Datasheet

SGI™ Advanced Cluster Environment for IRIX®

Features

- Cutting-edge cluster environment
- Optimized performance
- Job management
- Parallel programming
- Cluster administration

ACE IRIX

Complete Cluster Environment

SGI Advanced Cluster Environment (ACE) for IRIX provides the industry's leading compute cluster environment. SGI ACE for IRIX is a fully integrated cluster package for compute-intensive environments, scaling SGI™ Origin™ family servers to multiple processors. In a complete cluster atmosphere, ACE is a comprehensive software package used to build the following types of clusters:

- Capability clusters address huge problems that need to scale to multiple CPUs; it is more efficient and economical to solve some of these problems in a cluster environment than on a large single system
- Throughput clusters run multiple jobs (either different applications or multiple instances of the same application) in a batch-style environment

Cutting-Edge Cluster Environment with Low Total Cost of Ownership

ACE for IRIX is the result of years of development by SGI engineers of high-performance computing tools. The same tools used in managing systems such as the 6,144-processor cluster at Los Alamos National Laboratory are now available in an integrated, easy-to-use package. Advanced tools are provided to ease cluster administration, providing a single point of administration and single system view to the end user. Many user applications run as efficiently in a clustered environment as in a single-system environment. High-performance interconnect hardware, a single point of administration solution package of hardware and software, and advanced message-passing libraries ensure maximum performance for the most challenging cluster jobs. In addition, clusters allow for greater application availability than a single system.

Each component of ACE for IRIX has gone through extensive testing in SGI's cluster labs to ensure the interoperability and functionality of the whole package. Best-of-breed cluster software and software administration tools from SGI have been assembled to create a robust clustering environment to address your toughest problems. The SGI ACE for IRIX cluster solution is backed by SGI's industry-leading service and support organization. An extremely economical managed service gets your cluster solution up and running and will also train your staff on the components of the overall solution.

Components of SGI ACE for IRIX

ACE consists of a number of tools to support parallel programming, job management, and cluster administration.

Parallel Programming

Message Passing Toolkit (MPT) provides an optimized implementation of the industry's top message-passing libraries together as one product. MPT permits application developers to use standard, portable interfaces for developing applications while obtaining the best communication performance.

Job Management

Performance Co-Pilot™ is designed for the in-depth analysis and mechanisms that are needed to understand the hardest performance problems in our most complex systems. It provides a cluster-wide performance view from a single console. The major benefit of Performance Co-Pilot to its users is the ability to quickly isolate, drill down, and understand performance behavior, resource utilization, activity levels, and performance bottlenecks in the cluster.

Platform Computing Corporation's Load Sharing Facility (LSF) provides effective workload distribution and job scheduling across the cluster. It also maximizes the use of application and system resources critical to achieving enterprise business objectives. The LSF suite is an additional package that can be added to your ACE for IRIX solution.

Cluster Administration

A newly developed console solution will offer an intelligent, easy-to-use central control point that will manage and monitor servers and log their activity. This integrated console solution will consist of an SGI workstation, serial MUX, and a suite of software tools to meet the remote management needs of SGI's broad base of installed servers.

SGI™ Array Services is a highly scalable, available, and cost-effective solution for large-scale computing. Array Services examines both the HPC (scalable) market and the commercial (parallel database and high availability) market. Along with the power and flexibility of large, clustered systems comes some additional complexity in the area of administering and managing the array as a whole. Some of these services revolve around the notion of an array session, which is a set of processes, running on different nodes in an array, that are conceptually related as a single job. Additional services are provided by the Array Services daemon, which knows about the configuration of an array and is therefore able to provide functions for describing and administering it.

RoboInst is a software distribution product designed to help automate the process of installing operating system upgrades, operating system and application patches, and applications for a distributed network of SGI systems. It can perform in-place upgrades of software without manual deinstallation of previous versions. RoboInst automates tasks at the IRIX miniroot level that include the ability to repartition the disk, create filesystems, install software, and execute any other shell scripts that are provided.

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