

SpeedStor Solid State Disk

Product

SpeedStor- designed to maximize performance and CPU utilization cost effectively.

SpeedStor- the FASTEST, Greenest, Safest and most cost effective disk technology built for the enterprise.

SpeedStor: allows you to overcome performance bottlenecks while reducing cost, infrastructure, power and space requirements for as little as \$12k (single drive).

SpeedStor Solid State Nand disk storage in a 1u Rackmount chassis housing up to four 3.5" disk storage devices with dual full duplex 2Gbit FC-AL (fibre channel arbitrated loop) interface. Capacities available (per drive): 18, 36, 73, 146GB. Full redundancy via disk suite mirroring and internal hardware and cable duplication.

SpeedStor incorporates the first NAND disk designed for the enterprise:

- Maximum Data Integrity: specialized engineering and wear leveling techniques allow for 11 years (on 18GB drive) and 20+ years on larger drives for consistent write IO. will result in the loss or corruption of data
- Maximum RAS (Resilience, Availability, Serviceability)
- Maximum Performance- the only Nand SSD able to compete with traditional DRAM SSD performance at a fraction of the price

SpeedStor Advantages:

- Increased response times by average of 10X
- One SpeedStor drive is over two hundred times faster than a standard rotating drive
- Large capacity (585GB) in small 1U footprint
- Very low power consumption (6 watts per drive)
- Increased reliability: non volatile, no moving parts, fully redundant

SpeedStor's unique design changes the Paradigm of high performance architecture. Now the enterprise can address the performance gap between CPU processing and disk performance with an extremely cost effective disk technology. Virtually eliminate I/O wait time and improve throughput 4X to 10X. Instant ROI!

“ NAND is the storage technology that will drive SSDs, making it one of the key technologies to watch.”



Specifications

Capacity	18, 36, 73 & 146GB (1GB = 1,000,000,000 bytes)
Interface	Dual ported 4GB full duplex FC-AL
External transfer rate	200MB/second
Warranty	5 years

Performance Per Drive (linear performance)

Sustained media throughput	
Reading	200MB/sec
Writing	100MB/sec
Sustained media operations	
Reading	52000 IO/sec
Writing	18000 IO/sec
512MB of intelligent cache	
ECC correction capability per 1K of data	
Sequential	12 bytes in single bursts
Random	8 random byte minimum (16 max.)
16 bit CRC for added data security and to eliminate data miscorrection.	

Power

Operational	500mA at 12V±15%
Startup (30 seconds)	1500mA at 12V±15%

Environment

Operating	0 to 70°C
Non operating	-60 to 125°C
Shock	G, half sine, 2ms duration, 20Hz to 600z, 3 cycles per axis
Vibration	G, RMS, random, 20Hz to 600Hz, 1 hour duration, 3 axis
Acoustics	Negligible (no moving parts).

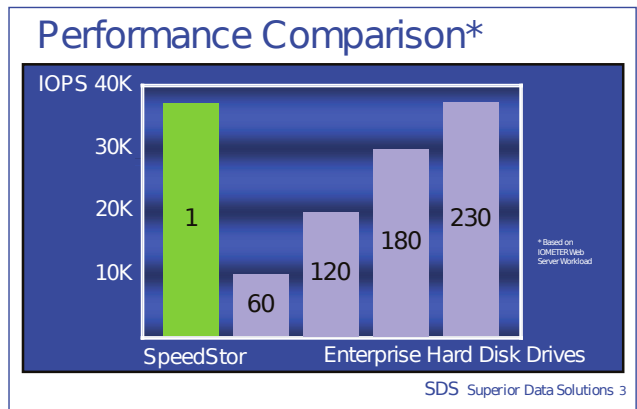
Physical

Depth	21"
Width	17.25"
Height	1U (1.75")
Weight	26lbs
Power supply	250watts

SSDs: They're lighter, faster, quieter and less power-hungry than conventional hard disk drives (HDD)...

Performance

The number of random I/O operations per second possible with a top end, high specification enterprise class (15,000 rpm) conventional disk drive is measured in the order of hundreds - approx. 250 per second. With a Solid State storage device it is measured in the thousands, or in the case of the SpeedStor range Tens of Thousands - approx. 52,000 per second. This is mainly due to the elimination of delays caused by mechanical movement, but with the SpeedStor performance has been further enhanced by using a powerful RISC processor, hardware assist functions and 512MB of high speed intelligent cache. Together with hardware that allows many Nand Flash chips to be read and/or written in parallel this means that the SpeedStor range is as fast as DRAM based products while requiring only a fraction of the space and power.



Changing the Paradigm

Increase I/Ops with HDDs	Increase I/Ops with SpeedStor
Array many HDDs to gain sustainable IOPS performance	One can take the place of >200 HDDs
Add system cost for data redundancy	Solid state for better reliability
More power supplies	Save on volatile energy costs IT growth w/o extra power drops
Greater heat generation requires more A/C	Lower heat loads and AC costs
Added system hardware, racks, room size, etc.	SSDs provide greater density on a per I/Ops basis

SDS Superior Data Solutions 1

Target Customers/Applications:

Clustered File System: place metadata into SpeedStor and witness a dramatic improvement of FS operation response times. All common files will be accessed up to 220 times faster than if stored on a rotating disk drive.

Relational Databases- Oracle, Sybase: redo logs, and index files: Oracle states that it is best to place redo and index files on the fastest drive available to you. A single SpeedStor drive is 220 times faster than a rotating drive!

Applications With:

Large amounts of Random IO and disk fragmentation: "One of the most potent applications today is to use SSDs as a kind of 'super cache' to speed up access to files or blocks on heavily loaded systems, especially over a SAN. In these applications, the SSD allows using cheaper, lower performance disk arrays in place of a highly tuned system with a lot of fast spindles. Generally speaking, any mission critical application that requires fast access to a lot of mostly random data is a potential candidate for SSD acceleration."

SearchStorage

- Web servers
- Transactional databases
- Telecom (i.e. Subscriber index files)
- Low Latency requirements (i.e. Video on Demand)
- High IO data warehousing
- Rich Media