

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

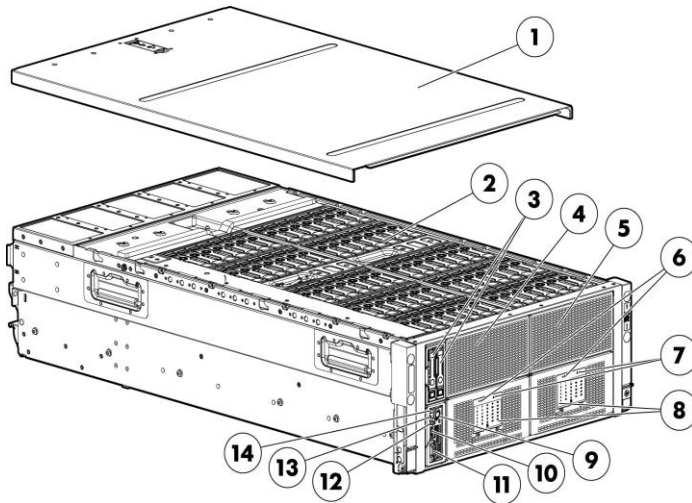
### Overview

### HP ProLiant SL4540 Generation 8 (Gen8) Server

How are you going to scale out to petabytes with your current infrastructure?

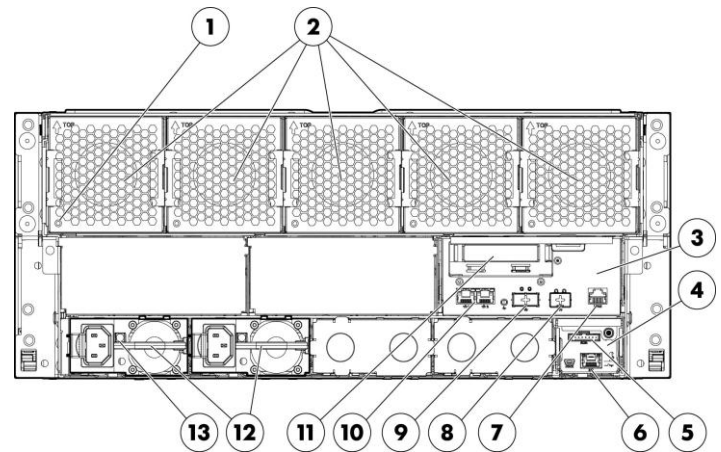
Big data, largely unstructured such as messages, images, readings from sensors, and GPS signals from cell phones, are growing at an exponential rate. The HP ProLiant SL4540 Gen8 Server solves the traditional structured database problems when dealing with big data. Implementing a scale-up infrastructure will invariably result in challenges of data center capacity, spiraling energy costs, infrastructure complexity and inefficiencies because today's siloed infrastructure is not optimized for scale-out server workloads driven by big data. The SL4540 Gen8 Server is a server purpose-built for big data. A highly efficient converged design that delivers the right combination of capacity and performance, in the least amount of space and at lower cost, with the reliability and manageability you expect from HP ProLiant Gen8, the world's most intelligent servers.

### SL4540 Gen8 1x60 Model



#### SL4540 Gen8 1x60 Model Front View:

1. Hood Cover
2. LFF 3.5" hard drives (60)
3. SFF 2.5" hard drives on node (2)
4. LFF hard drives connected to storage controller (Port 1i)
5. LFF hard drives connected to storage controller (Port 2i)
6. Hard drive backplane health LED
7. Storage UID
8. Hard drive LED display boards
9. Node ejection button
10. Node USB connectors (2)
11. Node video connector (VGA port)
12. Node power ON/Standby button and system power LED
13. Node health LED
14. Node UID LED button



#### SL4540 Gen8 1x60 Model Rear View:

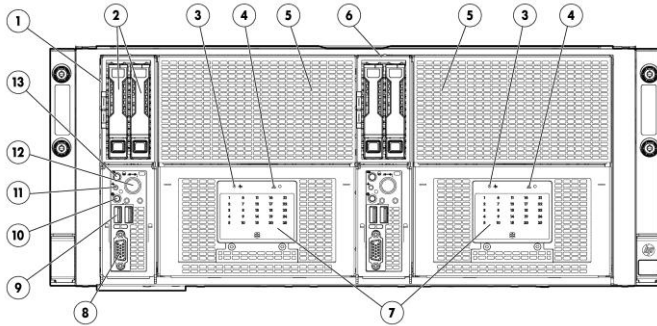
1. Fan LED
2. System fans
3. I/O Module
4. Management Module
5. SL Advanced Power Manager Distribution Module (SL-APMD) connector
6. iLO connector
7. Server Serial Port
8. 10Gb Ethernet SFP+ port  
**NOTE:** Available only when 10G I/O module is ordered. 1G I/O Module has 2x1Gb Ethernet ports only.
9. 10Gb Ethernet QSFP port  
**NOTE:** Available only when 10G I/O module is ordered. 1G I/O Module has 2x1Gb Ethernet ports only.
10. 2 X 1Gb Ethernet ports
11. Low profile PCI express slot  
**NOTE:** Available only when the optional HP SL454x Storage Mezzanine to PCIe Enablement Kit is ordered
12. Power supplies
13. Power supply LED

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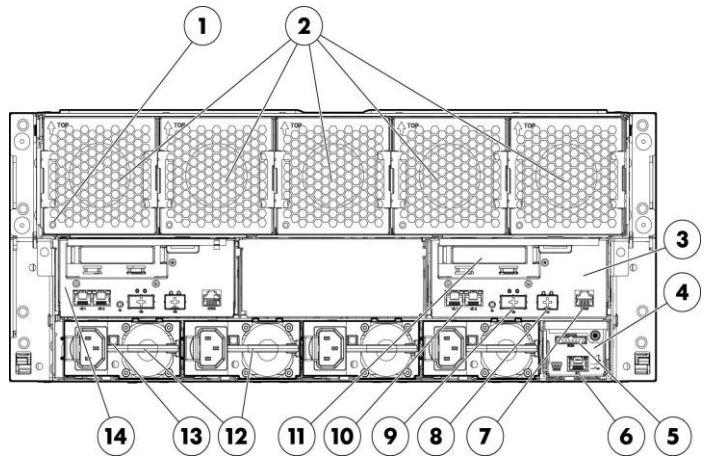
### Overview

#### SL4540 Gen8 2x25 model



#### SL4540 Gen8 2x25 Model Front View:

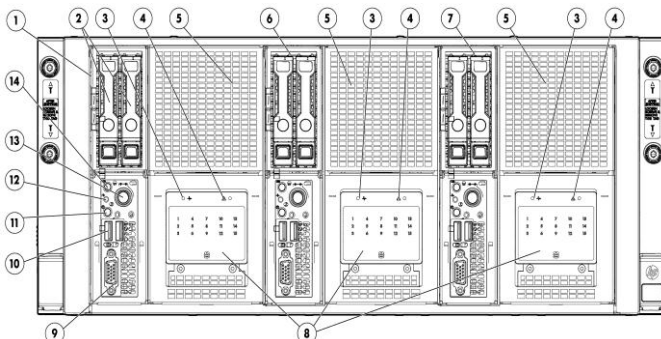
1. Server Node 1
2. SFF 2.5" hard drives on node (2)
3. Hard drive backplane health LED
4. Storage UID
5. LFF hard drives
6. Server Node 2
7. Hard drive LED display boards
8. Node video connector (VGA port)
9. Node USB connectors (2)
10. Node power ON/Standby button and system power LED
11. Node health LED
12. Node ejection button
13. Node UID LED button



#### SL4540 Gen8 2x25 Model Rear View:

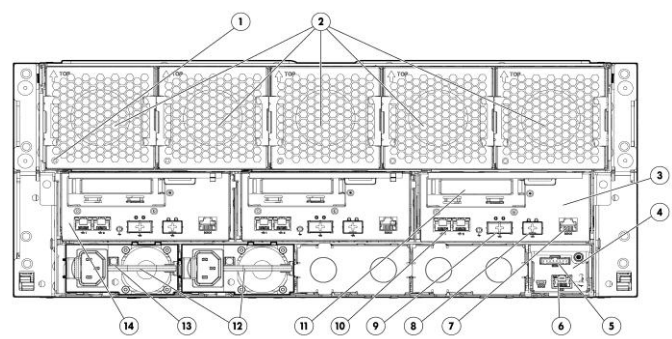
1. Fan LED
2. System fans
3. I/O Module Server Node 1
4. Management Module
5. SL Advanced Power Manager Distribution Module (SL-APMD) connector
6. iLO connector
7. Server Serial Port
8. 10Gb Ethernet SFP+ port  
**NOTE:** Available only when 10G I/O module is ordered. 1G I/O Module has 2x1Gb Ethernet ports only.
9. 10Gb Ethernet QSFP port  
**NOTE:** Available only when 10G I/O module is ordered. 1G I/O Module has 2x1Gb Ethernet ports only.
10. 2 X 1Gb Ethernet ports
11. Low profile PCI express slot  
**NOTE:** Available only when the optional HP SL454x Storage Mezzanine to PCIe Enablement Kit is ordered
12. Power supplies
13. Power supply LED
14. I/O Module Server Node 2

#### SL4540 Gen8 3x15 model



#### SL4540 Gen8 3x15 Model Front View:

1. Server Node 1



#### SL4540 Gen8 3x15 Model Rear View:

1. Fan LED

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## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Overview

- SFF 2.5" hard drives on node (2)
- Hard drive backplane health LED
- Storage UID
- LFF hard drives connected to Server Node 1 (15)
- Server Node 2
- LFF hard drives connected to Server Node 2 (15)
- Server Node 3
- LFF hard drives connected to Server Node 3 (15)
- Hard drive LED display boards
- Node video connector (VGA port)
- Node USB connectors (2)
- Node power ON/Standby button and system power LED
- Node health LED
- Node ejection button
- Node UID LED button
- System fans
- I/O Module Server Node 1
- Management Module
- SL Advanced Power Manager Distribution Module (SL-APMD) connector
- iLO connector
- Serial Port
- 10Gb Ethernet SFP+ port  
**NOTE:** Available only when 10G I/O module is ordered. 1G I/O Module has 2x1Gb Ethernet ports only.
- 10Gb Ethernet QSFP port  
**NOTE:** Available only when 10G I/O module is ordered. 1G I/O Module has 2x1Gb Ethernet ports only.
- 2 X 1Gb Ethernet ports
- Low profile PCI express slot  
**NOTE:** Available only when the optional HP SL454x Storage Mezzanine to PCIe Enablement Kit is ordered
- Power supplies
- Power supply LED
- I/O Module Server Node 3

### What's New

- Intel® Xeon® Processor E5-2400 v2 Series
- HP SL4500 H220 Host Bus Adapter
- VMware support for H220 Host Bus Adapter
- HP DDR3-1600 Low Voltage Memory Kit
- Hard Drive zoning via two P420i controller
- 32GB Low Volatage Memory Kit
- 6TB LFF HDD's
- 48VDC Power Supply Kit

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## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Standard Features

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

#### Processor

One model of the following per server node

#### E5-2400 v2 Series

##### Ten-Core Processors

Intel® Xeon® E5-2470v2 (2.4GHz/10core/25MB/95W) Processor

Intel® Xeon® E5-2450Lv2 (1.7GHz/10core/25MB/60W) Processor

##### Eight-Core Processors

Intel® Xeon® E5-2450v2 (2.5GHz/8core/20MB/95W) Processor

Intel® Xeon® E5-2440v2 (1.9GHz/8core/20MB/95W) Processor

##### Six-Core Processors

Intel® Xeon® E5-2430v2 (2.5GHz/6core/15MB/80W) Processor

Intel® Xeon® E5-2430Lv2 (2.4GHz/6core/15MB/60W) Processor

Intel® Xeon® E5-2420v2 (2.2GHz/6core/15MB/80W) Processor

##### Quad-Core Processors

Intel® Xeon® E5-2407v2 (2.4GHz/4core/10MB/80W) Processor

#### E5-2400 series

##### Eight-Core Processors

Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8) Turbo+

Intel® Xeon® E5-2470 (2.30GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)

##### Six-Core Processors

Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5) Turbo

Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/7.2GT-s QPI/60W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2440 (2.40GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

##### Quad-Core Processors

Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066)

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

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

**NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed (options for 1333 and 1066MHz memory speed are available).

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

**NOTE:** For the Intel® C600 Chipset E5-2400 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2400x v#, 2 = number of CPUs in a Node, 4 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number

#### Cache Memory

One of the following depending on model

25MB (1x25MB) Level3

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

20MB (1x20MB) Level3

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

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## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Standard Features

15MB (1x15MB) Level3  
**NOTE:** For Six-core processors.  
 10MB (1x10MB) Level3  
**NOTE:** For Quad-core processors.

**Chipset** Intel® C600 Series Chipset  
 Intel® E5-2400 v2 Processor Family  
 Intel® E5-2400 Processor Family  
**NOTE:** For more information regarding Intel® chipsets, please see the following URL:  
<http://www.intel.com/products/server/chipsets/>.

**Upgradeability** Upgradeable to two processors  
**NOTE:** Processor upgrade available from Intel® Xeon® Processors E5-2400 to E5-2400 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 E5-2400 to an Intel Xeon Processor E5-2400v2](#), regarding critical details before upgrading. An explanation of requirements and limitations are provided.

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

**Memory Protection** Advanced ECC (multi-bit error protection)  
 Online Spare  
 Lock Step Mode

**Memory** Type HP SmartMemory  
 Dedicated to each server node DDR3 Registered (RDIMM)  
 DIMM Slots Available 12 DIMM Slots available  
 Maximum (RDIMM) (per server tray) 384GB (12 x 32GB) Registered memory configurations  
**NOTE:** HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:  
[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)  
**NOTE:** HP certified SmartMemory must be used to guarantee full 1600 MHz speeds.  
**NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 1600, 1333MHz or 1066MHz. Please see the Online Memory Configuration Tool at:  
[www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**Network Controller** HP Ethernet 1Gb 2-port 361i  
 One of the following dedicated to each server node HP Ethernet 1Gb 2-port 361i and HP Ethernet 10Gb 2-Port 544i Adapter  
**NOTE:** Dual port ConnectX-3 10GbE or QDR IB  
**NOTE:** Network controller is hosted in the I/O Module

### Expansion Slots

| Primary Riser Dedicated to each server node | Expansion Slots # | Technology | Bus Width* | Connector Width | Form Factor      | Notes |
|---|-------------------|------------|------------|-----------------|------------------|-------|
|   | 1                 | PCIe 2.0   | X8         | X8              | Low profile slot |       |

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



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### Standard Features

**NOTE:** One PCIe 2.0 low profile expansion slot is enabled by HP Svr Storage Mezz to PCIe Option Kit 682632-B21 for adding one of the expansion options including an HP IO accelerator, networking options or external storage controller options.

**NOTE:** Expansion Slot is hosted in the I/O Module.

#### HP Server ROM

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

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

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

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

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

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

#### Storage Controllers

Dedicated to each server node

HP Dynamic Smart Array B120i SATA RAID

**NOTE:** HP Dynamic Smart Array B120i SATA RAID is located on the server node and controls only the two small form factor (SFF/2.5") hard drives on the server node itself.

HP SL4500 H220 Host Bus Adapter

**NOTE:** HP SL4500 H220 HBA is located in the I/O Module, which is located at the rear of the SL4540 chassis and controls the large form factor (LFF/ 3.5") hard drives.

HP Smart Array P420i Controller

**NOTE:** HP Smart Array P420i is located in the I/O Module, which is located at the rear of the SL4540 chassis and controls the large form factor (LFF/ 3.5") hard drives.

#### Internal Storage Devices

|                |   |
|----------------|---|
| Diskette Drive | Via USB port, external support only   |
| Optical Drive  | Via USB port, external support only   |
| Hard Drives    | None ship standard  |
| Drive Bays     | 2 SFF drive bays total for each node<br>60 LFF drive bays total in chassis for a 1x60 model<br>50 LFF drive bays total in chassis for a 2x25 model (25 drives per node)<br>45 LFF drive bays total in chassis for a 3x15 model (15 drives per node) |

#### Maximum

#### 1x60 Model - 60 LFF Drives per node

#### Internal Storage

|                   |         |          |
|-------------------|---------|----------|
| Hot Plug LFF SAS  | 360.0TB | 60 x 6TB |
| Hot Plug LFF SATA | 360.0TB | 60 x 6TB |



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## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Standard Features

|                       |        |            |
|-----------------------|--------|------------|
| Hot Plug SFF SATA     | 2.0TB  | 2 x 1TB    |
| Hot Plug LFF SATA SSD | 48.0TB | 60 x 800GB |
| Hot Plug SFF SATA SSD | 1.6TB  | 2 x 800GB  |

**NOTE:** The node consists of two SFF (2.5") hard drive bays on the front of the server

**NOTE:** The main storage section in the chassis has 60 LFF (3.5") hard drive bays and they can be populated with any combination of SAS, SATA, or SATA SSD drives to achieve desired performance.

#### 2x25 Model - 25 LFF Drives per node

|                       |         |            |
|-----------------------|---------|------------|
| Hot Plug LFF SAS      | 300.0TB | 50 x 6TB   |
| Hot Plug LFF SATA     | 300.0TB | 50 x 6TB   |
| Hot Plug SFF SATA     | 4.0TB   | 4 x 1TB    |
| Hot Plug LFF SATA SSD | 40.0TB  | 50 x 800GB |
| Hot Plug SFF SATA SSD | 3.2TB   | 4 x 800GB  |

**NOTE:** Each node contains two SFF (2.5") hard drive bays on the front of the node.

**NOTE:** The main storage section in the chassis has 50 LFF (3.5") hard drive bays, 25 bays per node, and they can be populated with any combination of SAS, SATA, or SATA SSD drives to achieve desired performance

#### 3x15 Model - 15 LFF Drives per node, 45 LFF Drives per chassis

|                       |         |            |
|-----------------------|---------|------------|
| Hot Plug LFF SAS      | 270.0TB | 45x 6TB    |
| Hot Plug LFF SATA     | 270.0TB | 45 x 6TB   |
| Hot Plug SFF SATA     | 6.0TB   | 6 x 1TB    |
| Hot Plug LFF SATA SSD | 36.0TB  | 45 x 800GB |
| Hot Plug SFF SATA SSD | 4.8TB   | 6 x 800GB  |

**NOTE:** Each node contains two SFF (2.5") hard drive bays on the front of the node.

**NOTE:** The main storage section in the chassis has 45 LFF (3.5") hard drive bays, 15 bays per node, and they can be populated with any combination of SAS, SATA, or SATA SSD drives to achieve desired performance.

### Interfaces

Dedicated to each server node

|                         |  |
|-------------------------|--|
| Network RJ-45           | Two 1GbE NIC ports (available in both 1GbE and 10GbE I/O Module)<br><b>NOTE:</b> Only one of either the 1GbE I/O Module or 10GbE I/O Module can be connected to the node.                                  |
| SFP+ connector          | One 10GbE SFP+ connector<br><b>NOTE:</b> 10GbE SFP+ and 10GbE/40Gb IB QSFP are additional networking interfaces available using optional 10GbE I/O Module.   |
| QSFP connector          | One 10GbE/40GbIB QSFP connector<br><b>NOTE:</b> 10 Gb Ethernet on the QSFP port requires the use of the QSFP to SFP+ adapter 655874-B21<br><b>NOTE:</b> IB supported with addition of HP IB Enablement Kit |
| USB                     | 2 front (external)   |
| Serial                  | 1 rear (external on I/O Module)  |
| Video                   | 1 front (external)   |
| Management Network Port | 10/100 Mb Dedicated (Optionally a 1GbE port can be dedicated to iLO)<br><b>NOTE:</b> Management port is shared   |
| Health LED              | 2 front  |
| Power                   | 1 front  |
| UID for node            | 1 front per node and 1 rear on management module)  |
| UID for storage         | 1 per display board  |

### Industry Standard Compliance

ACPI 2.0b Compliant  
PCIe 2.0 Compliant  
WOL Support

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## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Standard Features

Microsoft® Logo certifications  
PXE Support  
USB 1.1 and 2.0 Compliant  
SMBIOS 2.6.1

### Server Power Cords

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

**NOTE:** HP ProLiant SL servers are primarily connected to PDU's in data center racks so they ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant SL server using a 110V receptacle (NEMA-15), the NEMA power cord must be ordered separately.

**NOTE:** If customers require a local power cord, they can check the power cord matrix for the appropriate cord. Please see the following power cord matrix:  
<http://www.hp.com/go/powercordmatrix>.

### Power Specifications

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

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

### Common Slot Power Supply

HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% and are available in two power output options - 750W, and 1200W - allowing the user 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. It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP Power Advisor can be accessed at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

**NOTE:** 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:** 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 [www.80Plus.org](http://www.80Plus.org).

**NOTE:** Redundant Power: Optional redundant power supplies can be purchased through power supply option kits (see Power Supplies for part numbers).

### System Fans

System ships standard with 5 Dual fan modules.

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

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

**NOTE:** Only 64-bit versions of these operating systems are supported.

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



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### Standard Features

download page: <http://www.hp.com/support/SL4540Gen8>

**Graphics (per node)** Integrated Matrox G200 video standard

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

**Form Factor** 4.3U form factor  
**NOTE:** Can be racked as either a 5U tall chassis or as three chassis in 13U when purchased with a Rack Adapter Kit (P/N 681677-B21)

**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 self test or POST).
    - Please go to the Intelligent Provisioning website at [www.hp.com/go/intelligentprovisioning](http://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](http://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](http://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  
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

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## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Standard Features

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.

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

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### Security

Power-on password  
QuickLock, Network Server Mode  
Serial interface control  
Administrator's password  
iLO 4 (Integrated Lights-Out 4) has 12 customizable user accounts and SSL encryption  
iLO 4 can be disabled via a Global Setting  
iLO Advanced supports directory services integration

---

### 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 1-Year Parts, 1-Year Labor, 1-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.

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

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### Standard Features

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>

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Optional Features

|                                  |                                       |  |
|----------------------------------|---------------------------------------|--|
| <b>HP Insight management</b>     | HP Insight Control                    | <p>HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see <a href="http://www.hp.com/go/insightcontrol">http://www.hp.com/go/insightcontrol</a>.</p> <p>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: <a href="http://www.hp.com/services/insight">http://www.hp.com/services/insight</a>.</p>   |
|                                  | HP iLO Advanced                       | <p>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: <a href="http://www.hp.com/go/iloadvance">http://www.hp.com/go/iloadvance</a></p>   |
|                                  | HP iLO Scale-Out                      | <p>The HP iLO Scale-Out license ideal for web/hosting/cloud service providers and High Performance Computing environments. This license is a specific subset of iLO Advanced functionality, provides fast remote access through Text Console via SSH, lower operational cost with Dynamic power capping, and faster time to resolution through Email-based Alerting and proactive notifications. With this newly designed HP iLO Scale-Out license HPC customers now have a server management package solely design and priced for their massive data environments. HP iLO Scale-Out is available on all HP ProLiant Gen8 SL and BL and DL 160 servers. For more information, see: <a href="http://www.hp.com/go/iLO/scale-out">http://www.hp.com/go/iLO/scale-out</a></p> |
|                                  | HP Matrix Operating Environment       | <p>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.</p> <p>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).</p> <p><b>NOTE:</b> For more information, visit: <a href="http://www.hp.com/go/matrixoe">http://www.hp.com/go/matrixoe</a></p>  |
| <b>High Performance Clusters</b> | HP HPC Interconnects                  | <p>High Performance Computing (HPC) interconnect technologies are available for this server. These high-speed InfiniBand and 10 Gigabit interconnects are fully supported by HP.</p> <p><a href="http://www.hp.com/techservers/clusters/ucp/index.html">http://www.hp.com/techservers/clusters/ucp/index.html</a></p>  |
|                                  | HP Insight Cluster Management Utility | <p>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.</p> <p><a href="http://www.hp.com/go/cmu">http://www.hp.com/go/cmu</a></p>   |
|                                  | HP HPC Linux Value Pack               | <p>HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported option to HP Insight CMU, for the development and deployment of</p>   |

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Optional Features

applications on HPC Cluster Platforms. Value Pack includes the Platform LSF workload scheduler and Platform Application Center, as well as the HP-MPI parallelization library.

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#### HP Insight Online

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

[www.hp.com/go/insightonline](http://www.hp.com/go/insightonline)

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#### Factory Express Portfolio for Servers and Storage

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

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

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

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#### HP Simple Configurator

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

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Service and Support

#### Service and Support

##### HP Technology Services for SL Server

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

##### What HP SL Services can do for you

HP SL Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. HP Services helps deliver high levels of application availability through proactive service management and advanced technical response

HP Technology Services meets business challenges with recommended services HP support solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support recommendations for servers, storage, networking and software. Protect your business beyond warranty with HP Care Pack Services: HP Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business needs

#### Recommended Support Solution

Supports maintaining servers at optimum performance availability

##### HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner <http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf>

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

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

**For a Hyperscale Environment**, Datacenter Care is our most flexible and comprehensive support offering. HP works in partnership with our customers to provide end-to-end tailored support for your existing IT environments while aiding you on your converged cloud journey. It leverages the integrated technology, people, processes, and partner ecosystem of HP to deploy, help operate, and evolve your data centers on their journey from traditional data centers to converged cloud. With the ability to configure support tailored to your needs, we offer you flexibility that is cost effective. Datacenter Care is made from "building blocks" of services, each tested and delivered globally. These can be combined to deliver the services that you require, and are monitored and updated to change as your needs change. Start with the core building blocks of an assigned account service manager, enhanced call handling, proactive and reactive support, and add on other services that are tailored to your specific needs. Proactive and reactive support are configured to deliver the level of support needed by the different components in a data center, to meet both SLA and cost targets.

**For SMB to Enterprise customers** HP Technology Services meets business challenges with the right services solution:

##### Recommended Services **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



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Service and Support

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>

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

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**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

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

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

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

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Pre-configured Models

|   |                    |  |
|---|--------------------|--|
| <b>HP ProLiant 3xSL4540<br/>Gen8 1G Mezz HBA Server</b><br>748409-001 | Processor(s)       | (1) Intel Xeon® E5-2470 v2 ( 2.4GHz, 10 core, 25MB, 95W) |
|   | Servers            | Includes 3 nodes in 1 chassis                            |
|   | Cache Memory       | 25MB L3 Cache per node                                   |
|   | Memory             | 32GB (4 x 8GB) per node                                  |
|   | Network Controller | (2) 1Gb Ethernet Ports per node                          |
|   | Storage Controller | (1) HP SL4500 H220 Host Bus Adapter per node             |
|   | Hard Drive         | None ship standard                                       |
|   | Expansion Slot     | (1) available mezzanine slot per node                    |
|   | Management         | HP iLO Management Engine                                 |
|   | Form Factor        | 4.3U, comes with .66U spacer blank and rail kit          |
|   | Power Supply       | (2) HP 1200W Common Slot Platinum Plus Hot Plug          |
|   | Warranty           | 1-1-1  |



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### 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.

**NOTE:** Rack chosen is required to have 1200mm to provide space for cable management arm at the rear of the chassis and host PDU in the rear of the rack

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

|                                |   |  |
|--------------------------------|---|--|
| <b>HP Chassis - 1x60 Model</b> | HP ProLiant SL454x 1x Node Chassis<br><b>NOTE:</b> Standard 5 dual fan modules included along with chassis.<br><b>NOTE:</b> Supports 60 LFF drives. One node total  | 663600-B21                             |
| <b>HP Chassis - 2x25 Model</b> | HP ProLiant SL454x 2x Node Chassis<br><b>NOTE:</b> Standard 5 dual fan modules included along with chassis.<br><b>NOTE:</b> Supports 50 LFF drives with up to 25 per node. Two nodes total  | 663600-B22                             |
| <b>HP Chassis - 3x15 Model</b> | HP ProLiant SL454x 3x Node Chassis<br><b>NOTE:</b> Standard 5 dual fan modules included along with chassis.<br><b>NOTE:</b> Supports 45 LFF drives with up to 15 per node. Three nodes total  | 663600-B23                             |
| <b>HP Power Supplies</b>       | <b>NOTE:</b> 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:<br><a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a><br><b>HP Common Slot Platinum Plus Power Supply Kits</b><br><b>NOTE:</b> The following power supplies offer up to 94% efficiency.<br>HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit<br>HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit<br><b>HP Common Slot Gold Power Supplies</b><br><b>NOTE:</b> The following power supplies offer up to 92% efficiency.<br>HP 750W Common Slot Gold Hot Plug Power Supply Kit<br><b>NOTE:</b> Kits contain optional power supply, an IEC power cable and PDU IEC cables. | 656363-B21<br>656364-B21<br>512327-B21 |
| <b>HP Rail Kits</b>            | <b>NOTE:</b> One Rail Kit is required for every chassis in a rack.<br>HP 4.3U Server Rail Kit<br>HP 0.66U Spacer Blank Kit<br><b>NOTE:</b> A Spacer Blank kit may be ordered to make an even 5U (4.3U+0.66U) spacing in a rack. This would enable racking of up to 8 chassis in a 42U rack. It is also possible to rack up to 9 chassis in a 42U rack using an additional dense racking option kit. The Spacer Blank kit is not used when the dense racking option HP 13U FIO Rack Adapter Kit for 3x4.3U Chassis is used   | 681254-B21<br>681260-B21               |

### Step 1A: Select Nodes

|                                     |  |            |
|-------------------------------------|--|------------|
| <b>HP Server Nodes - 1x60 model</b> | HP ProLiant SL4540 Gen8 Tray 1x Node Server<br><b>NOTE:</b> Select quantity of one   | 664644-B21 |
| <b>HP Server Nodes - 2x25 model</b> | HP ProLiant SL4540 Gen8 Tray 2x Node Server<br><b>NOTE:</b> Select quantity of two   | 664644-B22 |
| <b>HP Server Nodes - 3x15 model</b> | HP ProLiant SL4540 Gen8 Tray 3x Node Server<br><b>NOTE:</b> Select quantity of three | 664644-B23 |

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



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Configuration Information - Factory Integrated Models

#### otherwise noted)

#### HP Processors

**NOTE:** If 2 processor servers are desired, select one xxxxx-L21 and one xxxxxx-B21 for every processor option chosen per node

#### E5-2400 v2 Series Processors

##### Ten-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2470v2 (2.4GHz/10-core/25MB/95W) FIO Processor Kit 740674-L21

HP SL4540 Gen8 Intel® Xeon® E5-2450Lv2 (1.7GHz/10-core/25MB/60W) FIO Processor Kit 744134-L21

##### Eight-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2450v2 (2.5GHz/8-core/20MB/95W) FIO Processor Kit 740695-L21

HP SL4540 Gen8 Intel® Xeon® E5-2440v2 (1.9GHz/8-core/20MB/95W) FIO Processor Kit 740677-L21

##### Six-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2430v2 (2.5GHz/6-core/15MB/80W) FIO Processor Kit 740680-L21

HP SL4540 Gen8 Intel® Xeon® E5-2430Lv2 (2.4GHz/6-core/15MB/60W) FIO Processor Kit 740689-L21

HP SL4540 Gen8 Intel® Xeon® E5-2420v2 (2.2GHz/6-core/15MB/80W) FIO Processor Kit 740693-L21

##### Four-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2407v2 (2.4GHz/4-core/10MB/80W) FIO Processor Kit 740691-L21

#### E5-2400 series Processors

##### Eight-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/95W) FIO Processor Kit 730777-L21

HP SL4540 Gen8 Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/95W) FIO Processor Kit 684373-L21

##### Six-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/95W) FIO Processor Kit 728427-L21

HP SL4540 Gen8 Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/95W) FIO Processor Kit 684379-L21

HP SL4540 Gen8 Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/60W) FIO Processor Kit 686169-L21

HP SL4540 Gen8 Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/95W) FIO Processor Kit 684376-L21

##### Quad-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/80W) FIO Processor Kit 686166-L21

#### HP Memory

**NOTE:** Please choose memory options for the first processor of each server node. Up to 6 DDR3 DIMM slots are dedicated per processor socket.

**NOTE:** HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** HP certified SmartMemory must be used to guarantee full 1333MHz speeds.

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

#### Registered DIMMs (RDIMM) - For E5-2400 v2 Series Processors

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Configuration Information - Factory Integrated Models

**NOTE:** The Following memory is supported by E5-2400 v2 series processors

|  |            |
|--|------------|
| HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit | 713981-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 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit   | 713983-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit | 713985-B21 |
| HP 32GB (1x16GB) Dual Rank x4 PC3L-10600L (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit  | 647903-B21 |

#### Registered DIMMs (RDIMM) - For E5-2400 Series Processors

**NOTE:** The Following memory is supported by E5-2400 series processors

|   |            |
|---|------------|
| HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647893-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit   | 647897-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647901-B21 |
| HP 32GB (1x16GB) Dual Rank x4 PC3L-10600L (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647903-B21 |

**NOTE:** A maximum of 12 DDR3 based memory slots are available on the node tray.

#### HP I/O Module

**NOTE:** At least one I/O module must be selected per node. The HP ProLiant SL454x 1G FIO Module Kit supports two (2) embedded 1Gb NICs. The HP SL454x 10G FIO Input Output Module Kit supports two (2) embedded 1Gb NICs and two (2) embedded 10Gb NICs with an optional InfiniBand upgrade.

**NOTE:** 10 Gb Ethernet on the QSFP port requires the use of the QSFP to SFP+ (QSA) adapter 655874-B21.

**NOTE:** IB supported with addition of HP IB Enablement Kit

|  |            |
|--|------------|
| HP SL454x 1G FIO Input Output Module Kit | 664647-B21 |
| HP SL454x 10G Input Output Module Kit    | 664648-B21 |

**NOTE:** Quantity of I/O module is 1 for every 1x60 model, 2 for every 2x25 model and 3 for every 3x15 model.

#### HP Storage Controllers

**NOTE:** Each node can support up to two of the P420i Gen8 storage controllers to manage the LFF hard drives.

**NOTE:** Each node can support ONLY one HP SL4500 H220 HBA to manage the LFF hard drives

**NOTE:** If two P420i Gen8 storage controllers are ordered, the HP SL454x Storage Mezzanine to PCIe Enablement Kit cannot be ordered

**NOTE:** A cache module and the 12 inch Supercap kit must be selected per each P420i ordered.

**NOTE:** Zero Memory cache option is not supported.

#### Host Bus Adapter

|                                     |            |
|-------------------------------------|------------|
| HP SL4500 H220 FIO Host Bus Adapter | 740326-B21 |
|-------------------------------------|------------|

#### Smart Array P420i Controller

|   |            |
|---|------------|
| HP Smart Array P420i Mezzanine Controller FIO Kit | 692276-B21 |
|---|------------|

#### Options for P420i

**NOTE:** A cache module and the 12 inch Supercap kit must be selected per each P420i

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Configuration Information - Factory Integrated Models

ordered

**NOTE:** Zero Memory cache option is not supported

|  |            |
|--|------------|
| HP 12in Super Capacity Option for Smart Array        | 668943-B21 |
| HP 1GB P-series Smart Array Flash Backed Write Cache | 631679-B21 |
| HP 2GB P-series Smart Array Flash Backed Write Cache | 631681-B21 |

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

|                            |  |
|----------------------------|--|
| <b>PCI Riser</b>           | <p>HP SL454x Storage Mezzanine to PCIe Enablement Kit 682632-B21</p> <p><b>NOTE:</b> Needed to enable Low Profile PCIe Slot in the I/O module. Required for ordering any additional PCI Express cards for adding one of the expansion options such as HP IO accelerator, networking options or external storage controller options</p> <p><b>NOTE:</b> If two P420i Gen8 storage controllers are ordered, the HP SL454x Storage Mezzanine to PCIe Enablement Kit cannot be ordered</p>   |
| <b>Rack Adapter</b>        | <p>HP 13U FIO Rack Adapter Kit for 3X4.3U Chassis 681677-B21</p> <p><b>NOTE:</b> Densely groups three SL4540 chassis into a 13U tall space. Order one per three chassis. The 0.66U spacer is not used when selecting this option.</p>  |
| <b>HP Insight Software</b> | <p>HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License C6N36A</p> <p>HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 8 Svr FIO Electronic License C6N32ABE</p> <p><b>NOTE:</b> The Electronic software license is available in EMEA only</p> <p>HP Insight Control for BladeSystem including 1yr 24x7 Support Enclosure 16Svr FIO Electronic License C6N33ABE</p> <p><b>NOTE:</b> The Electronic software license is available in EMEA only</p> <p>HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License C6N36ABE</p> <p><b>NOTE:</b> The Electronic software license is available in EMEA only</p> |

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

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

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Core Options

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

#### HP Processors

**NOTE:** Please choose Processor options for the second processor of each server node.

#### E5-2400 v2 Series Processors

##### Ten-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2470v2 (2.4GHz/10-core/25MB/95W) Processor Kit 740674-B21

HP SL4540 Gen8 Intel® Xeon® E5-2450Lv2 (1.7GHz/10-core/25MB/60W) Processor Kit 744134-B21

##### Eight-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2450v2 (2.5GHz/8-core/20MB/95W) Processor Kit 740695-B21

HP SL4540 Gen8 Intel® Xeon® E5-2440v2 (1.9GHz/8-core/20MB/95W) Processor Kit 740677-B21

##### Six-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2430v2 (2.5GHz/6-core/15MB/80W) Processor Kit 740680-B21

HP SL4540 Gen8 Intel® Xeon® E5-2430Lv2 (2.4GHz/6-core/15MB/60W) Processor Kit 740689-B21

HP SL4540 Gen8 Intel® Xeon® E5-2420v2 (2.2GHz/6-core/15MB/80W) Processor Kit 740693-B21

##### Four-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2407v2 (2.4GHz/4-core/10MB/80W) Processor Kit 740691-B21

#### E5-2400 Series Processors

##### Eight-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/95W) Processor Kit 730777-B21

HP SL4540 Gen8 Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/95W) Processor Kit 684373-B21

##### Six-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/95W) Processor Kit 728427-B21

HP SL4540 Gen8 Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/95W) Processor Kit 684379-B21

HP SL4540 Gen8 Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/60W) Processor Kit 686169-B21

HP SL4540 Gen8 Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/95W) Processor Kit 684376-B21

##### Quad-Core Processors

HP SL4540 Gen8 Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/80W) Processor Kit 686166-B21

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

#### HP Memory

**NOTE:** Please choose memory options for the second processor of each node. Up to 6 DDR3 DIMM slots are dedicated per socket.

**NOTE:** HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** HP certified SmartMemory must be used to guarantee full 1333MHz speeds.

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

#### Registered DIMMs (RDIMM) - For E5-2400 v2 Series Processors

**NOTE:** The Following memory is supported by E5-2400 v2 series processors

HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low 713981-B21

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Core Options

|  |            |
|--|------------|
| Voltage Memory Kit   |            |
| 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 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit   | 713983-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit | 713985-B21 |
| HP 32GB (1x32GB) Dual Rank x4 PC3L-14900R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit | 708643-B21 |

#### Registered DIMMs (RDIMM) - For E5-2400 Series Processors

**NOTE:** The Following memory is supported by E5-2400 series processors

|   |            |
|---|------------|
| HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647893-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit   | 647897-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647901-B21 |
| HP 32GB (1x32GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647903-B21 |

### HP Hard Drives

**NOTE:** For the 1x60 model, choose up to a total of 60 LFF 3.5" hard drives from the following options using any mix of SAS/SATA/SSD hard drives for desired performance and up to a total of 2 SFF 2.5" hard drives from the following options for OS, boot or additional storage purposes.

**NOTE:** For the 2x25 model, choose up to a total of 25 LFF 3.5" hard drives per server node from the following options using any mix of SAS/SATA/SSD hard drives for desired performance and up to a total of 2 SFF 2.5" hard drives per server node from the following options for OS, boot or additional storage purposes.

**NOTE:** For the 3x15 model, choose up to a total of 15 LFF 3.5" hard drives per server node from the following options using any mix of SAS/SATA/SSD hard drives for desired performance and up to a total of 2 SFF 2.5" hard drives per server node from the following options for OS, boot or additional storage purposes.

**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 for the subsystem.

**NOTE:** Hard drives have either a one year or three year warranty.

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

|   |            |
|---|------------|
| HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive | 765424-B21 |
| 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 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive | 761477-B21 |
| HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive | 695510-B21 |
| 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:

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Core Options

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

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

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

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

|   |            |
|---|------------|
| HP 6TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   | 753874-B21 |
| HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   | 693687-B21 |
| HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   | 628061-B21 |
| HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   | 658079-B21 |
| HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive   | 657750-B21 |
| HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive | 658071-B21 |

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

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

#### **6G 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 600GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive | 739900-B21 |
| HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive | 718183-B21 |
| HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive | 739890-B21 |
| HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive | 718177-B21 |

#### **6G SATA 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 |
| 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 LFF (3.5-inch) Enterprise Mainstream Solid State Drives**

|   |            |
|---|------------|
| HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive | 691860-B21 |
| HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive | 691856-B21 |
| HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr 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 |

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

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

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Core Options

(Worldwide)

#### 12G SAS Value Endurance Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives

|                                      |            |
|--------------------------------------|------------|
| HP 800GB 12G SAS VE 3.5in SCC EV SSD | 762270-B21 |
| HP 1.6TB 12G SAS VE 3.5in SCC EV SSD | 762272-B21 |

#### 12G SAS Value Endurance Hot Plug LFF (2.5-inch) Enterprise Value Solid State Drives

|                                     |            |
|-------------------------------------|------------|
| HP 800GB 12G SAS VE 2.5in SC EV SSD | 762261-B21 |
| HP 1.6TB 12G SAS VE 2.5in SC EV SSD | 762263-B21 |

**NOTE:** 12G SAS SSDs operate at 6G when deployed in SL4540 Gen8.

### HP Networking

#### Gigabit Ethernet Adapters

|  |            |
|--|------------|
| HP NC365T 4-port Ethernet Server Adapter | 593722-B21 |
| HP Ethernet 1Gb 4-port 331T Adapter      | 647594-B21 |

#### 10 Gigabit Ethernet adapters

|   |            |
|---|------------|
| 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 |

**NOTE:** Need to order HP SL454x Storage Mezzanine to PCIe Enablement Kit to enable the low profile PCIe slot.

**NOTE:** These are additional expansion options and only one may be selected per server node.

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

### Optical Adapters

|  |            |
|--|------------|
| HP BladeSystem c-Class 10Gb Short Range Small Form-Factor Pluggable Option | 455883-B21 |
| HP BladeSystem c-Class 10Gb Long Range Small Form-Factor Pluggable Option  | 455886-B21 |
| HP BLc VC 1GB SFP RJ-45 Module   | 453156-001 |
| HP BLc Virtual Connect 1Gb RJ-45 Small Form Factor Pluggable Option Kit    | 453154-B21 |
| HP BLc Virtual Connect 1Gb SX Small Form Factor Pluggable Option Kit       | 453151-B21 |
| HP X132 10G SFP+ LC SR Transceiver   | J9150A     |
| HP X132 10G SFP+ LC LR Transceiver   | J9151A     |
| HP QSFP/SFP+ Adapter Kit   | 655874-B21 |

**NOTE:** The adaptors listed will function with single mode fiber cable designed to fit in an SFP/SFP+ transceiver

### SFP+ Direct Attach Cables

|  |                            |
|--|----------------------------|
| 0.5M 10GbE BLc DAC SFP+                                | 487649-B21 /<br>487559-001 |
| 1M 10GbE BLc DAC SFP+                                  | 487652-B21 /<br>487654-001 |
| 3M 10GbE BLc DAC SFP+                                  | 487655-B21 /<br>487657-001 |
| 7M 10GbE BLc DAC SFP+                                  | 487658-B21 /<br>487660-001 |
| HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable | J9281B                     |
| HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | JD097C                     |
| HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | J9283B                     |



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Core Options

|  |        |
|--|--------|
| HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable   | JG081C |
| HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable   | J9285B |
| <b>NOTE:</b> 10 Gb Ethernet on the QSFP port requires the use of the QSFP to SFP+ adaptor (P/N 655874-B21) |        |

### HP InfiniBand

|   |            |
|---|------------|
| HP InfiniBand Enablement Kit  | 614841-B21 |
| <b>NOTE:</b> Please see the QuickSpecs for additional information:<br><a href="http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html">http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html</a> |            |

### Infiniband Cables

|  |            |
|--|------------|
| <b>NOTE:</b> Infiniband supported with addition of HP IB Enablement Kit (P/N 614841-B21) |            |
| HP 1M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Copper Cable                | 498385-B21 |
| HP 2M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Copper Cable                | 498385-B22 |
| HP 3M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Copper Cable                | 498385-B23 |
| HP 5M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Copper Cable                | 498385-B24 |
| HP 3M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Optical Cable               | 498386-B23 |
| HP 5M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Optical Cable               | 498386-B24 |
| HP 10M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Optical Cable              | 498386-B25 |
| HP 15M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Optical Cable              | 498386-B26 |
| HP 20M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Optical Cable              | 498386-B27 |
| HP 30M 4X DDR/QDR Quad Small Form Factor Pluggable InfiniBand Optical Cable              | 498386-B28 |
| <b>NOTE:</b> FDR and FDR-10 not supported.   |            |

### HP Power Supplies

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

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

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

|  |            |
|--|------------|
| HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit  | 656363-B21 |
| HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit  | 636673-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 up to 92% efficiency.

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

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

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

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

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

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

**NOTE:** The HP 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user to select an alternative power cord for your server, please review the HP Common Slot Power Supplies QuickSpecs..

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

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### Core Options

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

#### HP SL Advanced Power Manager

The SL Advanced Power Manager is an optional rack level solution for the HP ProLiant SL4540 and SL4545 which enables server-level DC (or hardware) power on and off and server-level monitoring. In addition, the SL APM will automatically discover SL hardware components which are connected into the SL APM solution. The SL APM does not replace rack PDUs, but is designed to enable the utilization of basic, low cost, rack PDUs while providing the functionality of 'switched' PDUs (which provide hardware power on/off of individual servers by turning off the AC power to the power supplies of a given server). Because the SL servers share power supplies to optimize power efficiency, using 'switched' PDUs to turn off all the power supplies in the chassis will result in the loss of all server nodes in that chassis. The SL APM solves this by allowing server node-level hardware power on/off of the DC power to the individual server node motherboards.

|  |            |
|--|------------|
| HP SL Advanced Power Manager Kit                     | 538084-B21 |
| HP SL Advanced Power Manager Distribution Module Kit | 620002-B21 |

#### HP Insight Software

##### HP Insight Control

|  |          |
|--|----------|
| HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License | C6N28ABE |
|--|----------|

**NOTE:** The Electronic software license is available in EMEA only.

|   |        |
|---|--------|
| HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License | C6N27A |
|---|--------|

|  |        |
|--|--------|
| HP Insight Control Server Provisioning Media Kit | BD883A |
|--|--------|

|                                 |        |
|---------------------------------|--------|
| HP Insight Management Media Kit | C6N31A |
|---------------------------------|--------|

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

##### HP Integrated Lights-Out (iLO)

##### HP iLO Scale-Out

|   |          |
|---|----------|
| HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Flex Qty E-LTU | BD776AAE |
|---|----------|

|  |        |
|--|--------|
| HP Integrated Lights-Out Scale-Out 3yr 24x7 Tech Support and Updates Flex Quantity License | BD776A |
|--|--------|

|   |        |
|---|--------|
| HP Integrated Lights-Out Scale-Out including 3yr 24x7 Tech Support and Updates Tracking License | BD777A |
|---|--------|

|   |          |
|---|----------|
| HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates Flex Qty E-LTU | BD778AAE |
|---|----------|

|  |        |
|--|--------|
| HP Integrated Lights-Out Scale-Out 1yr 24x7 Tech Support and Updates Flex Quantity License | BD778A |
|--|--------|

|   |        |
|---|--------|
| HP Integrated Lights-Out Scale-Out including 1yr 24x7 Tech Support and Updates Tracking License | BD779A |
|---|--------|

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

**NOTE:** For additional license options please see the QuickSpecs at:

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

[http://h18000.www1.hp.com/products/quickspecs/13019\\_div/13019\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html)

#### HP Integrated Lights-Out (iLO) Advanced for ProLiant

HP iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU E6U59ABE

**NOTE:** The Electronic software license is available in EMEA only.

HP iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU E6U64ABE

**NOTE:** The Electronic software license is available in EMEA only.

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

HP iLO Advanced for BladeSystem including 1yr 24x7 Support Eight Server License 512489-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](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](http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html)

### 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

**NOTE:** Need to order HP SL454x Storage Mezzanine to PCIe Enablement Kit to enable the low profile PCIe slot.

**NOTE:** These are additional expansion options and only one may be selected per server node.

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

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

### HP PCIe Workload Accelerator Options

#### Mainstream Endurance (ME) PCIe Workload Accelerators

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

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

#### High Endurance (HE) PCIe Workload Accelerators

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

HP 350GB HH/HL High Endurance (HE) PCIe Workload Accelerator 708088-B21

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

[http://h18000.www1.hp.com/products/quickspecs/14528\\_div/14528\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14528_div/14528_div.html) (Worldwide)



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

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

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

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

### HP Storage Controllers

#### SAS Controllers

##### Smart Array P421 Controller

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

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

##### Smart Array P431/4G Controller

HP Smart Array P431/4GB FBWC 6Gb 2-ports Ext SAS Controller 698532-B21

##### Optional Upgrades

HP 12in Super Capacity Option for Smart Array 668943-B21

**NOTE:** The HP 12in Super Cap is a required option to implement a HP Smart Array Controller with Flash.

HP 1GB P-series Smart Array Flash Backed Write Cache 631679-B21

HP 2GB P-series Smart Array Flash Backed Write Cache 631681-B21

HP SmartCache No Media 24x7 Technical Support 1 Svr License D7S26A

HP SmartCache No Media 24x7 Technical Support Flexible License D7S27A

HP SmartCache No Media 24x7 Technical Support Electronic License D7S27AAE

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

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

[http://h18000.www1.hp.com/products/quickspecs/14532\\_div/14532\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14532_div/14532_div.html)  
(SmartCache)

##### Host Bus Adapter

HP H221 PCIe 3.0 SAS Host Bus Adapter 729552-B21

**NOTE:** Need to order HP SL454x Storage Mezzanine to PCIe Enablement Kit to enable the low profile PCIe slot.

**NOTE:** These are additional expansion options and only one may be selected per server node.

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

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

### HP Power Cords

**NOTE:** HP ProLiant servers ships with an IEC-IEC power cord used for rack mounting



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

with Power Distribution Units (PDUs).

|  |        |
|--|--------|
| HP C13 - C14 WW 250V 10A Gray 0.7m Jumper Cord         | A0K03A |
| HP C13 - C14 WW 250V 10A Gray 1.37m Jumper Cord        | A0K04A |
| HP C13 - 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 - SI-32 IL 250V 10Amp 1.83m Power Cord          | AF564A |
| HP C13 - NBR-14136 BR 250V 10Amp 1.83m Power Cord      | AF591A |
| 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 - C14 WW 250V 10Amp 2.0m Jumper Cord            | A0K02A |
| HP C13 - IS-1293 IN 250V 10Amp HV 2.5m Power Cord      | SG579A |
| HP C13 - AS3112-3 AU 250V 10Amp 2.5m Power Cord        | AF569A |
| HP C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord        | AF567A |
| HP C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord       | AF572A |
| HP C13 - C14 WW 250V 10A Gray 3.0m Jumper Cord         | A0K06A |
| HP C13 - Nema 6-15P US 250V 15A JP 3.6m Power Cord     | A0N33A |
| HP C13 - GB-1002 CN 250V 10Amp 1.83m Power Cord        | AF557A |
| HP C13 - KSC- 8305 KR 250V 10Amp 1.83m Power Cord      | AF560A |
| HP C13 - CNS-690 TW 110V 13Amp 1.83m Power Cord        | AF561A |
| HP C13 - Nema 5-15P TH/PH 250V 10Amp 1.83m Power Cord  | AF559A |
| HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord  | AF556A |
| HP C13 - IS-1293 IN 240V 6Amp LV 2.0m Power Cord       | AF562A |
| HP C13 - IRAM -2073 AR 250V 10A 2.5m Power Cord        | AF558A |
| HP C13 - C14 WW 250V 10Amp Flint Gray 2.0m Jumper Cord | AF573A |

### 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 LTO Ultrium Half-Height Tape Drives

HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit C0L99A

#### HP StoreEver 1/8 G2 Tape Autoloader

HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 SAS Tape Autoloader C0H18A

#### HP StoreEver MSL6480

HP StoreEver MSL6480 Scalable Base Module QU625A

### HP Tape Storage Systems

#### HP StoreEver MSL6480

HP StoreEver MSL6480 Scalable Base Module QU625A

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

[http://h18000.www1.hp.com/products/quickspecs/14604\\_div/14604\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14604_div/14604_div.html) (Worldwide)

### HP Disk Storage Systems Disk Enclosures

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

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

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

information:

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

(Worldwide)

#### HP Uninterruptible Power Systems

##### HP Rack-mountable UPS

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

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

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

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

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

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

(Worldwide)

###### HP R/T3000 G2 Uninterruptible Power System (UPS)

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

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

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

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

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

(Worldwide)

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

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

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

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

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

(Worldwide)

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

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

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

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

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

(Worldwide)

**NOTE:** For additional information on HP Uninterruptible Power Systems please go to: [www.hp.com/servers/rackups](http://www.hp.com/servers/rackups).

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

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

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

#### HP Basic Power Distribution Units (bPDU)

##### HP Basic Power Distribution Unit: 1U/0U Version

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

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

##### HP Basic Power Distribution Unit: Half Height Version

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

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

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

HP 7.3kVA 230 Volt IEC309 32A Input (20xC13) INTL Basic PDU H5M68A



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

|  |        |
|--|--------|
| HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13) NA/JP Basic PDU   | H5M61A |
| <b>HP Basic Power Distribution Unit: Mid Height Version</b>  |        |
| HP 4.9kVA 208 Volt L6-30 Input (24xC13/6xC19) NA/JP Basic PDU  | H5M59A |
| HP 7.3kVA 230 Volt IEC309 32A Input (24xC13/6xC19) INTL Basic PDU  | H5M70A |
| HP 8.3kVA 208 Volt CS8265C Input (30xC13/6xC19) NA/JP Basic PDU  | H5M60A |
| HP 11kVA 230 Volt IEC309 63A Input (30xC13/6xC19) INTL Basic PDU   | H5M71A |
| HP Hardwired 200-240 Volt Input (30xC13/6xC19) WW Basic PDU  | H5M75A |
| HP 5.7kVA 208 Volt L21-20 3-Phase Input (24xC13/3xNEMA 5-20R) NA/JP Basic PDU  | H5M63A |
| HP 8.6kVA 208 Volt L21-30 3-Phase Input (24xC13/3xC19/3xNEMA 5-20R) NA/JP Basic PDU  | H5M64A |
| HP 8.6kVA 208 Volt L15-30 3-Phase Input (24xC13/6xC19) NA/JP Basic PDU   | H5M62A |
| HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/6xC19) INTL Basic PDU   | H5M72A |
| <b>HP Basic Power Distribution Unit: Full Height Version</b>   |        |
| HP 11kVA 400 Volt IEC309 16A 3-Phase Input (36xC13/6xC19) INTL Basic PDU   | H5M73A |
| HP 11kVA 400 Volt IEC309 30A 3-Phase Input (36xC13/6xC19) NA Basic PDU   | H5M67A |
| <b>HP Basic Power Distribution Unit: 480/277 Volt Version</b>  |        |
| HP 13.2kVA 480 Volt IEC309 30A 3-Phase Input (15 Outlet) NA Basic PDU  | H3X07A |
| HP 19.9kVA 480 Volt IEC309 30A 3-Phase Input (30 Outlet) NA Basic PDU  | H3X08A |
| <b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:<br><a href="http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html">http://h18000.www1.hp.com/products/quickspecs/14557_div/14557_div.html</a> (Worldwide) |        |
| <b>NOTE:</b> Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: <a href="http://www.hp.com/go/rackandpower">www.hp.com/go/rackandpower</a>  |        |

### HP Remote Monitoring Power Distribution Units (mPDU)

|   |        |
|---|--------|
| <b>HP Remote Monitored Power Distribution Unit: 1U Version</b>                          |        |
| HP 2.8kVA 120 Volt L5-30 Input (12xNEMA 5-20R)NA/JP Monitored PDU                       | D9N43A |
| HP 3.6kVA 200-240 Volt Detachable C20 Input (12xC13) WW Monitored PDU                   | D9N46A |
| HP 4.9kVA 208 Volt L6-30 Input (12xC13) NA/JP Monitored PDU                             | D9N44A |
| <b>HP Remote Monitored Power Distribution Unit: Half Height Version</b>                 |        |
| HP 3.6kVA 200-240 Volt Detachable C20 Input (16xC13) WW Monitored PDU                   | D9N45A |
| <b>HP Remote Monitored Power Distribution Unit: Mid Height Version</b>                  |        |
| HP 4.9kVA 208 Volt L6-30 Input (20xC13/4xC19) NA/JP Monitored PDU                       | D9N47A |
| HP 7.3kVA 230 Volt IEC309 32A Input (20xC13/4xC19) INTL Monitored PDU                   | D9N48A |
| HP 8.6kVA 208 Volt L15-30 3-Phase Input (18xC13/3xC19) NA/JP Monitored PDU              | D9N51A |
| HP 5.7kVA 208 Volt L21-20 3-Phase Input (18xC13/3xNEMA 5-20R) NA/JP Monitored PDU       | D9N52A |
| HP 8.6kVA 208 Volt L21-30 3-Phase Input (20xC13/3xC19/3xNEMA 5-20R) NA/JP Monitored PDU | D9N53A |
| HP 11kVA 400 Volt IEC309 16A 3-Phase Input (18xC13/3xC19) INTL Monitored PDU            | D9N55A |
| <b>HP Remote Monitored Power Distribution Unit: Full Height Version</b>                 |        |
| HP 8.3kVA 208 Volt CS8265C Input (30xC13/3xC19) NA Monitored PDU                        | D9N49A |
| HP 7.3kVA 230 Volt IEC309 32A Input (32xC13/4xC19) INTL Monitored PDU                   | D9N50A |
| HP 11kVA 400 Volt IEC309 16A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU            | D9N57A |
| HP 14.4kVA 208 Volt CS8365C 3-Phase Input (12xC13/12xC19)NA Monitored PDU               | D9N58A |
| HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (30xC13/3xC19) NA Monitored PDU            | D9N61A |



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

|  |        |
|--|--------|
| HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (24xC13/3xC19) NA/JP Monitored PDU  | D9N54A |
| HP 17.3kVA 208 Volt IEC309 60A 3-Phase Input (12xC13/12xC19) NA/JP Monitored PDU   | D9N59A |
| HP 22kVA 400 Volt IEC309 32A 3-Phase Input (12xC13/12xC19) INTL Monitored PDU  | D9N60A |
| HP 22kVA 400 Volt IEC309 32A 3-Phase Input (30xC13/3xC19) INTL Monitored PDU   | D9N56A |
| HP 16.6kVA 400 Volt IEC309 30A 3-Phase Input (12xC13/12xC19) NA Monitored PDU  | D9N62A |
| HP 19.9kVA 480 Volt 3-Phase (30 Outlet) NA Monitored PDU   | D9N63A |
| <b>HP Environmental Sensor for Remote Monitored PDUs</b>   |        |
| HP Environmental Sensor for Remote Monitored PDUs  | E2D53A |
| <b>NOTE: Please see the QuickSpecs for additional information:</b><br><a href="http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html">http://h18000.www1.hp.com/products/quickspecs/14669_div/14669_div.html</a><br>(Worldwide) |        |

### HP Intelligent Power Distribution Units (iPDU)

#### iPDU Core Units

|  |        |
|--|--------|
| HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit        | AF520A |
| HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit        | AF521A |
| HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit         | AF522A |
| HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit             | AF533A |
| HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit        | AF523A |
| HP 17.3kVA 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit       | AF902A |
| HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit         | AF525A |
| HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit           | AF526A |
| HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit           | AF527A |
| HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit | AF535A |
| HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit | AF537A |
| HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit    | AF538A |

#### iPDU Kits with Standard Extension Bars

|   |        |
|---|--------|
| HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit | AF531A |
| HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit  | AF532A |
| HP 7.3kVA 32A Single Phase INTL Intelligent Modular Power Distribution Kit  | AF534A |

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

### HP Rack Series

#### HP Intelligent Rack Series

|  |        |
|--|--------|
| HP 636 1200mm Pallet Intelligent Series Rack | BW899A |
| HP 636 1200mm Shock Intelligent Series Rack  | BW900A |



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

|  |        |
|--|--------|
| HP 642 1200mm Pallet Intelligent Series Rack | BW907A |
| HP 642 1200mm Shock Intelligent Series Rack  | BW908A |
| HP 647 1200mm Pallet Intelligent Series Rack | BW913A |
| HP 647 1200mm Shock Intelligent Series Rack  | BW914A |

**NOTE:** Rack chosen is required to have a depth of 1200mm to provide space for cable management arm at the rear of the chassis and host PDU in the rear of the rack.

**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](http://h18000.www1.hp.com/products/quickspecs/14223_div/14223_div.html)  
(Worldwide)

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

### HP Rack 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 |

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

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

#### HP Server Console Switches

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

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

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

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

|  |            |
|--|------------|
| HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software | AF618A     |
| HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software | AF619A     |
| HP KVM CAT5 1-pack USB Interface Adapter                               | 336047-B21 |

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

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

information:

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

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

|   |        |
|---|--------|
| HP 1x4 USB/PS2 KVM Console Switch                                   | AF611A |
| HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software  | AF620A |
| HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software | AF621A |
| HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software | AF622A |

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

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

### HP Care Pack Services

#### Server Care Packs

|  |        |
|--|--------|
| HP 3 year Next business day SL454X Gen8 Tray 1x Node Hardware Support                                | U7K40E |
| HP 3 year Next business day Defective Media Retention SL454X Gen8 Tray 1x Node Hardware Support      | U7K41E |
| HP 3 year Next business day SL454X Gen8 Tray 1x Node Proactive Service                               | U7K42E |
| HP 3 year Next business day Defective Media Retention SL454X Gen8 Tray 1x Node Proactive Service     | U7K43E |
| HP 3 year 4 hour 13x5 SL454X Gen8 Tray 1x Node Hardware Support                                      | U7K44E |
| HP 3 year 4 hour 13x5 with Defective Media Retention SL454X Gen8 Tray 1x Node Hardware Support       | U7K45E |
| HP 3 year 4 hour 24x7 SL454X Gen8 Tray 1x Node Hardware Support                                      | U7K48E |
| HP 3 year 4 hour 24x7 Defective Media Retention SL454X Gen8 Tray 1x Node Hardware Support            | U7K49E |
| HP 3 year 4 hour 24x7 SL454X Gen8 Tray 1x Node Proactive Service                                     | U7K50E |
| HP 3 year 4 hour 24x7 Defective Media Retention SL454X Gen8 Tray 1x Node Proactive Service           | U7K51E |
| HP 3 year 24 hour 24x7 Call to Repair SL454X Gen8 Tray 1x Node Hardware Support                      | U7K54E |
| HP 3 year 24 hour 24x7 Defective Media Retention SL454X Gen8 Tray 1x Node Hardware Support           | U7K55E |
| HP 3 year 6 hour 24x7 Call to Repair SL454X Gen8 Tray 1x Node Hardware Support                       | U7K56E |
| HP 3 year 6 hour 24x7 Defective Media Retention SL454X Gen8 Tray 1x Node Hardware Support            | U7K57E |
| HP 3 year 6 hour 24x7 SL454X Gen8 Tray 1x Node Call to Repair Proactive Service                      | U7K58E |
| HP 3 year 6 hour 24x7 Defective Media Retention SL454X Gen8 Tray 1x Call to Repair Proactive Service | U7K59E |

#### Enclosure Care Packs

|   |        |
|---|--------|
| HP 3 year Next business day SL454x 1 Node Chassis Hardware Support                            | U7J55E |
| HP 3 year Next business day Defective Media Retention SL454x 1 Node Chassis Hardware Support  | U7J56E |
| HP 3 year Next business day SL454x 1 Node Chassis Proactive Service                           | U7J57E |
| HP 3 year Next business day Defective Media Retention SL454x 1 Node Chassis Proactive Service | U7J58E |
| HP 3 year 4 hour 13x5 SL454x 1 Node Chassis Hardware Support                                  | U7J59E |
| HP 3 year 4 hour 13x5 with Defective Media Retention SL454x 1 Node Chassis Hardware Support   | U7J60E |



# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Additional Options

|  |        |
|--|--------|
| HP 3 year 4 hour 24x7 SL454x 1 Node Chassis Hardware Support   | U7J63E |
| HP 3 year 4 hour 24x7 Defective Media Retension SL454x 1 Node Chassis Hardware Support               | U7J64E |
| HP 3 year 4 hour 24x7 SL454x 1 Node Chassis Proactive Service  | U7J65E |
| HP 3 year 4 hour 24x7 Defective Media Retension SL454x 1 Node Chassis Proactive Service              | U7J66E |
| HP 3 year 24 hour 24x7 Call to Repair SL454x 1 Node Chassis Hardware Support                         | U7J69E |
| HP 3 year 24 hour 24x7 Defective Media Retension SL454x 1 Node Chassis Hardware Support              | U7J70E |
| HP 3 year 6 hour 24x7 Call to Repair SL454x 1 Node Chassis Hardware Support                          | U7J71E |
| HP 3 year6 hour 24x7 Defective Media Retension SL454x 1 Node Chassis Hardware Support                | U7J72E |
| HP 3 year 6 hour 24x7 SL454x 1 Node Chassis Call to Repair Proactive Service                         | U7J73E |
| HP 3 year 6 hour24x7 Defective Media Retension SL454x1 Node Chassis Call to Repair Proactive Service | U7J74E |

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

#### Cloudera Care Packs

|   |          |
|---|----------|
| Cloudera Ent Basic Ed 1yr 24x7 Phys Lic | G7M27A   |
| Cloudera Ent Basic Ed 1yr 24x7 E-LTU    | G7M27AAE |
| Cloudera Ent Basic Ed 1yr 8x5 Phys Lic  | G7M28A   |
| Cloudera Ent Basic Ed 1yr 8x5 E-LTU     | G7M28AAE |
| Cloudera EDH Ed 1yr 24x7 Phys Lic       | G7M29A   |
| Cloudera EDH Ed 1yr 24x7 E-LTU          | G7M29AAE |
| Cloudera EDH Ed 1yr 8x5 Phys Lic        | G7M30A   |
| Cloudera EDH Ed 1yr 8x5 E-LTU           | G7M30AAE |
| Cloudera EDH Ed 1yr 24x7 Premium E-LTU  | G7M31AAE |

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Memory

#### HP ProLiant SL4540 (Gen8) server

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

**NOTE:** Chart does not represent all possible memory configurations.

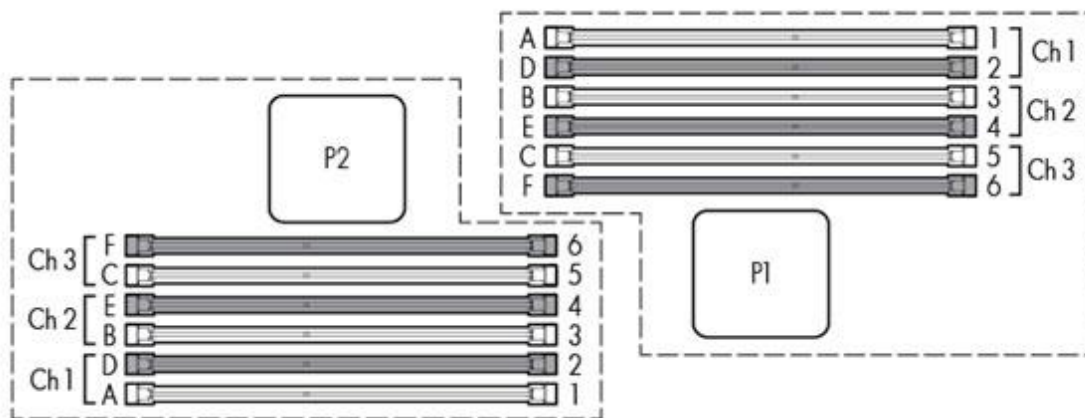
For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:

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

#### Memory Subsystem Architecture

Each Intel® Xeon® E5-2400 family processor socket contains three memory channels that support two DIMMs each for a total of six (6) DIMM per installed processor or a grand total of twelve (12) DIMMs for the server. Up to 32GB capacity DIMMs are supported for 384GB of memory (12 DIMM slots x 32GB per DIMM).

#### DIMM slot and configuration diagrams



#### Memory population guidelines

General Memory Population Rules and Guidelines:

- Light DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate light 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 (dual-rank) to lightest load (single-rank) within a channel. Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor
- 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 SL4540 Gen8 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html).

| DIMM Type               | Registered DIMMS for E5-2400 v2 Series Processors (RDIMMs) |      |                |      |
|-------------------------|--|------|----------------|------|
|                         | Single Rank (1R)   |      | Dual Rank (2R) |      |
| DIMM Rank               |  |      |                |      |
| DIMM Capacity           | 4GB  | 8GB  | 8GB            | 32GB |
| DIMM Native Speed (MHz) | 1600   | 1600 | 1600           | 1600 |
| Voltage                 | LV   | LV   | LV             | LV   |

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Memory

| <b>SLOTS THAT CAN BE POPULATED</b>  |      |      |      |      |
|---|------|------|------|------|
| 12 slot server nodes  | 12   | 12   | 12   | 12   |
| <b>MAXIMUM CAPACITY (GB)*</b>   | 48   | 96   | 96   | 384  |
| 1 DIMM Per Channel  | 1600 | 1600 | 1600 | 1600 |
| 2 DIMM Per Channel  | 1600 | 1600 | 1600 | 1600 |
| <p><b>NOTE:</b> Memory speed is a function of the processor QPI bus speed.<br/>                     * Maximum capacity will vary based on individual server platform qualification schedule</p> <p><b>NOTE:</b> Capacity references are rounded to the common Gigabyte values:</p> <ul style="list-style-type: none"> <li>• 4GB = 4096MB</li> <li>• 8GB = 8192MB</li> <li>• 16GB = 16384MB</li> <li>• 32GB = 32768MB</li> </ul> |      |      |      |      |

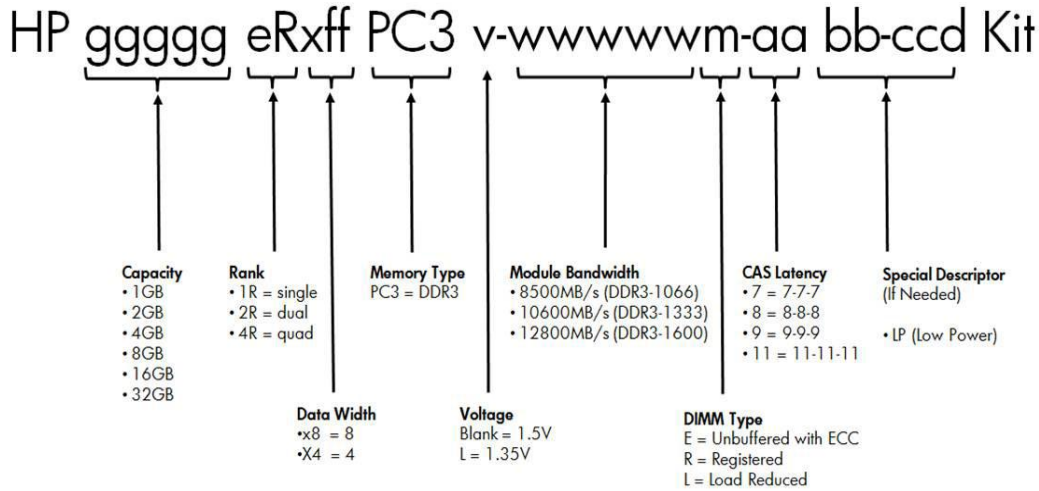
| DIMM Type   | <b>Registered DIMMS for E5-2400 Series Processors (RDIMMs)</b> |                       |      |
|---|--|-----------------------|------|
|   | <b>Single Rank (1R)</b>  | <b>Dual Rank (2R)</b> |      |
| DIMM Rank   |  |                       |      |
| DIMM Capacity   | 4GB  | 8GB                   | 32GB |
| DIMM Native Speed (MHz)   | 1333   | 1333                  | 1333 |
| Voltage   | LV   | LV                    | LV   |
| <b>SLOTS THAT CAN BE POPULATED</b>  |  |                       |      |
| 12 slot server nodes  | 12   | 12                    | 12   |
| <b>MAXIMUM CAPACITY (GB)*</b>   | 48   | 96                    | 384  |
| 1 DIMM Per Channel  | 1333   | 1333                  | 1333 |
| 2 DIMM Per Channel  | 1333   | 1333                  | 1333 |
| <p><b>NOTE:</b> Memory speed is a function of the processor QPI bus speed.<br/>                     * Maximum capacity will vary based on individual server platform qualification schedule</p> <p><b>NOTE:</b> Capacity references are rounded to the common Gigabyte values:</p> <ul style="list-style-type: none"> <li>• 4GB = 4096MB</li> <li>• 8GB = 8192MB</li> <li>• 16GB = 16384MB</li> <li>• 32GB = 32768MB</li> </ul> |  |                       |      |

### DDR3 memory options part number decoder

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Memory



**Following are memory options available from HP:**

**HP Memory**

**NOTE:** Please choose memory options for socket 2 of each server node. Up to 6DDR3 DIMM slots dedicated per socket.

**NOTE:** HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** HP certified SmartMemory must be used to guarantee full 1333MHz speeds.

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

**Registered DIMMs (RDIMM) - For E5-2400 v2 Series Processors**

**NOTE:** The Following memory is supported by E5-2400 v2 series processors

|  |            |
|--|------------|
| HP 4GB (1x4GB) Single Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit | 713981-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 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit   | 713983-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3L-12800R (DDR3-1600) Registered CAS-11 Low Voltage Memory Kit | 713985-B21 |
| HP 32GB (1x32GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit  | 647903-B21 |

**Registered DIMMs (RDIMM) - For E5-2400 Series Processors**

**NOTE:** The Following memory is supported by E5-2400 series processors

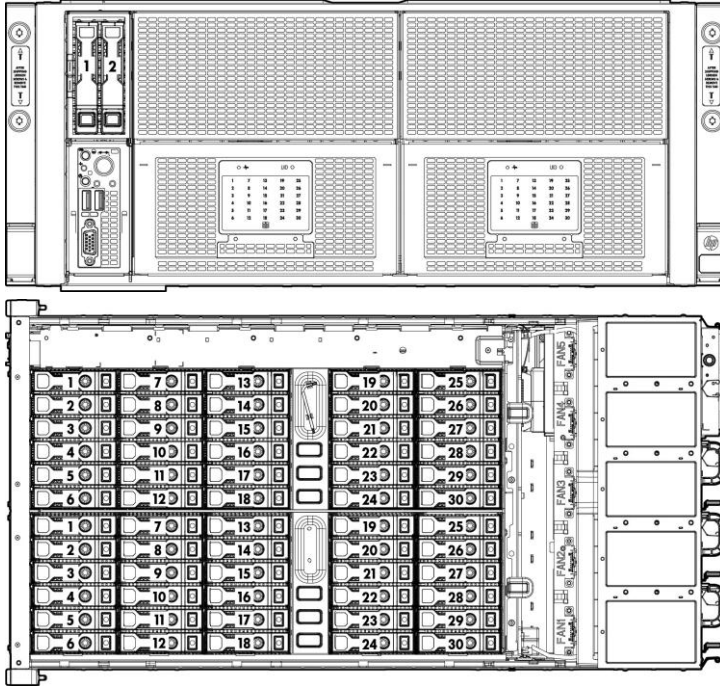
|   |            |
|---|------------|
| HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647893-B21 |
| HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit   | 647897-B21 |
| HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647901-B21 |
| HP 32GB (1x32GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit | 647903-B21 |

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Storage

#### 1x60 Model



1-2 2 x SFF SATA/SATA SDD Hot Plug Hard Drive Bays

1-30 30 x LFF SATA/SAS/SDD Hot Plug Hard Drive Bays  
Controller Port 1i

1-30 30 x LFF SATA/SAS/SDD Hot Plug Hard Drive Bays  
Controller Port 2i

1x60:

Controller 1 will see drives 1-15 from one box/port 1i and drives 16-30 of the other box/port 2i  
Same for controller 2; drives 16-30 from one box and drives 1-15 of the other box.



Front of Chassis

**NOTE:** This is simple drive zoning

**NOTE:** Requires second P420i FIO option

#### Maximum Storage Capacity - 1x60 Model

|                                 |                           |
|---------------------------------|---------------------------|
| Internal<br>(2 SFF Drive Cage)  | 2TB (2 x 1TB SATA SFF)    |
| Internal<br>(60 LFF Drive Cage) | 360TB (60 x 6TB SATA LFF) |
| Total                           | 362TB                     |

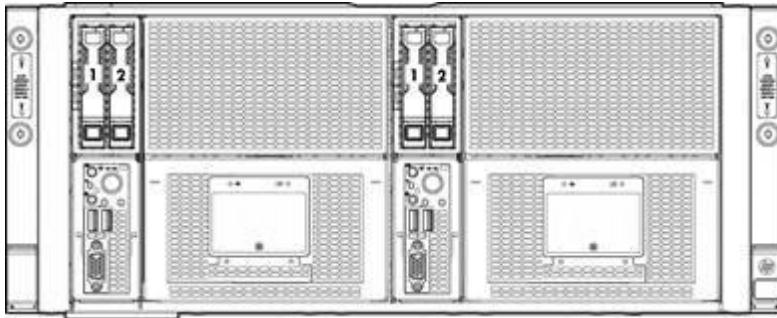
#### 2x25 Model



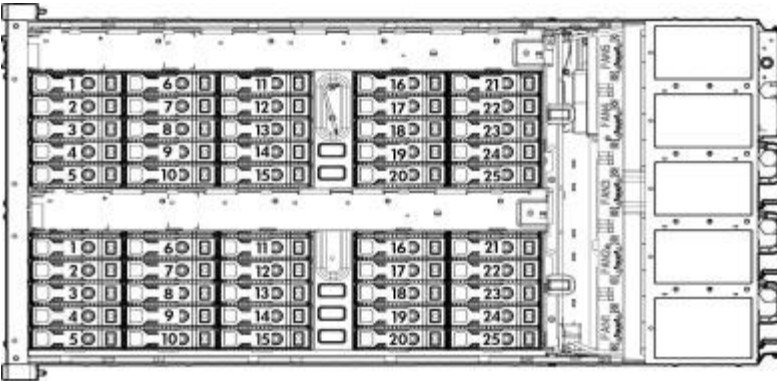
# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

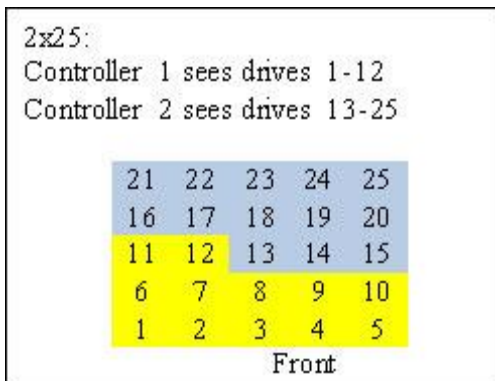
### Storage



- 1-2 2 x SFF SATA/SATA SDD Hot Plug SFF Hard Drive Bays for server node 1
- 1-2 2 x SFF SATA/SATA SDD Hot Plug SFF Hard Drive Bays for server node 2



- 1-25 25 x LFF SATA/SAS/SDD Hot Plug Hard Drive Bays for server node 1
- 1-25 25 x LFF SATA/SAS/SDD Hot Plug Hard Drive Bays for server node 2

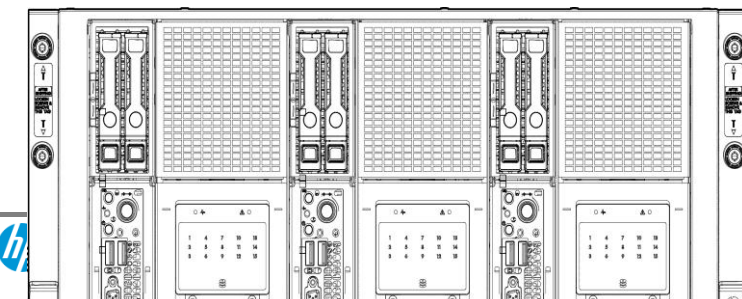


**NOTE:** This is simple drive zoning  
**NOTE:** Requires second P420i FIO option

#### Maximum Storage Capacity - 2x25 Model

|                                 |                           |
|---------------------------------|---------------------------|
| Internal<br>(2 SFF Drive Cage)  | 4TB (4 x 1TB SATA SFF)    |
| Internal<br>(50 LFF Drive Cage) | 300TB (50 x 6TB SATA LFF) |
| <b>Total</b>                    | <b>304TB</b>              |

#### 3x15 Model

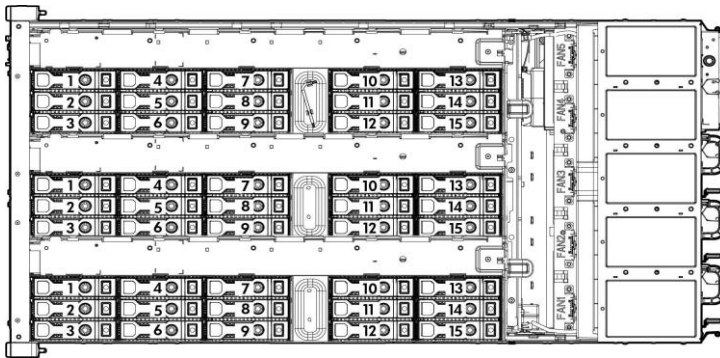


- 1-2 2 x SFF SATA/SATA SDD Hot Plug SFF Hard Drive Bays for server node 1
- 1-2 2 x SFF SATA/SATA SDD Hot Plug SFF Hard Drive Bays for server node 2

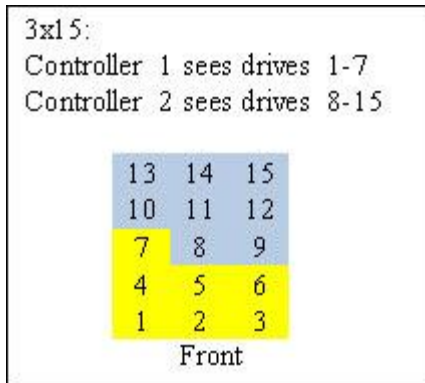
# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Storage



- 1-2 2 x SFF SATA/SATA SDD Hot Plug SFF Hard Drive Bays for server node 3
- 1-15 15 x LFF SATA/SAS/SDD Hot Plug Hard Drive Bays for server node 1
- 1-15 15 x LFF SATA/SAS/SDD Hot Plug Hard Drive Bays for server node 2
- 1-15 15 x LFF SATA/SAS/SDD Hot Plug Hard Drive Bays for server node 3



**NOTE:** This is simple drive zoning  
**NOTE:** Requires second P420i FIO option

#### Maximum Storage Capacity - 3x15 Model

|                                 |                           |
|---------------------------------|---------------------------|
| Internal<br>(2 SFF Drive Cage)  | 6TB (6 x 1TB SATA SFF)    |
| Internal<br>(50 LFF Drive Cage) | 270TB (45 x 4TB SATA LFF) |
| <b>Total</b>                    | <b>276TB</b>              |

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Technical Specifications

|  |   |   |  |  |
|--|---|---|--|--|
| <b>System Unit</b>                           | <b>Chassis Dimensions</b><br>(H x W x D) Add fan extension kit (with bezel) | 7.47 x 17.45 x 35.34in (18.96 x 44.33 x 89.97cm)<br><b>NOTE:</b> Rack chosen is required to have 1200mm depth to provide space for cable management arm at the rear of the chassis and host PDU in the rear of the rack.)   |  |  |
|  | <b>Weight</b><br>(approximate)  | Maximum<br>(all hard drives, power supply, and processor installed)   | 220lb (99.8kg)   |  |
|  | <b>Input Requirements</b><br>(per power supply)                             | Rated Line Voltage  | 100 to 120 VAC<br>200 to 240 VAC   |  |
|  |   | Rated Input Current   | For 1200 W Power Supply:<br>10 A (at 100 VAC),<br>4.9 A (at 200 VAC)<br>For 750 W Power Supply:<br>8.9 A (at 100 VAC),<br>4.3 A (at 200 VAC)   |  |
|  |   | Rated Input Frequency   | 50 to 60 Hz  |  |
|  |   | Rated Input Power   | For 1200 W Power Supply:<br>930 W (at 100 VAC),<br>1348 W (at 200 VAC)<br>For 750 W Power Supply:<br>857 W (at 100 VAC),<br>824 W (at 200 VAC)   |  |
|  | <b>Power Supply Output</b><br>(per power supply)                            | Rated Steady-State Power  | For 1200 W Power Supply:<br>800 W (at 100 VAC),<br>900 W (at 120 VAC),<br>1200 W (at 200 to 240 VAC)   |  |
|  |   | Maximum Peak Power  | For 1200 W Power Supply:<br>800 W (at 100 VAC),<br>900 W (at 120 VAC),<br>1200 W (at 200 to 240 VAC)<br>For 750 W Power Supply:<br>750 W (at 100 to 120 VAC),<br>750 W (at 200 to 240 VAC) |  |
|  | <b>Power Specifications</b>   | To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL:<br><a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a> .  |  |  |
|  | <b>Power Supply Output</b><br>(per power supply)                            | Rated Steady-State Power  |  |  |
| <b>System Inlet Temperature</b>              | Operating   | 50° to 95° F (10° to 35° C) at sea level with an altitude derating of 1.8°F per every 1000 ft (1.0°C per every 304.8 m) above sea level to a maximum of 10,000 ft (3048 m), no direct sustained sunlight. Maximum rate of change is 18°F/hr (10°C/hr). The upper limit may be limited by the type and number of options installed.<br>System performance may be reduced if operating with a fan fault or above 86°F (30°C). |  |  |
|  | Non-operating   | -22° to 140° F (-30° to 60° C)<br>Maximum rate of change is 36°F/hr (20°C/hr).  |  |  |
| <b>Relative Humidity</b><br>(non-condensing) | Operating   | 10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.   |  |  |

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Technical Specifications

|                                       |  |   |
|---------------------------------------|--|---|
| <b>Altitude</b>                       | Non-operating  | 5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.   |
|                                       | Operating  | 10,000 ft (3048 m). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1500 ft/min (457 m/min). |
|                                       | Non-operating  | 30,000 ft (9144 m). Maximum allowable altitude change rate is 1500 ft/min (457 m/min).  |
| <b>Acoustic Noise</b>                 | Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). |   |
|                                       | <b>Idle</b>  |   |
|                                       | L WAd  | 7.27 B  |
|                                       | L pAm  | 58.93 dBA   |
|                                       | <b>Operating</b>   |   |
|                                       | L WAd  | 7.27 B  |
|                                       | L pAm  | 59.00 dBA   |
| <b>Emissions Classification (EMC)</b> | <b>FCC Rating</b>  | Class A   |
|                                       | <b>Normative Standards</b>   | CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1                               |

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

|  |  |  |  |  |
|--|--|--|--|--|
| <b>HP Ethernet 1Gb 2-port 361i Adapter</b> | <b>Network Interface Compatibility</b> | 10Base-T/100Base-TX/1000Base-TX<br>IEEE 802.3 10Base-T<br>IEEE 802.3ab 1000Base-T<br>IEEE 802.3u 100Base-TX<br>IEEE 1588, IEEE 802.1AS<br>IEEE 802.3az - Energy Efficient Ethernet (EEE) |  |  |
|  | <b>Data Transfer Method</b>            | PCI Express v 2.1, 5.0 GT/s and 2.5 GT/s bus speeds and supports for x1, x2, x4 links widths (Lanes)   |  |  |
|  | <b>Controller</b>                      | I350 Powerville  |  |  |
|  | <b>Network Transfer Rate</b>           | 10Base-T (Half-Duplex)   | 10 Mb/s per port, 20 Mb/s Combined             |  |
|  |  | 10Base-T (Full-Duplex)   | 20 Mb/s per port, 40 Mb/s Combined             |  |
|  |  | 100Base-TX (Half-Duplex)   | 100 Mb/s per port, 200 Mb/s Combined           |  |
|  |  | 100Base-TX (Full-Duplex)   | 200 Mb/s per port, 400 Mb/s Combined           |  |
|  |  | 1000Base-TX (Half and Full-Duplex)   | 1000Mb/s per port, 2000 Mb/s Combined          |  |
|  | <b>Connector</b>                       | RJ-45  |  |  |
|  | <b>Cable Support</b>                   | 10Base-T   | Categories 3, 4 or 5 UTP; up to 328 ft (100 m) |  |
| 10/100/1000Base-TX                         |  | Category 5 UTP; up to 328 ft (100 m)   |  |  |

|   |                              |   |
|---|------------------------------|---|
| <b>HP Ethernet 10Gb 2-port 544i SFP Adapter</b> | <b>Data Transfer Method</b>  | Compliant to x8 PCIe Gen2 Specification   |
|   | <b>Network Transfer Rate</b> | X4 IB: 10 Gb/s (SDR), 20 Gb/s (DDR), 40Gb/s (QDR)<br>10Gb/s Ethernet: Full-duplex single lane XFI |

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Technical Specifications

|                      |   |
|----------------------|---|
| <b>Connector</b>     | QSFP - IB<br>SFP+ - 10Gb/s Ethernet.  |
| <b>Cable Support</b> | IB: HP copper and optical IB cables. <b>NOTE: IB supported with addition of HP IB Enablement Kit</b><br>10Gb/s: HP copper and optical SFP+ cables |

#### HP Smart Array P420i Controller

|   |  |
|---|--|
| <b>Dimensions</b>   | Embedded   |
| <b>Disk Drive and Enclosure Interface - Transfer rate</b> | 6Gb/s SAS (Serial Attached SCSI)<br>6Gb/s SATA (Serial ATA)  |
| <b>SAS Connectors</b>                                     | 2 internal 4X connectors   |
| <b>Cache Memory Speed</b>                                 | 1GB or 2GB FBWC DDR3-1333MHz with 72-bit wide bus  |
| <b>Server Interface</b>                                   | x8 PCIe 3.0 operating at PCI 2.0   |
| <b>SAS Speed</b>  | (8) 6Gb/s SAS links provide 4.8GB/s maximum bandwidth  |
| <b>Cache Memory</b>                                       | 72-bit 1GB FBWC or 72-bit 2GB FBWC   |
| <b>Logical Drives Supported</b>                           | Up to 64 logical drives with cache   |
| <b>Host Memory Addressing</b>                             | 64-bit, supporting greater than 4GB server memory space  |
| <b>RAID Support</b>                                       | RAID 6, 60 (Advanced Data Guarding)<br>RAID 5, 50 (Distributed Data Guarding)<br><b>NOTE: A minimum of 512 MB cache is required to enable RAID 5, 50, 6, 60</b><br><b>NOTE: HP Smart Array Advanced Pack (SAAP 2.0) is no longer required to enable RAID 6 &amp; 60 (Advanced Data Guarding). However, controller must be in firmware version 4.68 (or later).</b><br>RAID 1+0 (Striping & Mirroring)<br>RAID 0 (Striping), RAID 1 (Mirroring) |

#### Environment-friendly Products and Approach

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

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

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

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Summary of Changes

| Date        | Version History       | Action  | Description of Change:  |
|-------------|-----------------------|---------|---|
| 18-Aug-2014 | From Version 19 to 20 | Changed | Changes made throughout the document.   |
| 09-Jun-2014 | From Version 18 to 19 | Changed | Hard Drives, Optical Adapters, Direct Attach Cables, Insight Control, Storage Controllers, Tape Backup, and Care Pack Services were revised.  |
| 18-Mar-2014 | From Version 17 to 18 | Changed | Core and Additional Options were revised.   |
| 22-Jan-2014 | From Version 16 to 17 | Changed | The link in the Note was corrected in the Standard Features/ Upgradeability section.  |
| 17-Jan-2014 | From Version 15 to 16 | Changed | The Note in the Standard Features/ Upgradeability section was updated.  |
| 09-Jan-2014 | From Version 14 to 15 | Changed | E5-2400 v2 Series Processors and Registered DIMMs - For E5-2400 v2 Series Processors were added<br><br>25MB Level3 Cache Memory was added<br><br>Pre-Configured Models was added<br><br>Tape Backup and Disk Storage Systems were revised in Additional Options   |
| 13-Dec-2013 | From Version 13 to 14 | Changed | HP ProLiant SL4545 G7 Tray 1x Node Server was removed from Step 1 in Configuration Information<br><br>HP Power Distribution Units were removed from Additional Options<br><br>HP Ethernet 10Gb 2-port 560SFP+ Adapter was added to Networking<br><br>HP SmartCache and HP H221 PCIe 3.0 SAS Host Bus Adapter were added to Storage Controllers<br><br>HP Tape and Disk Storage Systems were added to Additional Options<br><br>HP Basic Power Distribution Units, HP Remote Monitoring Power Distribution Unites, and HP Intelligent Power Distribution Unites were revised in Additional Options |
| 15-Nov-2013 | From Version 12 to 13 | Changed | Minor change made to the Hard Drives section only.  |
| 11-Oct-2013 | From Version 11 to 12 | Added   | HP 300GB and 600GB 6G SATA Value Endurance LFF 3.5-in Enterprise Boot Solid State Drives to were added Hard Drives<br><br>Mainstream Endurance PCIe Workload Accelerators were added to HP PCIe Workload Accelerator Options<br><br>HP Remote Monitoring Power Distribution Units was added to Additional Options   |

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Summary of Changes

|             |                       |         |   |
|-------------|-----------------------|---------|---|
| 19-Aug-2013 | From Version 10 to 11 | Changed | <p>Changes made to the following Sections:</p> <p>What's New:</p> <p>Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2- 5/5/6/6/7/7/8/8) Turbo+</p> <p>Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5)Turbo</p> <p>Standard Features</p> <p>Configuration Information- Steps 1, 2 &amp; 3</p> <p>Core Options - HP processors, HP Hard Drives, HP Networking</p> <p>Additional Options - HP Insight Software, Added HP Security</p> |
| 10-Jun-2013 | From Version 9 to 10  | Changed | <p>Changes made to the following Sections:</p> <p>What's New</p> <p>Standard Features - Maximum Internal Storage Section</p> <p>Configuration Information - Step 2</p> <p>Core Options - HP processors and HP Hard Drives</p> <p>Additional Options - HP Insight Software</p>   |
| 15-May-2013 | From Version 8 to 9   | Changed | Removed a line from the Interfaces section of Standard Features.  |
| 13-May-2013 | From Version 7 to 8   | Changed | <p>Changes made in the following sections:</p> <p>Standard Features - Maximum Internal Storage</p> <p>Core Options - Hard Drives</p> <p>Additional Options - HP Insight Software, Power Cords. Added HP PCIe Workload Accelerator Options and HP Basic Power Distribution Units</p>   |
| 05-Apr-2013 | From Version 6 to 7   | Changed | Changes made throughout the QuickSpec to add the SL4540 Gen8 3x15 model.  |
| 01-Mar-2013 | From Version 5 to 6   | Removed | Additional Options: Removed TC9074BAE, 452150-B21 and 4336222-B21 from the HP Insight Software section.   |
| 01-Mar-2013 | From Version 4 to 5   | Removed | Additional Options: Removed TC276AAE and TC277AAE from HP Insight Software section.   |

# QuickSpecs

## HP ProLiant SL4540 Generation 8 (Gen8) Server

### Summary of Changes

|             |                     |         |  |
|-------------|---------------------|---------|--|
| 04-Dec-2012 | From Version 3 to 4 | Changed | Changes made to the following sections:<br><br>Overview: Added the SL4540 Gen8 2x25 model<br><br>Standard Features: On System Management<br><br>Configuration Information: Step 1, Step 2, Step 3<br><br>Core Options: Hard Drives<br><br>Additional Options: Added HP Care Pack Services<br><br>Storage: Added 2x25 Model |
| 19-Nov-2012 | From Version 2 to 3 | Changed | Correction was made to the Hard Drives section.  |
| 19-Nov-2012 | From Version 1 to 2 | Changed | Correction was made to add a missing note.   |

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