

SCI StorInt™ Dispatch - IBM070710 Announcing new features: IBM System Storage TS7700 and TS3400

This Silverton Consulting (SCI) Storage Intelligence (StorInt™) Dispatch provides a summary of IBM's recent tape announcement that touted the benefits of tape and introduced significant business continuance and other related features for mainframe customers.

IBM's "green" solutions

Tape has always been a "green" solution because it consumes less power than disk for nearline and offline storage. IBM's recent announcement re-emphasized this with two 10 year TCO models showing that blended SATA disk with real LTO4 tape libraries is three times less expensive than a SATA only solution and a LTO4 tape-only solution is seven times less expensive than a SATA only solution.

IBM also showed some tape power comparisons:

- LTO and enterprise class tape drives consume between 12% and 38% less power respectively than competitive offerings
- Enterprise tape libraries and virtual tape systems take 20X less and 14% less power respectively than competitive offerings over five years

Surprisingly, IBM also showed a comparison of their DS8000 to a competitive disk-offering showing up to 31% less power consumption. Furthermore, IBM stated plans to reallocate \$1B a year to accelerate "green" technologies and service offerings.

TS7700 R1.3 and R1.4 announcement summary

As an indicator of IBM's re-emerging tape technology prowess they recapped recent tape announcement history and showed charts of tape drive and automation market share for CY'06 with IBM being the clear winner over all competitors.

Business Continuance (BC) Options

The TS7700 R1.3 August delivery includes some significant BC capabilities -- namely the ability to create a three-way tape data mirror. Any of the three TS7700s can be at regional or continental distances from one another and, if close enough, support synchronous copy. Two key BC capabilities were also announced:

- Mirror copying only requires IP networking today. Previously, mirroring would have required channel extenders, a significant expense.
- Mirror copies no longer require the connection of virtual tape controllers, eliminating the need for separate cabling. This reduces the cost of mirror copies even further.

IBM also announced the ability for the third site to obtain data from either of the two other sites based on network bandwidth and other considerations. Thus the primary site

no longer needs to be the sole provider of data to all remote sites. The tertiary site knows it needs to obtain tape volume data for its mirror and will request the data from whichever site can most easily provide it.

For clients who don't need active data mirrors IBM announced the Copy Export feature, which can be used to create a secondary copy of tape volume data and to have it ejected from the TS7700. This group of tapes contains a copy of the TS7700 database that, together with the actual tape volume data, can be used to clone the primary TS7700 onto a spare TS7700 at a remote site

Configuration Options

In addition to the significant data mirror capabilities it announced, IBM also introduced the ability to configure the disk cache from one to six TB while physically having one and one-half to six installed. IBM calls this On Demand Cache Increments. They also announced the ability to provide additional increments of performance in 100MB/s increments.

Migration Options

For those customers with existing VTSs attached to 3494 or TS3500s IBM has provided reasonable migration paths to get them onto TS7700 with TS3500 libraries. Most of these migration options come out with R1.3 in August but a few become available with R1.4 coming out in November ([TS7700 information](#)).

TS3400 Tape Library August announcement

The TS3400 tape library now supports z/OS, z/VM, z/VSE and TPF with use of the TS1120 controller supporting 4Gbps FICON and ESCON. Apparently some smaller mainframe customers have requirements that can be satisfied by the compact TS3400 for smaller or branch office locations ([TS3400 information](#))

Announcement significance

The mainframe is still a healthy growth market that IBM and others continue to invest in with new technology and storage offerings. In addition, tape technology is alive and well and has a large market niche that, even today, the relentless advance of disk drive capacity cannot displace. The advantages of tape are more apparent in the mainframe space but even in open systems the economics of tape are hard to ignore.