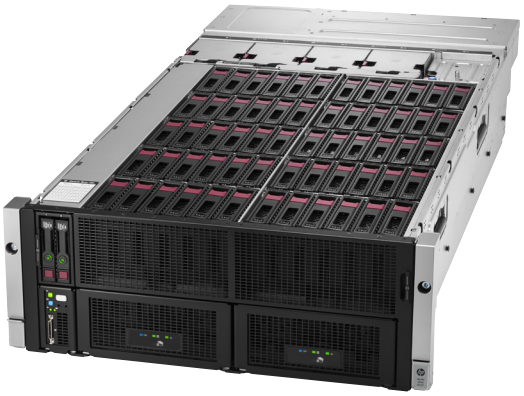
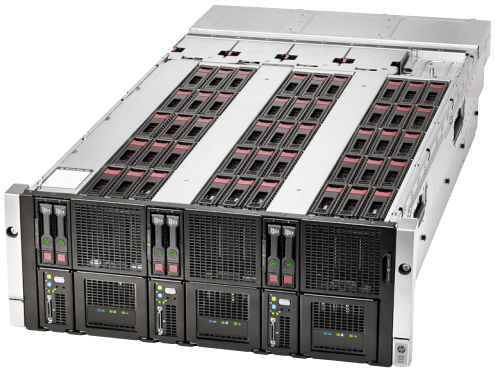
Family data sheet

HP Apollo 4500 System

Purpose-built for Big Data analytics and object storage solutions



HP Apollo 4510 System



HP Apollo 4530 System

June 2015

The HP Apollo 4500 Systems family provides density-optimize Big Data servers that are purpose-built for object storage, Hadoop, and Big Data analytics solutions

Gathering intelligence from Big Data for competitive advantage is key, but you need to meet the challenges of the volume, velocity, and variety of this new data. HP Apollo 4500 Systems are purpose-built for Big Data solutions like Hadoop, Big Data analytics and object storage, and growing data volumes—at petabyte scale and beyond.

Organizations of all kinds are seeking to glean intelligence from Big Data and translate it into a competitive business advantage. Big Data, much of which is unstructured—Web click-streams, Social Media messages, images and video, and readings from sensors on increasing numbers of network-connected machines—is growing at an exponential rate. Traditional structured databases are not well suited to storing and processing Big Data at this new scale cost-effectively.

New technologies have emerged to deal with the volume, velocity, and variety of these new sources of data—notably Hadoop-based Big Data analytics and object storage solution systems. As promising as these new technologies are, today's general purpose infrastructure runs into problems when these workloads move to petabyte scale, and the data center can experience capacity constraints, spiraling energy costs, infrastructure complexity, and inefficiencies.

To maximize the value of Big Data, you need systems that are purpose-built for Big Data workloads.

HP is taking the next big step ahead with the introduction of HP Apollo 4500 Systems. This new family of systems is purpose-built to service the technologies that are driving the Big Data IT revolution—Hadoop and Big Data analytics and object storage systems. These purpose-built systems will give you a competitive edge for accelerated market share and business growth by enabling you work with growing volumes of data—at petabyte scale and beyond. Efficiently storing and quickly converting large amounts of information into insights will enable better and faster decision-making to drive revenue growth, reduce costs, mitigate risks, and aid you in developing new markets quickly. And Apollo 4500 Systems allow you to accomplish all of this while meeting your data center challenges of space, energy, and time.

HP Apollo 4530 System: purpose-built for Hadoop and Big Data analytics solutions
The HP Apollo 4530 System is purpose-built for the wide variety of Big Data analytics solutions. It provides an ideal server platform for analytics based on parallel Hadoop data mining such as developing a 360-degree view of customers to improve the cost-effectiveness of advertising and promotion, increase Web commerce sales, focus real-time personalized marketing, and increase customer retention and satisfaction. It is also well suited to analytics systems that deal with volumes of machine-generated data being analyzed to streamline and automate operations and improve efficiency and profitability.

The HP Apollo 4530 System is an ideal server platform for Big Data analytics solutions from HP and the HP HyperScale Big Data Ecosystem partners including Hortonworks and Cloudera, as well as HP Autonomy and HP Vertica, and for Big Data analytics solutions using distributions of NoSQL databases.

This three-server, 4U chassis system matches the characteristics of traditional Hadoop-based analytics that typically save three copies of data on independent servers. It can be optimally configured for economical, large-scale, Hadoop-based data analytics or for more complex compute-intensive analytics with high-performance processor and memory options, solid-state disks (SSDs), high-performance disk controllers, and fast, high-capacity I/O options.

For smaller implementations or for "plug-and-play" integration into traditional enterprise rack-server data centers, you can also consider the 2U HP Apollo 4200 Gen9 Server with up to 50 SFF hard disk drives (HDDs)/SSDs for Hadoop and Big Data analytics solutions.

HP Apollo 4510 System: purpose-built for object storage solutions at any scale
The HP Apollo 4510 System is purpose-built for the variety of Big Data object storage solutions—from cost-effective, high-capacity content repositories that address petabyte-scale data volumes, to the tuned responsiveness required for content distribution systems. Density-optimized HP Apollo 4510 systems are ideal to form the foundation platform for object storage solutions ranging from collaboration and content distribution, to content repositories and active archives, to back-up repositories and cold storage, and everything in between.

The HP Apollo 4510 System is an ideal Big Data storage server for object storage solutions from HP HyperScale Data Eco-System partners including Cleversafe, Scality, Ceph, OpenStack®/Swift, and it forms the building blocks for HP's own Helion Content Depot.

This one-server, 4U chassis system provides cost-effective, space-saving storage capacity of up to 544 terabytes per system and 5.44 petabytes per 42U rack[1] to meet object storage solution needs at any scale, from one to hundreds of petabytes and more. With up to 68 hot-plug LFF HDDs/SSDs and HP ProLiant Gen9 server, processor, memory, and I/O options, it can meet the storage capacity, throughput, and responsiveness requirements of every variety of Big Data object storage solution—and provide the right compute for the right price.

For smaller implementations or for "plug-and-play" integration into traditional enterprise rack-server data centers, you may also consider the HP Apollo 4200 Gen9 Server with up to 28 LFF HDDs/SSDs for object storage solutions.

[1] Based on 8 TB LFF drives

Key features and benefits

HP Apollo 4500 Systems provide a balanced architecture built to deal with Big Data and object storage workloads, delivered in a density-optimized, power-efficient chassis designed to meet today's petabyte-scale Big Data requirements.

For Hadoop and Big Data analytics

The HP Apollo 4530 System is ideal for the wide variety of Big Data analytics solutions based on parallel Hadoop-based data mining, as well as NoSQL-based Big Data analytics solutions.

HP Apollo 4530 System

A three-server, 4U chassis system optimized for Hadoop and Big Data analytics with up to three two-processor HP ProLiant Gen9 servers, each with up to 15 hot-plug SAS or SATA HDDs/SSDs.

Efficient analytics scaling:

- Each server has up to 120 terabytes of capacity—providing economical building blocks for efficient implementations at scale with up to 30 servers and 3.6 petabytes of capacity in a 42U rack.[1]

Versatile performance for Big Data analytics variety:

Choose the right balance of performance and cost-efficiency with:

- Two-processor server configuration options for:
  - Intel® Xeon® E5-2600 v3 series processors with choices from 6–16 cores, 1.6 GHz–2.6 GHz CPU speed, and power ratings between 55–135 watts
  - 16 memory DIMM slots with up to 512 GB DDR4 memory at up to 2,133 MHz—ideal for complex analytics needing fast performance or in-memory data processing analytics applications
  - Solid-state disks and high-performance storage controllers to speed data transfer
  - Up to four PCI Express (PCIe) slots with flexible performance and I/O options to match the variety of analytics workload performance and throughput criteria

For object storage

The HP Apollo 4510 System is ideal for object storage solutions at any scale including collaboration and content distribution, content repositories and active archives, back-up repositories and cold storage, and everything in between.

HP Apollo 4510 System

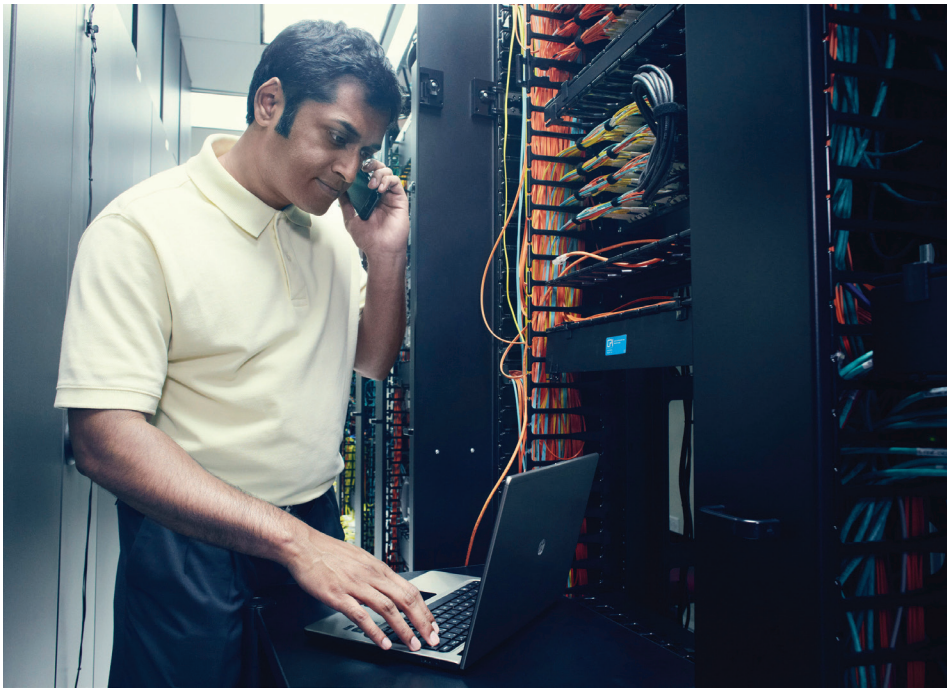
A 4U, one-server system that has been purpose-built for object storage solutions with up to 68 hot-plug SAS or SATA HDDs/SSDs with up to 544 terabytes storage capacity per server and up to 5.44 petabytes of storage per 42U rack.

Density-optimized for space and power efficiency at scale:

- High direct attach storage capacity per server for large-scale object storage systems
  - Up to 544 terabytes per 4U chassis (with 8 TB HDDs)
  - Up to 5.44 petabytes per 42U rack (with 10 HP Apollo 4510 Systems and 68 LFF HDDs)

Configuration flexibility to optimize for capacity, throughput, and responsiveness:

- Flexible performance and I/O options to match the variety of object storage response and throughput criteria
  - Two-processor server configuration options choices from 6–16 cores, 1.6 GHz–2.6 GHz CPU speed, and power ratings between 55–135 watts
  - 16 memory DIMM slots with up to 512 GB DDR4 memory at up to 2,133 MHz
  - Solid-state disks and high-performance storage controllers to speed data transfer
  - Up to four PCI Express (PCIe) slots with flexible I/O options to match the performance and throughput requirements



Technical specifications

	HP Apollo 4530 System	HP Apollo 4510 System
Form factor	4U shared infrastructure chassis	4U shared infrastructure chassis
Server	Up to 3 servers per chassis	1 servers per chassis
Storage type	Up to 15 LFF hot-plug SAS/SATA/SSD per server Up to 45 drives per chassis	Up to 60 LFF hot-plug SAS/SATA/SSD + Optional 8 LFF in rear drive cage
Storage capacity	Up to 120 TB per server (15 LFF 8 TB HDD) Up to 3.6 PB per 42U rack (30 servers 8 TB HDD)	Up to 544 TB per server (60 + 8 LFF 8 TB HDD) Up to 5.4 PB per 42U rack (10 servers 8 TB HDD)
Storage controller	HP Dynamic Smart Array B140i Integrated HP Smart Array P244br/HP H244br controllers Plus additional Smart Array or Smart HBA controller options	HP Dynamic Smart Array B140i Integrated HP Smart Array P244br/HP H244br controllers Plus additional Smart Array or Smart HBA controller options
Processor family	Intel Xeon E5-2600 v3 Series	Intel Xeon E5-2600 v3 Series
Processor number	One or two per server	One or two per server
Processor cores available	6/8/10/12/14/16	6/8/10/12/14/16
Processor frequency	From 1.6 GHz–2.6 GHz	From 1.6 GHz–2.6 GHz
Memory	HP SmartMemory 16 DIMM slots Up to 512 GB DDR4 memory at up to 2,133 MHz	HP SmartMemory 16 DIMM slots Up to 512 GB DDR4 memory at up to 2,133 MHz

Technical specifications (continued)

	HP Apollo 4530 System	HP Apollo 4510 System
Networking	2 x 1 Gb Ethernet plus FlexibleLOM and PCIe options	2 x 1 Gb Ethernet plus FlexibleLOM and PCIe options
Expansion slots	Up to four PCIe Slots + FlexibleLOM support	Up to four PCIe Slots + FlexibleLOM support
Management	HP iLO 4	HP iLO 4
Recommended for Management at scale	HP Advanced Power Manager HP Insight Cluster Management Utility	HP Advanced Power Manager HP Insight Cluster Management Utility
Systems fans features	Five hot-plug fan modules (provide redundancy)	Five hot-plug fan modules (provide redundancy)
Power supply type	Up to 4 power supplies, 800W and 1400W Flex Slot, hot-plug redundant power supplies	Up to 4 power supplies, 800W and 1400W Flex Slot, hot-plug redundant power supplies
QuickSpec URL	hp.com/h20195/v2/GetHtml.aspx?docname=c04616501	hp.com/h20195/v2/GetHtml.aspx?docname=c04616501

HP Support Services

Tap into the HP support services advantage for a single-source solution that makes the most of your investments. Choose from our three levels of care that cover the entire lifecycle.

Optimized care
- Three-year Proactive Care 24x7
- Factory Express Level 4

Delivers the highest levels of performance and stability through expert consulting for factory configuration/integration/installation, assigned technical experts, enhanced call handling, and critical event management.

Standard care
- Three-year Foundation Care 24x7
- Installation and start up

Helps maintain a high level of uptime, along with expert help to manage the cost and complexity of implementation and support.

Basic care
- Foundation Care next business day
- Installation and start up

Cost-effectively manage implementation, keep devices running, and address problems as needed.

Customize your IT lifecycle management from acquisition of new IT, management of existing assets, and removal of unneeded equipment. **hp.com/go/hpfinancialservices**

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. **hp.com/go/factoryexpress**

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**

Other support options

HP Datacenter Care—Provides environment-wide support tailored to your needs with a flexible, comprehensive, relationship-based approach to personalized support and management of heterogeneous data centers. Datacenter Care offers options for multivendor environments, spare parts, infrastructure automation, and more.

HP Flexible Capacity—As an option of HP Datacenter Care, HP Flexible Capacity delivers a public cloud experience with the benefits of public and/or on-premises IT. With this pay-as-you-grow solution, you can scale instantly to handle growth without the usual wait for procurement.

HP Proactive Care Advanced—Dedicated resources and assistance to help you reduce costs and maximize staff utilization, increase IT performance, and maximize return on investment. An assigned local Account Support Manager delivers highly personalized support, best practice advice, critical incident management, and access to technical experts.

Additional Technology Services to help maximize your HP Apollo 4500 System investment

HP Proactive Select—A flexible, customizable way to obtain technical expertise to meet ongoing IT needs. Proactive Select credits provide access to services as needed.

HP Lifecycle Event Services—Provides expertise at every step, including strategy, design, deployment, operations, and education services. These services help you deploy technologies, solutions, and assessments to help optimize and operate the IT infrastructure.

HP Education Services—Comprehensive training to expand your skills and keep up to speed with the latest technologies from HP.

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