

HP Apollo 2000 System

The enterprise bridge to scale-out architecture



The HP Apollo 2000 System supports a full complement of high-performance computing options

Optimize high-performance computing (HPC) clusters for many different applications including product design and testing simulation, financial risk modeling and Monte Carlo simulation, and scientific research modeling.

HPC options include top bin CPUs, fast memory, integrated accelerators—graphics processing units (GPUs) or Coprocessors—and fast cluster fabrics and I/O interconnections, making it easier for you to achieve the right performance, and price/performance for your HPC workloads.

You need to deploy more compute power so you can benefit from cloud business, deploy Web-based applications, and increase high-performance computing power to speed research and bring new products and services to market faster—but you have space and resource restrictions. The HP Apollo 2000 System provides enterprises a bridge to scale-out architecture for traditional data centers so you can achieve the space and cost savings of density-optimized infrastructure in a non-disruptive manner.

Density-optimized and powerfully simple servers with configuration flexibility for a variety of workloads

You need more compute power to keep up with modern business demands, but data center space is at a premium. With up to four independent hot-pluggable servers in a standard 2U chassis, the HP Apollo 2000 System is a very dense solution that packs a lot of performance and workload capacity into a small amount of data center space—making it ideal for your space-constrained data center or remote site.

In fact, four HP Apollo 2000 System 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 flexible configuration options for the HP Apollo 2000 System make it ideally suited for a variety of workloads, from remote site systems to large HPC clusters and everything in between. The ability to combine HP ProLiant XL170r Gen9 servers and HP ProLiant XL190r Gen9 servers in the same HP Apollo 2000 System chassis, and the unique drive mapping flexibility lends itself to optimizing server configurations for many applications. Chassis, or groups of chassis, can be custom-configured to act as affordable, modular, 2U building blocks for specific implementations at scale—and for future growth.

Built to seamlessly integrate with your data center

The HP Apollo 2000 System is designed to be deployed in traditional enterprise data centers, without disruption or the need to change anything in the environment. It has the same rack dimensions, cabling, and serviceability attributes of traditional 1U rack servers, but with up to four servers in the 2U shared-infrastructure chassis. These can be managed at the individual server level with the same hardware and software tools used with traditional rack servers, and use the same service procedures and practices—eliminating any cost of change for introducing efficient, space-saving scale-out architecture.

The HP Apollo 2000 System has the right characteristics and delivers the right value to make it your enterprise bridge to efficient, space-saving, scale-out architecture.

Key features and benefits

Density optimized for traditional data centers

- Up to four powerful servers in 2U chassis—2X the density of 1U servers
- Traditional racks and cabling for existing data centers
- Cost-effective in any configuration

Configuration flexibility for variety of workloads

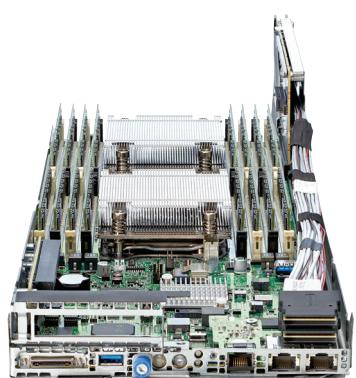
- Mix and match servers for workload optimization
- HPC performance with accelerators, top bin CPUs, fast HPC clustering
- Storage flexibility and a broad range of I/O options for workload optimization

Simple at scale—it's HP ProLiant Gen9

- Same HP ProLiant enterprise-class management and operational tools
- HP iLO management—Saves administration time and cost
- HP Advanced Power Manager—Enables more efficient capacity per rack
- HP Insight Cluster Management Utility—To monitor, manage, and optimize compute clusters of any size



HP ProLiant XL170r Gen9 Server



HP ProLiant XL190r Gen9 Server

Technical specifications

HP Apollo 2000 System—HP ProLiant Gen9 servers and options

	HP ProLiant XL170r Gen9 Server	HP 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 v3 series processors with options for 4–18 cores, 1.6 GHz–3.5 GHz CPU speed, 85–145 Watts	Dual Intel Xeon E5-2600 v3 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 x DDR4 up to 2,133 MHz 512 GB maximum	16 x DDR4 up to 2,133 MHz 512 GB maximum
Network module	2 x 1Gb Ethernet, Serial RJ45 connector, SUV connector (1 serial/2 USB/1 video), Optional FlexibleLOM	2 x 1Gb 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 PCI Express (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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 HP SmartCache and RAID10 Advanced Data Mirroring	Integrated Smart Array B140i storage controller Optional PCIe Host Bus Adapters and Smart Array Controllers with advanced array features like HP SmartCache and RAID10 Advanced Data Mirroring
Supported accelerators	N/A	Support for up to two per server: NVIDIA Tesla K40 GPUs or Intel Xeon Phi 5110P Coprocessors
Management	HP iLO Management Engine (iLO 4) HP Advanced Power Manager (optional rack level management)	HP iLO Management Engine (iLO 4) HP Advanced Power Manager (optional rack level management)
Common workloads	<ul style="list-style-type: none"> High-performance computing Cloud server Density-optimized general purpose server Compute/storage all-in-one server for SMB, FSI, EDA 	<ul style="list-style-type: none"> High performance computing (with integrated GPUs or Coprocessors) Density-optimized general purpose server Compute/storage all-in-one server for SMB, FSI, EDA Server storage gateway controller for SAN, EDA, HPC Cloud server for online gaming

HP Apollo 2000 System chassis options

	HP Apollo r2200 Chassis	HP Apollo r2600 Chassis	HP 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 1,400 W Platinum Power Supplies, N+1 redundancy option	800 W or 1,400 W Platinum Power Supplies, N+1 redundancy option

Leverage the expertise of HP Services

Let HP help guide your business through the rapidly changing IT landscape. HP Technology Services delivers confidence, reduces risk, and helps you realize greater agility and stability.

Customize your IT lifecycle management, from acquisition of new IT, management of existing assets, and removal of unneeded equipment.

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Our **consulting** services provide advice and guidance to safely move your workloads to newer technologies.

IT 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 **HP Proactive Care** for ProLiant Gen9 servers to prevent issues and resolve problems quickly and efficiently.

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

HP Datacenter Care enables you to operate and evolve your IT environment at a lower cost and with more agility, including our **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, anywhere, at any time.

For more information see: hp.com/services/proliant

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