

Application Brief

SGI® Diskless Operation Server Solution



Security-Agile Classified Data Management and Protection

Change Classification Levels in Minutes, Not Days

When National Security, lives, and revenue are at risk, the ability to rapidly change classification levels is critical to protect sensitive information and get it immediately into the hands of intelligence analysts, pilots, soldiers, and key decision makers. The SGI® Diskless Operation Server Solution enables facility operators to change classification levels in a matter of minutes as compared to hours or days using traditional disk drive swapping and management techniques. Using a unique integration of 100% Commercial Off the Shelf (COTS) technologies, the SGI Diskless Operation Server Solution consolidates all storage for each classification level to individual sets of air-gap separated drive containers. Thus, all storage for each classification level is centralized and protected, eliminating the need for facility operators to label, transport, swap, audit, and secure hundreds of individual disk drives throughout a facility. By keeping the storage centralized, classification level changes can happen in a matter of minutes, not hours or days, thereby maximizing operational uptime as well as easing the manageability of all classified

and unclassified data. Also, instead of having to manually administer each lab system, you can now centrally administer and upgrade numerous heterogeneous operating systems from a single storage location.

Consolidate All Classified Data to Centralized, Individual Sets of Air-Gap Separated Drive Containers

The foundation of the SGI Diskless Operation Server Solution is the combining of all data with common classification levels onto distinct groups of air-gap separated storage drive containers. This minimizes the number of drives to manage by as much as 90% (depending on the actual configuration), and significantly decreases the time needed to rapidly change classification levels. To change classification levels, an air-gap based patch panel is used to ensure physical separation between classification levels to satisfy stringent security requirements. Instead of labeling, transporting, swapping, and securing potentially hundreds of disk drives, a system administrator simply moves a few cables associated with the desired classification



level's storage to the air-gap patch panel. This allows the lab systems to boot without a system drive at that classification level and access its associated data.

The combination of diskless booting and air-gap patch panel approaches enables labs to rapidly and securely change classification levels while at the same time avoiding hardware wear and tear due to storage transportation and handling. Additionally, the procedural challenges and security risks associated with labeling, transporting, swapping, auditing, and securing hundreds of individual disk drives every time a classification level change occurs are minimized. Not only does this approach ease the management of classified disks, the number of physical drives is also reduced since identical classes and configurations of computing systems can boot from the same diskless OS image.

Boot and Operate the Most Popular Computing Platforms Without Disk Drives

The open, cross-platform nature of the SGI Diskless Operation Server Solution enables many of the most popular computing platforms to operate without system drives:

- Microsoft® Windows® 2000/XP
- Linux® for x86, Intel®Xeon™ EM64T, and AMD Opteron™ x86_64
- Linux for Intel Itanium®, including the SGI® Altix® and Silicon Graphics Prism™ families
- IRIX® for MIPS, including SGI® Origin®, SGI® Onyx® and IRIX workstations
- Solaris™ for SPARC, x86, and AMD Opteron x86_64

Choose High Performance Fibre Channel Attach or Low-Cost NAS Attach to Access Shared Data

Each diskless system can connect to the SGI Diskless Operation Server Solution for data access as a high speed Storage Area Network (SAN) client using SGI's award winning CXFS™ SAN technologies, or as a low cost Network Attach Storage (NAS) client where near local disk performance is not required. The choice of either high performance data access or low cost data access on a system by system basis ensures the right balance of performance and solution cost.

Integration of Proven, 100% COTS Technologies with Options for Later Expansion

The components of the SGI Diskless Operation Server Solution are successfully in operation at hundreds of locations. These components include high performance, enterprise-grade SGI storage components such as the XFS® filesystem, the XVM volume manager, the CXFS cluster filesystem, and SGI® InfiniteStorage SAN and NAS servers, as well as proven, 3rd party, COTS middle-ware and air-gap switching equipment. In addition, since the SGI Diskless Operation Server Solution is built upon SGI InfiniteStorage technology at its core, it can be extended at any time to provide high availability failover, disaster recovery features, hierarchical storage management, tape backup, SAN over Wide Area Networks (WANs) and other features depending upon mission needs. Furthermore, this proven solution is 100%



designed, certified, and supported by SGI, freeing you to spend more time on your mission.

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 storage, high-performance computing and advanced visualization, 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 the Diskless Operation Server Solution, including relocation of your SGI® systems with SGI Deployment Services.

To Learn More

Contact your local SGI sales office to learn more about the SGI Diskless Operation Server Solution, and how SGI Technology Solutions can help you accomplish your technology goals and optimize your technology investment.



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