RAM-SAN™

The World's Fastest Storage®

RamSan-320

- 3 Gigabytes per Second
- 250,000 IOPS
- 16-64 GB Storage
- 2-8 FC Links (2Gb)
- Hot-swap Modules

RamSan-320

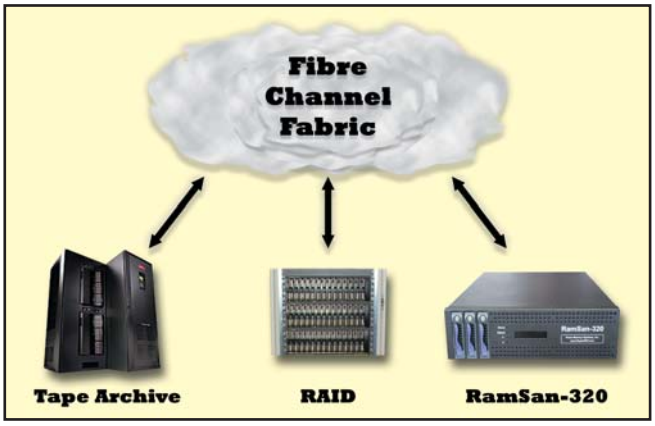
SSD Storage
The RamSan-320 is the storage appliance built for speed. Its data storage is based on fast SDRAM media instead of mechanical rotating drives. With a memory bus architecture similar to high performance servers, the RamSan-320 has the extra bandwidth (3 GB/sec) needed for heavy operations. Its low latency allows support for dozens of servers immediately without any performance degradation. Low latency has two advantages: it provides users with 100x faster response times and allows 100x more users to access the same volume. The RamSan-320 supports 2-8 Fibre Channel ports (1-Gb, 2-Gb) operating at full speed. The RamSan-320 provides an incredible performance improvement over the best disks.

Typical Storage Hierarchy
As computer performance increases faster than rotational disk performance, the traditional, two-level storage hierarchy scheme needs a new performance level. The high-performance RamSan-320 fills this need by allowing users to implement a three level storage hierarchy. Even under heavy load conditions, the RamSan-320's I/O power and bandwidth make it possible for all of your computers to have immediate access to highly active data files simultaneously.

Installation and Management
The RamSan-320 is as easy to install as a disk drive. In its simplest configuration, it provides a direct link to one server through a host bus adapter (HBA). In its expanded configuration, it can be linked through Fibre Channel switches to hundreds of servers or workstations via SANs. Basic management operations, including manual shutdown and any alerts, are available from the front panel screen. Full monitoring and configuration capabilities are available over any browser via a protected Java applet. The RamSan-320 is fully SNMP compatible.

Highly Reliable Storage
With any storage device, reliability is a primary concern. The RamSan-320 is designed to offer superior reliability to other solid state disks and RAID devices. Its standard features include: hot swap power supplies, failover Fibre Channel ports, SNMP compatibility, three redundant internal batteries, and three redundant, hot swappable power fail backup disks.

Non-Volatile Backup Methods
The SDRAM used to give the RamSan-320 record-breaking performance would generally lose its data if power was lost. To ensure non-volatility, the RamSan-320 provides three distinct backup methods to its redundant internal RAID disks, configurable per LUN, to give the user the ultimate in versatility and reliability.



Typical Storage Hierarchy

FIBRE CHANNEL CONNECTION

- 2-Gigabit Fibre Channel (1-Gigabit capable)
- 2 ports standard; up to 8 ports available
- Supports point-to-point, arbitrated loop, and switched fabric topologies
- Interoperable with Fibre Channel Host Bus Adapters, switches, and operating systems

MANAGEMENT

- Browser-enabled system monitoring, management, and configuration
- SNMP supported
- Telnet management capability
- Front panel displays system status and provides basic management functionality

LUN SUPPORT

- 1 to 64 LUNS with variable capacity per LUN
- Flexible assignment of LUNs to ports
- Hardware LUN masking

DATA RETENTION

- Non-volatile solid state disk
- Redundant internal batteries power the system for 25 minutes after power loss
- Automatically backs up data to disk at 90 MB/sec

Specifications

I/Os per second	250,000
Capacity	16-64 GB
Bandwidth	3 GB/sec
Fibre Channels: 1Gb, 2Gb	2 to 8 Ports
Latency	<20 microseconds
Disk Drives	3 Hot-Swap
Power Supplies	2 Hot-Swap
Batteries	3 Redundant
Size	5.25" (3U) x 25"
Power Consumption (peak)	350 Watts
Weight (maximum)	80 lbs

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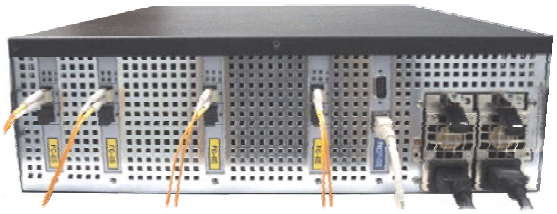

RamSan-320

RELIABILITY AND AVAILABILITY

- 99.999% availability
- ECC memory error protection
- Internal redundancies
  -Power supplies and fans
  -Backup battery power (n+1)
  -Backup hard disk drives (RAID3)
- Hot swappable components
  -Three backup hard disk drives (front access)
  -Power supplies
- Active:Passive Fibre Channel failover (optional)

BACKUP PROCEDURES

Supports three backup modes that are configurable per system or per LUN:

- Data Sync mode - synchronizes data to redundant internal disk drives before shutdown or with power loss.
- Mirror mode - mirrors data to redundant internal disk drives in real time for read-intensive data.
- Active Backup™ mode (optional) - backs up data constantly to internal redundant disks without impacting system performance.

ABOUT TEXAS MEMORY SYSTEMS

Since 1978, Texas Memory Systems (TMS) has specialized in high bandwidth, low latency, I/O-intensive storage systems. While the primary feature of our products has always been high performance, we achieve this performance without resorting to overly complex circuitry or unwieldy protocols. This emphasis on simplicity allows TMS to deliver outstanding performance using mature technologies and readily available off-the-shelf components.

TMS systems were originally designed to meet the needs of the U.S. defense industry. This market has always demanded the ultimate in performance and TMS has always delivered it. The RamSan-320 delivers a level of performance previously unavailable in a commercial storage product.