EasyCo Delivers its First 1 Terabyte SSD Server

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EasyCo has delivered its first enterprise server with 1 Terabyte of solid state storage. This server represents the next era of enterprise storage combining high capacity, high performance, and low cost.

The server is configured with 18 64GB Mtron 1025 series Flash solid state disks. Running in a raid-6 configuration, this yields 1TB of raw SSD space and about 910 GB of "managed" space that is available to user files. The server itself is based on a Supermicro 2U rack mount chassis with a single socket quad-core Xeon processor that is field upgradable with a second processor.

Main SSD storage is managed with EasyCo's patent pending MFT layer. The system is built on the Fedora Linux distribution and will run Samba providing windows file shares to 10+ front-line web servers when this system is installed.

SSD Performance:

The SSD array is optimized for small file random performance. Measured array performance is > 50,000 8K random reads/sec and > 30,000 8K random writes/sec. Linear throughput from the drives maxes out at over 1.4 GB/sec on reads and 300 MB/sec on writes. This level of performance would require nearly 200 15K SAS drives to obtain the same IOPS ratings, and even then, 15K SAS drives would still have > 10x the latency.

Power:

The system draws less than 400 watts of power, even with 14 network interfaces, 16 GB of FB-DDR ram, a 3.16 GHz quad-core CPU, and redundant power supplies.

Connectivity:

This system is configured with a cornucopia of Ethernet connections. The system features 10 independent GigE ports, plus an additional four independent 10-GigE-CX copper ports.

Price:

The delivered price for the base server, without the additional Ethernet adapters is about $23,000 with the additional Ethernet ports, the price rises to just over $27,000.

Lower Cost and higher performance than 15K Hard Drives:

The same base server chassis populated with 24 72 GB 15K SAS drives would cost just over $26,000. Running raid-10, this would yield 912 GB of usable space.

	GB	Cost/GB	IOPS	Cost/IOPS
Flash SSD	921	$24.97	50,000	$0.46
15K HDD	912	$29.61	6,000	$4.50

SSD Lifespan:

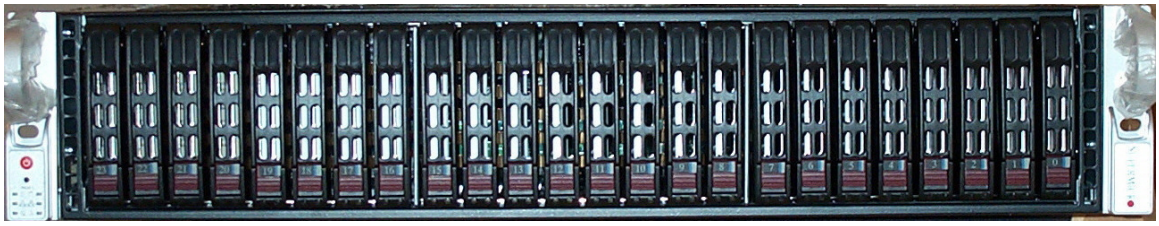
This server is built with MLC (Multi Level Cell) Flash SSDs. Normally, the use of MLC drives would be a real concern regarding drive wear out. The MFT software mitigates drive wear out allowing lower cost MLC drives to perform well for years and even decades. In this configuration, the drives can be expected to wear out in about 7 years assuming that the entire contents of the array are overwritten daily. The particular customer that is receiving this server is expecting a data update rate of about 50 GB/day, thus the drives should wear out in just over 150 years.

Tier 1, not Tier 0:

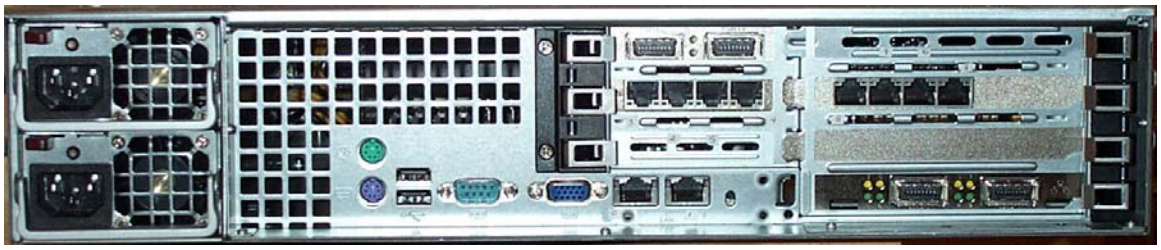
MLC Flash SSDs combined with EasyCo MFT management software position solid state storage as general "high performance" storage. This is not an ultra expensive Tier-0 solution, but instead a direct replacement for commodity 15K rotating disk drives.

System Photos:

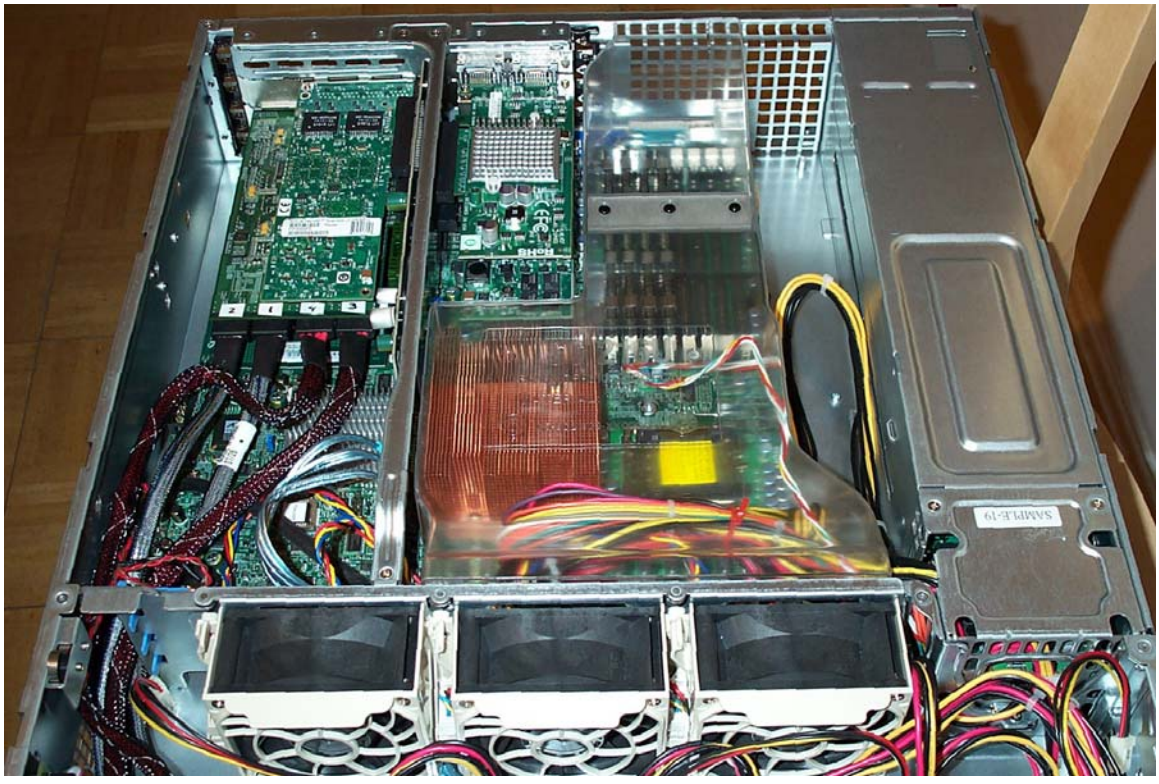
Front View:



Rear View:



Interior View:



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