![acer - explore beyond limits™]

Acer solutions for Technical Computing

Acer delivers ultimate performance and reliability for workstation and high-performance computing

Acer delivers high-performance computing for high-performing businesses. With our servers, workstations and key industry partnerships, Acer crafts exceptional solutions tailored to your business, research, digital content or engineering needs. Leveraging our expertise and wealth of resources, companies in the automotive, computational design, and chemical/biomedical research industries now experience exceptional high-density performance, optimized power consumption, and simplified management and maintenance.

What Is HPC?

Clustering the power of multiple system nodes, High-Performance Computing achieves a level of performance far beyond that of a single PC or even a server. Using parallel computing, a cluster separates a large task into smaller jobs and distributes them to separate systems. Performance increases as more nodes work in tandem. Typically, a head node acts as the interface for the cluster, assigning the jobs and collecting the results from the multiple computing nodes handling individual assignments.

Who Needs HPC?

Who can benefit from the wide bandwidth, low latency networking, and extreme capabilities of High-Performance Computing?

- Physicists unlocking the secrets of the universe

- Automakers designing the cars of tomorrow
- Special effects houses animating the next blockbuster film
- Local weather bureau tracking storm developments

HPC use is also increasing in financial services, the oil and gas industry, life sciences, and manufacturing. The applications are truly endless.

To see who is using it now, view these two case studies from Scuderia Ferrari and Taiwan's National Center for High-performance Computing.

Acer High-Density Systems

With performance demands outstripping current datacenters, system density is crucial. Denser systems carry lower costs (e.g., less floor space, lower power). High-density systems also help users with jobs split across hundreds of cores. Ideal for HPC, we offer the following solutions:

- Gemini Series has 2-node/1U density, with low power usage and chassis cost.

- Co-Processor Optimized solutions offer server designs with native support for both a CPU-dense system and a GPU-dense system in a single design.

- 4-Socket Platforms offer the maximum in per-watt performance, satisfying the largest memory and high-core count demands.

We have solutions that rank among the Top 500 list of the fastest supercomputers in the world.

Test Drive Your HPC Solution

You wouldn't buy a high-performance automobile without a test drive, so why would you purchase a high-performance computer without one? Acer supports worldwide access to HPC competency centers that are equipped with testing service facilities for customers interested in acquiring Acer's High Performance Computing systems and HPC solutions. These competency centers offer a range of high-density systems that can be configured into a multitude of HPC solutions so you can generate real-world results.

Pro Partners, Total Solutions

Team of experts
Acer partners with companies and research institutions around the world to deliver world-class HPC cluster solutions to its customers. These partners cover all ranges of the supercomputing field; including networking, compute performance, high-performance storage, and HPC consulting. Additionally, Acer works closely with research institutions, including the University of Pisa. Below is a complete list of partners.

Compute
Intel
NVIDIA
AMD

Interconnect
Mellanox
Intel

Storage
DDN
HDS

Cluster management and applications
Bright Computing
Altair
Allinea
ANSYS
The Portland Group
Microsoft
SUSE

System integrators
NEC
Integrex HPC
Go Virtual

Acer and Intel Cluster Ready

Interested, but not sure where to start? Acer offers certified Intel Cluster Ready (ICR) solutions which are pre-tested to run a wide variety of technical computing applications. Additionally, Acer can customize a cluster to meet a customer's needs and certify it with the ICR program to ensure its Intel-based cluster performs exactly the way it's designed to.

Intel Cluster Ready supports HPC technical software from vendors such as Ansys, ESI Group, Altair Engineering, Siemens PLM software and many more. For a full list, please visit
http://software.intel.com/en-us/articles/intel-cluster-ready-participating-vendors/

Acer's series is already certified with Bright Computing down to four compute nodes. For more information about developing your own solution, please contact your local Acer representative.

For more information about the Intel Cluster Ready program, please see www.intel.com/go/cluster

Acer and Altair®

Acer and Altair have partnered together to certify and enable customers' total integration of Acer's data-center-grade hardware with Altair's robust HPC workload management suite – PBS Works. PBS Works provides engineers and researchers a robust toolset to manage jobs, upload data from their desktop/workstation and analyze cluster use. Having been first developed at NASA Ames in the 1990s, PBS Works has evolved and been implemented in major supercomputers over the past two decades, and is proven to deliver robust performance within its easy-to-manage framework.

For more information about Altair's software, please see
http://www.altair.com , and http://www.pbsworks.com

Acer and Bright Computing

For customers looking to minimize the time and cost of managing their HPC clusters, Acer offers Bright Cluster Manager in both standard and advanced editions. Bright Cluster Manager is an intuitive, easy to use management solution that, tightly coupled with Altair PBS Professional, provides a comprehensive solution for provisioning, scheduling, monitoring and managing HPC clusters. No need for system management expertise, tool-kit synchronization or complex scripting. Bright makes it easy to get the most performance, uptime and throughput from your Acer clusters, enabling users to focus on research instead of managing systems.

Key features:

- Intuitive GUI or powerful Cluster Management Shell (command line) interfaces
- Full support for NVIDIA GPUs, including preconfigured CUDA and OpenCL libraries
- Full support for Intel Xeon Phi coprocessors, including automatic setup, configuration and management
- Scalable 1000s of nodes
- Flexible OS image management and provisioning, including diskless and over InfiniBand
- Extensive and extensible cluster health checks to prevent system-related job crashes
- Security controls for firewalls and LDAP support
- Pre-configured PBS Professional workload manager; other scheduler options
- Fully Intel Cluster Ready compliant
- And much more

To find out more about the Bright Cluster Manager, please visit http://info.brightcomputing.com/bright-cluster-manager-for-acer/

Meeting professional demands

Acer Veriton workstations bring enterprise-class performance to individual users. Made for designers, engineers and research professionals, our workstations put maximum computing and 3D graphics power in a reliable design capable of running 24/7.

Veriton P Series workstations

Acer workstations give hard-core computer users the multi-core power, graphics performance, and rock-solid stability they need for demanding applications like 3D animation, CAD and digital imaging. Enterprise-level expandability and redundancy allow these users to tackle even the largest projects with confidence.

Interested?

To learn more about Acer's offerings for technical computing or get answers to more specific questions, please contact us at HPCsolutions@acer.com .