IBM TotalStorage SAN Integration Server

 Highlights

- **An integrated storage solution intended for easy SAN infrastructure implementations**
  IBM TotalStorage™ SAN Integration Server is designed to help reduce the costs and complexity of implementing storage area networks (SANs) by integrating and delivering a complete SAN infrastructure as a single unit.

- **Highly scalable system architecture supports investment protection**
  Storage capacity, server connectivity and performance are independently scalable to accommodate changing business needs.

- **Improved resource utilization**
  SAN Integration Server is designed to help increase the efficiency of storage administrators through centralized management and improved utilization of storage capacity by providing hosts with a shared storage pool.

- **Avoidance of downtime for planned and unplanned outages, maintenance and backups**
  SAN Integration Server is designed to provide the capability to non-disruptively migrate, reallocate and scale storage capacity, increase performance, add advanced software functionality and perform backups, restores, point-in-time copying, and remote mirroring of data.

- **Centralized point of control for volume management**
  SAN Integration Server is designed to help IT professionals manage connectivity, storage allocation and utilization, and advanced copy services from a single console.

- **A single, cost-effective set of advanced copy functions**
  Advanced copy functions can help facilitate improvements in disaster recovery and business continuance. SAN Integration Server supports remote mirroring, point-in-time data copying, and backup and restore to help safeguard data and keep it available when needed.
The storage management challenge

Storage area networks (SANs) and pooled storage solutions allow companies to share homogeneous storage resources across the enterprise. But for many companies, information resources are spread over multiple locations in a variety of different storage environments. Often, SANs comprise products from different vendors, who supply some components, but not everything in the overall IT environment. This scenario has resulted in complexities and challenges, especially in a heterogeneous client, server and storage environment. IT staffs now face the challenge of connecting disparate applications, servers, storage and operating systems.

In addition to the complexity of managing storage systems, companies must also balance rapidly growing storage needs with cost control. Lean budgets limit a company’s ability to withstand unavailability, downtime, underutilized storage capacity or manual problem resolution. Additionally, as storage needs increase — and they are increasing for most businesses — the best solutions are those that leverage the latest storage technology breakthroughs, allow for future growth and can adapt to changing business needs.

IBM TotalStorage SAN Integration Server

This solution is designed to integrate IBM’s virtualization technology with Fibre Channel switches and Redundant Array of Independent Disks (RAID) storage technologies into a preconfigured, comprehensive solution. Delivered and installed as an integrated unit, it offers upgrade options for connectivity, storage capacity and performance levels. The solution helps provide the benefits of SANs with ease of manageability. The SAN Integration Server can help manage over 100 terabytes (TB) of storage capacity and support up to 26 hosts with the ability to increase to up to 42 hosts when available.

The SAN Integration Server provides centralized management through a single interface to support easier storage allocation and address application demands. This flexibility helps to provide the benefit of better storage utilization by reducing or eliminating the problem of unused storage found in direct attached storage (DAS) implementations, and to reduce required administrative time and resources. These are key factors in realizing a lower total cost of ownership (TCO).

The architecture of the SAN Integration Server is designed to bring enterprise-class reliability and performance to open-systems environments. It features hardware redundancy and elements of IBM’s advanced autonomic computing technologies. The intent is to help minimize downtime and improve availability while performing remote mirroring; point-in-time copies; backup and restore; maintenance functions; and performance, capacity and connectivity upgrades.

IBM has designed and tested the SAN Integration Server for integration into existing environments, including heterogeneous hardware and operating systems. It is interoperable with a wide range of servers running Linux, UNIX® and Microsoft® Windows® operating systems, whether from IBM or other vendors.
A centralized point of control for volume management

Through virtualization technology, SAN Integration Server is capable of creating pools of managed disks, spanning multiple storage subsystems. Utilizing these virtual disks will help administrators make better use of a company’s storage facilities. Ease of management is provided through the powerful and comprehensive graphical interface of the master console. As a result, SAN Integration Server has the potential to help improve resource management and facilitate better responsiveness to ever-changing storage needs.

With SAN Integration Server, administrators will be able to manage up to 100 TB of storage capacity and allocate that storage from a single console—whether it’s a laptop, an office PC or remote connection from another city. The management console will be capable of providing a view of the system's internal network with a topology onscreen, along with the capability to drill down into this topology for more detail. This management interface is based on open standards, and supports the Storage Management Initiative Specification (SMIS) application programming interface (API) and further demonstrates IBM's focus on open standards.

Avoidance of downtime due to planned outages, maintenance and backups

SAN Integration Server, with its dynamic data-migration utility for migrating information from one storage device to another, can move information without taking it offline.

SAN Integration Server has been developed to leverage the same multipathing software used in the most advanced IBM storage systems, such as the IBM TotalStorage Enterprise Storage Server™. This software allows administrators to reallocate and scale storage capacity, and increase performance and connectivity without disrupting applications. The use of this multipathing technology allows both local area network (LAN) free and server-free backups while supporting continuous access to data. Its highly available clustered configuration is designed to provide for nondisruptive hardware and software upgrades.

Improved resource utilization

SAN Integration Server is designed to scale to over 100 TB, all of which can be managed by one administrator. By providing a large pool of storage to multiple hosts, the system is intended to reduce the amount of unused storage capacity typically found in DAS implementations.

A single, cost-effective set of advanced copy services

The IBM TotalStorage SAN Integration Server supports advanced copy services options—such as FlashCopy® and remote mirroring—to improve disaster recover and offer business continuance benefits.

Technology for an on-demand era

In an era in which businesses are integrating processes across the enterprise, SAN Integration Server can help companies become on demand businesses, responding with flexibility and speed to customer demands, market opportunities or competitive threats. With the solution's integration, support of open standards, and virtualization and autonomic capabilities, companies can be better positioned to meet storage management challenges.

IBM services

IBM offers services to help speed implementation and return on investment (ROI). Our knowledgeable storage specialists can conduct storage solution and infrastructure reviews to help prepare and speed initial installation, and to examine your existing infrastructures to determine sizing and performance needs. In addition, we offer a range of service and subscription offerings to keep your storage infrastructure up-to-date and running smoothly.

For more information

To find out more about SAN Integration Server and other high-performance IBM TotalStorage products, contact your IBM representative, call IBM Direct at 1-800-IBM-CALL (1-800-426-2255) or go to ibm.com/totalstorage/virtualization
IBM TotalStorage SAN Integration Server, at a glance

A complete, integrated solution that is customized to your unique requirements

- Storage engines
  - Two-node clustered pair, up to two pairs
    - Based on IBM @server xSeries™ platform
    - Onboard service processor
    - Two 2-port 2-Gb host bus adapters (HBAs)
    - PCI-based management card
    - 1U form factor

- Master console
  - Standard in the system's solution
  - Keyboard and monitor included
  - Virtual private network (VPN)
  - IBM Director
  - Tivoli® Bonus Pack for SAN Manager
  - Call home
  - Remote support

- Ethernet switch

- Storage capacity and controller
  - Up to 100 TB (83 TB RAID 5 useable capacity)
  - Up to 13 pairs of virtualized IBM RAID controllers
    - Software can present the virtualized storage capacity as a single pool

Software

- Multipathing software — subsystem device driver
  - Support for nondisruptive hardware and software upgrades
  - Failover
  - Load balancing

- Virtualization software
  - LUN virtualization
    - Up to 1024 virtual disks
    - Up to 2 TB virtual disk size
    - Up to 1024 physical LUNs
  - Data migration
    - Transparent virtual disk to physical disk mapping
  - Synchronous Peer-to-Peer (PPRC) - optional
    - Up to 10 km (6.25 mi)
  - FlashCopy - optional
    - One point-in-time (PIT) copy per volume
  - Management
    - Out of band browser-based graphical user interface (GUI)
    - Command Line Interface (CLI)
    - Single management view for a cluster
    - Error logs
    - Fault isolation
    - Performance monitoring
    - Simple Network Management Protocol (SNMP) traps
    - SMIS compliant
  - Security
    - SSH secure connection
    - Backup and restore
    - Host-based backup and restore

IBM Global Services (IGS) storage services

- Operating system support:
  - Microsoft Windows NT®/Windows 2000
  - IBM AIX®
  - Sun Solaris
  - HP-UX
  - Linux

- Consult and design
  - Backup and continuity planning
  - Performance utilization and capacity planning

- Integrate and deploy
  - Installation, cabling and site preparation
  - Migration and consolidation
  - Education and training

- Operate and manage
  - System support and maintenance