SGI® InfiniteStorage TP9700 Storage System

Features

- 4Gb Fibre Channel or 10Gb InfiniBand host connectivity
- Fibre Channel host channels increase connectivity
- Native InfiniBand channels reduce network complexity
- Fibre Channel and SATA drive options
- Comprehensive storage management
- Pre-configured SAN and NAS solution platforms

4Gb Fibre Channel or 10Gb InfiniBand Host Connectivity

The SGI® InfiniteStorage TP9700 (SGI TP9700) RAID storage system combines a high-performance 4Gb Fibre Channel (FC) architecture with increased host connectivity to deliver industry-leading levels of bandwidth. Customers with data-intensive applications will appreciate the increased connectivity provided by the TP9700's eight 4Gb/second host channels. Alternatively, customers with current InfiniBand (IB) investments benefit from the ability to have their Linux® server clusters communicate natively with the TP9700 by connecting the 10Gb/second host interface ports directly to the fabric using the highly efficient IB protocol.

Fibre Channel Host Channels Increase Connectivity

Each of the eight 4Gb host channels will deliver up to 400MB/s peak bandwidth. Customers historically relied on multiplexing several 2Gb Fibre Channel streams to deliver the bandwidth now available from a single 4Gb connection. Applications requiring high-bandwidth streaming data can now develop storage solutions using 4Gb Fibre Channel links not possible previously with 2Gb infrastructure.

Native InfiniBand Channels Reduce Network Complexity

In order for current InfiniBand-based clusters to utilize high-performance Fibre Channel storage, separate FC switches and host adapters, or IB-FC gateways must be used to enable the FC storage to tie into the InfiniBand fabric. Separate FC switches and host adapters create multiple network fabrics, increasing costs and complexity. IB-FC gateways become a performance bottleneck, are expensive and increase latency due to added protocol translations.

The TP9700 storage system's native InfiniBand interfaces enable it to attach directly to the existing InfiniBand fabric switches in use by the cluster, providing significant cost savings and simplifying the network. Additionally, native InfiniBand interfaces require no IB-to-FC protocol translations within the controller, enabling higher performance and lower latency.

Fibre Channel and SATA Drive Options

By offering modules with high-performance Fibre Channel and high capacity SATA disk drives that can be intermixed, custom configurations can be built to address specific requirements. Fibre Channel drive modules are designed to optimize performance while SATA drive modules provide lowest cost per GB storage.

Comprehensive Storage Management

Powerful, yet easy to use management software enables centralized administration of multiple storage systems from any location on the network‹regardless of host or client platform. The TP9700 offers advanced features like point-in-time copy, remote replication, and volume copy that allow customers to increase uptime and data availability.

Pre-configured SAN and NAS Solution Platforms

Pre-configured solution platforms add capability and simplify configuration choices. The TP9700 is available as an integral part of the SGI® InfiniteStorage NAS 3000 and the SGI® InfiniteStorage SAN 3000.

SGI® InfiniteStorage TP9700 Storage System

	TP9700 HPC Model	TP9700 Full-Feature Model
Cache Size per TP9700	2GB	2, 8, 16GB
Optional TPSSM Software Available Features		
TPSSM Partitioning Up to 4, 32 or 64 partition options	4, 16	4, 16, 64
TPSSM Volume Copy - For data copy from one volume to another for improved performance and assists with data migration and backup	Not Available	Supported
TPSSM SnapCopy - Array-based point-in-time copy of a volume	Not Available	Supported
TPSSM Remote Volume Mirroring - Synchronous or asynchronous remote replication of volumes for business continuance applications	Not Available	Supported
SATA Intermix Option - Mix FC RAID and SATA Option. TPSSM Support for both Fibre Channel and SATA drives behind single TP9700	Not Available	Supported

TP9700 Base Controller Enclosure

- Dual active Fibre Channel controllers
- RAID Levels 0, 1, 1+0, 3, 5
- Up to 7-day minimum cache backup
- Up to 256 LUNs per partition
- Up to 2,048 LUNs per TP9700 (requires optional partitioning SW)
- RAID stripe depth configurable to 16, 32, 64, 128, 256, or 512 per disk
- Up to 15 global hot spare disk drives
- Two 100/1000 Ethernet ports per controller, total of 4 per system for remote management
- Two RS-232 ports
- 3-Yr 5X9 parts and labor warranty, on-site, NBD response; upgradeable to multi-year, 7X24, 2-hour response

Host Interface

- Eight 4Gb Fibre Channel host channels with SFPs each support FC-SW connectivity
- Four 10Gb InfiniBand host channels support IB-SW connectivity
- Aggregate peak bandwidth of 1600MB/s to host
- Command tag queuing with up to 256 tags

Drive Interface

- Eight 4Gb Fibre Channel drive channels
- Eight 4Gb Fibre Channel optical SFPs (four per controller), provide eight loops or four redundant channels for drive expansion modules
- Aggregate peak bandwidth of 1600MB/s to media

Software Management

- SGI TPSSM host management for Origin® (IRIX®) and Altix® (64-bit Linux®)
- Same S/W management as SGI® InfiniteStorage TP9300, TP9300S, TP9500
- Immediate LUN availability
- Performance monitoring
- Non-disruptive firmware upgrades
- Enterprise management window provides comprehensive view of all TP9300, TP9300S, TP9500 and TP9700 storage systems in the management domain

Optional Host Software

- XVM
  Volume Manager for SGI systems, is a virtualization technology to organize logical data structures for high performance and ease of management
- XVM Plex
  Provides disk striping, mirroring, concatenation and advanced recovery features
- XVM Snapshot
  Creates point-in-time snapshots of data at the filesystem level; can create single snapshot of entire filesystem for customers with vast amounts of data
- XFS®
  High-performance, 64-bit journaled filesystem for SGI IRIX and Linux system platforms
- CXFS™*
  Heterogeneous shared filesystem for storage area networks; eliminates the need for replication data across a SAN by allowing multiple heterogeneous systems to share one scalable filesystem
- DMF
  Data lifecycle management policy automation software; DMF automates data placement among storage devices to achieve maximum reduction of total cost of ownership while appropriately managing data based on its value over time

Dimensions (Approximate) Controller Enclosure

- Height 6.9", 17.5cm, 4 EIA units
- Width 24.8", 61.0cm
- Depth 19.0", 48.2cm
- Weight 97 lb (44 kg)

Drive Enclosure

- Height 5.2", 13.1cm, 3 EIA units
- Width 22.8" 57.9cm
- Depth 19.0", 48.0cm
- Weight 88 lb (40 kg)

Rack

- Height 72.0", 182.9cm, 3 EIA units
- Width 36.0", 91.4cm
- Depth 22.0", 56cm
- Weight 1,020 lb (464 kg) full; 440 lb (215 kg) empty

Supported Hosts

- IRIX, Linux 64 for the Altix family of Servers and Supercomputers, Linux 32, Windows® 2000, Windows® 2003/XP, Solaris™, HP-UX®, NetWare®, Linux and AIX

Storage Capacity

- Disk drives available 73GB, 15K RPM FC; 146GB 15K RPM FC; 300GB 10K RPM FC; 400GB 7,200 RPM SATA
- Min. drive capacity 4 per drive enclosure
- Max. drive capacity Up to 224 drives per TP9700
- Drive expansion 14-bay drive enclosure
- Max. expansion 16 SATA drive enclosures per TP9700
- Drives per enclosure 4-14
- Max. enclosures per rack 11 drive enclosures and one controller enclosure per 38U rack

Power (Redundant Power per Enclosure)

- Input power for rack
  Dual power input lines, single phase, voltage 250VAC (180 min. to 257 max. VAC), frequency 50/60 Hz
- Power connections rack
  AC distribution 250 VAC, 16A
  US:NEMA L6-30P, 250 VAC, 30A
  International: IEC 309, 230 VAC 32A

Environmental

- Operating temperature
  Minimum 50 degrees F (10 degrees C)
  Maximum 104 degrees F (40 degrees C)
- Operating relative humidity
  20% to 80% (noncondensing)
- Altitude
  30.5 m to 3,000 m (100 ft to 9,846 ft)
- Safety compliance
  UL 1950
  CSA 22.2 No. 950
  IEC 950
  EN 60950

Electromagnetic Compliance

FCC Class A
VCCI Class 1
EN 55022 Class A
EN 50082-1,
IEC 801-2, IEC 801-3, IEC 801-4

Quality Standard

Manufactured under an ISO 9000-registered quality system

*CXFS support for InfiniBand available 1HCY06

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