RAMSAN

Texas Memory Systems
The World's Fastest Storage®

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Introduction

- Worlds Fastest Storage
- Used Low Power – Ideal choice for Green Data Center
- Faster application & responsive
- Easily handling more high traffic simultaneously
- Latest Product :
  - RamSan-710 (SLC, 5-TB)
  - RamSan-810 (eMLC, 10-TB)
  - RamSan-630 (SLC, 10-TB)
  - RamSan-70 (SLC, 900-GB, PCIe card).

Utilizations

Best in accelerating :-

- Database I/O Performance
- High Performance Computing
- Data Warehousing
- Batch Processing
- Modelling
- Video

RAMSAN : Oracle Solutions

- **Complete queries faster and reduce commit time.**

    RamSan solid state disks leverage semiconductor based storage to dramatically reduce the latency of an I/O access to microseconds - not milliseconds like traditional disks.

- **Support more users.**

    Enabling more queries to run in parallel stresses storage as more I/Os have to be completed in the same time. The RamSan delivers scalability by supporting hundreds of thousands of I/O per second verse the 100-200 that an enterprise disk can handle.

RAMSAN : Oracle Solutions

- **Accelerate OLAP systems.**

  Complex analysis queries can require full table scans that will use all available storage bandwidth. The typical solution of adding more and more drives to scale performance can end up filling a whole rack with expensive power hungry disks for demanding OLAP applications. RamSan products provide massive bandwidth in a small package.

RAMSAN 810

RAMSAN 810 : Features

- **Speed + Reliability + Affordability = The eMLC RamSan-810**

- **The World's Fastest Storage®:**
  Sustained I/O rates up to 320,000 IOPS for reads or writes and sustained, random bandwidth up to 4 GB/second.

- **Fault Tolerant Flash (FTF):**
  The Flash used in the RamSan-810 is enterprise grade eMLC Flash. Each Flash card in the RamSan-810 includes on-board RAID protection to protect against chip failure. In addition, an advanced chip-level ECC provides multiple regions of bit correction per block.

- **Series-7 Flash Controller™:**
  One key to the RamSan-810's uncompromising performance is the Series-7 Flash Controller. Based on high-performance Xilinx FPGAs and a PowerPC processor, the Series-7 Flash Controller is field-upgradable, ensuring that TMS customers will always have the best performance and latest features.

RAMSAN 810 : Features

- **Variable Stripe RAID (VSR)™:**

  VSR is a patented technology only available to TMS customers that drastically reduces wasted planes. If a plane fails, VSR automatically rebuilds and relocates the data from that plane. It then allows data to be rewritten to the area, dynamically altering the size of the stripe to avoid the failed plane. Under traditional RAID schemes, the entire stripe would have been unusable and all its remaining good planes would have been lost.

- **8 Gbit Fibre Channel:**

  The RamSan-810 comes with new dual ported 8 Gbit Fibre Channel controllers.

- **QDR InfiniBand:**

  The RamSan-810 can be equipped with up to two dual ported QDR InfiniBand controllers.

- **Active Spare:**

  One FTF card can be designated as an active-spare that works hand-in-hand with the chip level RAID. If one of the cards experiences a failure that degrades its RAID protection, the system will immediately migrate the data on that card to the hot-spare to return to a fully redundant state.

RAMSAN 810 : Features

- **Wear Leveling:**

  The RamSan-810 includes wear-leveling technology that protects the underlying Flash media by spreading out writes and maximizing the write life of the system.

- **Completely Non-Volatile:**

  Flash memory is inherently non-volatile. Batteries are incorporated into the design anywhere RAM buffers are used with enough power to synchronize the buffers to Flash.

- **Unparalleled Scalability:**

  A single 1U chassis upgrades from 2 to 10 TB of Flash storage and two Fibre Channel ports or two InfiniBand ports. Multiple units can be added to meet any capacity or performance requirement.

- **Low Power:**

  The RamSan-810 typically uses only 250 watts of power.

RAMSAN 810 : Specifications

- **Storage**
  - Capacity (Raw): 13,742 GB
  - Capacity (Usable): 2 - 10 TB
  - LUNs: 1,024 LUNs
  - Storage Medium: eMLC Flash

- **Performance**
  - Maximum Bandwidth: 4 GB/s
  - Read IOPS: 320 K IOPS
  - Write IOPS: 320 K IOPS

- **Interfaces**
  - Expansion Slots: 2 slots
  - Fibre Channel Ports per Card: 2 ports/card
  - Fibre Channel Speed per Port: 8 Gb/s
  - InfiniBand Channel Width: 4 links
  - InfiniBand Channels per Card: 2 channels/card
  - InfiniBand Data Rate Standard: QDR
  - InfiniBand Speed per Channel: 40 Gb/s

RAMSAN 810 : Specifications

- **Management**
  - Supports Browser Management
  - Supports SNMP Management
  - Supports SSH Management
  - Supports Telnet Management
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- **Power**
  - Typical Power Consumption: 250 W

- **Mechanical**
  - Form Factor: 1U
  - Weight: 25 lbs

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5   Texas Memory Systems — RAMSAN: THE WORLD'S FASTEST STORAGE

7   OCZ Technology

8   FOREMAY Green Technologies™

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