Datasheet

SGI™ Total Performance 9400 Storage Array

Features

- Superior scalability without disruption
- Maximum total capacity—20TB in one 19-inch rack enclosure
- Unbeatable performance
- High availability for continuous access to data
- Flexible connectivity with multi-OS configurations

Total Performance

The SGI Total Performance 9400 (TP9400) storage array is the highest throughput RAID storage subsystem in its class. Combining 2Gb Fibre Channel technology with state-of-the-art 15,000, 10,000, and 7,200 RPM disk drives, maximum drive capacities up to 181GB each, parallel high-performance controllers with multifunctional cache modules, and advanced cache management microcode, the TP9400 can enhance the throughput of nearly any application.

Uncompromised Availability

In addition to providing enhanced availability through the RAID architecture of the disk-drive arrays, the TP9400 offers full redundancy with duplication of all active components in the subsystem, including controllers, cache, data channels, cables, interfaces, power supplies, fans, and battery-backup modules. Continuous component monitoring ensures nonstop access to data. Battery backup for cache will retain data for a minimum of seven days.

Dynamic Scalability

Demand for storage continues to grow. The advantage of the TP9400 design is it allows you to add resources whenever the need arises, but also to do so without disruption while the subsystem remains online and available to your applications. In this way, you can grow a single subsystem, online, to 20TB.

Superior Connectivity

The TP9400 is a data resource that can be dedicated to a single server or shared among numerous computing platforms. Connectivity to these platforms can be through direct channel attachment or as part of a storage area network (SAN). The TP9400 was designed to meet the data requirements of technical and creative users and may be concurrently attached to both SGI and non-SGI heterogeneous open systems. In addition to IRIX® support, the TP9400 can attach to Solaris®, Windows NT®, Windows® 2000, Linux®, and other popular platforms.

Maximum Capacity

SGI understands that computer room space is valuable. Thus, the TP9400 is mounted in an industry-compatible 19-inch rack enclosure that can accommodate up to 20TB of data along with redundant controllers, channels, and power, providing maximum data density per square foot.

Outstanding Storage Management

Online storage management facilities are exceptional, providing such key functions as drive formatting, RAID level(s) and configuration, LUN definition, performance monitoring, cache management, event monitoring, logging, notification, and resource allocation.

SGI TP9400 Storage Array Technical Specifications

RAID Levels 0, 1, 1+0, 3, 5
- Up to 29+1 drives in a LUN
- RAID stripe depth configurable to 16, 32, 64, 128, or 256 per disk
- Global hot spares

Front-End Performance
- 2 to 4 port mini hubs per controller enclosure
- 400MB/sec per controller
- 800MB/sec with dual controllers

Dimensions (Approximate)

Control Enclosure
- 6.90" H, 24.0" D, 17.5" W (17.5 cm H, 61.0 cm D, 44.5 cm W)
- 4 EIA units
- 97 lb (44 kg)

Drive Enclosure
- 6.50" H, 22.0" D, 17.5" W (16.6 cm H, 56.0 cm D, 45.0 cm W)
- 3 EIA units
- 81 lb (36.9 kg)

Rack
- 72.0" H, 36.0" D, 22.0" W (83 cm H, 91.4 cm D, 56 cm W)
- 38 EIA units
- 1,020 lb (464 kg) full
- 440 lb (215 kg) empty

Host Interface
- Two 200MB/sec (maximum) Fibre Channel logical connections per controller
- 1.024GB cache per controller
- FCI SCSI-3 protocol
- Command tag queuing up to 256 tags
- GBIC connector (optical)

Maximum Cable Length

Server to enclosure	100 m
Enclosure to switch	12 m

Drive Interface
- Dual, independent FC-AL interface ports on each drive (100MB/sec)
- Failover by each controller to both Fibre Channel loops

Capacity
- Up to 220 drives per controller pair
- Up to 10 drives in a drive tray, 1,816GB (181GB drives)
- Up to 110 drives in a rack, 20TB (181GB drives)
- Up to 11 drive trays and one controller enclosure per 38U rack

Drives

36.7GB

Rotational velocity	15,000 RPM
Average latency	2.0 msec
Sustained data rate	26 to 40MB/sec
Average seek (read/write)	3.6 msec

73.4GB

Rotational velocity	10,000 RPM
Average latency	2.99 msec
Sustained data rate	26.7 to 40.2MB/sec
Average seek	4.9 msec

181.6GB

Rotational velocity	7,200 RPM
Average latency	4.17 msec
Sustained data rate	25.3 to 47MB/sec
Average seek	7.4 msec

Power (2 per Enclosure)

Frequency	47 to 63 Hz
AC voltage	Rack: 200 to 240 VAC
AC circuits	Single or redundant external AC circuits
Inlet type	NEMA L6-30

Operating Environment

Temperature (operating)	10°C to 40°C (50°F to 104°F)
Relative humidity	20% to 80% (noncondensing)
Altitude	30.5 m to 3,000 m (100 ft to 9,846 ft)

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

Safety
- UL 1950
- CSA 22.2 No. 950
- IEC 950
- EN 60950

Quality Standard
- Manufactured under an ISO 9000–registered quality system

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