For Immediate Release

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LTO ULTRIUM FORMAT REACHES MAJOR MILESTONE:
MORE THAN 1,000,000 LTO ULTRIUM TAPE DRIVES SHIPPED

SILICON VALLEY, CALIF. — (August 29, 2005) — Certance LLC (now owned by Quantum), HP and IBM Corporation, the three technology provider companies (TPCs) for the Linear Tape-Open (LTO) Program, today announced that more than one million LTO Ultrium tape drives have shipped worldwide since September 2000 when products based on the format first became commercially available.

The one million tape drive milestone announcement follows a recently-released study by research firm Freeman Reports, pegging the LTO Ultrium format market penetration at over 70% of the entire super tape drive category (100GB native capacity or higher). Additionally, the LTO Program earlier this year reached another milestone of more than 30 million tape cartridges shipped. Thirty million LTO tape cartridges could store enough books equal to nearly one million times the content in the Library of Congress (assuming an average capacity of 400GB per cartridge).

“Reaching this one million milestone in less than five years is a remarkable accomplishment, underscoring the strong performance of the LTO format,” said Jim Wold, Senior VP, General Manager, Quantum Storage Devices. “The success can be based in part to a solid roadmap, increasing data capacity and transfer rates, an open specification supported by the top companies in the storage industry and data interchangeability among competing LTO manufacturers.”

Storage administrators continue to seek more powerful tape performance, new technologies such as WORM (Write Once, Read Many) functionality to address ever-growing business 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 reach up to 160 MB per second (MB/s) from 80 MB/s in generation 2 (assuming a 2:1 compression). 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 Ultrium format generation 3 specification includes the ability for WORM enabled and non-WORM enabled drives to co-exist. The LTO Program implementation is designed to provide users with a very cost effective means of storing data in a non-rewriteable format.

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. 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.

**Updated 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 reach up to 360 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 reach up to 540 MB/s (assuming a 2:1 compression).


**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 owned by Quantum), HP, and IBM Corporation to help address 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. 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](http://www.ultrium.com).

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

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