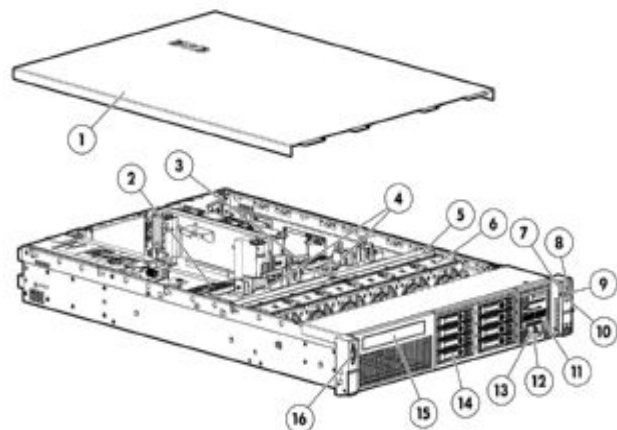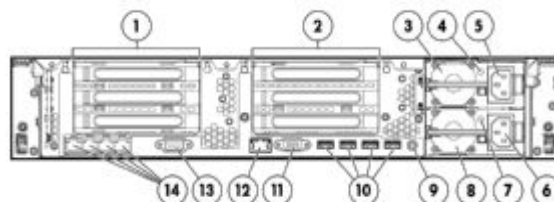## Overview

The HP ProLiant DL380p Gen8 sets the next generation standards of 2U 2-socket rack servers for the industry. With enhanced configuration flexibility, unmatched performance, and leading energy efficient design the DL380p Gen8 offers the perfect solution for the dynamic compute requirements of today's demanding datacenters.

Front View:

1. Quick removal access panel
2. Second Intel Processor
3. First Intel Processor
4. 24 DIMM slots: DDR3 Registered (RDIMM), Load Reduced (LRDIMM), or Unbuffered (UDIMM) memory
5. Air Baffle
6. Hot-plug fans, full N+1 redundancy
7. Health LED
8. Power On /Standby button and system power LED button
9. USB connector
10. Unit ID LED
11. Systems Insight Display
12. Asset Tag
13. USB connector
14. Drive Bays
15. Optional Slim Optical Bay (SATA DVD-RW /ROM Optical Drive)
16. Video connector

Rear View:

1. PCIe 3.0 Slots 1, 2, 3-PCIe 2.0 top to bottom
2. PCIe 3.0 Slots 4-6 top to bottom
3. Power supply 1
4. Power supply 1 Power LED
5. Power supply 1 Power connection (with Intelligent PDU communication)
6. Power supply 2 Power connection (with Intelligent PDU communication)
7. Power supply 2 Power LED
8. Power supply 2
9. Unit ID LED/Button
10. USB connectors (4)
11. Video connector
12. iLO connector
13. Serial connector
14. FlexibleLOM ports (Shown: 4 ports 1Gb each /Optional: 2 ports 10Gb each)

What's New

- Intel® Xeon® E5-2600 v2 Series Processors
- 1866 MHz DDR3 Memory
- New FlexibleLOM Adapters including the HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- New Smart Array P430 & P431 Controllers
- 96% Efficient Titanium Power Supply
- 3TB ioDrive2 IO Accelerator

Standard Features

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

Processor One of the following depending on Model	**E5-2600 v2 series Processors** **Entry Processors** **NOTE:** All support up to 1333MHz DDR3 memory speeds. Intel® Xeon® E5-2609 v2 (2.5GHz/4-core/10MB/6.4GT-s QPI/80W) Intel® Xeon® E5-2603 v2 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W) **Base Processors** **NOTE:** All support up to1600MHz DDR3 memory speeds. Intel® Xeon® E5-2640 v2 (2.0GHz/8-core/20MB/7.2GT-s QPI/95W, DDR3-1600, HT, Turbo2-3/3/3/3/3/4/5) Intel® Xeon® E5-2630 v2 (2.6GHz/6-core/15MB/7.2GT-s QPI/80W, DDR3-1600, HT, Turbo2-3/3/3/3/4/5) Intel® Xeon® E5-2620 v2 (2.1GHz/6-core/15MB/7.2GT-s QPI/80W, DDR3-1600, HT, Turbo2-3/3/3/3/4/5) Intel® Xeon® E5-2650L v2 (1.7GHz/10-core/25MB/8.0GT-s QPI/70W, DDR3-1600, HT, Turbo2- 2/2/2/2/2/2/2/2/3/4) Intel® Xeon® E5-2630L v2 (2.4GHz/6-core/15MB/7.2GT-s QPI/60W, DDR3-1600, HT, Turbo2-2/2/2/2/3/4) **Performance Processors** **NOTE:** All support up to 1866MHz DDR3 memory speeds. Intel® Xeon® E5-2697 v2 (2.7GHz/12-core/30MB/8.0GT-s QPI/130W, DDR3-1866, HT, Turbo2- 3/3/3/3/3/3/3/4/5/6/7/8) Intel® Xeon® E5-2695 v2 (2.4GHz/12-core/30MB/8.0GT-s QPI/115W, DDR3-1866, HT, Turbo2- 4/4/4/4/4/4/4/4/5/6/7/8) Intel® Xeon® E5-2690 v2 (3.0GHz/10-core/25MB/8.0GT-s QPI/130W, DDR3-1866, HT, Turbo2- 3/3/3/3/3/3/3/4/5/6) Intel® Xeon® E5-2680 v2 (2.8GHz/10-core/25MB/8.0GT-s QPI/115W, DDR3-1866, HT, Turbo2- 3/3/3/3/3/4/5/6/7/8) Intel® Xeon® E5-2670 v2 (2.5GHz/10-core/25MB/8.0GT-s QPI/115W, DDR3-1866, HT, Turbo2- 4/4/4/4/4/4/5/6/7/8) Intel® Xeon® E5-2667 v2 (3.3GHz/8-core/25MB/8.0GT-s QPI/130W, DDR3-1866, HT, Turbo2-3/3/3/3/4/5/6/7) Intel® Xeon® E5-2660 v2 (2.2GHz/10-core/25MB/8.0GT-s QPI/95W, DDR3-1866, HT, Turbo2-4/4/4/4/4/4/5/6/7/8) Intel® Xeon® E5-2650 v2 (2.6GHz/8-core/20MB/8.0GT-s QPI/95W, DDR3-1866, HT, Turbo2-4/4/4/4/5/6/7/8) Intel® Xeon® E5-2643 v2 (3.5GHz/6-core/25MB/8.0GT-s QPI/130W, DDR3-1866, HT, Turbo2-1/1/1/1/2/3) Intel® Xeon® E5-2637 v2 (3.5GHz/4-core/15MB/8.0GT-s QPI/130W, DDR3-1866, HT, Turbo2-1/1/2/3) **E5-2600 series Processors** **Entry Processors** **NOTE:** All support up to 1066MHz memory speeds. 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) **Base Processors** **NOTE:** All support up to1333MHz DDR3 memory speeds. Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

QuickSpecs

Standard Features

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® E5-2620 (2.0GHz/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)

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

Intel® Xeon® E5-2690 (2.9GHz/8-core/20MB/8.0GT-s QPI/135W, DDR3-1600, HT, Turbo2-4/4/4/5/5/7/7/9)

Intel® Xeon® E5-2680 (2.7GHz/8-core/20MB/8.0GT-s QPI/130W, DDR3-1600, HT, Turbo2-4/4/5/5/5/7/8/8)

Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/8.0GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2667 (2.9GHz/6-core/15MB/8.0GT-s QPI/130W, DDR3-1600, HT, Turbo2-3/3/3/4/5/6)

Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/8.0GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/8.0GT-s QPI/95W, DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)

Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/8.0GT-s QPI/95W, DDR3-1600, HT, Turbo2-4/4/5/5/5/7/8/8)

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

Intel® Xeon® E5-2643 (3.3GHz/4-core/10MB/8.0GT-s QPI/130W, DDR3-1600, HT, Turbo2-1/1/2/2)

Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/8.0GT-s QPI/80W, DDR3-1600, HT, Turbo2- 5/5)

NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology.
NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 8, 7, 6, 5, 4, 3, 2 or 1 core(s) active.
NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
NOTE: Up to 2 processors supported. Mixing different processor models is not supported.
NOTE: For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, and x = L for low power SKUs.

Cache Memory
One of the following depending on Model

30MB (1x30MB) Level 3
NOTE: For Twelve-core processors.

25MB (1x25MB) Level 3
NOTE: For Ten-core processors.

20MB (1x20MB) Level 3
NOTE: For Eight-core processors.

15MB (1x15MB) Level 3
NOTE: For Six-core processors.

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.

Standard Features

Chipset	Intel® C600 Series Chipset
	Intel® E5-2600 and E5-2600 v2 Processor Families
	NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.

Upgradeability	Upgradeable to 2 processors (24 Cores)
	NOTE: Processor upgrade available from Intel® Xeon® Processors E5-2600 to E5-2600 v2. Please contact HP Technology Sales (http://www.hp.com/support), your local HP Re-seller, or reference the following Customer Advisory: ProLiant Servers-Instructions for Upgrading an HP ProLiant Gen8 Server from an Intel Xeon Processor E5-2600 to an Intel Xeon Processor E5-2600 v2, regarding critical details before upgrading. An explanation of requirements and limitations are provided.
	Up to 24 DIMM slots available for higher Memory capacity
	FlexibleLOM connector for 1 Gigabit or 10 Gigabit networking options
	8SFF Hard drive bays (16SFF with optional upgrade), 8LFF, 12LFF, or 25SFF
	Optional 3 slot riser (x16, x8, x8), or 2 slot (x16, x16)
	NOTE: To take advantage of the additional 3 PCI slot upgrade, the second processor must be installed.
	Redundant Power Supply
	Optical Drive (8SFF/8LFF only)

On System Management Chipset	HP iLO (Firmware: HP iLO 4)
	NOTE: For more information, visit: http://www.hp.com/go/ilo

Memory Protection	Advanced ECC
	NOTE: Advanced ECC uses single device data correction (SDDC) to detect and correct single and all multi-bit error that occurs within a single DRAM chip. Both x4 and x8 SDDC are supported (x8 requires lockstep mode).
	Online Spare
	NOTE: Memory online spare mode (also known as rank spare mode) detects a rank that is degrading and switches operation to the spare rank.
	Lock-step mode
	NOTE: Memory Lockstep mode is used to correct a single x8 DRAM device failure on a DIMM. The DIMMs in each paired memory channel must have identical HP part numbers.

Standard Features

Memory One of the following depending on Model	Type	HP SmartMemory
		DDR3 Load Reduced (LRDIMM), Registered (RDIMM) or Unbuffered (UDIMM)
	DIMM Slots Available	24 (12 DIMM slots per processor /4 channels per processor/3 DIMMs per channel)
	Maximum Capacity (LRDIMM)	768GB (24 x 32GB LRDIMM @1066MHz)
	Maximum Capacity (RDIMM)	384GB (24x 16GB RDIMM @1333MHz)
	Maximum Capacity (UDIMM)	128GB (16 x 8GB UDIMM @1600MHz)
	Maximum Capacity (HDIMM)	768GB (24 x 32GB HDIMM @1333MHz)

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html
NOTE: LRDIMM, RDIMM, UDIMM, and HDIMMs 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 half the DIMM slots are available.
NOTE: UDIMM max DIMM population is 16.
NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1866MHz, 1600MHz, 1333MHz, or 1066MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

Network Controller One of the following depending on Model	HP ProLiant Gen8 servers offer a new flexible network technology - FlexibleLOMs. The HP ProLiant DL380p Gen8 server offers the customer the choice of 1Gb, 10Gb, or 10Gb base-T networking solutions. For additional details see the Networking Section of this document.	
	Entry Models	HP Ethernet 1Gb 4-port 331FLR Adapter
	Base Models	HP Ethernet 1Gb 4-port 331FLR Adapter
	25SFF Models	HP FlexFabric 10Gb 2-port 533FLR-T Adapter
	Performance Models One of the following depending on Model	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
		HP Ethernet 1Gb 4-port 331FLR Adapter
		HP FlexFabric 10Gb 2-port 533FLR-T Adapter
	Energy Star Models	HP Ethernet 1Gb 4-port 331FLR Adapter

QuickSpecs

Standard Features

Expansion Slots

Primary Riser
(Standard)

Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
1	PCIe 3.0	X16	X16	7	Full Length, Full Height Slot	Proc 1
2	PCIe 3.0	X8	X8	10	Half Length, Full Height Slot	Proc 1
3	PCIe 2.0	X4	X8	13	Half Length, Full Height Slot	Chipset

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.
NOTE: When populating the second optional riser slot, the second processor must be installed.
NOTE: All slots support up to 150w PCIe cards, but an additional Power Cord Option is required (PN 669777-B21). See Option Section below for offering.

PCIe Riser
(Optional 3-slot)

Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
4	PCIe 3.0	X16	X16	16	Full length, full height slot	Proc 2
5	PCIe 3.0	X8	X8	20	Half length, full height slot	Proc 2
6	PCIe 3.0	X8	X8	23	Half length, full height slot	Proc 2

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.
NOTE: When populating the second optional riser slot, the second processor must be installed.
NOTE: All slots support up to 150w PCIe cards, but an additional Power Cord Option is required (669777-B21). See Option Section below for offering

PCIe Riser
(Optional 2-slot)

Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
4	PCIe 3.0	X16	X16	16	Full length, Full height slot	Proc 2
5	PCIe 3.0	X16	X16	16	Half Length, Full Height	Proc 2

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

Standard Features

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

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

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

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

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

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

Storage Controller *One of the following depending on Model*	Entry Models	HP Smart Array P420i/ZM (RAID 0/1/1+0)
	Base Models	HP Smart Array P420i/1GB with FBWC (RAID 0/1/1+0/5/5+0)
	25SFF Models	HP Smart Array P420i/2GB with FBWC (RAID 0/1/1+0/5/5+0)
	Performance Models	HP Smart Array P420i/2GB with FBWC (RAID 0/1/1+0/5/5+0)
	Energy Star Models	HP Smart Array P420i/1GB with FBWC (RAID 0/1/1+0/5/5+0)

Internal Storage Devices	Diskette Drive	None
	Optical Drive	Ships standard in Performance Models
		Optional: DVD-ROM, DVD-RW
	Hard Drives	None ship standard
	Drive Bays	Standard: 8SFF drive bays total with Optical Bay, 8 LFF drive bays total with Optical Bay, 12LFF drive bays total, or 25SFF drive bays total

Optional: +8SFF drive bay (total of 16SFF drive bays)

NOTE: The Optical drive bay is not available with the 12LFF model, 25SFF model, or +8SFF drive bay optional upgrade.
NOTE: The 8LFF, 12LFF, and 25SFF drive cage versions are not field upgradeable options from the 8SFF model.
NOTE: The optional +8SFF drive bay requires an additional internal storage controller be selected. HP recommends the HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller (P/N 631670-B21).
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. The part numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server.

Standard Features

Maximum Internal Storage	Hot Plug SFF SAS	30.0TB	25 x 1.2TB (with optional SFF drive cage)
	Hot Plug SFF SATA	25.0TB	25 x 1TB (with optional SFF drive cage)
	Hot Plug LFF SAS	36.0TB	12 x 3TB (with optional LFF drive cage)
	Hot Plug LFF SATA	48.0TB	12 x 4TB (with optional LFF drive cage)
	Hot Plug SFF SAS SSD	20.0TB	25 x 800GB (with optional SFF drive cage)
	Hot Plug LFF SATA SSD	9.6TB	12 x 800GB (with optional LFF drive cage)

Interfaces	Serial	1
	Video	2 (1 front, 1 back) not active simultaneously
	FlexibleLOM Network Ports	Some models come standard with 4 x 1Gb ports while others come with 2 x 10Gb or 2 x 10Gb base-T ports (See HP Networking section below for more details and options).
	HP iLO Remote Management Network Port	1 Gb Dedicated
	SD slot	1 Internal Secure **NOTE:** The SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.
	USB 2.0 Ports	Up to 7 total: up to 2 front, 4 back, 1 internal **NOTE:** Only 1 front USB port available for 12LFF and 25SFF models.

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

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

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

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

Standard Features

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

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

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

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

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

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

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

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html |
| **System Fans** One of the following depending on Model | 2P Models have (6) (N+1 redundancy standard)

1P Models have (4) (N+1 redundancy standard) |
| **Required Cabling** | For required cabling information, refer to the HP Web site at: www.hp.com/servers/dl380p-gen8. |

QuickSpecs

HP ProLiant DL380p Generation8 (Gen8)

Standard Features

Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Canonical Ubuntu Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Citrix XenServer **NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page: http://www.hp.com/support/DL380pGen8

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

2U Rack form factor

8 SFF & 25SFF Drive Bay Version:
3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 27.5" (69.85 cm) Length

8 LFF & 12LFF Drive Bay Version:
3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94cm) Length

---

On System Management

HP iLO Management Engine

- HP iLO Management Engine is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management Engine portfolio includes:
  - **HP iLO:** The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine
  - **HP Agentless Management:** Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected.
  - **HP Active Health System:** Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support.
  - **HP Intelligent Provisioning:** Lets customers provision and configure a single server without any separate media. No more SmartStart CDs or Smart Update Firmware DVD are needed.
    - To start Intelligent Provisioning:
      - Press the F10 key during the ProLiant Gen8 server boot process (also known as power on

Standard Features

self test or POST).
- Please go to the Intelligent Provisioning website at www.hp.com/go/intelligentprovisioning for additional information and to view usage videos.
- Use the Service Pack for ProLiant (SPP) at www.hp.com/go/spp to get firmware and software updates.

○ **HP iLO Mobile App:** Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: www.hp.com/go/ilo/mobileapp

NOTE: For more information, visit: http://www.hp.com/go/ilo or HP iLO Management Engine technologies whitepaper

| **HP Insight management** | HP Service Pack for ProLiant (SPP) | HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling 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 for each Service Pack for ProLiant release.

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 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 provides a 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 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. |

Standard Features

Security	Power-on password
	Serial interface control
	Administrator's password

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

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

Optional Features

HP Insight management	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. HP Insight Control also supports Location and Power Discovery Services to automate many configuration, asset tracking, and power management tasks to speed implementation and prevent downtime. For more information, see 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, see: http://www.hp.com/services/insight.
	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/iloadvance
	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

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

QuickSpecs

Optional Features

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: www.hp.com/go/storage/software

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

HP Proactive Insight experience	Prevent problems with innovative, automated monitoring tools and proactive services. The HP Proactive Insight experience consist of using Insight Online, Insight Remote Support, and Proactive Care Support Service as one integrated solution. The Proactive Insight experience provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: www.hp.com/go/proactiveinsightexperience

Optional Features

Factory Express Portfolio for Servers and Storage

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

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

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

HP 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

Service and Support

Service and Support	**HP Technology Services for Industry Standard Servers** Capitalizing on HP ProLiant server capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services. **Protect your business beyond warranty with HP Care Pack Services** HP Care Pack services offer complete care and support expertise with committed response choices designed to meet your IT and business needs. HP Foundation Care services offer scalable reactive support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for your IT and business needs. HP Proactive Care delivers high levels of system availability through proactive service management and advanced technical response.
Optimized Care	**Supports maintaining servers at optimum performance availability** **3-Year HP 6 hour Call to Repair Response, Proactive Care*** Combined reactive and proactive support for hardware and software helping optimize your systems and delivering high levels of availability through proactive service management and advanced technical response. Hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request. A Technical Account Manager, as your single point of contact, will own your call or issue end to end until resolved. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf **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
Standard Care	**Service recommendation that maintains high level of server availability** **3-Year HP 24x7 4 hour response, Proactive Care Service*** This service gives you combined reactive and proactive support including rapid access to our Advanced Solution Center to manage and prevent problems and a Technical Support Specialist with a broad level of technical knowledge that will engage with additional technical expertise as needed from HP's vast global resources. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf **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

Service and Support

Related Services	**HP Proactive Care Personalized Support - Environmental Option** The Personalized Support option provides an assigned Account Support Manager who can bring best practices from across the industry plus extra technical skills to your IT team. This option is only available as an add-on to HP Proactive Care Support. **HP Proactive Select Service** Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf Additional HP Care Pack services can be found at: http://www.hp.com/go/cpc
Insight Online/Insight Remote Support	HP Insight Remote Support provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. This comes at no additional cost with your HP solution*. Learn more about Insight Remote Support http://www.hp.com/go/insightremotesupport and Insight Online http://www.hp.com/go/insightonline * Insight Remote Support is a prerequisite for Proactive Care.
HP Support Center	Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack, or HP contractual support agreement. *HP' Support Center Mobile App is subject to local availability
Parts and Material	HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction.
For more information	To learn more on HP ProLiant servers, please contact your HP sales representative or HP Authorized ServiceOne Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit.
NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.

Entry Models

E5-2600 v2 series Processors

HP ProLiant DL380p Gen8 E5-2609v2 1P 4GB-R P420i/ZM 460W PS Server 704560-xx1		
	Processor(s)	(1) Intel® Xeon® E5-2609 v2 (2.5GHz/4-core/10MB/6.4GT-s QPI/80W)
	Cache Memory	10MB (1x10MB) Level 3
	Memory	4GB (1x4GB) PC3L-12800R (DDR3-1600LV) Registered DIMMs **NOTE:** Total 24 DIMM slots available with processor upgrade (2P configuration)
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/ZM (RAID 0/1/1+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays; includes 6 SFF hard drive blanks Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays
	Optical Drive Bay	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)
	PCI-Express Slots	3 PCIe slots (+3 PCIe slots available with upgrade option)
	Power Supply	(1) HP 460W Common Slot Gold Hot Plug Power Supply (92% Efficient)
	Fans	(4) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard) Optional: HP Insight Control
	Energy Star	N/A
	Form Factor	Rack (2U), HP Friction Rail Kit **NOTE:** The HP 2U Gen8 Cable Management Arm is not available when using Friction Rails. **NOTE:** To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). **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 Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

E5-2600 series Processors

HP ProLiant DL380p Gen8 E5-2609 1P 4GB-		
	Processor(s)	(1) Intel® Xeon® E5-2609 (2.4GHz/4-core/10MB/6.4GT-s QPI/80W) Processor

Pre-configured Models

R P420i SFF 460W PS Entry Server 642121-xx1	**Cache Memory**	10MB (1x10MB) Level 3
	Memory	4GB (1x4GB) PC3L-10600R (DDR3-1333) Registered DIMMS **NOTE:** Total 24 DIMM slots available with processor upgrade (2P configuration)
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/ZM (RAID 0/1/1+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays; includes 6 SFF hard drive blanks Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays
	Optical Drive Bay	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)
	PCI-Express Slots	3 PCIe slots (+3 PCI slots available with upgrade option)
	Power Supply	(1) HP 460W Common Slot Gold Hot Plug Power Supply (92% Efficient)
	Fans	(4) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard) Optional: HP Insight Control
	Energy Star	Meets Energy Star requirements
	Form Factor	Rack (2U), HP Friction Rail Kit **NOTE:** The HP 2U Gen8 Cable Management Arm is not available when using Friction Rails. NOTE: To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). **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 Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Base Models

E5-2600 v2 series Processors

HP ProLiant DL380p Gen8 E5-2630v2 1P 16GB-R P420i/1GB FBWC 460W PS Server 704559-xx1	**Processor(s)**	(1) Intel® Xeon® E5-2630 v2 (2.6GHz/6-core/15MB/7.2GT-s QPI/80W, DDR3-1600, HT, Turbo2- 3/3/3/3/4/5)
	Cache Memory	15MB (1x15MB) Level 3
	Memory	16GB (1x16GB) PC3L-12800R (DDR3-1600LV) Registered DIMMs **NOTE:** Total 24 DIMM slots available with processor upgrade (2P configuration)
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays; includes 6 SFF hard drive blanks Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays
	Optical Drive Bay	Optional: Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)
	PCI-Express Slots	3 PCIe slots (+3 PCIe slots available with upgrade option)
	Power Supply	(1) HP 460W CS Platinum Plus Hot Plug Power Supply (94% Efficient)
	Fans	(4) (N+1 redundancy standard)

Pre-configured Models

Management	HP iLO Management Engine (standard) Optional: HP Insight Control	
Energy Star	N/A	
Form Factor	Rack (2U), HP Ball Bearing Rail Kit without Cable Management Arm **NOTE:** To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). **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 Parts, 3-Year Labor, 3-Year Onsite support with next business day response.	

E5-2600 series Processors

HP ProLiant DL380p Gen8 E5-2640 1P 16GB-R P420i SFF 460W PS Base Server 642107-xx1	**Processor(s)** One of the following depending on Model	(1) 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 (1) Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) Processor (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
HP ProLiant DL380p Gen8 E5-2630 1P 16GB-R P420i SFF 460W PS Base Server 642119-xx1	**Cache Memory**	15MB (1x15MB) Level 3
	Memory	16GB (4x4GB) PC3L-10600R (DDR3-1333) Registered DIMMS **NOTE:** Total 24 DIMM slots available with processor upgrade (2P configuration)
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
HP ProLiant DL380p Gen8 E5-2620 1P 16GB-R P420i SFF 460W PS Base Server 642120-xx1	**Storage Controller**	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays; includes 6 SFF hard drive blanks Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays
	Optical Drive Bay	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)
	PCI-Express Slots	3 PCIe slots (+3 PCI slots available with upgrade option)
	Power Supply	(1) HP 460W CS Platinum Plus Hot Plug Power Supply (94% Efficient)
	Fans	(4) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard) Optional: HP Insight Control
	Energy Star	Meets Energy Star requirements
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit/Cable Management Arm standard **NOTE:** To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). **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 Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Pre-configured Models

25SFF Models

NOTE: This Model is Energy Star Certified.

E5-2600 v2 series Processors

HP ProLiant DL380p Gen8 E5-2650v2 2P 32GB-R P420i/2GB FBWC 750W RPS Server 704558-xx1	Processor(s)	(2) Intel® Xeon® E5-2650 v2 (2.6GHz/8-core/20MB/8.0GT-s QPI/95W, DDR3-1866, HT, Turbo2- 4/4/4/4/5/6/7/8)
	Cache Memory	20MB (1x20MB) Level 3
	Memory	32GB (2x16GB) PC3-14900R (DDR3-1866) Registered DIMMs **NOTE:** Total 24 DIMM slots available with processor upgrade (2P configuration)
	Network Controller	HP FlexFabric 10Gb 2-port 533FLR-T Adapter
	Storage Controller	HP Smart Array P420i/2GB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 25 SFF SAS/SATA HDD Bays; includes 23 SFF hard drive blanks
	Optical Drive Bay	Not available in 25 SFF model
	PCI-Express Slots	6 PCIe slots
	Power Supply	(2) HP 750W CS Platinum Plus Hot Plug Power Supply (94% Efficient)
	Fans	(6) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard) Optional: HP Insight Control
	Energy Star	Meets Energy Star requirements
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit without Cable Management Arm **NOTE:** To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). **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 Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Performance Models

NOTE: These Models are Energy Star Certified.

E5-2600 v2 series Processors

HP ProLiant DL380p Gen8 E5-2690v2 2P 32GB-R P420i/2GB FBWC 750W RPS Server 709943-xx1	Processor(s)	(2) Intel® Xeon® E5-2690 v2 (3.0GHz/10-core/25MB/8.0GT-s QPI/130W, DDR3-1866, HT, Turbo2- 3/3/3/3/3/3/3/4/5/6)
	Cache Memory	25MB (1x25MB) Level 3
	Memory	32GB (2x16GB) PC3-14900R (DDR3-1866) Registered DIMMs **NOTE:** Total 24 DIMM slots available with processor upgrade (2P configuration)
	Network Controller	HP FlexFabric 10Gb 2-port 533FLR-T Adapter
	Storage Controller	HP Smart Array P420i/2GB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays; includes 6 SFF hard drive blanks Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays
	Optical Drive Bay	DVD-RW standard

Pre-configured Models

PCI-Express Slots	6 PCIe slots	
Power Supply	(2) HP 750W CS Platinum Plus Hot Plug Power Supply (94% Efficient)	
Fans	(6) (N+1 redundancy standard)	
Management	HP iLO Management Engine (standard) Optional: HP Insight Control	
Energy Star	Meets Energy Star requirements	
Form Factor	Rack (2U), HP Ball Bearing Rail Kit without Cable Management Arm **NOTE:** To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). **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 Parts, 3-Year Labor, 3-Year Onsite support with next business day response.	

E5-2600 series Processors

HP ProLiant DL380p Gen8 E5-2690 2P 32GB-R P420i SATA SFF 750W PS High Perf Server
662257-xx1

HP ProLiant DL380p Gen8 E5-2665 2P 32GB-R P420i SFF 750W PS High Perf Server
642105-xx1

HP ProLiant DL380p Gen8 E5-2650 2P 32GB-R P420i SFF 750W PS High Perf Server
642106-xx1

Processor(s) One of the following depending on Model	(2) Intel® Xeon® E5-2690 (2.9GHz/8-core/20MB/8GT-s QPI/135W, DDR3-1600, HT, Turbo2- 4/4/4/5/5/7/7/9) Processor (2) 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) Processor (2) Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2- 4/4/5/5/7/7/8/8) Processor	
Cache Memory	20MB (1x20MB) Level 3	
Memory	32GB (4x8GB) PC3-12800R (DDR3-1600) Registered DIMMS **NOTE:** Total 24 DIMM slots available.	
Network Controller One of the following depending on Model	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter (on E5-2690/E5-2665 Models) **NOTE:** SFP Transceivers for the 530FLR-SFP+ are not included with the server and must be purchased separately. HP Ethernet 1Gb 4-port 331FLR Adapter (on E5-2650 Model)	
Storage Controller	HP Smart Array P420i/2GB FBWC (RAID 0/1/1+0/5/5+0)	
Hard Drive	None ship standard	
Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays; includes 6 SFF hard drive blanks Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays	
Optical Drive Bay	DVD-RW standard	
PCI-Express Slots	6 PCIe slots (includes second riser slot upgrade option)	
Power Supply	(2) HP 750W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)	
Fans	(6) (N+1 redundancy standard)	
Management	HP iLO Management Engine (standard) HP Insight Control Standard	
Energy Star	Meets Energy Star requirements	
Form Factor	Rack (2U), HP Ball Bearing Rail Kit/Cable Management Arm standard **NOTE:** To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). **Caution:** HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation	

Pre-configured Models

		instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

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

E5-2600 v2 series Processors

HP ProLiant DL380p Gen8 E5-2630v2 2P 32GB-R P420i/1GB FBWC 460W PS Server 709942-xx1	**Processor(s)**	(2) Intel® Xeon® E5-2630 v2 (2.6GHz/6-core/15MB/7.2GT-s QPI/80W, DDR3-1600, HT, Turbo2- 3/3/3/3/4/5)
	Cache Memory	15MB (1x15MB) Level 3
	Memory	32GB (2x16GB) PC3L-12800R (DDR3-1600LV) Registered DIMMs **NOTE:** Total 24 DIMM slots available with processor upgrade (2P configuration)
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays; includes 6 SFF hard drive blanks Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays
	Optical Drive Bay	Optional: Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)
	PCI-Express Slots	6 PCIe slots
	Power Supply	(1) HP 460W CS Platinum Plus Hot Plug Power Supply (94% Efficient)
	Fans	(6) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard) Optional: HP Insight Control
	Energy Star	Meets Energy Star requirements
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit without Cable Management Arm **NOTE:** To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). **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 Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

E5-2600 series Processors

HP ProLiant DL380p Gen8 E5-2630 2P 16GB-R P420i Hot Plug SFF 460W PS Server 677278-xx1	**Processor(s)**	(2) Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5)
	Cache Memory	15MB (1x15MB) Level 3
	Memory	16GB (4x4GB) PC3L-10600R (DDR3-1333) Registered DIMMS **NOTE:** Total 24 DIMM slots.
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/1GB with FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard

Pre-configured Models

Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays; includes 6 SFF hard drive blanks	
	Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays	
Optical Drive Bay	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)	
PCI-Express Slots	3 PCIe slots (+3 PCI slots available with upgrade option)	
Power Supply	(1) 460W HP CS Platinum Plus Hot Plug Power Supply (94% Efficient)	
Fans	(6) (N+1 redundancy standard)	
Management	HP iLO Management Engine (standard)	
	Optional: HP Insight Control	
Energy Star	Meets Energy Star requirements	
Form Factor	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard	
	NOTE: To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001).	
	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 Parts, 3-Year Labor, 3-Year Onsite support with next business day response.	

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

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Factory Integrated Models must start with a CTO Server.
NOTE: FIO indicates that this option is only available as a factory installable option.
NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

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

HP Models   HP ProLiant DL380p Gen8 8 LFF Configure-to-order Server   665553-B21

Factory Integrated Model ships with:

2 x HP Smart Socket Guides for fast processor installation.
24 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation
1 FlexibleLOM connector: (see Step2: HP FlexibleNIC section below for NIC choices to populate the embedded connector)
Smart Array P420i Controller w/ Zero Memory (ZM)
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x16 PCIe 3.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and Options subsection

System Fans - 4 (2 additional fans included with second processor)
Drive Cage - 8LFF (Optical media drive optional)
USB - 4 Rear, 2 Front, 1 Internal, 1 SD slot
HP iLO Management Engine (standard)
NOTE: Power Supply & Rail Kit not included - choose from Step 3 & 4 sections below
NOTE: If a P430 controller is required, it cannot be populated in slots 3 or 4.

HP ProLiant DL380p Gen8 8 SFF Configure-to-order Server   653200-B21

Factory Integrated Model ships with:

1 FlexibleLOM connector: (see Step 2: HP FlexibleLOM section below for NIC choices to populate the embedded connector)
Smart Array P420i Controller w/ Zero Memory (ZM)
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x16 PCIe 3.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and Options subsection

System Fans - 4 (2 additional fans included with second processor)
Drive Cage - 8SFF (Optical media drive OR Second 8SFF drive cage optional)
USB - 4 Rear, 2 Front, 1 Internal, 1 SD slot
HP iLO Management Engine (standard)
NOTE: Power Supply & Rail Kit not included - choose from Step 3 & 4 sections below
NOTE: If a P430 controller is required, it cannot be populated in slots 3 or 4.

HP ProLiant DL380p Gen8 12 LFF Configure-to-order Server   665552-B21

Factory Integrated Model ships with:

1 FlexibleLOM connector: (see Step 2: HP FlexibleLOM section below for NIC choices to populate the embedded connector)

Configuration Information - Factory Integrated Models

Smart Array P420i Controller w/ Zero Memory (ZM)
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x16 PCIe 3.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and Options subsection

System Fans - 4 (2 additional fans included with second processor)
Drive Cage - 12LFF (with built-in expander)
USB - 4 Rear, 1 Front, 1 Internal, 1 SD slot
HP iLO Management Engine (standard)
NOTE: Power Supply & Rail Kit not included - choose from Step 3 & 4 sections below
NOTE: Customers can only choose from 115W or lower E5-2600 and E5-2600 v2 processors in this configure-to-order model.
NOTE: This chassis comes with a built-in expander. All drives can be driven off of the embedded P420i controller.
NOTE: Customers must add a minimum of a 512MB controller cache module when choosing this CTO server.
NOTE: If a P822 controller is required, it cannot be populated in slot 3.
NOTE: If a P421 controller is required, it cannot be populated in slot 1.
NOTE: If a P430 controller is required, it cannot be populated in slots 3 or 4.
NOTE: HyperCloud DIMMs, Q4000, and Q6000 options are not supported in this CTO server.
NOTE: Customer will not be able to get an optical drive, SID, second front USB, and ID label.

HP ProLiant DL380p Gen8 25 SFF Configure-to-order Server	665554-B21

Factory Integrated Model ships with:

1 FlexibleLOM connector: (see Step 2: HP FlexibleLOM section below for NIC choices to populate the embedded connector)
Smart Array P420i Controller w/ Zero Memory (ZM)
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x16 PCIe 3.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and Options subsection

System Fans - 4 (2 additional fans included with second processor)
Drive Cage - 25SFF (with built-in expander)
USB - 4 Rear, 1 Front, 1 Internal, 1 SD slot
HP iLO Management Engine (standard)
NOTE: Power Supply & Rail Kit not included - choose from Step 3 & 4 sections below
NOTE: Customers cannot select the E5-2643, E5-2637 v2, nor the E5-2643 v2 processor in this configure-to-order model.
NOTE: This chassis comes with a built-in expander. All drives can be driven off of the embedded P420i controller.
NOTE: Customers must add a minimum of a 512MB controller cache module when choosing this CTO server.
NOTE: If a P822 controller is required, it cannot be populated in slot 3.
NOTE: If a P430 controller is required, it cannot be populated in slots 3 or 4.
NOTE: HyperCloud DIMMs, Q4000, and Q6000 options are not supported in this CTO server.
NOTE: Customer will not be able to get an optical drive, SID, second front USB,

and ID label.

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

HP Processors

Entry Processors - E5-2600 v2 series Processors
NOTE: All support up to 1333MHz memory speeds.

HP DL380p Gen8 Intel® Xeon® E5-2609v2 (2.5GHz/4-core/10MB/80W) FIO Processor Kit	715222-L21
HP DL380p Gen8 Intel® Xeon® E5-2603v2 (1.8GHz/4-core/10MB/80W) FIO Processor Kit	715223-L21

Base Processors - E5-2600 v2 series Processors
NOTE: All support up to1600MHz DDR3 memory speeds.

HP DL380p Gen8 Intel® Xeon® E5-2640v2 (2.0GHz/8-core/20MB/95W) FIO Processor Kit	715219-L21
HP DL380p Gen8 Intel® Xeon® E5-2630v2 (2.6GHz/6-core/15MB/80W) FIO Processor Kit	715220-L21
HP DL380p Gen8 Intel® Xeon® E5-2620v2 (2.1GHz/6-core/15MB/80W) FIO Processor Kit	715221-L21
HP DL380p Gen8 Intel® Xeon® E5-2650Lv2 (1.7GHz/10-core/25MB/70W) FIO Processor Kit	715229-L21
HP DL380p Gen8 Intel® Xeon® E5-2630Lv2 (2.4GHz/6-core/15MB/60W) FIO Processor Kit	715230-L21

Performance Processors - E5-2600 v2 series Processors
NOTE: All support up to 1866MHz DDR3 memory speeds

HP DL380p Gen8 Intel® Xeon® E5-2697v2 (2.7GHz/12-core/30MB/130W) FIO Processor Kit	715224-L21
HP DL380p Gen8 Intel® Xeon® E5-2695v2 (2.4GHz/12-core/30MB/115W) FIO Processor Kit	715225-L21
HP DL380p Gen8 Intel® Xeon® E5-2690v2 (3.0GHz/10-core/25MB/130W) FIO Processor Kit	715214-L21
HP DL380p Gen8 Intel® Xeon® E5-2680v2 (2.8GHz/10-core/25MB/115W) FIO Processor Kit	715215-L21
HP DL380p Gen8 Intel® Xeon® E5-2670v2 (2.5GHz/10-core/25MB/115W) FIO Processor Kit	715216-L21
HP DL380p Gen8 Intel® Xeon® E5-2667v2 (3.3GHz/8-core/25MB/130W) FIO Processor Kit	715226-L21
HP DL380p Gen8 Intel® Xeon® E5-2660v2 (2.2GHz/10-core/25MB/95W) FIO Processor Kit	715217-L21
HP DL380p Gen8 Intel® Xeon® E5-2650v2 (2.6GHz/8-core/20MB/95W) FIO Processor Kit	715218-L21
HP DL380p Gen8 Intel® Xeon® E5-2643v2 (3.3GHz/6-core/25MB/130W) FIO Processor Kit	715227-L21
HP DL380p Gen8 Intel® Xeon® E5-2637v2 (3.5GHz/4-core/15MB/130W) FIO Processor Kit	715228-L21

Entry Processors - E5-2600 series Processors
NOTE: All support up to 1066MHz memory speeds.

HP DL380p Gen8 Intel® Xeon® E5-2609 (2.40GHz/4-core/10MB/80W) FIO Processor Kit	662252-L21

Configuration Information - Factory Integrated Models

HP DL380p Gen8 Intel® Xeon® E5-2603 (1.80GHz/4-core/10MB/80W) FIO Processor Kit	662254-L21

Base Processors - E5-2600 series Processors
NOTE: All support up to1333MHz DDR3 memory speeds.

HP DL380p Gen8 Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/95W) FIO Processor Kit	662246-L21
HP DL380p Gen8 Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/95W) FIO Processor Kit	662248-L21
HP DL380p Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) FIO Processor Kit	662250-L21
HP DL380p Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) FIO Processor Kit	675092-L21

Performance Processors - E5-2600 series Processors
NOTE: All support up to 1600MHz DDR3 memory speeds

HP DL380p Gen8 Intel® Xeon® E5-2690 (2.9GHz/8-core/20MB/135W) FIO Processor Kit	662226-L21
HP DL380p Gen8 Intel® Xeon® E5-2680 (2.7GHz/8-core/20MB/130W) FIO Processor Kit	662228-L21
HP DL380p Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) FIO Processor Kit	662240-L21
HP DL380p Gen8 Intel® Xeon® E5-2667 (2.9GHz/6-core/15MB/130W) FIO Processor Kit	662214-L21
HP DL380p Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) FIO Processor Kit	666509-L21
HP DL380p Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) FIO Processor Kit	662242-L21
HP DL380p Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) FIO Processor Kit	662244-L21
HP DL380p Gen8 Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/70W) FIO Processor Kit	662256-L21
HP DL380p Gen8 Intel® Xeon® E5-2643 (3.3GHz/4-core/10MB/130W) FIO Processor Kit	662216-L21
HP DL380p Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) FIO Processor Kit	662224-L21

HP Memory

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html
NOTE: LRDIMM, RDIMM, UDIMM, and HDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support LRDIMM, RDIMM and UDIMMs.

Registered DIMMs (RDIMMs)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

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

Configuration Information - Factory Integrated Models

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

Registered DIMMs (RDIMMs)
NOTE: The following memory is supported by the E5-2600 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 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)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 2GB (1x2GB) Single Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713975-B21
HP 2GB (1x2GB) Single Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708631-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713977-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708633-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713979-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708635-B21

Unbuffered with ECC DIMMs (UDIMMs)
NOTE: The following memory is supported by the E5-2600 series Processors.

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

Configuration Information - Factory Integrated Models

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 Reduced DIMMs (LRDIMMs)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21

Load Reduced DIMMs (LRDIMMs)
NOTE: The following memory is supported by the E5-2600 series Processors.

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

HyperCloud DIMMs (HDIMMs) - E5-2600 v2 series Processors
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 32GB (1x32GB) Dual Rank x4 PC3-10600H (DDR3-1333) HyperCloud CAS-9 Memory Kit	715166-B21

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

HP Networking — **FlexibleLOM Adapters**
NOTE: Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped.
NOTE: For 10Gb adapters, a minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

HP Ethernet 1Gb 4-port 331FLR FIO Adapter	684208-B21
HP FlexFabric 10Gb 2-port 526FLR-SFP+ FIO Adapter	684219-B21
HP Ethernet 10Gb 2-port 530FLR-SFP+ FIO Adapter	684210-B21
HP FlexFabric 10Gb 2-port 533FLR-T FIO Adapter	700760-B21
HP FlexFabric 10Gb 2-port 534FLR-SFP+ FIO Adapter	700752-B21
HP FlexFabric 10Gb 2-port 554FLR-SFP+ FIO Adapter	684213-B21
HP Ethernet 1Gb 4-port 366FLR FIO Adapter	684217-B21
HP Ethernet 10Gb 2-port 560FLR-SFP+ FIO Adapter	684218-B21
HP Ethernet 10Gb 2-port 561FLR-T FIO Adapter	700700-B21
HP Ethernet 10Gb 2-port 570FLR-SFP+ FIO Adapter	728983-B21
HP Ethernet 10Gb 2-port 570FLR-SFP+ FIO Adapter	717492-B21

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.

HP InfiniBand

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

NOTE: 10Gb Ethernet requires the use of the QSFP to SFP+ adapter P/N 655874-B21.
NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html

HP Power Supplies — **NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power

Configuration Information - Factory Integrated Models

supplies are inserted, you will get errors, and operation will fail.
NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.

HP Common Slot Platinum Plus Power Supply Kits
NOTE: The following Power Supplies offer 94% Efficiency and lower total harmonic distortion to save on energy costs. Common Slot Platinum Plus Power Supplies support Power Discovery Services when used with the HP Intelligent PDUs.

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

HP Common Slot Gold Power Supplies
NOTE: The following Power Supplies offer 92% Efficiency.

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

HP Common Slot -48VDC Power Supplies
NOTE: The following Power Supplies offer 92% Efficiency.

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

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

HP Common Slot 380VDC Power Supplies
NOTE: 94% efficiency.

HP 1200W Common Slot 380VDC Hot Plug Power Supply Kit	684539-B21

NOTE: The 1200W Common Slot 380VDC Hot Plug Power Supply Kit does not include a power cord.

HP Common Slot 277VAC Power Supplies
NOTE: 94% efficiency.

HP 500W Common Slot 277VAC Hot Plug Power Supply Kit	717362-B21
HP 750W Common Slot 277VAC Hot Plug Power Supply Kit	717364-B21
HP 1200W Common Slot 277VAC Hot Plug Power Supply Kit	717359-B21

NOTE: The 1200W Common Slot 277VAC Hot Plug Power Supply Kit does not include a power cord.

HP Common Slot Titanium Power Supply Kits
NOTE: 96% efficiency with support for HP Power Discovery Services.

HP 750W Common Slot Titanium Hot Plug Power Supply Kit	697581-B21

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 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_div/14209_div.html

Configuration Information - Factory Integrated Models

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

HP Rack Kits	**NOTE:** Gen8 rail kits have changed significantly from prior generation rail kits. Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen8 server. **NOTE:** Rail kits are optional for DL380p Gen8 and are no longer included standard with the server. Customers have the option to purchase their server without a rail kit. The HP 2U Gen8 Cable Management Arm is not available when using Friction Rails. **NOTE:** To assist in the installation of the server into the rack, an optional installation tool is available by contacting your local services representative (p/n 695539-001). **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. **NOTE:** See HP Rack Options in Additional Options section of this QuickSpecs for more rack kit choices.	
	HP 2U FIO Friction Rail Kit **NOTE:** Kit contains non-telescoping friction rails which do not allow for in-rack serviceability. The HP Gen8 Cable Management Arm is not available when using Friction Rails.	663476-B21
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE

Step 4: Choose Additional Options for Factory Integration
NOTE: For additional options, please refer to the "Core Options and Additional Options" section below.

Core Options

HP Unique Options		
	HP DL380p/560 Gen8 3 Slot PCI-E Riser Kit	653206-B21
	HP DL380p/560 Gen8 2 Slot 2x16 PCI-E Riser Kit	653208-B21
	HP DL380p Gen8 Double Wide Riser Cage Kit	662885-B21
	NOTE: Kit is required to support nVidia Q6000 double wide graphics card. **NOTE:** Kit contains a power cable for the nVidia Q6000 double wide graphics card. **NOTE:** The double wide riser cage kit is not supported in the 12LFF and 25SFF Configure-to-order Servers.	
	HP DL380p Gen8 NEBS Conversion Cage Kit	707865-B21
	NOTE: This conversion kit is only available for the 8SFF base server model. **NOTE:** A NEBS conversion cage kit is required for each riser in an 8SFF base server for the server to meet NEBS and ETSI certification.	

HP Processors		
	Entry Processors - E5-2600 v2 series Processors **NOTE:** All support up to 1333MHz memory speeds.	
	HP DL380p Gen8 Intel® Xeon® E5-2609v2 (2.5GHz/4-core/10MB/80W) Processor Kit	715222-B21
	HP DL380p Gen8 Intel® Xeon® E5-2603v2 (1.8GHz/4-core/10MB/80W) Processor Kit	715223-B21
	Base Processors - E5-2600 v2 series Processors **NOTE:** All support up to1600MHz DDR3 memory speeds.	
	HP DL380p Gen8 Intel® Xeon® E5-2640v2 (2.0GHz/8-core/20MB/95W) Processor Kit	715219-B21
	HP DL380p Gen8 Intel® Xeon® E5-2630v2 (2.6GHz/6-core/15MB/80W) Processor Kit	715220-B21
	HP DL380p Gen8 Intel® Xeon® E5-2620v2 (2.1GHz/6-core/15MB/80W) Processor Kit	715221-B21
	HP DL380p Gen8 Intel® Xeon® E5-2650Lv2 (1.7GHz/10-core/25MB/70W) Processor Kit	715229-B21
	HP DL380p Gen8 Intel® Xeon® E5-2630Lv2 (2.4GHz/6-core/15MB/60W) Processor Kit	715230-B21
	Performance Processors - E5-2600 v2 series Processors **NOTE:** All support up to 1866MHz DDR3 memory speeds	
	HP DL380p Gen8 Intel® Xeon® E5-2697v2 (2.7GHz/12-core/30MB/130W) Processor Kit	715224-B21
	HP DL380p Gen8 Intel® Xeon® E5-2695v2 (2.4GHz/12-core/30MB/115W) Processor Kit	715225-B21
	HP DL380p Gen8 Intel® Xeon® E5-2690v2 (3.0GHz/10-core/25MB/130W) Processor Kit	715214-B21
	HP DL380p Gen8 Intel® Xeon® E5-2680v2 (2.8GHz/10-core/25MB/115W) Processor Kit	715215-B21
	HP DL380p Gen8 Intel® Xeon® E5-2670v2 (2.5GHz/10-core/25MB/115W) Processor Kit	715216-B21
	HP DL380p Gen8 Intel® Xeon® E5-2667v2 (3.3GHz/8-core/25MB/130W) Processor Kit	715226-B21
	HP DL380p Gen8 Intel® Xeon® E5-2660v2 (2.2GHz/10-core/25MB/95W) Processor Kit	715217-B21
	HP DL380p Gen8 Intel® Xeon® E5-2650v2 (2.6GHz/8-core/20MB/95W) Processor Kit	715218-B21

Core Options

HP DL380p Gen8 Intel® Xeon® E5-2643v2 (3.3GHz/6-core/25MB/130W) Processor Kit	715227-B21
HP DL380p Gen8 Intel® Xeon® E5-2637v2 (3.5GHz/4-core/15MB/130W) Processor Kit	715228-B21

Entry Processors - E5-2600 series Processors
NOTE: All support up to 1066MHz memory speeds.

HP DL380p Gen8 Intel® Xeon® E5-2609 (2.40GHz/4-core/10MB/80W) Processor Kit	662252-B21
HP DL380p Gen8 Intel® Xeon® E5-2603 (1.80GHz/4-core/10MB/80W) Processor Kit	662254-B21

Base Processors - E5-2600 series Processors
NOTE: All support up to1333MHz DDR3 memory speeds.

HP DL380p Gen8 Intel® Xeon® E5-2640 (2.5GHz/6-core/15MB/95W) Processor Kit	662246-B21
HP DL380p Gen8 Intel® Xeon® E5-2630 (2.3GHz/6-core/15MB/95W) Processor Kit	662248-B21
HP DL380p Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) Processor Kit	662250-B21
HP DL380p Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) Processor Kit	675092-B21

Performance Processors - E5-2600 series Processors
NOTE: All support up to 1600MHz DDR3 memory speeds.

HP DL380p Gen8 Intel® Xeon® E5-2690 (2.9GHz/8-core/20MB/135W) Processor Kit	662226-B21
HP DL380p Gen8 Intel® Xeon® E5-2680 (2.7GHz/8-core/20MB/130W) Processor Kit	662228-B21
HP DL380p Gen8 Intel® Xeon® E5-2670 (2.6GHz/8-core/20MB/115W) Processor Kit	662240-B21
HP DL380p Gen8 Intel® Xeon® E5-2667 (2.9GHz/6-core/15MB/130W) Processor Kit	662214-B21
HP DL380p Gen8 Intel® Xeon® E5-2665 (2.4GHz/8-core/20MB/115W) Processor Kit	666509-B21
HP DL380p Gen8 Intel® Xeon® E5-2660 (2.2GHz/8-core/20MB/95W) Processor Kit	662242-B21
HP DL380p Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) Processor Kit	662244-B21
HP DL380p Gen8 Intel® Xeon® E5-2650L (1.8GHz/8-core/20MB/70W) Processor Kit	662256-B21
HP DL380p Gen8 Intel® Xeon® E5-2643 (3.3GHz/4-core/10MB/130W) Processor Kit	662216-B21
HP DL380p Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) Processor Kit	662224-B21

NOTE: Up to 2 processors supported. Performance and Energy Star Model configurations include two processors.
NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology
NOTE: Turbo2: Intel® Turbo Boost Technology 2.0 provides more computing power when you need it with performance that adapts to spikes in your workload and delivers more performance upside than then previous generation turbo technology.
NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

Core Options

HP Memory

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

Registered DIMMs (RDIMMs)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

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

Registered DIMMs (RDIMMs)
NOTE: The following memory is supported by the E5-2600 series Processors.

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 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)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 2GB (1x2GB) Single Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713975-B21
HP 2GB (1x2GB) Single Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708631-B21

Core Options

HP 4GB (1x4GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713977-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708633-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713979-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708635-B21

Unbuffered with ECC DIMMs (UDIMMs)
NOTE: The following memory is supported by the E5-2600 series Processors.

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 Reduced DIMMs (LRDIMMs)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21

Load Reduced DIMMs (LRDIMMs)
NOTE: The following memory is supported by the E5-2600 series Processors.

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

HyperCloud DIMMs (HDIMMs)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 32GB (1x32GB) Dual Rank x4 PC3-10600H (DDR3-1333) HyperCloud CAS-9 Memory Kit	715166-B21

NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.
NOTE: Depending on the memory configuration and processor model, 1600MHz and 1333MHz memory may operate at a lower speed. Please see the see the "Memory" section later in this document and the Online Memory Configuration Tool for details at: 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: www.hp.com/go/proliant-energy-efficient
NOTE: PC3L is a low voltage memory.

Core Options

HP Optical Drives	HP 12.7mm Slim SATA DVD-ROM JackBlack Optical Drive	652232-B21
	HP 12.7mm Slim SATA DVD-RW JackBlack Optical Drive	652235-B21

HP Hard Drives

NOTE: The HP ProLiant DL380p Gen8 Smart Storage solutions are equipped with entirely re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HP Qualified Hard Drives and Solid State Drives. These new carriers provide status and activity indicators as well as caution indicators for "Do Not Remove".

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

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

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

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	697574-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

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

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

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

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

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

HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

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

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

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

Core Options

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

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

HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)

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

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 Value Endurance Hot Plug LFF (3.5-inch) Enterprise Boot Solid State Drives

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 Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives

HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717973-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717971-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 Drives

HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718189-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718183-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718177-B21

6G SATA ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives

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

Core Options

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 ME Hot Plug SFF (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 Wty Solid State Drive	691854-B21
HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691852-B21

6G SAS SLC Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives

HP 400GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653082-B21
HP 200GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653078-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html (Worldwide)

Hard Drive Kits

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

NOTE: The part numbers for single HDD blanks below are provided should the customer require replacement HDD blanks for their server.

HP SFF Gen8 Hard Drive Blank Kit	666987-B21
HP LFF Gen8 Hard Drive Blank Kit	666986-B21
HP DL380/DL385 Gen8 8 Small Form Factor Hard Drive Backplane Cage Kit	662883-B21

NOTE: With upgrade of 8SFF Cage/Bkpln (662883-B21), there is no Optical Drive support.

NOTE: All cables necessary for proper installation of the 8SFF Cage are included with this Kit.

NOTE: With upgrade of 8SFF Cage/Bkpln (662883-B21), an additional storage controller is required. HP recommends the HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller (P/N 631670-B21).

NOTE: The P822 controller has only two internal ports like the P420 controller and cannot be used to attach both 8SFF drive cages through a single controller. Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/14341_div/14341_div.html

NOTE: In Gen8, the 8+8SFF solution is designed as a performance configuration delivering maximum IOPS across the two drive cages. Customers seeking to have all drives in a single volume should consider the DL380p Gen8 25 SFF Configure-to-order Server (P/N 665554-B21) as a base.

Hard Drive Cables

HP DL38x/DL360 Gen8 Embedded SATA Cable Kit	664009-B21

Core Options

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

10 Gigabit Ethernet Adapters

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

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.

	HP NC523SFP 10Gb 2-port Server Adapter	593717-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
	HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
	HP Ethernet 10Gb 2-port 570SFP+ Adapter	718904-B21
	HP 10 GbE PCI-e G2 Dual Port Network Interface Card	516937-B21

FlexibleLOM Adapters

NOTE: Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped.

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.

	HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
	HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
	HP FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter	629138-B21
	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
	HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
	HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
	HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter	629142-B21
	HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
	HP Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
	HP Ethernet 10Gb 2-port 570FLR-SFP+ Adapter	717491-B21

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

QuickSpecs

HP ProLiant DL380p Generation8 (Gen8)

Core Options

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

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

	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

NOTE: 10Gb Ethernet requires the use of the QSFP to SFP+ adapter P/N 655874-B21.
NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html

HP I/O Expansion Options	HP DL380p/560 Gen8 3 Slot PCI-E Riser Kit	653206-B21
	HP DL380p/560 Gen8 2 Slot 2x16 PCI-E Riser Kit	653208-B21
	HP DL380p Gen8 Double Wide Riser Cage Kit	662885-B21

NOTE: Kit is required to support nVidia Q6000 double wide graphics card.
NOTE: Kit contains a power cable for the nVidia Q6000 double wide graphics card.
NOTE: The double wide riser cage kit is not supported in the 12LFF and 25SFF Configure-to-order Servers.

	HP DL380p Gen8 NEBS Conversion Cage Kit	707865-B21

NOTE: This conversion kit is only available for the 8SFF base server model.
NOTE: A NEBS conversion cage kit is required for each riser in an 8SFF base server for the server to meet NEBS and ETSI certification.

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

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

HP Common Slot Platinum Plus Power Supply Kits
NOTE: The following Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.*

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

HP Common Slot Gold Power Supplies
NOTE: The following Power Supplies offer 92% Efficiency.

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

HP Common Slot -48VDC Power Supplies
NOTE: The following Power Supplies offer 92% Efficiency.

Core Options

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

NOTE: The 750W Common Slot -48VDC Hot Plug Power Supply Kit does not include a power cord. It has been designed with a terminal block connection that allows for custom design of power cords by the end user. To select an alternative power cord for your server, please review the HP Common Slot Power Supplies QuickSpecs

HP Common Slot 380VDC Power Supplies
NOTE: 94% efficiency.

HP 1200W Common Slot 380VDC Hot Plug Power Supply Kit	684539-B21

NOTE: The 1200W Common Slot 380VDC Hot Plug Power Supply Kit does not include a power cord.

HP Common Slot 277VAC Power Supplies
NOTE: 94% efficiency.

HP 500W Common Slot 277VAC Hot Plug Power Supply Kit	717362-B21
HP 750W Common Slot 277VAC Hot Plug Power Supply Kit	717364-B21
HP 1200W Common Slot 277VAC Hot Plug Power Supply Kit	717359-B21

NOTE: The 1200W Common Slot 277VAC Hot Plug Power Supply Kit does not include a power cord.

HP Common Slot Titanium Power Supply Kits
NOTE: 96% efficiency with support for HP Power Discovery Services.

HP 750W Common Slot Titanium Hot Plug Power Supply Kit	697581-B21

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

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: 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_div/14209_div.html

HP Graphic Options	HP 150W PCI-E Power Cable Kit	669777-B21
	HP 225W PCIe Power Cable Kit	728539-B21
	NVIDIA Quadro 4000 2GB PCI-E Adapter	655933-B21

NOTE: The DL380p Gen8 can support up to two Quadro 4000 cards. One card in each x16 slot in riser 1 and riser 2. Riser 2 function requires a second processor.
NOTE: Each Quadro 4000 card requires a 150W PCI-E Power Cable Kit (P/N 669777-B21).
NOTE: The Quadro 4000 option kit is not supported in the 12LFF and 25SFF Configure-to-order Servers.

NVIDIA Quadro 6000 6GB PCI-E Adapter	655935-B21

NOTE: The DL380p Gen8 can support one Quadro 6000 card in a x16 slot in riser 2. Riser 2 function requires a second processor.
NOTE: Installation of the Quadro 6000 requires selection of the HP DL380p Gen8 Double Wide Graphics Riser Cage Kit (P/N 662885-B21). This riser kit includes a power cable along with the riser.
NOTE: The Quadro 6000 option kit is not supported in the 12LFF and 25SFF Configure-to-order Servers.

QuickSpecs

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 Server Provisioning Media Kit	BD883A
HP Insight Management Media Kit	C6N31A
HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License	452151-B21

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

HP Integrated Lights-Out (iLO) Advanced for ProLiant

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	E6U59ABE
HP iLO Advanced including 3yr 24x7 Tech Support and Updates Electronic License	E6U64ABE
HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A

NOTE: For additional license options please see the QuickSpecs at:
http://h18004.www1.hp.com/products/quickspecs/14276_div/14276_div.html
NOTE: For more information, visit: http://www.hp.com/go/ilo

High Performance Clusters

HP Cluster Management Utility

HP Insight Cluster Management Utility 1yr 24x7 Flexible License	QL803B
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: For additional license kits please see the QuickSpecs at:
http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html

Additional Options

HP I/O Accelerator Options	**Second Generation Accelerators**	
	HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673642-B21
	HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673644-B21
	HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673646-B21
	HP 2410GB Multi Level Cell G2 PCIe ioDrive2 Duo for ProLiant Servers	673648-B21
	HP 3TB G2 FH/HL PCIe ioDrive2 IO Accelerator for ProLiant Servers	721458-B21
	First Generation Accelerators	
	HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers	600278-B21
	NOTE: A low-profile PCI bracket is included for use in low-profile slots.	
	HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers	600281-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html (Worldwide)	

HP PCIe Workload Accelerator Options	HP 350GB HH/HL PCIe Workload Accelerator for ProLiant Servers	708088-B21
	HP 700GB HH/HL PCIe Workload Accelerator for ProLiant Servers	708090-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14528_div/14528_div.html (Worldwide)	

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: 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 2U Security Bezel Kit	666988-B21

HP Storage Controllers	**SAS Controllers**	
	Smart Array P222 Controller	
	NOTE: P222 requires (1) HP Mini SAS Straight to Straight 37in Cable Assembly (P/N 662897-B21)	
	HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller	631667-B21
	Smart Array P420 Controller	
	NOTE: P420 requires (2) HP Mini SAS Straight to Straight 37in Cable Assemblies (P/N 662897-B21)	
	HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller	631670-B21
	HP Smart Array P420/2GB FBWC 6Gb 2-ports Int SAS Controller	631671-B21

Additional Options

Smart Array P421 Controller
NOTE: If a P421 controller is selected for the 12LFF model, it cannot be populated in slot 1.

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

Smart Array P430 Controller
NOTE: If a P430 controller is selected for any model, it cannot be populated in slots 3 or 4.

HP Smart Array P430/2GB FBWC 6Gb 1-port Int SAS Controller	698529-B21

Smart Array P431 Controller

HP Smart Array P431/2GB FBWC 6Gb 2-ports Ext SAS Controller	698531-B21

Smart Array P822 Controller
NOTE: If a P822 controller is selected for the 12LFF or 25SFF model, it cannot be populated in slot 3.

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

NOTE: The P822 controller has only two internal ports like the P420 controller and cannot be used to attach both 8SFF drive cages through a single controller. Please see the QuickSpecs link below for Technical Specifications and additional information.

Optional Upgrades

HP 1GB P-series Smart Array Flash Backed Write Cache	631679-B21
HP 2GB P-series Smart Array Flash Backed Write Cache	631681-B21
HP 512MB P-series Smart Array Flash Backed Write Cache	661069-B21
HP DL38Xp Gen8 8 Large Form Factor (LFF) P430/830 Cable Kit	729270-B21
HP DL38Xp Gen8 12 Large Form Factor (LFF) P430/830 Cable Kit	729272-B21
HP DL38Xp Gen8 25 Small Form Factor (SFF) P430/830 Cable Kit	729274-B21
HP 6G SAS P430/830 Secondary Cable Kit	729276-B21
HP 6G SAS P430/830 Primary Cable Kit	729278-B21
HP Mini SAS/Straight to Straight Offset Bypass Cable Assembly	697611-B21
HP Mini SAS/Straight to Straight Short Bypass Cable Assembly	697691-B21
HP Mini SAS/Straight to Straight 25 SFF Bypass Cable Assembly	726974-B21

HP Cable Options

HP Mini SAS Straight to Straight 37in Cable Assembly	662897-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/14227_div/14227_div.html (Smart Array P222 Controller)
http://h18000.www1.hp.com/products/quickspecs/14228_div/14228_div.html (Smart Array P420 Controller)
http://h18000.www1.hp.com/products/quickspecs/14229_div/14229_div.html (Smart Array P421 Controller)
http://h18000.www1.hp.com/products/quickspecs/14624_div/14624_div.html (Smart Array P430 Controller)
http://h18000.www1.hp.com/products/quickspecs/14625_div/14625_div.html (Smart Array P431 Controller)
http://h18000.www1.hp.com/products/quickspecs/14341_div/14341_div.html (Smart Array P822 Controller)

Host Bus Adapter

HP H220 Host Bus Adapter	650933-B21
HP H221 Host Bus Adapter	650931-B21
HP H222 Host Bus Adapter	650926-B21

Additional Options

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18004.www1.hp.com/products/quickspecs/14336_div/14336_div.html (HBA 220)
http://h18004.www1.hp.com/products/quickspecs/14222_div/14222_div.html (HBA 221)
http://h18004.www1.hp.com/products/quickspecs/14337_div/14337_div.html (HBA 222)

SCSI HBA

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

NOTE: Please see the following QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA)

HP Power Cords	**NOTE:** HP ProLiant servers ships with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs).	
	HP C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
	HP C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
	HP C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
	HP C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
	HP C13 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord	AF571A
	HP C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
	HP C13 - Nema 6-15P US 250V 15A JP 3.6m Power Cord	A0N33A
	HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A

HP Tape Backup	**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK	
	HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	C0L99A
	HP StoreEver LTO-6 Ultrium 6650 Internal Tape Drive	EH963A
	HP StoreEver LTO-6 Ultrium 6650 External Tape Drive	EH964A
	HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
	HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A

Additional Options

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 RDX500 USB3.0 External Disk Backup System	B7B66A
	HP RDX1000 USB3.0 Internal Disk Backup System	B7B67A
	HP RDX1000 USB3.0 External Disk Backup System	B7B69A
	HP RDX Removable Disk Backup Systems USB	
	HP RDX1000 USB3.0 Gen8 DL Server Module	B7B70A
	NOTE: Please see the QuickSpecs for additional part numbers, Technical Specifications, and additional information: http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html (Worldwide)	

HP Storage Options	**Storage Fibre Channel HBA**	
	NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Brocade Fibre Channel HBAs	
	HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	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 SN1000E 16Gb 1-port PCIe Fibre Channel Host Bus Adapter	QR558A
	HP SN1000E 16Gb 2-port PCIe Fibre Channel Host Bus Adapter	QR559A
	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
	HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter	C8R38A
	HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter	C8R39A
	Converged Network Adapter	
	HP CN1100E Dual Port Converged Network Adapter	BK835A
	HP CN1000Q Dual Port Converged Network Adapter	BS668A
	HP StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A

Additional Options

HP Uninterruptible Power Systems

HP Rack-mountable UPS

HP R1500 G3 Uninterruptible Power Supply (UPS)

HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A
HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A

NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html (Worldwide)

HP R/T3000 G2 Uninterruptible Power System (UPS)

HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A

NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide)

R5000 Uninterruptible Power System (UPS)

HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A

NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide)

R7000 Uninterruptible Power System (UPS)

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A

NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide)

NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.

NOTE: For additional information on sizing your server, please reference: http://www.upssizer.com.

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

QuickSpecs

Additional Options

HP Power Distribution Units	**Monitored PDUs**	
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF504A
	HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF506A
	HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit	AF508A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF510A
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF914A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF915A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html

NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit www.hp.com/go/rackandpower.

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

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

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 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
	HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
	iPDU Extension Bars	
	HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
	HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A

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

NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit www.hp.com/go/rackandpower.

HP Basic Power Distribution Units	HP 1.9kVA 120 Volt 12 Outlet NA/JP Basic Power Distribution Unit	H5M54A
	HP 2.8kVA 120 Volt 18 Outlet NA/JP Basic Power Distribution Unit	H5M55A

Additional Options

HP 3.6kVA 200-240 Volt 12 Outlet WW Basic Power Distribution Unit	H5M56A
HP 3.6kVA 200-240 Volt 20 Outlet WW Basic Power Distribution Unit	H5M57A
HP 4.9kVA 208 Volt 20 Outlet NA/JP Basic Power Distribution Unit	H5M58A
HP 4.9kVA 208 Volt 30 Outlet NA/JP Basic Power Distribution Unit	H5M59A
HP 8.3kVA 208 Volt 36 Outlet NA/JP Basic Power Distribution Unit	H5M60A
HP 8.6kVA 208 Volt Three Phase 18 Outlet NA/JP Basic Power Distribution Unit	H5M61A
HP 8.6kVA 208 Volt Three Phase 30 Outlet NA/JP Basic Power Distribution Unit	H5M62A
HP 5.7kVA 208 Volt Three Phase 27 Outlet NA/JP Dual Voltage Basic Power Distribution Unit	H5M63A
HP 8.6kVA 208 Volt Three Phase 30 Outlet NA/JP Dual Voltage Basic Power Distribution Unit	H5M64A
HP 11kVA 400 Volt Three Phase 42 Outlet NA Basic Power Distribution Unit	H5M67A
HP 7.3kVA 230 Volt 20 Outlet INTL Basic Power Distribution Unit	H5M68A
HP 7.3kVA 230 Volt 30 Outlet INTL Basic Power Distribution Unit	H5M70A
HP 11kVA 230 Volt 36 Outlet INTL Basic Power Distribution Unit	H5M71A
HP 11kVA 400 Volt Three Phase 30 Outlet INTL Basic Power Distribution Unit	H5M72A
HP 11kVA 400 Volt Three Phase 42 Outlet INTL Basic Power Distribution Unit	H5M73A
HP Hardwired 200-240 Volt 36 Outlet WW Basic Power Distribution Unit	H5M75A
HP 13.2kVA 480 Volt Three Phase 15 Outlet NA Basic Power Distribution Unit	H3X07A
HP 19.9kVA 480 Volt Three Phase 30 Outlet NA Basic Power Distribution Unit	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:
http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html (Worldwide)

NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit www.hp.com/go/rackandpower.

HP Rack Series

HP Intelligent Series Rack

HP 636 1075mm Pallet Intelligent Series Rack	BW895A
HP 636 1075mm Shock Intelligent Series Rack	BW896A
HP 642 1075mm Pallet Intelligent Series Rack	BW903A
HP 642 1075mm Shock Intelligent Series Rack	BW904A
HP 647 1075mm Pallet Intelligent Series Rack	BW911A
HP 647 1075mm Shock Intelligent Series Rack	BW912A

NOTE: Please see the QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:
http://h18000.www1.hp.com/products/quickspecs/14223_div/14223_div.html (Worldwide)
NOTE: For additional information regarding HP Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

HP Rack Options

HP Location Discovery Services

HP 36U Location Discovery Kit	BW945A
HP 42U Location Discovery Kit	BW946A
HP 47U Location Discovery Kit	BW947A

Additional Options

HP TFT7600 G2 KVM Console and Monitor (TFT7600 G2)

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A
HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A

HP USB Keyboard and Mouse

HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3
HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63

Additional Options

HP Server Console Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A
HP TAA 0x2x16xKVM Server Console G2 Switch	AF626A

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 CAT5 1-pack USB Interface Adapter	336047-B21

HP IP Console Switch G2 with Virtual Media & CAC

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

Rail Kits

NOTE: Gen8 rail kits have changed significantly from prior generation rail kits. Please take a moment to review the installation documentation that comes with the server to help you with the installation of your Gen8 server.
NOTE: Rail kits are optional for DL380p Gen8 and are no longer included standard with the server. Customers have the option to purchase their server without a rail kit.
NOTE: Ball bearing rail kits contain telescoping rails which allow for in-rack serviceability.
NOTE: The HP 2U Gen8 Cable Management Arm is not available when using Friction Rails.
NOTE: To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001).
Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

HP 2U Large Form Factor Ball Bearing Gen8 Rail Kit with CMA	663480-B21
HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA	663478-B21
HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit	720863-B21
HP 2U Large Form Factor Ball Bearing Gen8 Rail Kit	720864-B21
HP 2U Cable Management Arm for Ball Bearing Gen8 Rail Kit	720865-B21

Additional Options

HP USB and SD options	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB SD Enterprise Performance Flash Media Kit	580387-B21
	NOTE: Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization.	
	HP 2GB USB Flash Media Drive Key Kit	608447-B21
	NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	
	HP 32GB SD Enterprise Mainstream Flash Media Kit	700136-B21

HP Care Pack Services	**Proactive Care**	
	NOTE: Collaborative Support plus Proactive services delivered by the onshore, local language Advanced Solution Center (ASC), end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware/software revision management, proactive scans and incident trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience.	
	HP 3 year 4 hour 24x7 ProLiant DL38x(p) Proactive Care Service	U2Z50E
	HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL38x(p) Proactive Care Service	U2Z53E
	HP 3 year 6 hour Call To Repair 24x7 ProLiant DL38x(p) Proactive Care Service	U2Z56E
	HP 3 year 6 hour Call To Repair 24x7 w/DefectiveMedia Retention ProLiant DL38x(p) Proactive Care SVC	U2Z59E
	HP 3 year 4 hour 24x7 ProLiant DL38x(p) with Insight Control Proactive Care Service	U3N23E
	HP 3 year 4hr 24x7 with Defective Media Retention DL38x(p) with Insight Control Proactive Care SVC	U3N26E
	HP 3 year 6 hour Call To Repair 24x7 ProLiant DL38x(p) with Insight Control Proactive Care Service	U3N29E
	HP 3yr 6hrCallToRepair 24x7w/Defective Media Retention DL38x(p) w/Insight Control Proactive Care SVC	U3N32E
	NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack	

Memory

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

Memory Subsystem Architecture
Each Intel® Xeon® E5-2600 family processor socket contains four memory channels that support three DIMMs each for a total of twelve (12) DIMM per installed processor or a grand total of twenty-four (24) DIMMs for the server. Up to 32GB capacity DIMMs are supported for 768GB of memory (24 DIMM slots x 32GB per DIMM).

Memory population guidelines

General Memory Population Rules and Guidelines:

- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible.
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel. Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor
- RDIMMs operating at either 1.35V or 1.5V may be mixed in any order, but the system will power them at the higher voltage.
- Do not mix RDIMMs, LRDIMMs, and UDIMMs.
- LRDIMMs are supported up to 3 DIMMs per channel.
- Using the HP RBSU, 1.35V DIMMs can be changed to operate at 1.5V.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- HP memory from previous generation servers is not qualified on the DL380p Gen8 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:
  http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html.
- For memory population rules and additional memory guidelines, please see the DL380p Gen8 user guide at
  http://www.hp.com/support.

Supported Memory Bandwidth for DL380p Gen8 with Intel® Xeon® E5-2600 v2 Series Processor Family										
DIMM Type ->	Register DIMM							Load Reduced (LRDIMMs)	Unbuffered DIMM	
DIMM Rank ->	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)	Single Rank (1R)	Single Rank (1R)	Dual Rank (2R)	Dual Rank (2R)	Quad Rank (4R)	Single Rank (1R)	Dual Rank (2R)

Memory

DIMM Capacity ->	4GB	4GB	8GB	8GB	8GB	8GB	16GB	16GB	32GB	2GB	2GB	4GB	4GB	8GB
DIMM Native Speed (MT/s) ->	1600	1866	1600	1866	1600	1866	1600	1866	1866	1600	1866	1600	1866	1600
Voltage	LV	Std	LV	Std	LV	Std	LV	Std	Std	LV	Std	LV	Std	LV

SLOTS THAT CAN BE POPULATED

12 slot servers	12	12	12	12	12	12	12	12	12	12	12	12	12	12
16 slot servers	16	16	16	16	16	16	16	16	16	16	16	16	16	16
24 slot servers	24	24	24	24	24	24	24	24	24	16	16	16	16	16
32 slot server	32	32	32	32	32	32	32	32	32	n/a	n/a	n/a	n/a	n/a
48 slot servers	48	48	48	48	48	48	48	48	48	n/a	n/a	n/a	n/a	n/a
64 slot servers#	64	64	64	64	64	64	64	64	64	n/a	n/a	n/a	n/a	n/a

MAXIMUM CAPACITY (GB)*

12 slot servers	48	48	96	96	96	96	192	192	384	24	24	48	48	96
16 slot servers	64	64	128	128	128	128	256	256	512	32	32	64	64	128
24 slot servers	96	96	192	192	192	192	384	384	768	32	32	64	64	128
32 slot servers	128	128	256	256	256	256	512	512	1024	n/a	n/a	n/a	n/a	n/a
48 slot server	192	192	384	384	384	384	768	768	1536	n/a	n/a	n/a	n/a	n/a
64 slot servers#	256	256	512	512	512	512	1024	1024	2048	n/a	n/a	n/a	n/a	n/a

POPULATED DIMM SPEED (MT/s)

1 DIMM/ Channel	1600	1866	1600	1866	1600	1866	1600	1866	1866	1600	1866	1600	1866	1600
2 DIMM/ Channel	1600	1866	1600	1866	1600	1866	1600	1866	1866	1600	1866	1600	1866	1600
3 DIMM/ Channel	800	1066	800	1066	800	1066	800	1066	1333	n/a	n/a	n/a	n/a	n/a

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, UDIMM is supported at 2DPC@DDR3-1866. Third party memory may only support up to 2DPC@DDF
or 1600.
All configurations on 64 slot server run at DDR3-1066.

Memory

Memory Speed by E5-2600 v2 Processor Model

Processor Models	Supported Memory Speeds
E5-2697 v2, E5-2695 v2, E5-2690 v2, E5-2680 v2, E5-2670 v2, E5-2667 v2, E5-2660 v2, E5-2650 v2, E5-2643 v2, E5-2637 v2	1866/1600MHz
E5-2640 v2, E5-2630 v2, E5-2620 v2, E5-2650L v2, E5-2630L v2	1600MHz
E5-2609 v2, E5-2603 v2	1333MHz

Supported Memory Bandwidth for DL380p Gen8 with Intel® Xeon® E5-2600 Series Processor Family

DIMM Type	Registered DIMMS (RDIMMs)							Load Reduced (LRDIMMs	Unbuffered with ECC DIMMs (UDIMMs)						"Hyp M (HD
DIMM Rank	Single Rank (1R)			Dual Rank (2R)				Quad Rank (4R)	Single Rank (1R)		Dual Rank (2R)				Du
DIMM Capacity	4GB	4GB	8GB	8GB	8GB	16GB	16GB	32GB	2GB	2GB	4GB	4GB	8GB	8GB	1
DIMM Native Speed (MHz)	1333	1600	1600	1333	1600	1333	1600	1333	1333	1600	1333	1600	1333	1600	
Voltage	LV	Std	Std	LV	Std	LV	Std	LV	LV	Std	LV	Std	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***	1333	1600	1333	1600	1333	1600	
2 DIMM Per Channel	1333	1600	1600	1333	1600	1333	1600	1333***	1333****	1600	1333****	1600	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	13

NOTE: Memory speed is a function of the processor QPI bus speed. To realize the performance memory capabilities listed a SmartMemory is required.

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

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

*** LRDIMMs enable 3 DIMMs per channel. HP SmartMemory will support up to 3DPC@1066 at 1.35V. Third party memory support 3DPC @1066 at 1.5V.

**** For HP SmartMemory, UDIMM is supported at 2DPC@1333 at 1.35V. Third party memory may only support up to 2DP(at 1.5V.

RBSU setting required

Memory

Memory Speed by E5-2600 Processor Model

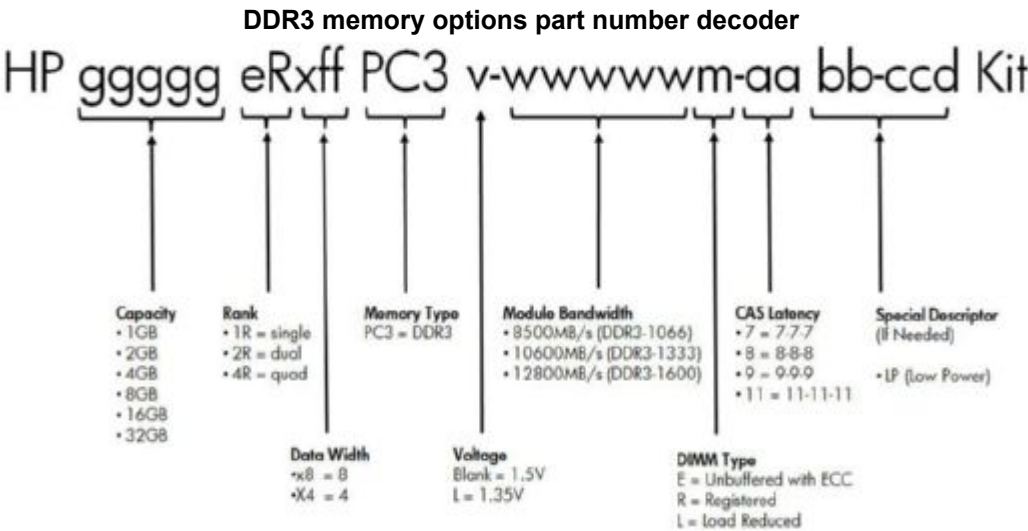| Processor Models	Supported Memory Speeds
E5-2690 E5-2680, E5-2670, E5-2667, E5-2665, E5-2660, E5-2650, E5-2650L, E5-2643, E5-2637	1600/1333/1066MHz
E5-2640, E5-2630, E5-2630L, E5-2620	1333/1066MHz
E5-2609, E5-2603	1066MHz

DIMM slot and configuration diagram
Population order; start with "A" first, "B" second, "C" third, etc.
When one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F …
When two processors are installed, install DIMMs in sequential
alphabetic order: CPU1-A, CPU2-A,CPU1-B,CPU2-B,CPU1-C, CP2-C

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

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

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

DDR3 memory options part number decoder

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

Capacity
- 1GB
- 2GB
- 4GB
- 8GB
- 16GB
- 32GB

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

Memory Type
PC3 = DDR3

Module Bandwidth
- 8500MB/s (DDR3-1066)
- 10600MB/s (DDR3-1333)
- 12800MB/s (DDR3-1600)

CAS Latency
- 7 = 7-7-7
- 8 = 8-8-8
- 9 = 9-9-9
- 11 = 11-11-11

Special Descriptor
(If Needed)
- LP (Low Power)

Data Width
- x8 = 8
- X4 = 4

Voltage
Blank = 1.5V
L = 1.35V

DIMM Type
E = Unbuffered with ECC
R = Registered
L = Load Reduced

Memory

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:
http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html
NOTE: LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.

Registered DIMMs (RDIMMs)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

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

Registered DIMMs (RDIMMs)
NOTE: The following memory is supported by the E5-2600 series Processors.

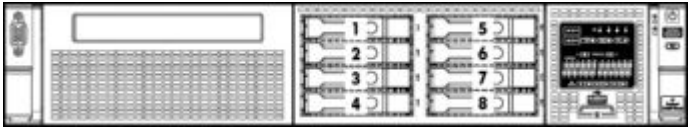|	
HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 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)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

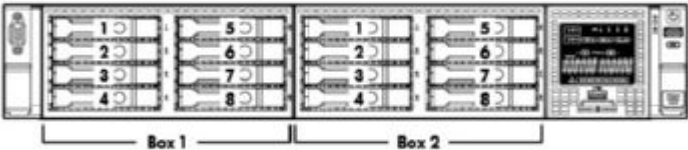|	
HP 2GB (1x2GB) Single Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713975-B21
HP 2GB (1x2GB) Single Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708631-B21

Memory

HP 4GB (1x4GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713977-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708633-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-12800E (DDR3-1600) Unbuffered CAS-11 Low Voltage Memory Kit	713979-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-14900E (DDR3-1866) Unbuffered CAS-13 Memory Kit	708635-B21

Unbuffered with ECC DIMMs (UDIMMs)
NOTE: The following memory is supported by the E5-2600 series Processors.

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 Reduced DIMMs (LRDIMMs)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 32GB (1x32GB) Quad Rank x4 PC3-14900L (DDR3-1866) Load Reduced CAS-13 Memory Kit	708643-B21

Load Reduced DIMMs (LRDIMMs)
NOTE: The following memory is supported by the E5-2600 series Processors.

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

HyperCloud DIMMs (HDIMMs)
NOTE: The following memory is supported by the E5-2600 v2 series Processors.

HP 32GB (1x32GB) Dual Rank x4 PC3-10600H (DDR3-1333) HyperCloud CAS-9 Memory Kit	715166-B21

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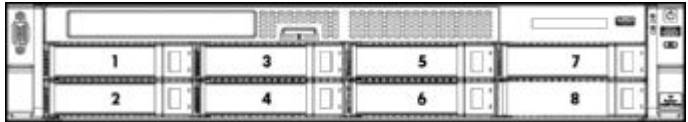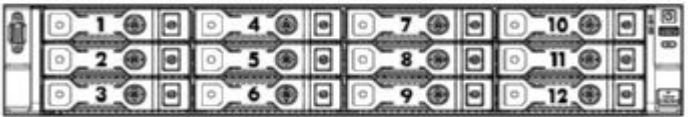**NOTE:** PC3L is a low voltage memory.
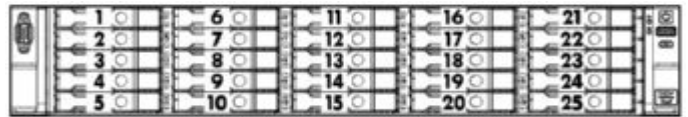
Storage

| 1-8 | Eight SFF SAS hot plug drive bays |

1-16	Sixteen SFF SAS hot plug drive bays
	NOTE: This configuration does not support optical drive.
	NOTE: This configuration requires the addition of a second controller for the second drive cage.

| 1-8 | Eight LFF SAS hot plug drive bays. |

1-12	Twelve LFF SAS hot plug drive bays.
	NOTE: This configuration does not support optical drive.
	NOTE: This configuration has a built-in expander that is driven by the embedded controller.

1-25	Twenty-five SFF SAS hot plug drive bays.
	NOTE: This configuration does not support optical drive.
	NOTE: This configuration has a built-in expander that is driven by the embedded controller.

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

Internal	30TB (25 SFF HDDs x 1.2TB SAS SFF)
Internal	48TB (12 LFF HDDs x4TB SATA LFF)
External	240TB (200 x 1.2TB SAS SFF)
Total	270TB (D2700 + DL380p Gen8 25 SFF)
	288TB (D2700 + DL380p Gen8 12 LFF)

Technical Specifications

System Unit	**Dimensions** (H x W x D) (with bezel)	SFF Drives: 3.44 x 17.54 x 27.50 in (8.73 x 44.55 x 69.85 cm) LFF Drives: 3.44 x 17.54 x 29.50 in (8.73 x 44.55 x 74.93 cm)	
	Weight (approximate)	Maximum (all LFF hard drives, power supply, and processor installed)	61.00 lb (27.66 kg)
		Minimum (one SFF hard drive, power supply, and processor installed, ODD not installed)	41.0 lb (18.59 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC
		Rated Input Current	For 1200 W Power Supply: 10 A (at 100 VAC), 4.9 A (at 200 VAC) For 750 W Power Supply: 8.9 A (at 100 VAC), 4.3 A (at 200 VAC) For 460 W Power Supply: 5.5 A (at 100 VAC), 2.6 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	For 1200 W Power Supply: 930 W (at 100 VAC), 1348 W (at 200 VAC) For 750 W Power Supply: 857 W (at 100 VAC), 824 W (at 200 VAC) For 460 W Power Supply: 526 W (at 100 VAC), 505 W (at 200 VAC)
	BTU Rating	Maximum	For 1200 W Power Supply: 3530 BTU/hr (at 100 VAC), 4600 BTU/hr (at 200 VAC) For 750 W Power Supply: 2925 BTU/hr (at 100 VAC), 2812 BTU/hr (at 200 VAC) For 460 W Power Supply: 1794 BTU/hr (at 100 VAC), 1725 BTU/hr (at 200 VAC)
	Power Supply Output (per power supply)	Rated Steady-State Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
		Maximum Peak Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC),

Technical Specifications

1200 W (at 200 to 240 VAC)
For 750 W Power Supply:
750 W (at 100 to 120 VAC),
750 W (at 200 to 240 VAC)
For 460 W Power Supply:
460 W (at 100 to 120 VAC),
460 W (at 200 to 240 VAC)

System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
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	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

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

	Entry	Base	Performance
Idle			
LWAd	4.1 B	4.1 B	4.1 B
LpAm	25 dBA	25 dBA	25 dBA
Operating			
LWAd	4.3 B	4.7 B	5.0 B
LpAm	27 dBA	31 dBA	35 dBA

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

Technical Specifications

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

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

HP Smart Array P420i Controller		
	Dimensions	Embedded
	Disk Drive and Enclosure Interface - Transfer Rate	6Gb/s SAS (Serial Attached SCSI)
		6Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal 4X connectors
	Cache Memory Speed	512MB FBWC - DDR3-1333MHz with 40-bit wide bus, 1GB or 2GB FBWC DDR3-1333MHz with 72-bit wide bus
	Server Interface	x8 PCIe 3.0 provides 8GB/s maximum bandwidth
	SAS Speed	(8) 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 512MB ECC protected flash back write cache 72-bit 1GB FBWC or 72-bit 2GB FBWC
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (8SFF or 4LFF physical drives) Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) **NOTE:** RAID 6, 6+0 can be enabled with one of the following combinations:

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

RAID 5, 5+0 (Distributed Data Guarding)
NOTE: A minimum of 512MB cache is required to enable RAID 5, 5+0 support

RAID 1+0 (Striping & Mirroring)

RAID 0 (Striping), RAID 1 (Mirroring)

Technical Specifications

HP Ethernet 1Gb 4-port 331FLR Adapter	**HP Flexible Network Technology**	HP Flexible Network Technology consists of replaceable network solutions to meet customer requirements now and in the future.
	Network Interface Compatibility	10Base-T/100Base-TX/1000Base-TX
		EEE 802.3 10Base-T
		IEEE 802.3ab 1000Base-T
		IEEE 802.3u 100Base-TX
		IEEE 802.3ad 1000Base-TX
		IEEE 802.1q 100Base-TX
	Data Transfer Method	PCI Express, four lanes (x4)
	Chipset	BCM5719
	Network Transfer Rate	10Base-T (Half-Duplex)　　10 Mb/s
		10Base-T (Full-Duplex)　　20 Mb/s
		100Base-TX (Half-Duplex)　　100 Mb/s
		100Base-TX (Full-Duplex)　　200 Mb/s
		1000Base-TX (Half and Full-Duplex)　　2000Mb/s
	Connector	Four RJ-45
	Cable Support	10Base-T　　Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX　　Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX　　Category 5 or higher UTP; up to 328 ft (100 m)

HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	**Network Interface Compatibility**	SFP+ for Direct Attach Cable copper or fiber
		IEEE 802.3 SFP+ (SX, SR & LR)
		IEEE 802.3ae
		IEEE 802.1ax
		IEEE 802.1q
		IEEE 802.3x
		IEEE 802.1au
		IEEE 802.3ap
		IEEE 802.1Qaz
		IEEE 802.1Qau
		IEEE 802.1Qbb
	Data Transfer Method	PCI Express, eight lanes (x8)
	Chipset	BCM57810S
	Network Transfer Rate	10Base-T (Half-Duplex)　　10Gbps
		10Base-T (Full-Duplex)　　1Gbps
	Connector	Two SFP+
	Cable Support	10Base-T　　Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX　　Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX　　Category 5 or higher UTP; up to 328 ft (100 m)

Technical Specifications

HP FlexFabric 10Gb 2-port 533FLR-T Adapter	**Network Interface**	10GBASE-T connectivity supporting up to 100 meters with CAT 6A cabling
	Compatibility	IEEE 802.3
		IEEE 802.3x
		IEEE 802.2x
		IEEE 802.3ad
		IEEE 802.1Qaz
		IEEE 802.1Qau
		IEEE 802.1Qbb
		IEEE 802.1Qbg
		IEEE 802.1ax
	Data Transfer Method	PCIe 2.0, eight lanes (x8)
	Chipset	BCM57810S
	Data Rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.
	Connector	Two RJ-45
	Cable Support	Maximum distances for CAT6 cable are 30 meters (98 feet). Maximum distances for CAT6a are 100 meters (328 feet).

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.