

SGI Altix Hybrid Cluster Solutions

Combining Capacity with Uncompromising Capability

Features

- The industry's most powerful computing architecture: the SGI® Altix™ 3000 server, with global shared memory and 64-bit Intel® Itanium® 2 processors
- Industry-standard 32-bit or 64-bit Linux® cluster technology
- A shared, centralized storage area network (SAN) using Fibre Channel or Gigabit Ethernet
- SGI® CXFST™ filesystem for a common, scalable, shared filesystem across the Altix™ Hybrid Cluster
- Centralized system management and administration tools
- A transparent workload management system that selects computing resources for each job
- Comprehensive onsite services for end-to-end setup, configuration, testing, and validation

Benefits

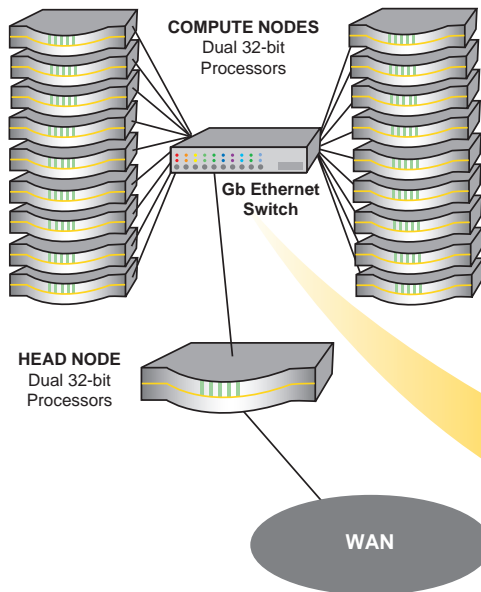
- Best-of-breed computing power to handle large, complex problems
- Low-cost distributed computing on 32-bit or 64-bit clusters
- Flexibility to use the best computing resources for each job
- Fast, simple job scheduling with minimal user intervention
- Easy, single-point administration and cluster management
- Accelerated workflow and industry-leading I/O performance
- Elimination of the need for file copying between systems
- A tailored, scalable solution from the industry's service leader

The Challenge: Satisfying All Cluster Users

Cluster technology is meeting the needs of many users for general purpose, capacity computing that has an emphasis on serial or embarrassingly parallel applications. But for a large number of cluster users, there are high costs for the use of cluster technology – in application porting, and in being forced to use a less efficient or less sophisticated application. These users could be far more productive in an environment that provides capability computing resources, so that large, resource-intensive jobs can access the high performance computing (HPC) capabilities they need. This creates a dilemma for organizations that are committed to open-source cluster technology: How do they provide both capacity and capability computing in a cost-effective, easy-to-use way?

Tailored Hybrid Solutions from SGI: Best of Both Worlds

The Altix Hybrid Cluster solution from SGI Technology Solutions satisfies both needs in a single, seamless environment tailored to the customer's needs. It integrates low-cost cluster technology with the highly scalable SGI Altix system, which continues to shatter benchmarks and win awards as the industry's most powerful Linux os-based capability computer. They operate as a single transparent system using a shared-filesystem SAN that incorporates layered SGI® storage solutions such as hierarchical storage management and back-up automation.



Scientific, engineering and creative professionals utilize a wide range of computational algorithms and software tools for research and production, and the data being used varies in size and complexity. The variety of software tools and data set sizes and complexities requires difference resources to maximize results. An Altix Hybrid Cluster lets scientists, engineers and creative professionals maximize results by having work performed on the most effective computing resources based on the characteristics of the job or applications. This cluster solution from SGI delivers the best of both worlds for:

- 64-bit computing systems ◆ 32-bit computing systems
- large shared memory ◆ distributed memory across nodes
- high I/O and memory bandwidth ◆ lower bandwidth interconnects
- low latency ◆ longer latencies

A common workflow management front end and a common data management solution with SGI's Altix Hybrid Cluster solution enable optimal workflows for most research and production environments.



SGI Altix Hybrid Cluster Solutions

An SGI® InfiniteStorage SAN gives users seamless access to data storage. The CXFS shared filesystem can make users more productive by eliminating the need to copy files between systems and giving all Linux users uncompromising I/O performance. All files are constantly visible from any point on the SAN.

Simplified Administration and Job Submission

The Altix Hybrid Cluster solution includes a software layer that provides transparent workload scheduling through which users can submit jobs without thinking about hardware. The administrative software intelligently queues submissions to run on the appropriate platform providing best in class performance and optimal load balancing.

Integrated cluster management tools and dynamic software controls can optimally change the total system from a single meta-cluster to semi-autonomous sub-clusters as needs dictate. For unexpected, time-critical computing challenges, the Altix system enables administrators to bring all available Altix resources to bear on a single job.

A Smooth, Cost-Effective Implementation

Knowledgeable SGI engineers assess your needs, goals, and operational environment before architecting an Altix Hybrid Cluster solution that will help you to generate maximum productivity from all your applications. Elements of the solution are scaled and tailored to your needs: Altix processors, traditional cluster processors, layered applications, and storage and network technology.

SGI Technology Solutions can move you quickly and efficiently into the Altix environment with expertise in all key areas – NUMAflex™ architecture, 64-bit computing, technical computing implementation, and the Linux OS environment – to integrate it into your infrastructure and tune systems for maximum performance and throughput.

A Great Way to Introduce 64-bit Computing

The Altix Hybrid Cluster is an excellent solution for organizations that look ahead to 64-bit open-source computing but may not be ready to make the change in

one step. Your solution can be tailored to provide the right mix of 64-bit Altix resources to enable you to start your evaluation and transition while still meeting your current and future needs for 32-bit Linux technology.

Highly Flexible Scalability

The Altix Hybrid Cluster gives you the ability to upgrade and expand any or all aspects of the solution: the Altix system, the traditional cluster, storage, and networking. The Altix Hybrid Cluster is the ultimate in modular flexibility. It performs as a capacity cluster and as a single-job capability powerhouse. It adapts readily to new technologies and applications and it scales Linux to an unprecedented level. The combination of Altix and traditional cluster technology puts you in a strong position to grow as your computing requirements evolve.

SGI Technology Solutions

SGI Technology Solutions are empowering a world of innovation and discovery by providing top-performance systems, solutions, and services to the world's leading technical and creative users. With exceptional expertise in high-performance computing, advanced visualization, and storage, our specialists have the resources and skill sets to architect, implement, and support the most effective technology solutions for the 21st century.

SGI offers a range of complementary services for your Altix Hybrid Cluster solution, including SGI® UPSafe® scalable power conditioning and protection systems.

Our comprehensive end-to-end technology solutions include SGI's renowned support services and comprehensive training. Our superior customer support programs range from basic coverage during normal business hours to 7x24 mission-critical support.

To Learn More

Contact your local SGI sales office to learn how SGI Technology Solutions can help you accomplish your technology goals and optimize your technology investment.



Corporate Office
1600 Amphitheatre Pkwy.
Mountain View, CA 94043
(650) 960.1980
www.sgi.com

North America 1 (800) 800.7441
Latin America (52)5267.1300
Europe (44)118.925.75.00
Japan (81)3.5488.1811
Asia Pacific (67)6771.0290