



HPE Apollo 6500 System



HPE Apollo 6500—massive GPU compute

Do you need to rapidly transform massive data streams into actionable results? Are you running massively parallel data models that require more processing horsepower? Would you like to deliver the maximum amount of performance from each of your high-performance computing (HPC) racks?

The HPE ProLiant XL270d Gen9 Accelerator Tray provides up to 168 Tflops of peak half precision performance per server, and up to 37 Tflops of peak double precision performance with eight NVIDIA® Tesla P100 and two Intel® Xeon® E5-2600 v4 processors in a 2U server. With a configurable internal PCIe Gen3 fabric, choose to configure the GPU technology to match your specific needs. High-bandwidth, low-latency networking is tightly coupled to the accelerators allowing you to take full advantage of your network.

The system consists of three key elements:

- The HPE ProLiant XL270d Gen9 Server tray
- The HPE Apollo 6500 Chassis, and
- The HPE Apollo 6000 Power Shelf

High-bandwidth, low-latency networking is tightly coupled to the accelerators allow you to take full advantage of your network. And the two x16 PCIe Gen3 slots add to your flexibility when choosing high-speed fabrics.

- Solve problems faster with up to 15 Tflops of single precision performance per 2U node.
- Specifically configure accelerator configurations to match your workload.
- Faster communications between nodes with two PCIe Gen3 x16 slots to enable your choice of high-speed fabrics.

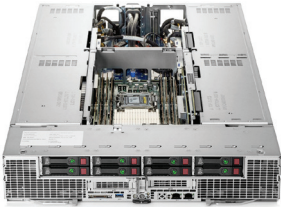


Figure 1. The HPE Apollo 6500 System—your next accelerated computing solution

A single HPE Apollo 6500 System can deliver more than 25 Tflops of sustained double precision performance. This is twice the power¹ of the #2 system on the TOP 500 Supercomputer list of 2003.

Key features and benefits

Flexible configurations for the most demanding high-performance computing workloads.

The HPE Apollo 6500 System supports up to eight 300 W GPU or coprocessors delivering increased performance.

For workloads requiring high peer-to-peer communication among the accelerators, the HPE Apollo 6500 allows you to configure four GPU on a single high-speed PCIe switch, and two banks to a CPU for eight GPU per CPU.

For workloads requiring higher-CPU to GPU communications, choose our four GPU per CPU configuration.

The HPE ProLiant XL270d Gen9 Server supports industry-standard Intel Xeon E5-2600 v4 processors, solid state drives (SSDs) with 12 G SAS and 1024 GB DDR4 2400 MHz memory for blazing performance.

Up to 16 HPE DDR4 2400 MHz memory modules per HPE ProLiant XL270d Gen9 Server for faster performance with data-intensive application workloads.

High-bandwidth, low-latency networking between accelerator nodes

The HPE Apollo 6500 System includes two low-profile PCIe Gen3 x16 slots to enable your choice of high-speed fabrics.

In the 8:1 GPU to CPU topology, networking is directly attached to the PCIe Gen3 fabric of the GPU for reduced latencies between GPU nodes.

Supports GPUDirect with four GPUs per HPE InfiniBand Adapter.

“HPE’s new HPC solutions feature innovations in systems design, workload optimization, density optimization and open source software that are designed to accelerate time-to-value in areas such as deep learning, energy exploration and mechanical design, as well as financial trading and regulatory compliance.”

– Steve Conway, IDC research vice president for high-performance computing and data analysis

¹ Internal HPE test results running Linpack utilizing HPL. (HPL—A Portable Implementation of the High-Performance Linpack Benchmark for Distributed-Memory Computers) Actual passed result of 2.520e+04 Gflops with the HPE NVIDIA Tesla P100

Technical specifications



HPE ProLiant XL270d Gen9 Server

Rack	Designed for 1200 mm deep racks
Chassis	HPE Apollo d6500 Chassis (4U, 2 server trays, up to 16 GPU/chassis) 6.96 x 17.638 x 37 in.
Processor	Intel Xeon E5-2600 v4 family
Power	HPE Apollo 6000 Power Shelf
Memory	16 2400 MHz DDR4 DIMMs, 1024 GB max (16 x 64 GB)
Network options	Two 1GbE single-port module Two x16 PCI Express low-profile slots supporting InfiniBand/OPA/Ethernet (1GbE or 10GbE)
I/O slots	Designed to support 8 350 W GPU per tray 1 x 8 PCIe mezzanine form factor (Smart Array) 2 x16 PCIe low-profile Gen3
Storage	Up to 8 SFF hot-plug SAS/SATA/SSD—front-accessible storage
Accelerator	NVIDIA Tesla: P100, M40, K80, K40, and the AMD FirePro S9150 NVIDIA Pascal GPU: P100 AMD FirePro S9150 Intel [®] 's future Xeon Phi as available
Management	HPE iLO 4, HPE Apollo Platform Manager



HPE Apollo d6500 Chassis

Description	HPE Apollo d6500 Chassis, Standard 19" racks, front cabled
Storage configuration	16 SFF hot-plug SAS or SATA HDDs or SSDs, allocated equally across server nodes
Size	4U: 6.97" wide x 37.79" deep
Power supplies	2,650 W Platform Power Supplies, N+N redundancy option with the HPE Apollo 6000 Power Shelf

Learn more at
hpe.com/info/apollo



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