

HPE Apollo 2000 System

The enterprise bridge to scale-out architecture



You need to deploy more compute power so you can benefit from cloud business, deploy Web-based applications, or increase high-performance computing (HPC) power to speed research and bring new products to market faster—but you have space and resource constraints.

Winner of the 2015 CRN Tech Innovator Award

The CRN Tech Innovator Award program evaluates products across 19 categories based on the products' capabilities to increase worker productivity and reduce cost and complexity for solution providers, IT departments, and end users.

The HPE Apollo 2000 System won this award in 2015 in the servers' category.

The HPE Apollo 2000 System provides enterprises a bridge to scale-out architecture for traditional data centers, allowing you to achieve the space and cost savings of a density-optimized infrastructure in a non-disruptive manner.

Configuration flexibility for a variety of workloads

The HPE Apollo 2000 System is an industry-leading, density-optimized platform that packs performance and workload capacity into a small amount of data center space, making it ideal for your space-constrained data center or remote site. Four independent hot pluggable HPE Apollo 2000 servers in a single 2U chassis provide 2X the performance density of standard 1U servers (four servers in 2U vs. 4U of rack space) at a comparable cost. The chassis can also accommodate two 2U servers, which include additional I/O expansion slots for accelerated workloads.

Flexible configuration options make the Apollo 2000 System a great fit for a variety of workloads, including HPC clusters. The ability to mix and match servers in the same chassis and the unique drive mapping flexibility allow you to create optimized configurations for many applications. Chassis, or a group of

chassis, can be custom configured to act as affordable, modular, 2U building blocks for a specific implementation at scale—and easily accommodate future growth.

The system also supports a full complement of HPC features, including top bin CPUs, fast memory, integrated accelerators or GPUs, and high-speed cluster fabrics and I/O interconnections. These options make it easy for you to achieve the right balance of price and performance for your HPC workloads.

Integrate seamlessly into your data center

The HPE Apollo 2000 System is designed to be deployed in traditional enterprise data centers, without the need to change anything within your environment. The system can be managed as an individual server with familiar hardware and software tools, as well as service procedures and practices similar to those used with traditional rack servers.

Key features and benefits

Among the Apollo systems family, the Apollo 2000 System provides an easy transition path for small- to medium-sized enterprises looking to benefit from HPC performance and density within the traditional data center.

Density optimized for traditional data centers

- Plug and play in traditional data centers using the same racks, cabling, and service accessibility
 - Easy to implement
 - Zero cost to change—leverage the same system administration
 - No disruption—no need to retrain your staff
- Have up to four independent hot pluggable servers in a 2U chassis (up to 80 servers in a 42U rack)
 - Provides twice the performance density compared to a 1U rack server
 - Configure each server uniquely and service them independently of one another

Configuration flexibility for variety of workloads

- Mix and match HPE ProLiant XL170r and XL190r Gen9 Servers
 - Supports a wide variety of workloads, including different workloads in the same chassis
- Attain HPC performance with accelerators, top bin CPUs, and fast HPC clustering
 - Achieve the right price for performance while selecting the right options needed to support your specific HPC workload

- Optimize workload with broad range of I/O options
 - Flexibly allocate hard drives to each server in a chassis with flexible drive mapping feature of the HPE Apollo r2800 Chassis
 - Balance performance for a specific workload with a range of I/O riser options that allow you to choose how high-performance cards that are mapped to the processor's PCI Express (PCIe) lanes

Simple at scale—it's HPE ProLiant Gen9 servers

• HPE Integrated Lights-Out (iLO) Management

- Manage your scale-out architecture efficiently
- Save administration time and cost by streamlining the management process

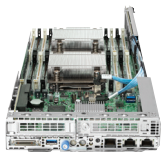
• HPE Apollo Platform Manager

- Gain the flexibility to meet any workload demand with dynamic and static power allocation and capping
- Save more than 80 percent by avoiding additional expenses on serial concentrators, adapters, cables, and switches

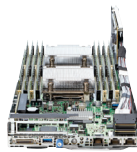
• HPE Insight Cluster Management Utility

- Monitor, manage, and optimize compute clusters of any size
- Receive an at-a-glance view of your entire cluster across multiple metrics
- Gain access to scalable remote management, analysis, and rapid provisioning of software to all servers on the system

Technical specifications



HPE ProLiant XL170r Gen9 Server



HPE ProLiant XL190r Gen9 Server

Maximum number	1U half width—up to four per chassis	2U half width—up to two per chassis
Processor	Dual Intel® Xeon® E5-2600 v4 series processors with options for 4–18 cores, 1.6 GHz–3.5 GHz CPU speed, 85–145 watts	Dual Intel Xeon E5-2600 v4 series processors with options for 4–18 cores, 1.6 GHz–3.5 GHz CPU speed, 85–145 watts
Chipset	Intel® C222	Intel C222
Memory	16 DDR4 DIMMs 2,400 MHz, 1 TB max. (16 x 64 GB)	16 DDR4 DIMMs 2,400 MHz, 1 TB max. (16 x 64 GB)
Network module	2 x 1 Gb Ethernet, serial RJ45 connector, SUV connector (1 serial/2 USB/1 video), optional FlexibleLOM	2 x 1 Gb Ethernet, serial RJ45 connector, SUV connector (1 serial/2 USB/1 video), optional FlexibleLOM
PCIe 3.0 slots	Two externally accessible I/O options that allow you to choose how the PCIe lanes are utilized to deliver balanced workload performance	Three externally accessible and one internally accessible I/O options that allow you to choose how the PCIe lanes are utilized to deliver balanced workload performance
Storage	Up to 24 drives per node Dual SATA host-based M.2 2242 NGFF SSDs-internal Hot-plug HDD support Internal USB port Hard drive mapping feature on r2800 chassis	Up to 24 drives per node Dual SATA host-based M.2 2242 NGFF SSDs-internal Hot-plug HDD support Internal USB port Hard drive mapping feature on r2800 chassis
Storage controller	Integrated Smart Array B140i storage controller Optional PCIe Host Bus Adapters and Smart Array controllers with advanced array features like HPE SmartCache and RAID 10 Advanced Data Mirroring	Integrated Smart Array B140i storage controller Optional PCIe Host Bus Adapters and Smart Array controllers with advanced array features like HPE SmartCache and RAID 10 Advanced Data Mirroring
Supported accelerators	N/A	Support for up to two per server NVIDIA® Quadro, Tesla K80, Tesla K40 GPUs, GRID K2 RAF, GRID M60 RAF, AMD S9150 accelerator, or Intel Xeon Phi 5110P coprocessors
Management	HPE iLO Management Engine (iLO 4) HPE Apollo Platform Manager (optional rack-level management)	HPE iLO Management Engine (iLO 4) HPE Apollo Platform Manager (optional rack-level management)
Common workloads	HPC Cloud server Density-optimized general purpose server Compute/storage all-in-one server for small to medium businesses, financial services, and electronic design automation	HPC (with integrated GPUs or coprocessors) Density-optimized general purpose server Compute/storage all-in-one server for small to medium businesses, financial services, and electronic design automation Server storage gateway controller for SAN, electronic design automation, HPC Cloud server for online gaming



HPE Apollo r2200 Chassis



HPE Apollo r2600 Chassis



HPE Apollo r2800 Chassis

Description	Gen9 12 LFF disk or SSD chassis	Gen9 24 SFF disk or SSD chassis	Gen9 24 SFF disk or SSD chassis with drive mapping capability
Storage configuration	12 LFF hot-plug SAS, or SATA HDDs or SSDs, allocated equally across server nodes	24 SFF hot-plug SAS, or SATA HDDs or SSDs, allocated equally across server nodes	24 SFF hot-plug SAS, or SATA HDDs or SSDs Supports flexible drive mapping enabling custom drive allocations to match workloads giving you flexible storage density for various applications
Size	2U: 17.64" wide x 31.21" deep	2U: 17.64" wide x 29.61" deep	2U: 17.64" wide x 29.61" deep
Power supplies	800 W or 1,400 W Platinum Power Supplies, N+1 redundancy option	800 W or 1400 W Platinum Power Supplies, N+1 redundancy option	800 W or 1,400 W Platinum Power Supplies, N+1 redundancy option

HPE Factory Express

HPE 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.

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Customer Technical Training

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

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Optimize your IT investment strategy with new ways to acquire, pay for and use technology, in lockstep with your business and transformation goals.

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HPE Rack and Power Infrastructure

HPE Rack and Power Infrastructure offers an entire portfolio of products to help you get the most out of your Apollo 2000 System. Spacious, 1,200 mm deep racks greatly simplify individual server maintenance through back-of-rack access, while our consolidated KVM solutions enable local and remote access to every server in your system. Internal and external server maintenance has never been so easy, whether you're near or far.

Additionally, as one of our most dense and scalable server solutions, effective power management is critical with Apollo 2000 System. Our end-to-end power management solutions ensure that power gets where it needs to go, when it needs to get there. With scalability comes increased opportunity for customization, and our metered and switched power distribution units (PDUs) allow you to completely monitor, manage, and customize power distribution to your servers to fit your application, now and in the future. Our uninterruptible power supply (UPS) units provide rack-based power protection, ensuring that your data is not lost or compromised in the event of a power outage.

Whatever your application, one of our most powerful server platforms requires a powerful and flexible infrastructure solution to realize its full potential, and to help your business do the same. Consider HPE Rack and Power Infrastructure for your HPE Apollo 2000 System. hpe.com/us/en/integrated-systems/rack-power-cooling.html

HPE Support Services

HPE Services can help guide you through the rapidly changing IT landscape. HPE Technology Services delivers confidence, reduces risk, and helps organizations realize greater agility and stability. Our **consulting** services provide advice and guidance to safely move your workloads to newer technologies.

HPE Infrastructure Consulting Services enable faster, more reliable startup of your new ProLiant Gen9 servers, and our support portfolio allows you to get connected and back to business fast. We recommend **HPE Proactive Care Services** for ProLiant Gen9 servers to prevent issues and resolve problems quickly and efficiently.

HPE Foundation Care Services provides a choice of coverage levels and response times for hardware and software support.

HPE Datacenter Care Services enables you to operate and evolve your IT environment at a lower cost and with more agility, including our **HPE Datacenter Care Flexible Capacity** service to acquire IT without impacting capital budget. Our support technology lets you tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, any location, any time.

Learn more at
hpe.com/info/apollo



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