SGI® Solutions for Geospatial Archive

Features

- Complete solutions for geospatial archive systems
- SGI® Altix®
  - Unparalleled database performance and scalability
  - Standard Linux® and 64-bit Intel® Itanium® 2
  - Supports broad set of commercial databases
- SGI® InfiniteStorage Family
  - Reliable, high performance RAID for primary storage
  - SATA and tape for secondary and tertiary storage
  - CXFS™ for shared, high speed direct data access
  - Data lifecycle management with SGI® DMF
- Integration with 3rd party applications
- Complete professional services to tailor custom solutions

Fast Access and Cost-Effective Data Management for Geospatial Databases

Geospatial databases are exploding in size and complexity. The proliferation of government and private acquisition systems combined with advanced methods for image processing and analysis continue to accelerate this growth. Discrete information sources such as maps, terrain data, satellite imagery, video, and many others are being combined into massive, unified databases that enable users to access all information through a single interface to create new multi-layered views that increase understanding and improve decision-making.

To deal effectively with mountains of geospatial data, a geospatial archive system must rapidly process complex database requests while cost-effectively storing huge quantities of data. Data must be delivered where it's needed quickly, and software solutions must help manage and make sense out of this data. At the same time, organizations don't want to get locked into expensive, proprietary solutions that will limit future options.

SGI meets these challenges with open systems hardware and industry-standard software components that can be flexibly combined into a balanced solution that meets the needs of even the most demanding users today while providing maximum flexibility for tomorrow.

SGI Altix: Unparalleled Scalability with Linux

The SGI Altix platform is the core of a complete SGI geospatial archive solution. Altix combines the benefits of the modular SGI® NUMAflex™ global shared memory architecture with 64-bit Intel Itanium 2 processors and the flexibility and economy of standard Linux to create a uniquely scalable alternative to proprietary SMP solutions and 32-bit Linux clusters. Altix demonstrates superior price/performance at every level versus other multi-processor systems.

Scalability in every dimension is essential to geospatial archive success. Altix systems are designed to scale processors, memory, and I/O capabilities independently to maximize performance of geospatial applications while minimizing system expenditures. An entry-level system purchased today will grow seamlessly to meet future needs.

The Altix® 350 systems support up to 16 processors and 192GB of shared memory; the Altix® 3000 systems support up to 256 processors and 3TB of shared memory in a single Linux OS image. Multiple Altix 3000 systems can be joined with global shared memory for even greater capability. The massive memory capacity of Altix systems ensures that complex geospatial workloads can be stored in physical memory for optimal processing performance, while blazing system I/O performance eliminates database bottlenecks. A single 32-processor NUMAflex architecture system has demonstrated database ingest rates up to 32TB/day, proving that SGI systems easily scale to accommodate the largest and busiest geospatial datasets.

SGI InfiniteStorage Solutions: Advanced Data Management

A geospatial archive system must balance processing capabilities with a storage infrastructure capable of managing and protecting huge volumes of data. The SGI InfiniteStorage Family is the result of years of experience in the most data-intensive computing environments on the planet. The entire product line is designed to integrate seamlessly and scale 'infinitely' so you can change capacity, performance, connectivity or even storage architecture to meet your changing requirements.

SGI® Solutions for Geospatial Archive

SGI InfiniteStorage includes a full line of high-performance fibre channel RAID systems for primary storage and serial ATA (SATA) options for secondary disk storage. A full range of state-of-the-art tape solutions is available for cost-effective storage of massive quantities of archive data. The combination of SGI InfiniteStorage hardware and innovative InfiniteStorage software solutions help unlock the secrets buried in mountains of geospatial information.

High-speed, Shared Access

As the size and complexity of geospatial data objects increase, ordinary network solutions may not provide adequate performance for shared data access. SGI® InfiniteStorage Shared Filesystem CXFS™ is the answer. With CXFS, systems attached to a fibre channel storage area network (SAN) access shared data directly with unparalleled performance and without the bottlenecks associated with file servers and local area networks. CXFS has demonstrated sustained performance in excess of 12GB/sec. Designed with the future in mind, CXFS can theoretically accommodate individual files as large as 9 million TB and file systems as large as 18 million TB.

Geospatial databases typically store metadata and pass pointers to users that enable them to directly access satellite imagery, video, graphics, and other archived visual data. With support for all major operating systems, CXFS ensures that users can access the data they need in the time frame they need it.

Data Lifecycle Management

Over time, most geospatial archives accumulate a large amount of data that must be retained but that is accessed infrequently. It makes little sense to store this information on expensive primary storage, but managing huge quantities of data across multiple media types can be complicated and error prone. SGI® InfiniteStorage Data Migration Facility DMF is a hierarchical storage management (HSM) system that is designed to adapt to unique data lifecycle requirements and store data on the most appropriate media type. DMF migrates data automatically to secondary SATA storage and/or tertiary tape storage based on user-defined criteria. Data remains accessible at all times and is automatically moved to primary storage when accessed without user or administrator intervention.

DMF has proven itself with years of use at over 500 data-intensive customer sites around the world. The busiest sites migrate multiple terabytes of data every day. DMF provides a virtually infinite storage pool at a fraction of the cost of disk-only storage solutions and without the administrative burden of manual archiving. Migrated data is protected with multiple copies, so regular backup is not required, simplifying data protection.

Database and Geospatial Application Support

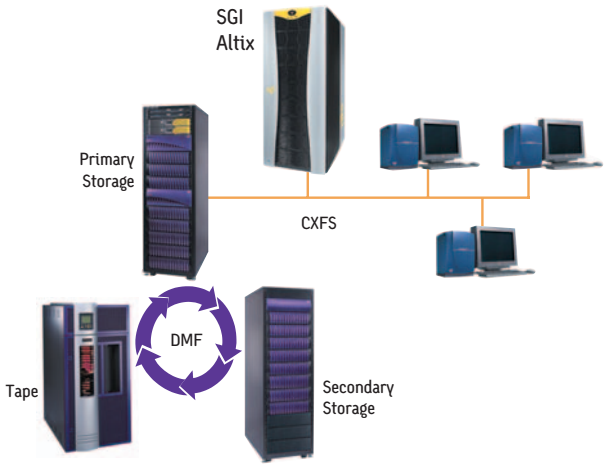
Flexibility is essential to a cost-effective geospatial archive solution. SGI supports a broad range of industry-leading databases on the Altix platform including IBM® DB2®, Oracle®, MySQL®, and Sybase® ASE. SGI continues to qualify additional database solutions to provide the greatest possible selection and choice to ensure your success.

Computing systems, storage systems and database software provide the infrastructure on which a geospatial archive system is built, but specialized application software is required to get the most from valuable geospatial assets. SGI collaborates with leaders in the geospatial software industry to ensure broad support for SGI platforms.

Technology leaders such as GenaWare, Inc. are working to expand the use and capabilities of geospatial database systems in government and defense, and to extend the reach of these technologies with additional products to help enterprise customers improve business understanding, performance, and efficiency. GenaWare's software provides open, scalable, standards-based spatial tools to address geospatial needs for organizations of any size. These products and applications provide industry-leading data interoperability and accessibility. GenaWare's software streamlines the spatial and a-spatial data management process from aggregation to distribution and can be implemented as spatial middleware or a complete geospatial management platform. GenaWare also develops applications and tools for the visualization, analysis, and publishing of data from one source to many disparate sources.

Services to Create a Custom Archiving Solution

SGI Professional Services can assemble a complete geospatial archive solution customized to meet your specific mission requirements and future needs. SGI professionals have the expertise to assess the datatypes, processes, and workflow of each specific application—even in classified environments. Working with SGI technology partners, SGI Professional Services can develop and deliver a custom solution that enhances productivity by delivering the processing, storage capacity and bandwidth necessary for optimal performance.



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