance (LE) PCIe Workload Accelerator | 775672-B21 |
| HP 2.6TB HH/HL Light Endurance (LE) PCIe Workload Accelerator | 775670-B21 |
| HP 1.3TB HH/HL Light Endurance (LE) PCIe Workload Accelerator | 775668-B21 |
| HP 1.0TB HH/HL Light Endurance (LE) PCIe Workload Accelerator | 775666-B21 |
| NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/14528_na/14528_na.html | |

HP Security

| | |
|---|------------|
| HP Trusted Platform Module Option | 488069-B21 |
| NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: 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

| | |
|--|------------|
| NOTE: Embedded HP B120i Dynamic Smart Array controller supports only up to 4 SATA drives. For SAS support and more than 4 drives support (in 8SFF models), a HP Smart Array controller is required. | |
| SAS Controllers | |
| Smart Array P222 Controller | |
| HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller | 631667-B21 |
| NOTE: Mini SAS 700mm cable (PN 662963-B21) required with this controller. | |
| NOTE: HP Smart Array P222 controller can only be installed in the external PCI-e slot. | |
| NOTE: HP Smart Array P222 controller is supported on LFF models only. | |
| HP Smart Array P420 Controller | |
| HP Smart Array P420/2GB FBWC 6Gb 2-ports Int SAS Controller | 631671-B21 |
| HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller | 631670-B21 |
| NOTE: HP Smart Array P420 controller can only be installed in the internal PCI-e slot. It is not supported on external PCI-e slot. | |
| HP Smart Array P421 Controller | |
| HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller | 631674-B21 |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

| | |
|--|------------|
| HP Smart Array P421/1GB FBWC 6Gb 2-ports Ext SAS Controller | 631673-B21 |
| HP Smart Array P822 Controller | |
| HP Smart Array P822/2GB FBWC 6Gb 2-ports-Int/4-ports Ext SAS Controller | 615418-B21 |
| NOTE: Requires two cable kits (P/N: 676895-B21 and P/N: 662963-B21) with 8SFF models. | |
| 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 SmartCache No Media 24x7 Technical Support 1 Svr License | D7S26A |
| HP SmartCache No Media 24x7 Technical Support Flexible License | D7S27A |
| HP SmartCache No Media 24x7 Technical Support Electronic License | D7S27AAE |
| HP Mini SAS 800mm Gen8 Cable Kit | 676895-B21 |
| NOTE: This cable option kit is required with HP Smart Array P822/ 2GB FBWC controller. | |
| HP Mini SAS 700mm Gen8 Cable Kit | 662963-B21 |
| NOTE: This cable option kit is required with HP Smart Array P822/ 2GB FBWC controller, HP Smart Array P222/512 FBWC controller and H222 Host bus adapter. | |
| NOTE: Please see the QuickSpecs for Technical Specifications and additional information: | |
| http://h18000.www1.hp.com/products/quickspecs/14227_na/14227_na.html (Smart Array P222 Controller) | |
| http://h18000.www1.hp.com/products/quickspecs/14228_na/14228_na.html (Smart Array P420 Controller) | |
| http://h18000.www1.hp.com/products/quickspecs/14229_na/14229_na.html (Smart Array P421 Controller) | |
| http://h18000.www1.hp.com/products/quickspecs/14337_na/14337_na.html (Smart Array P822 Controller) | |
| HP Smart Array Advanced Pack | |
| http://h18000.www1.hp.com/products/quickspecs/13200_na/13200_na.html (SAAP) | |
| Host Bus Adapter | |
| HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter | 412911-B21 |
| NOTE: Supports SCSI Tapes only, no RAID support. | |
| NOTE: HBA is recommended for SCSI tape drive support. | |
| HP H220 Host Bus Adapter | 650933-B21 |
| HP H221 PCIe 3.0 SAS Host Bus Adapter | 729552-B21 |
| HP H222 Host Bus Adapter | 650926-B21 |
| NOTE: Mini SAS 700mm cable (PN 662963-B21) required with this controller | |
| NOTE: HP H222 Host Bus Adapter is supported on LFF models only. | |
| NOTE: Please see the QuickSpecs for Technical Specifications and additional information: | |
| http://h18004.www1.hp.com/products/quickspecs/12566_na/12566_na.html (SC11Xe HBA) | |
| http://h18004.www1.hp.com/products/quickspecs/14336_na/14336_na.html (HBA 220) | |
| http://h18004.www1.hp.com/products/quickspecs/14222_na/14222_na.html (HBA 221) | |
| http://h18004.www1.hp.com/products/quickspecs/14337_na/14337_na.html (HBA 222) | |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

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> and <http://www.hp.com/go/ebs>.

NOTE: For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.

| | |
|---|--------|
| HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit | C0L99A |
| HP StoreEver LTO-6 Ultrium 6650 SAS Internal Tape Drive | EH963A |
| HP StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive | EH964A |
| HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive | EH969A |
| HP StoreEver LTO-6 Ultrium 6250 External Tape Drive | EH970A |
| HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader | C0H19A |

HP Tape Storage Systems

HP StoreEver MSL6480

| | |
|---|--------|
| HP StoreEver MSL6480 Scalable Base Module | QU625A |
|---|--------|

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

http://h18000.www1.hp.com/products/quickspecs/14604_na/14604_na.html

HP Disk Backup

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

HP RDX Removable Disk Backup System

| | |
|---|--------|
| HP RDX320 USB3.0 External Disk Backup System | B7B63A |
| HP RDX500 USB3.0 Internal Disk Backup System | B7B64A |
| HP RDX1000 USB3.0 Internal Disk Backup System | B7B67A |
| HP RDX 2TB USB3.0 Internal Disk Backup System | E7X52A |

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

http://h18000.www1.hp.com/products/quickspecs/13036_na/13036_na.html

HP Disk Storage Systems Disk Enclosures

| | |
|---|--------|
| HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle | E7W32A |
|---|--------|

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

http://h18000.www1.hp.com/products/quickspecs/13404_na/13404_na.html

| | |
|--|--------|
| HP D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle | E7W31A |
| HP D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle | E7W30A |
| HP D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle | QQ700A |
| HP D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle | QQ699A |
| HP D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle | QQ698A |
| HP D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle | QQ697A |
| HP D6000 Dual I/O Module Disk Enclosure | QQ695A |

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

http://h18000.www1.hp.com/products/quickspecs/14419_na/14419_na.html

HP Storage Options

Fibre Channel HBA



QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see:

<http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

Brocade Fibre Channel HBAs

HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AP769B

HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AP770B

Emulex Fibre Channel HBAs

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter AJ762B

HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter AJ763B

HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter C8R38A

HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter C8R39A

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

HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter QW971A

HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter QW972A

Converged Network Adapter

HP CN1100E Dual Port Converged Network Adapter BK835A

HP StoreFabric CN1100R Dual Port Converged Network Adapter QW990A

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

HP T750 G4 UPS Models

HP T750 G4 NA/JP Uninterruptible Power System J2P85A

HP T1000 G4 UPS Models

HP T1000 G4 NA/JP Uninterruptible Power System J2P86A

HP T1500 G4 UPS Models

HP T1500 G4 NA/JP Uninterruptible Power System J2P87A

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

HP Rack/Tower UPS

HP R/T2200 G4 UPS Models

HP R/T2200 G4 NA/JP Uninterruptible Power System J2R00A

HP R/T3000 G4 UPS Models

HP R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System J2R01A

HP R/T3000 G4 High Voltage NA/JP Uninterruptible Power System J2R02A

HP Rack-mountable UPS

HP R1500 G4 Uninterruptible Power Supply (UPS)

HP R1500 G4 NA Uninterruptible Power System J2Q99A

HP R1500 G4 INTL Uninterruptible Power System J2R03A

HP R1500 G4 JP/TWN Uninterruptible Power System J2R05A

R5000 Uninterruptible Power System (UPS)

HP R5000 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_na/14109_na.html

R7000 Uninterruptible Power System (UPS)

HP R7000 4U 50A High Voltage NA/JP Uninterruptible Power System AF462A

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14110_na/14110_na.html

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

<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: <http://www.hp.com/products/powercords>.

HP Basic Power Distribution Units

HP 1.9kVA 120 Volt L5-20 Input (12xNEMA 5-20R) NA/JP Basic PDU H5M54A

HP 2.8kVA 120 Volt L5-30 Input (18xNEMA 5-20R) NA/JP Basic PDU H5M55A

HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Basic PDU H5M56A

HP 3.6kVA 200-240 Volt Detachable C20 Input (18xC13) WW Basic PDU H5M57A

HP 4.9kVA 208 Volt L6-30 Input (20xC13) NA/JP Basic PDU H5M58A

HP 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU H5M59A

HP 8.3kVA 208 Volt CS8265C Input (30xC13/6xC19) NA/JP Basic PDU H5M60A

HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13) NA/JP Basic PDU H5M61A

HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU H5M62A

HP 5.7kVA 208 Volt L21-20 3-Phase Input (24xC13/3xNEMA 5-20R) NA/JP Basic PDU H5M63A

HP 8.6kVA 208 Volt L21-30 3-Phase Input (24xC13/3xC19/3xNEMA 5-20R) NA/JP Basic PDU H5M64A

HP 11kVA 400 Volt IEC309 30A 3-Phase Input (36xC13/6xC19) NA Basic PDU H5M67A

HP Hardwired 200-240 Volt Input (30xC13/6xC19) WW Basic PDU H5M75A

HP 19.9kVA 480 Volt IEC309 30A 3-Phase Input (30 Outlet) NA Basic PDU H3X08A

HP 277 Volt options for H3X07A and H3X08A

HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer H3X09A

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

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

http://h18000.www1.hp.com/products/quickspecs/14557_na/14557_na.html

NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit:

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

HP Remote Monitored Power Distribution Units (mPDU)

HP Remote Monitored Power Distribution Unit: 1U Version

| | |
|---|--------|
| HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R)NA/JP Monitored PDU | D9N43A |
| HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Monitored PDU | D9N46A |
| HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU | D9N44A |

HP Remote Monitored Power Distribution Unit: Half Height Version

| | |
|---|--------|
| HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU | D9N45A |
| HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU | G9Z05A |

HP Remote Monitored Power Distribution Unit: Mid Height Version

| | |
|---|--------|
| HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU | D9N47A |
| HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13/3xC19) NA/JP Monitored PDU | D9N51A |
| HP 5.7kVA 208 Volt L21-20 3-Phase Input (18xC13/3xNEMA 5-20R) NA/JP Monitored PDU | D9N52A |
| HP 8.6kVA 208 Volt L21-30 3-Phase Input (20xC13/3xC19/3xNEMA 5-20R) NA/JP Monitored PDU | D9N53A |

HP Remote Monitored Power Distribution Unit: Full Height Version

| | |
|---|--------|
| HP 8.3kVA 208 Volt CS8265C Input (30xC13/3xC19) NA Monitored PDU | D9N49A |
| HP 14.4kVA 208 Volt CS8365C 3-Phase Input (12xC13/12xC19)NA Monitored PDU | D9N58A |
| HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (30xC13/3xC19) NA Monitored PDU | D9N61A |
| HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (12xC13/12xC19) NA Monitored PDU | D9N62A |
| HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored PDU | D9N54A |
| HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU | D9N59A |
| HP 17.3kVA 208 Volt IEC309 60A 3-Phase Watertight Input (12xC13/12xC19) NA/JP Monitored PDU | G9Z07A |
| HP 19.9kVA 480 Volt 3-Phase (30 Outlet) NA Monitored PDU | D9N63A |
| HP Environmental Sensor for Remote Monitored and Managed PDUs | E2D53A |

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14669_na/14669_na.html

HP Intelligent Power Distribution Units (iPDU)

iPDU Core Units

| | |
|---|--------|
| 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 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit | AF523A |
| HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit | AF533A |

PDU Kits with Standard Extension Bars

| | |
|--|--------|
| 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 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit | AF535A |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

| | |
|--|--------|
| HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit | AF537A |
| iPDU Extension Bars | |
| HP 5xC13 Intelligent PDU Extension Bar G2 Kit | AF547A |
| HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar | AF528A |

HP Managed Power Distribution Units (mPDU)

Half Height Models

| | |
|--|--------|
| HP 3.6kVA 200-240 Volt Detachable C20 Input (7xC13/1xC19) WW Managed PDU | H8B49A |
|--|--------|

Full Height Models

| | |
|---|--------|
| HP 2.8kVA 120 Volt L5-30 Input (24x NEMA 5-20) NA/JP Managed PDU | H8B48A |
| HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Managed PDU | H8B50A |
| HP 8.6kVA 208 Volt L15-30 3 Phase Input (18xC13/6xC19) NA/JP Managed PDU | H8B52A |
| HP 8.6kVA 208 Volt L21-30 3 Phase Input (20xC13/3xC19/1x NEMA 5-20) NA/JP Managed PDU | H8B53A |
| HP 14.4kVA 208V CS8365C 3 Phase Input (12xC13/12xC19) NA/JP Managed PDU | H8B55A |
| HP 17.3kVA 208V IEC309 60A 3 Phase Input (12xC13/12xC19) NA/JP Managed PDU | H8B56A |

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

<http://www8.hp.com/h20195/v2/GetHtml.aspx?docname=c04376673>

HP Rack Series

Rack Intelligent Series rack

| | |
|--|--------|
| HP 36U 600mm x 1075mm Enterprise Pallet Rack | BW895A |
| HP 36U 600mm x 1075mm Enterprise Shock Rack | BW896A |
| HP 42U 600mm x 1075mm Enterprise Pallet Rack | BW903A |
| HP 42U 600mm x 1075mm Enterprise Shock Rack | BW904A |
| HP 47U 600mm x 1075mm Enterprise Pallet Rack | BW911A |
| HP 47U 600mm x 1075mm Enterprise Shock Rack | BW912A |

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/14223_na/14223_na.html

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

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

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

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

NOTE: High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) - PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) - PN: 327281-B22) are required to support the HP ProLiant DL160 in 7000 series racks.

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

Cable Management Arm is not supported on 7000 series racks.

NOTE: Cable management arm must be removed to access power supplies when the cable management arm is mounted on the right.

HP Rack Options

HP LCD8500 1U Rackmount Console Kit Models

HP LCD8500 1U US Rackmount Console Kit AF630A

HP LCD8500 1U US TAA Rackmount Console Kit AF645A

HP LCD8500 1U Rackmount Console Kit Options

HP Kit LCD 1.83m Latch Display Port Cable G7T29A

HP Location Discovery Services LCD8500 Kit TL052A

HP Rack LED Light Kit BW939A

HP Location Discovery Services

HP 36U Location Discovery Kit BW945A

HP 42U Location Discovery Kit BW946A

HP 47U Location Discovery Kit BW947A

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

http://h18000.www1.hp.com/products/quickspecs/14429_na/14429_na.html

HP USB Keyboard and Mouse

HP USB BFR with PVC Free US Keyboard/Mouse Kit 631341-B21

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

http://h18000.www1.hp.com/products/quickspecs/13972_na/13972_na.html

HP Server Console Switches

HP KVM Console USB Interface Adapter AF628A

HP 0x1x8 G3 KVM Console Switch AF651A

HP 0x2x16 G3 KVM Console Switch AF652A

HP TAA 0x2x16 G3 KVM Console Switch AF653A

HP USB Remote Access Key for G3 KVM Console Switches AF650A

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

http://h18000.www1.hp.com/products/quickspecs/11834_na/11834_na.html

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

HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter AF629A

KVM USB Cnsl Itfc Adapter 1PK ALL 336047-B21

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

http://h18000.www1.hp.com/products/quickspecs/13475_na/13475_na.html

HP 1x4 USB/PS2 KVM Console Switch

HP 1x4 USB/PS2 KVM Console Switch AF611A

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:

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Additional Options

http://h18000.www1.hp.com/products/quickspecs/13474_na/13474_na.html

Rack Kits

HP Rack Cable Management Velcro Clips 379820-B21

HP 1U Small Form Factor Ball Bearing Rail Kit 663201-B21

NOTE: For SFF models.

HP 1U Cable Management Arm for Ball Bearing Rail Kit 663203-B21

HP 1U Large Form Factor Ball Bearing Rail Kit 663202-B21

NOTE: For LFF models.

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

HP Flash Media Kits for USB Drives

HP Enterprise Mainstream Flash Media Kits for Memory Cards

HP 8GB SD Enterprise Mainstream Flash Media Kit 726113-B21

HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit 737953-B21

HP 32GB SD Enterprise Mainstream Flash Media Kit 700136-B21

HP Care Pack Services

Proactive Care - Collaborative Support plus Proactive services delivered by the on shore/near shore Advanced Solution Center (ASC) and backed by the global delivery organization, 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.

Proactive Care Personalized Support Environmental Option - to add an onsite Account Support Manager (ASM) to Proactive Care. ASM is an assigned resource who delivers support planning and brings technical expertise and best practices advice for the customer's environment.

HP 3 year 4 hour 24x7 ProLiant DL16x Proactive Care Service U3A18E

HP 3 year 4-Hour 24x7 with Comprehensive Defective Material Retention DL16x ProactiveCare Service U8Z30E

HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL16x Proactive Care Service U3A21E

Foundation Care

HP 3 year Next business day DL16x Foundation Care Service U2GW1E

HP 3 year Next business day with Defective Media Retention DL16x Foundation Care Service U2GW2E

HP 3 year Next business day wComprehensiveDefectiveMaterialRetention DL16x Foundation Care Service U2GW3E

HP 3 year 24x7 DL16x Foundation Care Service U2GW4E

HP 3 year 24x7 with Defective Media Retention DL16x Foundation Care Service U2GW5E

HP 3 year 24x7 with Comprehensive Defective Material Retention DL16x Foundation Care Service U2GW6E

Installation Services

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

HP Startup ProLiant DL16x Service U8K79E

HP Installation ProLiant DL16X Gen8 Service U9520E

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

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Memory

HP SmartMemory

New HP SmartMemory now provides additional protection for your servers. With HP Authentication it can verify that you have true HP Qualified Memory in your HP ProLiant Gen8 server. With HP SmartMemory your new HP ProLiant server can take advantage of additional Gen8 enhancements in performance, durability and future manageability support through HP Active Health System.

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

HP ProLiant DL160 Gen8

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

Standard Memory

4GB (1x4GB) , 8GB (2 x 4GB) or 16GB(4 x 4GB) depending on model, DDR3-1333MHz Registered RDIMM memory

Maximum Memory

Up to 768GB

NOTE: Charts do not represent all possible memory configurations.

DDR3 memory population guidelines

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

Some DIMM installation guidelines are summarized below:

- For servers with twenty-four (24) memory slots:
 - There are four (4) channels per processor; eight (8) channels per server
 - There are three (3) DIMM slots for each memory channel; twenty-four (24) total slots
- 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.
- When two processors are installed, balance the DIMMs across the two processors.
- To maximize performance, balance the total memory capacity between all installed processors
 - 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
- Do not mix UDIMMs, RDIMMs or LRDIMMs
- LR DIMMs are supported up to 3 DIMMs per channel.
- DIMMs of different voltages (1.35V & 1.5V) may be mixed in any order
- The system will power them at the higher voltage
- DIMMs of different speed grades may be mixed in any order
 - The system will select a common optimal speed
- 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_na/14225_na.html (Worldwide)

DIMM slot/capacity/populated speed table

| DIMM Type | Registered DIMMS (RDIMMs) | | Load Reduced (LRDIMMs) | Unbuffered with ECC DIMMs (UDIMMs) | |
|-----------|---------------------------|----------------|------------------------|------------------------------------|----------------|
| | Single Rank (1R) | Dual Rank (2R) | Quad Rank (4R) | Single Rank | Dual Rank (2R) |
| DIMM Rank | | | | | |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Memory

| | | | | | | | | | (1R) | | | | | | |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|---------|------|----------|------|----------|----------|------|--|
| DIMM Capacity | 4GB | 4GB | 8GB | 8GB | 8GB | 16GB | 16GB | 32GB | 2GB | 2GB | 4GB | 4GB | 8GB | 8GB | |
| DIMM Native Speed (MHz) | 1333 | 1600 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333 | 1333 | 1600 | |
| | LV | Std | Std | LV | Std | LV | Std | LV | Std | LV | Std | LV | LV | Std | |
| SLOTS THAT CAN BE POPULATED | | | | | | | | | | | | | | | |
| 24 slot servers | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 16 | 16 | 16 | 16 | 16 | 16 | |
| MAXIMUM CAPACITY (GB)* | | | | | | | | | | | | | | | |
| | 96 | 96 | 192 | 192 | 192 | 384 | 384 | 768 | 32 | 32 | 64 | 64 | 128 | 128 | |
| POPULATED DIMM SPEED (MHz) | | | | | | | | | | | | | | | |
| 1 DIMM Per Channel | 1333 | 1600 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333*** | 1600 | 1333 | 1600 | 1333 | 1333 | 1600 | |
| 2 DIMM Per Channel | 1333 | 1600 | 1600 | 1333 | 1600 | 1333 | 1600 | 1333*** | 1600 | 1333**** | 1600 | 1333**** | 1333**** | 1600 | |
| 3 DIMM Per Channel | 1066** | 1333## | 1333## | 1066** | 1333## | 1066** | 1333## | 1066 | n/a | n/a | n/a | n/a | n/a | n/a | |

NOTES:

Memory speed is a function of the processor QPI bus speed.

* Maximum capacity will vary based on individual server platform qualification schedule

** For HP SmartMemory, RDIMM support 3DPC@1066 at 1.35V. Third party memory may only support up to 3DPC@1066 at 1.5V.

*** LRDIMM enables 3 DIMMs per channel. HP SmartMemory will support up to 3DPC@1066 at 1.35V. Third party memory may only support 3DPC @1066 at 1.5V.

**** For HP SmartMemory, UDIMM is supported at 2DPC@1333. Third party memory may only support up to 2DPC@1066

RBSU setting required

Memory Speed by Processor Model

Processor Models

Supported Memory Speeds

E5-2680, E5-2670, E5-2667, E5-2665, E5-2660, E5-2650, E5-2650L

1600/1333/1066MHz

E5-2640, E5-2630, E5-2630L, E5-2620

1333/1066MHz

E5-2609, E5-2603

1066MHz

Standard and Maximum Memory Capacity (Pre-configured Models)

| Pre-Configured Models | Standard Memory | Maximum Memory Plus Optional Memory | Standard Memory Replaced with Optional Memory |
|-----------------------|-----------------|-------------------------------------|---|
| Intel Xeon E5-2640 | 16GB (4x 4GB) | 336GB (20x16GB, 4x4GB) | 768GB (24 x 32GB) |
| Intel Xeon E5-2620 | 8GB (2x 4GB) | 360GB (22x16GB, 2x4GB) | 768GB (24 x 32GB) |
| Intel Xeon E5-2603 | 4GB (1x 4GB) | 372GB (23x16GB, 1x4GB) | 768GB (24 x 32GB) |

DIMM slot and configuration diagrams



QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Memory

Basic memory slot & population diagram

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

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

Standard memory configuration (1 CPU model)

- 8GB, consisting of four (4) 2GB dual-rank PC3-10600 UDIMMs

| | CPU1 | | CPU2 | | |
|--------|--------|------------------|--------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | A; 2GB DIMM | 1 | C; empty | Chnl 1 |
| | 2 | E; empty | 2 | G; empty | |
| | 3 | I; empty | 3 | K; empty | |
| Chnl 2 | 4 | B; 2GB DIMM | 4 | D; empty | Chnl 2 |
| | 5 | F; empty | 5 | H; empty | |
| | 6 | J; empty | 6 | L; empty | |
| Chnl 3 | 7 | L; empty | 7 | J; empty | Chnl 3 |
| | 8 | H; empty | 8 | F; empty | |
| | 9 | D; 2GB DIMM | 9 | B; empty | |
| Chnl 4 | 10 | K; empty | 10 | I; empty | Chnl 4 |
| | 11 | G; empty | 11 | E; empty | |
| | 12 | C; 2GB DIMM | 12 | A; empty | |

Standard memory plus optional memory (1 CPU model)

- 60GB, consisting of three (3) 4GB RDIMMs plus six (6) 8GB RDIMMs

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Memory

- 3x 4GB dual-rank PC3-10600 RDIMMs
- 6x 8GB dual-rank PC3-10600 RDIMMs

| | CPU1 | | CPU2 | | |
|--------|--------|------------------|--------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | A; 4GB DIMM | 1 | C; empty | Chnl 1 |
| | 2 | E; 8GB DIMM | 2 | G; empty | |
| | 3 | I; 8GB DIMM | 3 | K; empty | |
| Chnl 2 | 4 | B; 4GB DIMM | 4 | D; empty | Chnl 2 |
| | 5 | F; 8GB DIMM | 5 | H; empty | |
| | 6 | J; empty | 6 | L; empty | |
| Chnl 3 | 7 | L; empty | 7 | J; empty | Chnl 3 |
| | 8 | H; 8GB DIMM | 8 | F; empty | |
| | 9 | D; 8GB DIMM | 9 | B; empty | |
| Chnl 4 | 10 | K; empty | 10 | I; empty | Chnl 4 |
| | 11 | G; 8GB DIMM | 11 | E; empty | |
| | 12 | C; 4GB DIMM | 12 | A; empty | |

Standard memory replaced with optional memory (1 CPU model) RDIMM maximum configuration

- 192GB, consisting of twelve (12) 16GB quad-rank PC3L-10600 RDIMMs

| | CPU1 | | CPU2 | | |
|--------|--------|------------------|--------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | A; 16GB DIMM | 1 | C; empty | Chnl 1 |
| | 2 | E; 16GB DIMM | 2 | G; empty | |
| | 3 | I; 16GB DIMM | 3 | K; empty | |
| Chnl 2 | 4 | B; 16GB DIMM | 4 | D; empty | Chnl 2 |
| | 5 | F; 16GB DIMM | 5 | H; empty | |
| | 6 | J; 16GB DIMM | 6 | L; empty | |
| Chnl 3 | 7 | L; 16GB DIMM | 7 | J; empty | Chnl 3 |
| | 8 | H; 16GB DIMM | 8 | F; empty | |
| | 9 | D; 16GB DIMM | 9 | B; empty | |
| Chnl 4 | 10 | K; 16GB DIMM | 10 | I; empty | Chnl 4 |
| | 11 | G; 16GB DIMM | 11 | E; empty | |
| | 12 | C; 16GB DIMM | 12 | A; empty | |

UDIMM maximum configuration (1 CPU model)

- 64GB, consisting of eight (8) 4GB dual-rank PC3-10600 UDIMMs

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Memory

| | CPU1 | | CPU2 | | |
|--------|--------|------------------|--------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | A; 8GB DIMM | 1 | C; empty | Chnl 1 |
| | 2 | E; 8GB DIMM | 2 | G; empty | |
| | 3 | I; empty | 3 | K; empty | |
| Chnl 2 | 4 | B; 8GB DIMM | 4 | D; empty | Chnl 2 |
| | 5 | F; 8GB DIMM | 5 | H; empty | |
| | 6 | J; empty | 6 | L; empty | |
| Chnl 3 | 7 | L; empty | 7 | J; empty | Chnl 3 |
| | 8 | H; 8GB DIMM | 8 | F; empty | |
| | 9 | D; 8GB DIMM | 9 | B; empty | |
| Chnl 4 | 10 | K; | 10 | I; empty | Chnl 4 |
| | 11 | G; 8GB DIMM | 11 | E; empty | |
| | 12 | C; 8GB DIMM | 12 | A; empty | |

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

- 768GB, consisting of twenty-four (24) 32GB quad-rank PC3-10600 LRDIMMs DDR3 Registered (LRDIMM) memory, operating at 1333MHz or 1066MHz when populated at 3 DIMMs per Channel in 24 slots.

| | CPU1 | | CPU2 | | |
|--------|--------|------------------|--------|------------------|--------|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | A; 32GB DIMM | 1 | A; 32GB DIMM | Chnl 1 |
| | 2 | E; 32GB DIMM | 2 | E; 32GB DIMM | |
| | 3 | I; 32GB DIMM | 3 | I; 32GB DIMM | |
| Chnl 2 | 4 | B; 32GB DIMM | 4 | B; 32GB DIMM | Chnl 2 |
| | 5 | F; 32GB DIMM | 5 | F; 32GB DIMM | |
| | 6 | J; 32GB DIMM | 6 | J; 32GB DIMM | |
| Chnl 3 | 7 | L; 32GB DIMM | 7 | L; 32GB DIMM | Chnl 3 |
| | 8 | H; 32GB DIMM | 8 | H; 32GB DIMM | |
| | 9 | D; 32GB DIMM | 9 | D; 32GB DIMM | |
| Chnl 4 | 10 | K; 32GB DIMM | 10 | K; 32GB DIMM | Chnl 4 |
| | 11 | G; 32GB DIMM | 11 | G; 32GB DIMM | |
| | 12 | C; 32GB DIMM | 12 | C; 32GB DIMM | |

UDIMM maximum configuration (2 CPU model)

- 128GB, consisting of sixteen (16) 8GB dual-rank PC3-10600E DDR3 Unbuffered (UDIMM) memory operating at 1333MHz when populated at 2 DIMMs per Channel in 16 slots

| | CPU1 | CPU2 | |
|--|------|------|--|
|--|------|------|--|

QuickSpecs

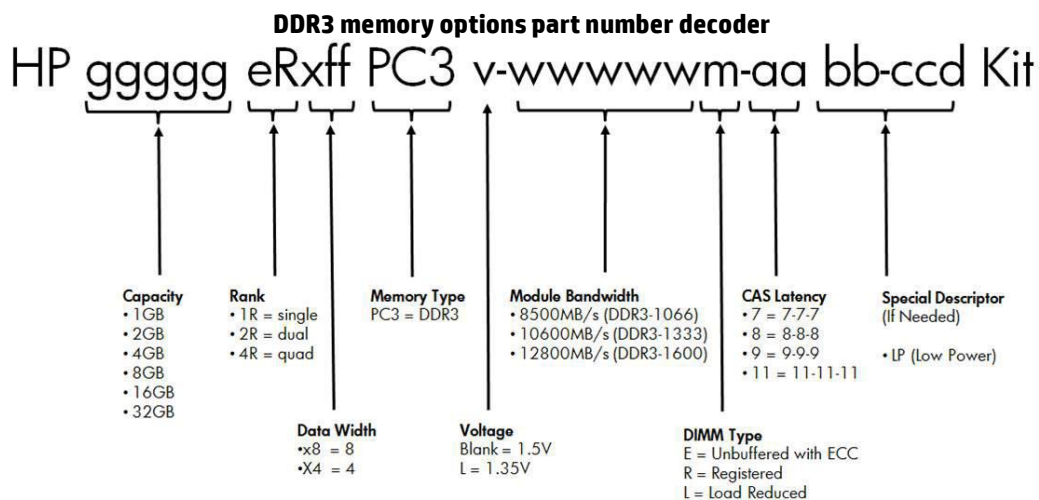
HP ProLiant DL160 Generation 8 (Gen8)

Memory

| | slot # | population order | slot # | population order | |
|--------|--------|------------------|--------|------------------|--------|
| Chnl 1 | 1 | A; 8GB DIMM | 1 | C; 8GB DIMM | Chnl 1 |
| | 2 | E; 8GB DIMM | 2 | G; 8GB DIMM | |
| | 3 | I; empty | 3 | K; empty | |
| Chnl 2 | 4 | B; 8GB DIMM | 4 | D; 8GB DIMM | Chnl 2 |
| | 5 | F; 8GB DIMM | 5 | H; 8GB DIMM | |
| | 6 | J; empty | 6 | L; empty | |
| Chnl 3 | 7 | L; empty | 7 | J; empty | Chnl 3 |
| | 8 | H; 8GB DIMM | 8 | F; 8GB DIMM | |
| | 9 | D; 8GB DIMM | 9 | B; 8GB DIMM | |
| Chnl 4 | 10 | K; empty | 10 | I; empty | Chnl 4 |
| | 11 | G; 8GB DIMM | 11 | E; 8GB DIMM | |
| | 12 | C; 8GB DIMM | 12 | A; 8GB DIMM | |

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

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



Following are memory options available from HP:

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:

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Memory

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, UDIMM and LRDIMM.

Registered DIMMs (RDIMMs)

| | |
|---|------------|
| 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 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit | 647899-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit | 690802-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647901-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit | 672631-B21 |

Unbuffered with ECC DIMMs (UDIMMs)

| | |
|---|------------|
| HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit | 669320-B21 |
| HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit | 647905-B21 |
| HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit | 669322-B21 |
| HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit | 647907-B21 |
| HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit | 669324-B21 |
| HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit | 647909-B21 |

Load Reduction DIMMs (LRDIMMs)

| | |
|---|------------|
| HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit | 647903-B21 |
|---|------------|

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

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

NOTE: For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>.

NOTE: PC3L is a low voltage memory.

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

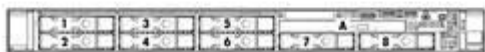
QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Storage



- 1-4 Four LFF Hot-plug SAS/SATA hard drive bays
- A Optional DVD-ROM, or DVD RW



- 1-8 Eight SFF Hot-plug SATA/SAS hard drive bays
- A Optional DVD-ROM, or DVD RW

Drive Support

External Storage

| | Quantity Supported | Position Supported | Host Controller or Adapter |
|----------------------|--------------------|--------------------|--|
| D2600 Disk Enclosure | Up to 4 | External | HP Smart Array P222/512MB FBWC Controller |
| | Up to 8 | External | HP Smart Array P421/1GB FBWC Controller HP Smart Array P421/2GB FBWC Controller |
| D2700 Disk Enclosure | Up to 2 | External | HP Smart Array P222/512MB FBWC Controller |
| | Up to 4 | External | HP Smart Array P421/1GB FBWC Controller |
| | | | HP Smart Array P421/2GB FBWC Controller |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Technical Specifications

| | | |
|--|--|--|
| | | System performance may be reduced if operating with a fan fault or above 30°C (86°F). |
| | Non-operating | -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr). |
| Relative Humidity (non-condensing) | Operating | 10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing. |
| | Non-operating | 5% to 95% relative humidity (Rh), 38.7° C (101.7° F) maximum wet bulb temperature, non-condensing |
| Altitude | Operating | 30480 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min). |
| | Non-operating | 9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min). |
| Acoustic Noise | Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). NOTE: The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. | |
| | Idle | |
| | LWAd | 5.3 B (1P SKU) 5.3 B (2P SKU) |
| | LpAm | 36 dBA (1P SKU) 36 dBA (2P SKU) |
| | Operating | |
| | LWAd | 5.3 B (1P SKU) 5.9 B (2P SKU) |
| | LpAm | 37 dBA (1P SKU) 42 dBA (2P SKU) |
| 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 Ethernet 1Gb 2-port 361i Adapter | Network Interface Capability | 10Base-T/100Base-TX/1000Base-TX IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 1588, IEEE 802.1AS |
| | Data Transfer Method | PCI Express v 2.1, 5.0 GT/s and 2.5 GT/s bus speeds and supports for x1, x2, |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Technical Specifications

| | | |
|------------------------------|------------------------------------|---|
| | | x4 links widths (Lanes) |
| Controller | | I350 Powerville |
| Network Transfer Rate | 10Base-T (Half-Duplex) | 10 Mb/s per port, 20 Mb/s Combined |
| | 10Base-T (Full-Duplex) | 20 Mb/s per port, 40 Mb/S Combined |
| | 100Base-TX (Half-Duplex) | 100 Mb/s per port, 200 Mb/s Combined |
| | 100Base-TX (Full-Duplex) | 200 Mb/s per port, 400 Mb/s Combined |
| | 1000Base-TX (Half and Full-Duplex) | 1000Mb/s per port, 2000 Mb/s Combined |
| Connector | | RJ-45 |
| Cable Support | | 10Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m) |
| | | 10/100/1000Base-TX Category 5 UTP; up to 328 ft (100 m) |

| | | |
|--|---|---|
| HP Dynamic Smart Array B120i Controller | Dimensions | Embedded |
| | Disk Drive and Enclosure Interface - Transfer rate | Up to 6Gb/s SATA (Serial ATA) |
| | Connectors | 6 internal SATA connectors |
| | Server Interface | x4 PCIe 2.0 |
| | SATA Speed | 6Gb/s SATA links |
| | Cache Memory | Zero Memory RAID has no cache memory |
| | Logical Drives Supported | Up to 8 logical volumes (6 physical drives) |
| | Host Memory Addressing | 64-bit, supporting greater than 4GB server memory space |
| | Hot Plug Support | Yes |
| RAID Support | | RAID 0 (Striping), RAID 1 (Mirroring) |
| | | RAID 1+0 (Striping & Mirroring) |

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

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Summary Of Changes

| Date | Version History | Action | Description of Change: |
|-------------|-----------------------|---------|---|
| 28-Sep-2015 | From Version 34 to 35 | Added | Added new 6Gb SATA Solid State Drives. |
| | | Removed | Added new HP OneView management software. Obsolete SKUs were removed from the QuickSpecs. |
| 17-Aug-2015 | From Version 33 to 34 | Added | New Solid State Drives offering was added to HP Hard Drives section. |
| 01-Jun-2015 | From Version 32 to 33 | Added | New Hard Drives were added to Core Options. |
| | | Removed | Obsolete SKUs were removed from Configuration Information - Factory Integrated Models, Core Options, and Additional Options. |
| 30-Mar-2015 | From Version 31 to 32 | Added | New Hard Drives were added to Core Options. |
| | | Removed | Removed obsolete SKUs from HP Insight software and HP Care Pack Services. |
| 09-Feb-2015 | From Version 30 to 31 | 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-Dec-2014 | From Version 29 to 30 | Added | HP 1.6TB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive and HP 1.6TB 6G SATA Value Endurance LFF 3.5-in SC Converter Enterprise Value 3yr Wty Solid State Drive were added to HP Hard Drives. |
| 01-Nov-2014 | From Version 28 to 29 | Changed | Version number increased in sequence to match Product Bulletin version number. |
| 01-Nov-2014 | From Version 27 to 28 | Changed | Service and Support section was revised. |
| 29-Sep-2014 | From Version 26 to 27 | Added | New Solid State Drives were added. |
| | | | HP Managed Power Distribution Units (mPDU) was added to Additional Options. |
| | | Changed | Service and Support section was revised. HP Hard Drives was revised in Core Options section. Broken hyperlinks were updated throughout the QuickSpecs. |
| 18-Aug-2014 | From Version 25 to 26 | Added | New Hard Drives were added. HP Remote mPDUs half height version were added. |
| | | Changed | Core Options and Additional Options sections were revised. |
| 10-Jun-2014 | From Version 24 to 25 | Added | 762272-B21, 762270-B21, 739898-B21 and 739888-B21 – Added to Hard drives. Gigabit Ethernet Adapters 593722-B21 and 615732-B21. HP PCIe Workload Accelerator Options, HP Tape Storage Systems, HP Disk Storage Systems and HP Remote Monitoring Power Distribution Units (mPDU) – Added to Additional Options. |
| | | Changed | Core Options, Additional Options and Memory were revised. |
| | | Removed | Core Options – Removed 690829-B21, 690825-B21, 653078-B21 and 653082-B21 from Hard drives. H221 Host Bus Adapter. HP Flash Media Kits for USB Drives. |
| 18-Apr-2014 | From Version 23 to 24 | Changed | Service and Support, Memory, Core Options, and Additional Options were revised. |
| 18-Feb-2014 | From Version 22 to 23 | Changed | Hard Drives and HP InfiniBand were revised HP secure Encryption was added to Core Options |
| 13-Dec-2013 | From Version 21 to 22 | Changed | Dual Core Processors were removed from Processors NVIDIA Quadro 4000 2GB PCI-E Adapter were removed from |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Summary Of Changes

| | | | |
|-------------|-----------------------|---------|--|
| | | | <p>Graphics Options</p> <p>First Generation Accelerators were removed from HP I/O Accelerator Options</p> <p>HP OneView was added to Optional Features</p> <p>Converged Infrastructure Management Software was added</p> <p>HP H221 PCIe 3.0 SAS Host Bus Adapter was added to Storage Controllers</p> <p>HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit was added and HP 4GB SD Enterprise Performance Flash Media Kit was removed from HP Flash Media Kits for USB Drives</p> |
| 11-Oct-2013 | From Version 20 to 21 | Changed | Changes made: Support for new Value Endurance Solid State Drives and SD Enterprise Mainstream Flash Media Kit |
| 20-Sep-2013 | From Version 19 to 20 | Changed | HP Dynamic Smart Array B120i Controller in Technical Specifications was revised. |
| 13-Sep-2013 | From Version 18 to 19 | Changed | High Performance Clusters, Memory, HP Networking, HP Optical Drives, HP InfiniBand, HP Insight software, HP iLO Advanced License, HP Storage Controllers, HP Tape Backup, HP Disk Backup, HP Storage Options, and HP Rack Options were revised. |
| 15-Jul-2013 | From Version 17 to 18 | Changed | Additional Options: Updated HP Disk Backup section. |
| 24-May-2013 | From Version 16 to 17 | Changed | Additional Options: Updated HP Storage Options section. |
| 13-May-2013 | From Version 15 to 16 | Removed | Additional Options: Removed HP Disk Storage Systems and Modular PDUs 1u/0U sections. Storage: Removed Drive Support section. |
| | | Changed | <p>Overview: Updated What's New with HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive.</p> <p>Standard Features: Updated Maximum Internal Storage section.</p> <p>Configuration Information-Factory Integrated Models: Updated Step 1, Step 2 and Step 3.</p> <p>Core Options: Updated HP Memory, HP Optical Drives and HP Hard Drives sections.</p> <p>Additional Options: Updated HP I/O Accelerator Options, HP Rack Options, HP USB and SD Options and HP Care Pack Services sections.</p> <p>Memory: Updated HP Memory,</p> |
| 29-Apr-2013 | From Version 14 to 15 | Changed | Technical Specifications: Updated HP Dynamic Smart Array B120i Controller section. |
| 25-Mar-2013 | From Version 13 to 14 | Removed | Additional Options: Removed 641027-B21, 600279-B21 and 600282-B21 from the HP i/o Accelerator Options section. |
| 25-Feb-2013 | From Version 11 to 13 | Removed | <p>Removed HP Storage Controllers, Software 582765-B21 and TC203A from HP Insight Software</p> <p>Core Options: Removed SAS Hot Plug SmartDrive SFF (2.5 inch) Enterprise Drives and SAS Hot Plug SmartDrive SFF (2.5 inch) Midline Drive, 6G SAS MLC Hot Plug SFF (2.5 inch) Enterprise Mainstream Solid Stated Drive and Removed p/ns 652503-B21 and 665249-B21 from HP Networking.</p> <p>Additional Options: Removed p/n T9074BAE, 45214B22, TC278AAE, 436222-B21, TC213AAE, TC209A, TC203AAE, TC208A and NOTES from HP Insight Control, Removed HP Backup & Recovery Software section</p> |
| | | Changes | <p>What's New: Updated with Support for HP 1.2TB 6G SAS 10K 2.5in DP ENT SC HDD, Support for HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive, Support for 6G SATA ME 2.5in SC EM SSD and Support new HP iLO Scale-</p> |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Summary Of Changes

| | | | |
|-------------|-----------------------|---------|--|
| | | | <p>Out license for massive scale out environments.</p> <p>Standard Features: Maximum Internal Storage updated storage amounts</p> <p>Optional Features: Updated first link and NOTE in HP Insight Control</p> <p>Pre-Configured Models: Updated NOTES before Entry Models, Updated Hard Drive throughout entire section</p> <p>Configuration Information - Factory Integrated Models: Updated description in Step 1, updated product description to HP Memory and Updated product description to 652238-B21</p> <p>Core Options: Updated product descriptions in Unbuffered with ECC DIMMs (UDIMMs) and HP Optical Drives, Updated note in HP Hard Drives</p> <p>Additional Options: Completely updated HP iLO Advanced License, Update product description for TC293B and TC294A, Updated product description for 655915-B21 in HP Graphics Options, Updated NOTES in HP Storage Controllers, Completely updated HP Tape Backup, HP Disk Backup, HP Storage Options, HP Disk Storage Systems, HP Power Distribution Units, HP Intelligent Power Distribution Units (iPDU), HP Rack Series, HP USB and SD Options, and HP Care Pack Services.</p> <p>Storage: Update amounts and Controllers</p> |
| | | Added | <p>Standard Features: HP iLO 4 On System Management Memory to Graphics</p> <p>Optional Features: HP iLO Scale-Out and HP iLO Advanced to HP Insight Management Software and Storage Software section.</p> <p>Pre-Configured Models: Added note to Storage Controller throughout Entry Models section</p> <p>Configuration Information - Factory Integrated Models: Added NOTES before Step 1 and added p/n 652241-B21 to HP Insight Software</p> <p>Core Options: Added p/n 697574-B21, 693687-B21, 6G SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives, 6G SATA ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives and 6G SATA ME Hot Plug SFF (3.5-inch) Enterprise Mainstream Solid State Drives sections to HP Hard Drive, Added p/ns 656596-B21, 652503-B21, 665249-B21, 665240-B21 and 665243-B21 to HP Networking</p> <p>Additional Options: Added Second Generation Accelerators section to HP I/O Accelerator Options, HP Location Discovery Services, HP TFT7600 G2 KVM Console Rackmount Keyboard Monitor, HP Server Console Switch G2 with Virtual Media & CAC to HP Rack Options</p> <p>Storage: Added 6G SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives</p> |
| 19-Dec-2012 | From Version 10 to 11 | Changes | Changes made to the description of the Disk Drive Interface - Transfer rate in the Technical Specifications section. |
| 24-Sep-2012 | From Version 9 to 10 | Changes | Changes made in Optional Features section. |
| 13-Aug-2012 | From Version 8 to 9 | Changes | Changes made throughout the QuickSpecs. |
| 30-Jul-2012 | From Version 7 to 8 | Changes | Change made in the Configuration Information - Factory Integrated Models section. |
| 15-Jun-2012 | From Version 6 to 7 | Changes | Revised a Note in the Standard Features, Power Specifications section. |
| 06-Jun-2012 | From Version 5 to 6 | Changes | Changed "Smart Drive" to "SmartDrive" and Changed a Note in the Power Supplies section. |

QuickSpecs

HP ProLiant DL160 Generation 8 (Gen8)

Summary Of Changes

| | | | |
|-------------|---------------------|---------|--|
| 04-Jun-2012 | From Version 4 to 5 | Changes | Changes were made throughout. |
| 18-May-2012 | From Version 3 to 4 | Changed | Changes made in the Processors section of Standard Features. |
| 04-May-2012 | From Version 2 to 3 | Removed | Removed the Note in the Graphics section of Standard Features. |
| 06-Apr-2012 | From Version 1 to 2 | Changes | Storage Controller note and Step 1 in Configuration Information - Factory Integrated Models were revised Tape and Disk Backup was removed from Storage and Cache Memory was removed from HP Embedded SATA controller |

© Copyright 2015 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. Intel, the Intel logo, Xeon and Xeon Inside are trademarks of Intel Corporation in the U.S. and other countries.

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.