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LTO PROGRAM OUTLINES GENERATION 8 SPECIFICATIONS AND EXTENDS TECHNOLOGY ROADMAP TO 12TH GENERATION

- *Generation 8 specifications outline increased capacities of up to 30TB* per cartridge*
- *Newly extended technology roadmap demonstrates commitment to format, exponential increase in future capacity*

SILICON VALLEY, CALIF. — (October 17, 2017) — Today, the LTO Program Technology Provider Companies (TPCs), Hewlett Packard Enterprise, IBM and Quantum, announced the specifications of the latest LTO Ultrium format, generation 8, which is now available for licensing by media manufacturers.

The LTO Program also released a new LTO technology roadmap, detailing specifications up to twelve (12) generations of tape technology, extending the total capacity of data held on one LTO Ultrium generation 12 tape cartridge to 480TB* - an increase of 32 times the capacity of current-generation 7 cartridges.

The new LTO generation 8 specifications are designed to double the tape cartridge capacity from the previous LTO generation 7, with customers now being able to store up to 30TB* per cartridge when compressed. In an effort to push the innovation boundaries of tape technology going forward, the current LTO format required a recording technology transition that supports capacity growth for future LTO generations. To address this technological shift and maintain affordability in times of extreme data growth, the latest LTO generation 8 specifications are intended to be only backwards compatible with LTO generation 7 cartridges.

LTO generation 8 specifications will continue to include features introduced in previous generations such as multi-layer security support including hardware-based encryption and WORM (Write-Once, Read Many) functionality. Additionally, the partitioning functionality that allows users to present an easy to use tape-based file system with the use of LTFS will be also included. Alongside the launch of LTO Ultrium generation 8 specifications, for customers who purchase new LTO generation 7 cartridges, a new initialization feature will be introduced to enable the cartridge capacity to be increased by up to 50 percent. New LTO generation 7 cartridges initialized as LTO-8 Type M media will be able to store up to 22.5TB* of data. Together, these features are expected to provide users with a cost-effective storage solution that is both easy-to-use and addresses numerous storage needs.

"Thanks to the ongoing commitment from LTO consortium members, LTO generation 8 technology will provide even more value than ever before. Modern tape has been optimized to support the big data workloads of today -- and future IT trends -- while improving businesses' ability to meet their security and regulatory requirements," said Calline Sanchez, Vice President Enterprise System Storage, IBM. *"This will be critical to customers using LTO technology for media and entertainment, healthcare, video surveillance, hyper scale data centers, IoT and research, which rely on LTO technology to create a massive repository for nearline and long-term storage."*

The current generation of LTO tape technology, LTO generation 7, supports tape cartridge storage compressed capacity of up to 15TB* and tape drive data transfer rates of up to 750MB*. At less than a penny per gigabyte, LTO generation 7 technology continues to serve customers in the media and entertainment, digital video surveillance, government video and data storage verticals with positive consumer feedback across the board.

"Data is growing at astronomical rates across a variety of industries, creating a number of business challenges for many companies," said Josh Woodhouse, senior market analyst, video surveillance, for IHS Markit, a global business information provider. "Due to this rapid growth in data, IT and security managers in the video surveillance industry are looking for cost-effective ways to protect and secure short- and long-term storage. LTO technology is increasingly being used in the video surveillance and digital evidence markets in multi-tiered environments for accessible, long-term data storage."

Additional information on the LTO Ultrium generation 8 specifications and the capability to increase new LTO generation 7 media capacity will be available later this year. To learn more about LTO technology in general, visit www.lto.org/ and follow The LTO Program on [Twitter](#) and [LinkedIn](#).

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 LTO Ultrium products, to basic packages providing LTO format specifications.

Buyers seeking LTO Ultrium format-compliant products should look for the LTO Ultrium format compliance verification trademarks on both tape drives and data cartridges. Storage and media manufacturers interested in licensing LTO formats may obtain information by contacting the LTO Program at www.lto.org/contact-us/

About Linear Tape-Open (LTO)

The LTO Ultrium format is a scalable and adaptable open tape format developed and continuously enhanced by technology providers Hewlett Packard Enterprise, IBM Corporation and Quantum Corporation (and their predecessors) to help address the growing demands of data protection in the midrange- to enterprise-class server environments. LTO Ultrium tape storage products continue 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 and is subject to change or withdrawal. There is no guarantee that these goals will be achieved. The roadmap is intended to outline a general direction of technology and should not be relied upon in making a purchasing decision. Format 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 licensed basis.

For additional information on the LTO Program, visit www.trustlto.com and the LTO Program Web site at www.lto.org.

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**Assumes a 2.5:1 compression achieved with larger compression history buffer available beginning with LTO generation 6 drives.*

Note: Linear Tape-Open, LTO, the LTO logo, Ultrium, and the Ultrium logo are trademarks of Hewlett Packard Enterprise, IBM and Quantum in the US and other countries.