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Customer demand for tape remains strong as shipped tape media capacity reaches record levels

The best metric for the continuing value of a technology is market adoption. A further positive proof point for the ongoing robustness of tape market demand can be seen in the increasing amounts of shipped tape media capacity.

According to the Santa Clara Consulting Group (SCCG)¹, total worldwide tape storage media capacity shipped has smashed through previous marks to reach a new peak.

Aggregate media capacity in the first quarter of 2011 was 4,683 PB, a growth of 7.1% quarter on quarter (Q/Q) and 34.1% year on year (Y/Y). This compares to 3,537 PBs of total external disk systems storage capacity shipping in Q4 CY'10, according to IDC.

¹Source: SCCG Backup Tape Tracker Q1 2011 – see: <http://www.sccg.com/tapetracker.html>

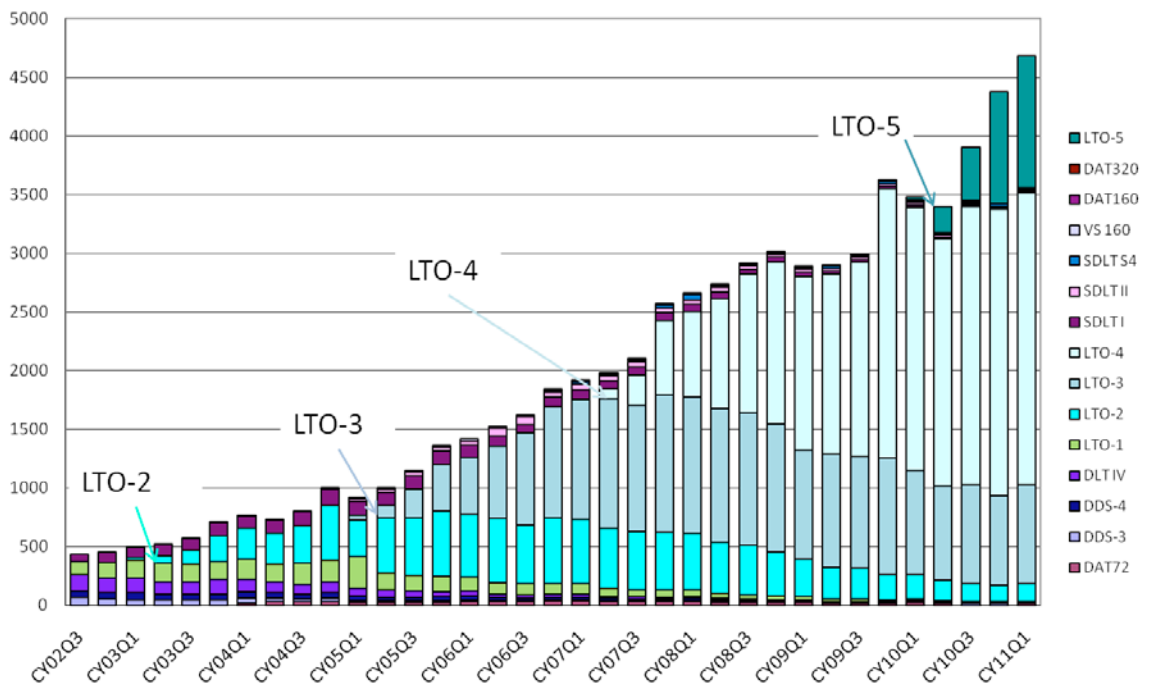


Shipped tape capacity media trends (see figure 1) show an upward trajectory and demonstrate tape's continued importance in the storage hierarchy.

Tape Media Capacity Shipment Trends by Quarter (in PB's)

Figure 1

Source: Santa Clara Consulting Group Media Tracker for Q1 CY11



LTO tape media market delivers double digit growth in the first quarter of 2011

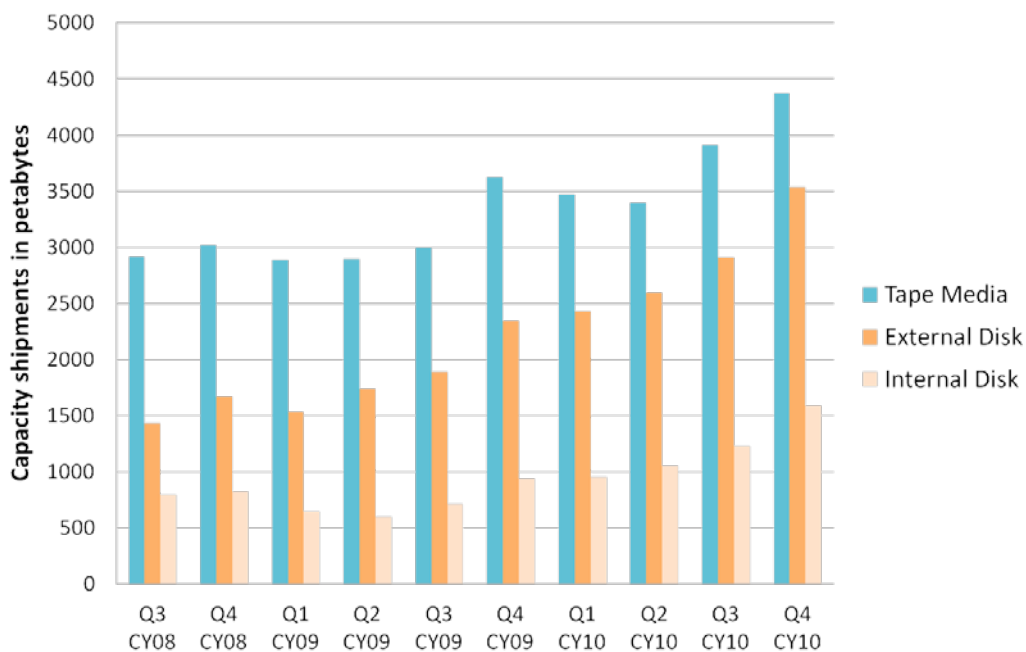
LTO tape media shipments continued to show strong momentum in the first quarter of 2011, rising to 6.8 million units for the quarter, a growth of 10% Y/Y. LTO-5 and LTO-4 media were key growth drivers, with LTO-5 cartridges increasing by 18.5% quarter on quarter (Q/Q) and LTO-4 media shipments up by 10% Y/Y and 2% Q/Q.



Tape media capacity shipments continue to surpass external disk capacity

According to SCCG, worldwide branded tape media sales generated \$822 million of revenue in 2010. Throughout calendar year 2010, total shipped tape storage media capacity surpassed total shipped external disk systems storage capacity (see figure 2)

Tape media, and disk storage system capacity shipment trends CY08 to CY10



Sources: IDC WW Disk Storage Tracker CQ410– March 2011 and Santa Clara Consulting Group Tape Media Tracker - February 2011

Figure 2



Tape Summit delivers further analyst endorsements for the future of tape

HP was a sponsor of the recent Tape Summit 2011 in Las Vegas, an industry event designed to provide comprehensive updates on the current and future state of the tape market from leading analysts and vendors.

The Tape Summit generated widespread positive analyst comment on the future of tape including the following endorsements:-

Note: please click on the source publication to link to the full feature

[“Summing up the recent Tape Summit in Nevada, the basic message was that tape is not only about to see a resurgence but rather a renaissance..... So long as tape lives, IT is the real winner.”](#)

David Hill, Network World

[“For a few years, the idea of tape in the Enterprise may have seemed like a quaint, outdated concept. It isn't. While IT encounters the inherent weaknesses of disk only storage, tape's future is beginning to find its well-earned position of prominence, as an indispensable component in any IT organization.”](#)

Mark Brownstein, Computer Technology Review

[“My initial inspiration from the Tape Summit is that 2010 is actually the year that tape was relevant again. 2011 will be the year that we finally begin to unravel just how relevant tape is... Clearly tape's future is now”](#)

Eric Slack, Storage Switzerland

[“It costs 4-8 times more to acquire a disk-based backup system than it does to acquire an automated tape system...tape actually has a better bit error rate than disk...tape uses less power than disk...long-term \(5+ years\) storage of data on disk is not compatible with the typical lifecycle of disk, but it is compatible with tape...tape can be your friend for long term archives and cheap offsite storage.”](#)

W Curtis Preston, Backup Central

[“What is saving tape is the same thing that saved Apple: innovation...the introduction of LTFS \(Linear Tape File System\) last year so that tape could be accessed in a manner similar to networked storage systems \(NAS specifically\) was a HUGE step forward for the tape industry..it stands a good chance of gaining market share simply because tape has made itself both easier to manage and more cost-effective so organizations can continue to justify leveraging tape in their infrastructure in this new context”](#)

Jerome M.Wendt, DCIG

LTO-5 with LTFS is changing the tape storage landscape

Excitement builds for LTO-5 with LTFS at the NAB 2011 show



The National Association of Broadcasters Show took place in Las Vegas in early April. The world's largest electronic media event this year attracted over 88,000² participants seeking the latest in filmed entertainment and the development, management and delivery of content across all mediums. Data storage is a key element in the digital transformation of content creation, editing, distribution and reception in the media and entertainment industry so during the show, hundreds of media and entertainment executives from around the world witnessed LTO Ultrium 5 tape and the new Linear Tape File System (LTFS) in action.

LTFS has been described as "mold-breaking innovation"³ as it allows users to utilize tape much like they would disk, with directory tree structures and the ability to drag and drop files to and from the tape.

LTFS opens the door to a new world of possibilities for tape and users are finding new applications as a result. The NAB show featured a variety of vendors who are capitalising on LTO-5 with LTFS to create new solutions bundling LTFS-based offerings with hardware and software designed for video workflow and archive applications. These vendors included Cache-A, TOLIS Group and SGL Software (click on the links for more information on individual solutions).

The LTO TPC (Technology Provider Companies) Program also held a seminar which featured a discussion on the use of LTO Ultrium generation 5 tape technology and LTFS for archive in production, post production and the sharing of LTO-5 tape content across operating system platforms. Attendees also learned how LTO-5 innovative tape storage technology with LTFS can reduce costs and help provide the data protection needed to preserve video assets.

For more information on HP LTO-5 with LTFS, please visit: www.hp.com/go/ltfs. This site includes a whitepaper describing the Cache-A Archive Appliance featuring HP LTO-5 with LTFS.



²Source: NAB Press Release - <http://www.nabshow.com/2011/newsRoom/pressRelease.asp?id=2510>

³Mark Ferrelli, Computer Technology Review, August 2010

HP LTO-5 is granted FIPS140-2 Level 1 Certification



A number of HP LTO-5 tape drives have now passed the required certification testing for FIPS140-2 Level 1 certification and are on the list of validated modules.

Since introduction, HP LTO-4 and LTO-5 tape drives have included hardware data encryption capabilities, designed to deliver security for user data by encrypting data written to tape. From the outset, the products were designed to meet the requirements specified by the US and Canadian Government agencies in a publication called FIPS140-2, the Federal Information Processing Standard (FIPS) Publication 140-2. This federal standard is used to accredit cryptographic “engines” inside software or hardware implementations.

A number of HP LTO-5 drive product variants have passed through the associated Cryptographic Module Validation Program (CMVP) which ensures that FIPS certified products meet the expected level of security in design and operation. All HP LTO-5 variants submitted have now passed as FIPS 140-2 level 1 certified.

As all LTO-5 tape drives contain the same hardware and firmware capabilities, they are able to offer the equivalent protection and data security making them FIPS 140-2 Level 1 capable.

For the complete list of HP LTO-5 FIPS140-2 product variants, please refer to:
<http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401val2011.htm#1486>

New ESG Video: Tape in the Cloud

For anyone who thinks that cloud computing is at odds with tape technology, a new Enterprise Strategy Group (ESG) video by Senior Analyst Mark Peters is now available on YouTube. In the video, Peters explains that tape is not only relevant to cloud computing, but actually a vital component for robust cloud-based data protection for both suppliers and users.

The short six minute video concludes with the following key message:

“The bottom line?

Big parts of what constitute cloud really have no big difference to other ways of supplying IT resources

...which makes tape entirely relevant

...and where cloud does differ in need, those needs actually mitigate in favor of tape being used”

Click here to take a look at the Tape-in-the-cloud video on YouTube.



Why LTO-5 continues to win over IBM TS1140

Earlier this month, IBM launched the TS1140 tape drive. At first glance, it might appear from the capacity and performance specifications that the TS1140 has more to offer than LTO-5; but as the chart below illustrates, LTO-5 offers superior customer value in the areas of market adoption, investment protection, configuration flexibility, enterprise class reliability at an affordable price, TCO and energy efficiency.

At a glance comparison:

	IBM TS1140	LTO-5 Ultrium
Positioning	Designed for mainframe data protection in an enterprise environment	Wide range of customer environments – direct attach SMB through to mid range and enterprise environments
Market adoption	Niche player with 2.0% unit share of the overall tape drive market in Q4'10	The world's most popular tape format with 75% unit share of the overall tape market in Q4'10
Capacity (native)	Up to 4TB	1.5TB
Performance (native)	Up to 250MB/s	140MB/s
Format & compatibility	Proprietary format tape technology Single supplier No publically published roadmap	Open standard format tape technology Multiple sources of supply Publically published roadmap Assured compatibility
Configuration	Large form-factor tape drive only, rack-only server support Automation in IBM enterprise libraries only Interface: 8Gb FC Minimal choice of complementary products/ services	Choice of half-height and full-height, internal/external/ rack-mount/blade server support Automation in autoloaders through mid-range and enterprise libraries Choice of native interfaces – SAS, 8Gb FC Wide and established range of media suppliers, software vendors and service offerings
Total Cost of Ownership	More expensive Media expected to be at least double the price of LTO Less energy-efficient – requires 50W of power	Less expensive Media expected to be half the price of IBM TS1140 More energy-efficient – requires only 24W for LTO-5

In Summary

When considering the high capacity and performance of the IBM TS1140 Tape Drive, customers must balance out the potential gains with the risk of investing in a proprietary format. LTO Ultrium continues to deliver an open source technology, that's widely adopted throughout the industry today, offering the assurance of supply and a competitive pricing advantage for OEMs and end-user customers alike.