

Reports of tape's demise are greatly exaggerated

As with most things vintage or old, tape storage has, through the years, been the highlight of many technology obituary pages. The basic thinking is that current technologies like disk storage and cloud offer more advantages like faster throughput and reliability. Physical tape is then, quite obviously, obsolete.

This couldn't be further from the truth. Today's LTO tape automation technology delivers huge advantages for data storage in terms of capacity, performance, reliability and TCO. Currently, nearly seven Exabytes of data is stored on tape in datacentres across the globe. And according to research authority, Santa Clara Consulting Group, the last four years alone have seen 114% growth in the amount of data stored on tape.

With the introduction of LTO-7 (linear tape-open) technology in late 2015, tape has really started to grab the attention of IT administrators. The technology now delivers a staggering 140% improvement in capacity and an 88% increase in performance when compared to its predecessor, LTO-6. These advancements in LTO technology undoubtedly establishes tape as the dominant storage option in the archive and big data space.

Put in technical terms, LTO-7 technology provides up to 15Tb of compressed data per cartridge, compared to the 6,25Tb offered in previous-generation LTO-6 tape drives. Data transfer rates is up to 750Mbps, or 2,7Tb of data per hour per drive.

Raul Del Fabbro, enterprise solutions manager at Drive Control Corporation (DCC), says: "Apart from the major improvements in performance and capacity, tape's cost per gigabyte still remains less expensive – the technology stores huge amounts of data over long periods of time at a very competitive price point.

"Also, LTO-7's improvement in storage density can lead to a 65% reduction in floor space which makes tape a viable option in smaller rooms as well as green and cost-sensitive data centres," he explains.

Commenting on the increased adoption of tape, Peri Grover, senior director of marketing for Overland Storage, says: "We

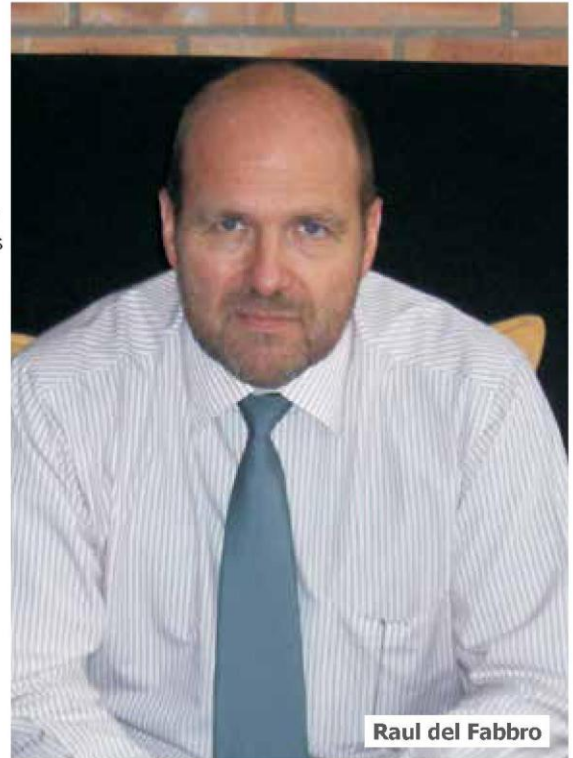
are most certainly seeing an increased demand for the use of tape for long-term storage. Customers regularly tell us that they have come to the realisation that disk and cloud are certainly very viable options for storage of moderate amounts of data they need often and immediately.

"But these solutions are slow and expensive when you're talking about storing the massive amounts of data needed for regulatory compliance, disaster recovery and archive applications. The vast majority of IT folks out there realize there is no more-reliable, cost-effective solution than a tape library."

Solid benefits

To understand the renewed and increased investment in tape, it's important to look at the benefits and differentiators:

- **Capacity:** Users can now store up to 15Tb of data on a single, rugged four-inch square cartridge. Used as part of a tape library, users can store up to 1,2Pb of data in a compact 6u space in a datacentre rack.
- **Performance:** Tape has become really fast, even faster than disk in some cases. With performance rates of up to 2,7Tb per hour, users can access their data in record time.
- **Reliability:** Tape is proven to be more reliable than disk. With a 30-year shelf life, compared to the average five-year lifespan of disk, it ensures extended data availability. Additionally, bit error rates for tape are significantly lower compared to disk. This means you'll get your data back from tape if you need it.
- **Security:** Tape isn't exposed to viruses and other security onslaughts, so it can be easily and reliably transported between data centres.
- **Energy efficiency:** Tape requires far less power and cooling than disk as it



Raul del Fabbro

doesn't generate as much heat. This means your data storage solution is not only more reliable long term, but it significantly reduces your energy costs. In fact, studies have shown that archiving data to disk can be six times more expensive than archiving it off to tape.

- **Cost of ownership:** You will reliably restore your data and use less energy to do it; tape therefore reduces your cost of service, support and maintenance. Furthermore, compared to disk and cloud storage, tape offers an up to 70% saving an Overland NEO-Series tape library costs about \$.01/Gb.

The bigger picture

Tape continues to be driven by innovation. The current LTO tape roadmap defines how the technology will take us to 120Tb per cartridge and move data at 10Pb per hour. These R&D efforts are backed by major industry players.

One of the other exciting technological advancements is LTFs (linear tape file system) technology. For example, it provides ease-of-use drag and drop



functionality which means it looks just like a disk on your operating system (OS) directory tree. This makes tape even easier to use and facilitates data interchange and, depending on your application, may even eliminate the costs of backup software.

Currently cloud, big data, analytics, as well as mobile and social systems of engagement, are driving massive data growth. Comparatively, particularly in a tougher economic climate, storage budgets aren't keeping pace with this demand.

Says Del Fabbro: "Again, this is where physical tape plays a major role as it is estimated that up 80% or more of enterprise data won't be accessed after 90 days,

according to research groups such as Gartner. If you move this stale or inactive data to tape, you will experience significant cost savings without compromising on performance. The same goes for cloud services, so implementing tape storage to deal with big data makes sense."

The above also contextualises tape's role in the bigger storage scheme of things. There is no doubt that when it comes to quick recovery time, disk is often superior, making it the obvious choice for critical data backup like security, payroll, e-mail and so forth. For the rest, tape is an extremely feasible solution.

Also, while data stored in the cloud is available almost anytime and anywhere, it is hampered by long recovery times due to

bandwidth issues – in some cases, it can take up 10 times longer than tape storage. It is therefore best to save large amounts and/or critical data on physical tape and disk storage.

Del Fabbro adds: "Each storage solution has its advantages and disadvantages which is why it important to define your business requirements. Often the right choice is a mix of tape, disk and cloud storage."

Overland Storage was one of the first solution providers to market with LTO-7 in their NEO Series of tape libraries and autoloaders. When configured with LTO-7, NEO tape libraries and autoloaders are designed to deliver up to 140% increase in storage capacity and more than 80% improvement in data throughput. ■