HP ProLiant SL4500 Server

Purpose-built server for your big data

**Ideal for Object Storage
1 Node**

**Ideal for MS Exchange
2 Nodes**

**Ideal for Hadoop
3 Nodes**

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Enterprises of all kinds are seeking to glean intelligence from big data and translate it into a competitive business advantage. Big data, largely unstructured—messages, images, readings from sensors, GPS signals from cell phones—is growing at an exponential rate. Traditional structured databases are not well suited to the storing and processing of big data. This has led to new data-intensive approaches based on scale-out industry-standard infrastructure.

Today's siloed infrastructure is not optimized for scale-out server workloads driven by big data. Implementing a scale-out infrastructure on such a setup will invariably result in data center challenges, such as capacity constraints, spiraling energy costs, infrastructure complexity, and inefficiencies.

The solution is HP ProLiant SL4500 Server—the industry's first ever purpose-built server for big data. The ProLiant SL4500 Server features a converged and balanced architecture that is ideal for a range of big data workloads, in an extremely dense and efficient chassis that scales easily as your data grows. It supports big data workloads, with different ratios of storage capacity per server, with scalable performance and throughput demanded by such workloads. Its highly efficient converged design delivers the right combination of capacity and performance, in the least amount of space and at a low cost, with the enterprise class reliability and manageability you would expect from HP ProLiant Gen8.

With this new offering, HP provides enterprises with a purpose-built server to meet their data center challenges of space, energy, and time while deploying big data workloads and gain a competitive edge for accelerated market share and business growth.[1]

[1] All configurations of SL4540 (1 node, 2 node and 3 node) are shipping WW today

Key features and benefits

The ProLiant SL4500 Server features a balanced architecture built to deal with big data workloads, in an extremely dense chassis that scales efficiently. Its key features include:

Workload optimization
With the HP ProLiant SL4540 Gen8 Server you have a choice of three, flexible compute nodes featuring the Intel® Xeon® E5-2400 Processor Family.

- The one-node configuration with 60 drives is ideal for applications such as object storage requiring a large amount of storage capacity.

- For applications such as email and data analytics, you get a more balanced core-to-spindle ratio with the two-node configuration, with 25 drives for each node.

- With parallel processing applications such as Hadoop that require a balanced core-to-spindle ratio, the three-node configuration with 15 drives for each node is an ideal choice.

In-built efficiency
- The 4.3 U form factor chassis is capable of storing up to 240 TB (using 4 TB LFF drives).[2] With nine chassis in a 42 U rack, it can achieve unprecedented server storage capacities of up to 2.16 PB.

- Extreme density requires scalable performance. This is achieved with a balanced architecture and HP Smart Array technology that provides the flexibility to balance cost and performance across various drive types (SAS, SATA, and SSD).

- The converged infrastructure design achieves energy savings with shared cooling and power while reducing complexity with fewer cables.
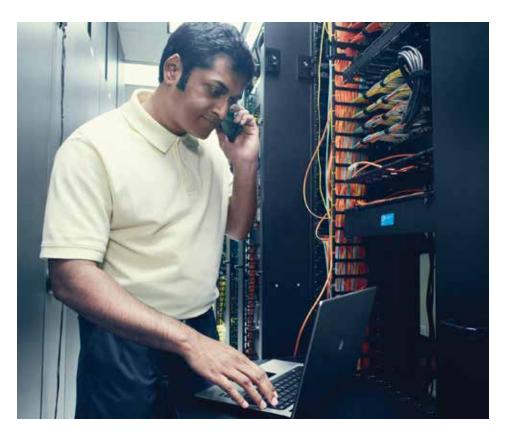

[2] Considering the 4TB LFF SAS/SATA HDD available today

Easy management

• HP Smart Array technology innovations such as predictive rebuild, reduce downtime exposure, improve data retention with Flash Backed Write Cache (FBWC), and increase data protection with advanced data mirroring.

• The ProLiant SL4500 Server offers a seamless management of the cluster, server, and storage, with integrated remote support. You can deploy applications across all servers with a single command; and control and manage power at the rack level.

• The ProLiant SL4500 Server offers serviceability at every level with hot-plug critical components (disk drives, nodes, fans, and power).

Purpose-built design

• With the ProLiant SL4500 Server, you can now benefit from the convergence of servers and storage within the HP ProLiant Gen8 family built on the HP ProActive Insight Architecture.

• The ProLiant SL4500 Server controls and monitors data center energy efficiency with embedded HP Sea of Sensors technology. The optional HP ProLiant SL Advanced Power Manager helps you monitor and manage power aggregated at the rack level.

• The high-efficiency HP Platinum Plus common-slot power supplies (750W and 1200W) enables support for both N+1 and N+N redundancy.

• The ProLiant SL4540 Gen8 Server is powered by the Intel Xeon E5-2400 Processor Family. It offers essential performance; power efficiency; and more adaptability leveraging Intel technologies and solutions, such as QuickPath, Integrated Memory Controller, Turbo Boost, Intelligent Power Technologies, and Trusted Execution Technology. The HP ProLiant SL4545 G7 Server on the other hand, is powered by the AMD Opteron 4200 Series processors. It offers unparalleled efficiency to your processing power and financial budgets with a new core architecture, AMD Turbo CORE Technology, C6 power state, and AMD Virtualization Technology 2.0.

• The ProLiant SL4500 Server chassis is easily serviceable with top-loaded, hot-plug LFF HDDs in the storage section, an easily removable server node, and hot-plug power supplies and fans.

Technical specifications

	HP ProLiant SL4540 Gen8 Server	HP ProLiant SL4545 G7 Server
Drive description	(60) LFF SAS/SATA/SSD for one-node configuration (25) LFF SAS/SATA/SSD per node for two-node configuration (15) LFF SAS/SATA/SSD per node for three-node configuration (2) SFF SATA/SSD per node	(60) LFF SAS/SATA/SSD for one-node configuration (25) LFF SAS/SATA/SSD per node for two-node configuration (15) LFF SAS/SATA/SSD per node for three-node configuration (2) SFF SATA/SSD per node
Storage type	Hot-plug LFF 3.5-inch SAS Hot-plug LFF 3.5-inch SATA Hot-plug LFF 3.5-inch SATA SSD Hot-plug SFF 2.5-inch SATA SSD Hot-plug SFF 2.5-inch SATA	Hot-plug LFF 3.5-inch SAS Hot-plug LFF 3.5-inch SATA Hot-plug LFF 3.5-inch SATA SSD Hot-plug SFF 2.5-inch SATA SSD Hot-plug SFF 2.5-inch SATA
Cache	20 MB L3 15 MB L3 10 MB L3	8 MB L3
Processor family	Intel Xeon E5-2400 Processor Family	AMD Opteron 4200 Series processor
Processor number	1 or 2 per node	1 or 2 per node
Compute nodes	Up to 3	Up to 3
Processor core available	8, 6, or 4	6 or 8
Processor speed	2.4 GHz	3.3 GHz
Memory slots	12 DIMM slots Maximum per node (6 DIMM slots per processor)	12 DIMM slots Maximum per node (6 DIMM slots per processor)
Maximum memory	192 GB per node	192 GB per node
Memory type	HP SmartMemory DDR3 Registered (RDIMM)	DDR3 Registered (RDIMM), Ultra Low Voltage DIMMs (ULVDIMMs)
Memory protection features	Advanced ECC (multi-bit error protection), online spare, and memory lock-step mode	Advanced ECC (multi-bit error protection)

Technical specifications (cont'd)

	HP ProLiant SL4540 Gen8 Server	HP ProLiant SL4545 G7 Server
Network controllers (depending on whether a 1 G I/O module or 10 G I/O module is selected)	HP Ethernet 1 Gb 2-port 361i; or HP Ethernet 1 Gb 2-port 361i and HP Ethernet 10 Gb 2P 544i Adapter	HP Ethernet 1 Gb 2-port 362i; or HP Ethernet 1 Gb 2-port 362i and HP Ethernet 10 Gb 2P 544i Adapter
Storage controllers	HP Dynamic Smart Array B120i SATA RAID for controlling 2 SFF drives per node	HP Dynamic Smart Array B110i SATA RAID for controlling 2 SFF drives per node
Expansion slots	1 Maximum The low profile expansion slot can contain a storage controller for external attached storage (HBA or Smart Array Controller), networking options, or an HP I/O accelerator.	1 Maximum The low profile expansion slot can contain a storage controller for external attached storage (HBA or Smart Array Controller), networking options, or an HP I/O accelerator.
Management	HP iLO Management, HP Insight Control	HP iLO Standard, HP Insight Control
Systems fans features	5 dual fans modules, shipped standard	5 dual fans modules, shipped standard
Power supply type	Up to 4 power supplies, 750W and 1200W Common Slot, hot-plug redundant power supply (Up to 94 percent efficiency)	Up to 4 power supplies, 750W and 1200W Common Slot, hot-plug redundant power supply (Up to 94 percent efficiency)
Graphic card	Integrated Matrox G200 video standard 1280 x 1024 (32 bpp) 1920 x 1200 (16 bpp)	ATI RN50 integrated with 32 MB memory
Form factor of chassis	4.3 U	4.3 U
Warranty	1-year parts, 1-year labor, 1-year onsite	1-year parts, 1-year labor, 1-year onsite
QuickSpec URLs	http://h18000.www1.hp.com/products/quickspecs/14406_div/14406_div.html	http://h18000.www1.hp.com/products/quickspecs/14407_div/14407_div.html

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HP Factory Express

HP Factory Express provides customization and deployment services along with your storage and server purchases. You can customize hardware to your exact specifications in the factory—helping speed deployment. Visit hp.com/go/factoryexpress.

Customer technical training

Gain the skills you need with ExpertOne training and certification from HP. With HP ProLiant training, you will accelerate your technology transition, improve operational performance, and get the best return on your HP investment. Our training is available when and where you need it, through flexible delivery options and a global training capability. hp.com/learn/proliant

HP Services

Tap into the HP support services advantage, backed by the strategic and technical know-how of our consulting experts, for a single source solution that makes the most of your investments. Depending on your individual support requirements, choose from our three levels of care that cover the entire lifecycle.

HP Optimized Care Service enables efficient performance and continuous availability of crucial HP ProLiant systems through deployments and proactive management practices. It includes:

• Factory Express level 2

• Datacenter care

• Self service spare

HP Standard Care Service helps maintain higher levels of server availability along with expert help, to cut the cost and complexity of implementing and supporting HP ProLiant servers. It includes:

• Factory Express level 2

• Datacenter care

• Self service spare

HP Basic Care Service delivers minimum recommended support service level through expert advice, implementation, and support. It includes:

• Datacenter care

• Self service spares

Learn more at
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hp.com/servers/sl4545