



HPE CRAY SUPERCOMPUTERS

Cray Supercomputer



WHAT'S NEW

- The HPE Cray EX235a Accelerator Blade with AMD Instinct™ MI-Next Series accelerator and 3rd Gen AMD EPYC processor.
- The HPE Cray EX235n Accelerator Blade with options for both NVIDIA A100 40GB and A100 80GB.

OVERVIEW

Do you need a powerful solution to meet today's supercomputing challenges?

HPE Cray supercomputers enable you to tackle infrastructure challenges that require the fusion of modeling and simulation workloads with analytics, AI, and the Internet of Things (IoT) to create a single business-critical workflow. Today's high-performance computing systems must be able to handle these massive and converged workloads, leading to a supercomputing sea-change.

With the imperative to navigate increasingly diverse and

complex workloads, the next generation of supercomputers will be differentiated by exascale performance, data-centric workloads, and diversification of processor architectures. HPE Cray supercomputers deliver application HPC and AI performance at scale, provide a flexible solution for tens to hundreds to thousands of nodes, and deliver consistent, predictable, and reliable performance, facilitating high productivity on large-scale workflows.

FEATURES

Flexible Hardware Infrastructure

HPE Cray supercomputers support multiple processor architectures and accelerator options. Additionally, they are architected for forward compatibility with next-generation blades and servers. HPE Cray supercomputers are available in two configurations.

For increased density and efficiency, the HPE Cray EX liquid-cooled cabinetry supports all components' direct liquid cooling in a highly dense bladed configuration. These cabinets can support processors up to 530W, and highly dense configurations of up to 512 processors per cabinet.

HPE Cray supercomputers are also available in a standard 19-inch rack configuration with HPE Cray software and HPE Slingshot networking, including a 19-inch top-of-rack HPE Slingshot switch. The current platforms for the standard rack solutions are the HPE Apollo 2000 and 6500 Gen10 Plus Systems.

Breakthrough Interconnect

HPE Cray supercomputers revolutionary design features the HPE Slingshot interconnect and delivers a high-performing interconnect solution built on high radix. These 64-port switches which enable scaling to hundreds of thousands of nodes with only three hops in a Dragonfly topology.

The 64-port switch provides 12.8 Tb/s of bandwidth. Each port operates at 200 Gb/s per direction and can provide an Ethernet edge or HPC fabric functionality. Edge ports connect to supported Ethernet NIC or external routers at 100GbE or 200GbE.

The HPE Slingshot switch is available in a liquid-cooled blade form factor for the HPE Cray EX infrastructure and in a 2U air-cooled form factor for standard 19-inch rack deployments. The internal switch logic is the same for both environments.

HPE Slingshot contains several innovative features to consistently deliver reliable high performance under heavy usage, including adaptive routing that sends packets dynamically based on real-time, global information on load inside the network, and advanced congestion control mechanisms.

With a growing focus on data-centric computing and the convergence of AI and HPC workloads, interoperability has become an increasingly important consideration. HPE Slingshot is based on industry-standard Ethernet, which enables straightforward connectivity with standard datacenter environments.



Redesigned Software Stack

The HPE Cray supercomputer can maneuver the convergence of HPC, AI, and data analytics workloads, coupled with explosive data growth. Today's supercomputers will have to handle exabytes of data in order to enable modern workloads to run in a productive, reliable, and expedient manner.

Built on decades of supercomputing expertise, the HPE Cray software stack adds the productivity of cloud and data center interoperability to the power of supercomputing to bring you a new standard in manageability, reliability, availability, and resiliency.

The stack provides a comprehensive HPE Cray System Management suite for administrators, a hardened low-jitter HPE Cray OS, as well as the HPE Cray Programming Environment software development toolchain for developers.

Integrated Storage Solution

Integrated with the HPE Cray supercomputers, the Cray ClusterStor E1000 Storage Systems is purpose-engineered to meet the demanding input/output requirements of supercomputers and HPC clusters in a very efficient way.

The parallel storage solution typically achieves the given HPC storage requirements with significantly fewer storage drives than alternative storage offerings, allowing HPC users with a fixed budget to spend more of their budget on CPU/GPU compute nodes accelerating time-to-insight.



For additional technical information, available models and options, please reference the [QuickSpecs](#)

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