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LTO-BASED TAPE LIBRARIES SHINED BRIGHT IN 2004, SAYS ANALYST STUDY

Reaches 73% of all tape library units and 51% of total 2004 library revenues

SILICON VALLEY, CALIF. — (May 10, 2005) —Certance LLC (now owned by Quantum), HP and IBM Corporation, the three technology provider companies (TPCs) of the LTO program – today announced that 2004 was another strong year for tape libraries based on the LTO Ultrium format, according to a just-released study by Freeman Reports titled *Tape Library Outlook 2005*. LTO-based libraries made significant gains in 2004 with 45,568 units shipped, up 28 percent over 2003.

In Freeman Reports' *Tape Library Outlook 2004*, the analyst firm indicated that LTO-based libraries in 2003 accounted for 57 percent of all tape library units and 47 percent of total library revenues. In the current study, Freeman Reports shows that LTO-based libraries accounted for 73 percent of all tape library units and 51 percent of total 2004 library revenues.

"The gains in LTO automation manufacturers' shipments for 2004 were very impressive, and there doesn't seem to be any slowdown in sight," said Robert C. Abraham, president, Freeman Reports. "Based on existing shipment patterns we're seeing, we anticipate that 2005 will be double digit growth year for the LTO Ultrium tape format in automation."

The report suggests what the LTO Program has witnessed in the past several years – a ubiquity of the LTO Ultrium format in the midrange and enterprise-class server environments, pushing LTO technology to the forefront of the "super" tape drive category.

"What is most gratifying about the Freeman Reports research is that the LTO Ultrium format continues to reach new levels of prominence in helping enterprises manage the prolific rise in data storage through highly cost effective tape technology," said Jim Wold, Senior VP, General Manager, Quantum Storage Devices. "End users continue to choose the LTO Ultrium format as a leading choice for tape technology, in large part due to the benefits that come from multiple suppliers and data interchange between competing LTO tape product providers."

Storage administrators continue to seek more powerful tape performance, new technologies such as WORM (Write Once, Read Many) functionality to meet ever-growing business and regulatory requirements, and a roadmap vision for the future they can trust. The LTO Program has addressed these issues with the LTO Ultrium format generation 3, LTO WORM, and a roadmap extension including generations five and six.

LTO Ultrium format generation 3

The LTO Ultrium format generation 3 doubles physical storage capacity over generation 2, increasing to 800 GB from 400 GB (assuming a 2:1 compression). Transfer rates in generation 3 improve to up to 160 MB per second (MB/s) from 80 MB/s in generation 2 (assuming a 2:1 compression) allowing for up to 576 GB of backup performance per hour. The LTO Ultrium format generation 3 drives also offer backwards-compatible read-and-write capability with the Ultrium format generation 2 cartridges and backward read capability with generation 1 cartridges, helping to protect the investment customers have made in LTO technology.

LTO WORM

The LTO Program WORM implementation is designed to provide users with a very cost effective means of storing data in a non-rewriteable format to address compliance regulations.

Robust algorithms using the Cartridge Memory (CM), in conjunction with low level encoding that is mastered on the tape media at the time of manufacture, are designed to prevent tampering. The LTO Ultrium format generation 3 specification includes the ability for WORM enabled and non-WORM enabled drives to co-exist. In addition, appending data at the end of a WORM cartridge which was previously written to is supported, thus allowing customers to take full advantage of the high capacity tape media.

Extended LTO Ultrium Roadmap

LTO Ultrium Generation 5

The LTO Ultrium format generation 5 is planned to double physical storage capacity over generation 4, increasing to 3.2 TB compressed (assuming a 2:1 compression). Transfer rates in generation 5 are planned to improve up to 360 MB per second (MB/s) (assuming a 2:1 compression).

LTO Ultrium Generation 6

The LTO Ultrium format generation 6 is planned to double physical storage capacity over generation 5, increasing to 6.4 TB (assuming a 2:1 compression). Transfer rates in generation 6 are planned to improve up to 540 MB/s (assuming a 2:1 compression). The complete roadmap can be found at http://www.ultrium.com/newsite/html/format_roadmap.html.

How to License LTO Ultrium Technology

The LTO program offers several different license packages – from enhanced packages that provide the specifications and licenses to manufacture Ultrium products, to basic packages, providing Ultrium format specifications and guidelines for interchangeability.

Buyers seeking Ultrium format-compliant products should look for the Ultrium format compliance verification trademarks on both tape drives and data cartridges. Storage and media manufacturers interested in licensing LTO technology may obtain information by contacting the Law Offices of Ladas & Parry at (323) 934-2300, or by e-mail at LTO_INFO@ladasparry.com.

About Linear Tape-Open (LTO) Technology

LTO technology is a powerful, scaleable, adaptable open tape format created by technology providers Certance (now part of Quantum), HP, and IBM Corporation to help meet the growing demands of data protection in the midrange to enterprise-class server environments. This ultra-high capacity generation of tape storage products is designed to deliver outstanding performance, capacity and reliability combining the advantages of linear multi-channel, bi-directional formats with enhancements in servo technology, data compression, track layout, and error correction.

The LTO Ultrium format has a well-defined roadmap for growth and scalability. The roadmap represents intentions and goals only. There is no guarantee that these goals will be achieved. Independent compliance verification is vital to meet the free-interchange objectives that are at the core of the LTO Program. Ultrium tape mechanism and tape cartridge interchange specifications are available on a licensee basis. For additional information on LTO technology, visit the LTO Program Web site at www.ultrium.com.

Note: Linear Tape-Open, LTO, the LTO logo, Ultrium, and the Ultrium logo are trademarks of Certance, HP and IBM in the US and other countries or both.

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