



eBook

10 Reasons to Migrate from Tape to Cloud

Making the move is less stressful than you think and provides many benefits — with the right partner.



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Introduction

The concept of backing up important data has been around since the dawn of time. Humans just love to record things. Humans are also generally optimistic. We assume the things we record will last. From etching figures onto rocks to scribbling on parchment and printing on paper, the aim has always been to move the ideas from our head onto something a little more permanent because “Hey, someone might need this later!”

Now fast forward. Computers, phones, cameras, hard drives, solid state drives, data centers at the bottom of the ocean—through sheer ingenuity our recording methods have come a long way. Over the last few decades alone, a multitude of new media formats have been introduced. Some have lasted. Most haven’t. One that has is tape—or more specifically, magnetic tape. Or, even more specifically, LTO (Linear Tape-Open) tape.

Recording data to tape has been a common business practice since the middle of the twentieth century, when computers were large enough to fill a room. Over time, the use of tape for backup became central to disaster recovery and long-term storage strategies. And even today, customers appreciate tape’s air gapping capabilities and its comparably low storage cost via external, sometimes second-party archival facilities.

Undoubtedly, tape has had a good, long run. In fact, it’s probably not going away, at least for a few more decades. But, tape storage strategies will likely change for many companies as we move into the future. Most single tape and small tape autoloaders and libraries will likely transition to other technologies as the costs of those alternatives get cheaper. Some data centers will opt to archive their cold data to a gigantic tape library with tens of thousands of media slots—so long as acquiring tape remains affordable and data/media migration remains easy.

Just as the many different forms of recordable media have evolved, so too have data backup strategies. We’re now in the age of the cloud. Perhaps somewhat surprisingly, there are still “rooms” filled with computers, but these rooms are cloud data centers with massive quantities of storage and processing power. Cloud-based storage has proven its benefits in both disaster recovery and data archiving over several decades. Organizations who have solely adopted an LTO-based strategy have multiple reasons to consider migrating their valuable data to the cloud, or, at the very least, using cloud-based storage alongside tape.





Why Leave Tape? (Or at Least Add to It)

Imagine that your company has been using LTO for either frequent backup or long-term storage. The process has been working (mostly). However, there are a few reasons why you may consider an alternative solution.

Changing LTO Generations

Like all technology, tape has changed over the years and, of course, it will continue to change. The first seven generations of LTO drives can read tapes from two generations prior. Generation LTO-8 is only compatible with one generation back and the same is true for LTO-9, launched in 2021. There now exist several generations of tape media, each with possibly different software and data retrieval methods.

This can cause delays in reaching data when it's needed, especially if you're relying solely on institutional knowledge to remember which version of tools are required for extraction (and hoping those tools are still available). Those who stick with tape backups face additional cost challenges, as upgrading to current LTO generations (for the same contained data) can be expensive and time consuming. Additionally, the requirement for very specific migration abilities is unavoidable when moving from older generations of LTO tape to more current ones.

Real-Time Analytics

Tape backup has been a sufficient method for recording and holding onto information. However, tape-stored data is comparatively stagnant when put against cloud-stored data. Today's computing hardware is capable of performing advanced tasks that can directly benefit businesses, including machine learning, artificial intelligence (AI), and data analytics. These capabilities are best achieved when machines, and the people using them, can easily access massive data sets. Unfortunately, when data is kept on tapes (which must be identified, physically located, and processed with the right tools before finally moving to a place where advanced analysis systems can ingest the data), it often becomes more trouble than it's worth.





10 Reasons to Migrate from Tape to Cloud



1

It's Less Stressful Than You Think

The thought of migrating tape-based data to the cloud may initially feel daunting. After all, tackling the conversion of dozens, maybe even thousands, of tapes internally is sure to tie up IT resources. To alleviate the stress and hassle of it all, having a second party handle the migration process is the way to go. Let the experts focus on migrating your data so that your team can stay focused on more pressing business operations.



2

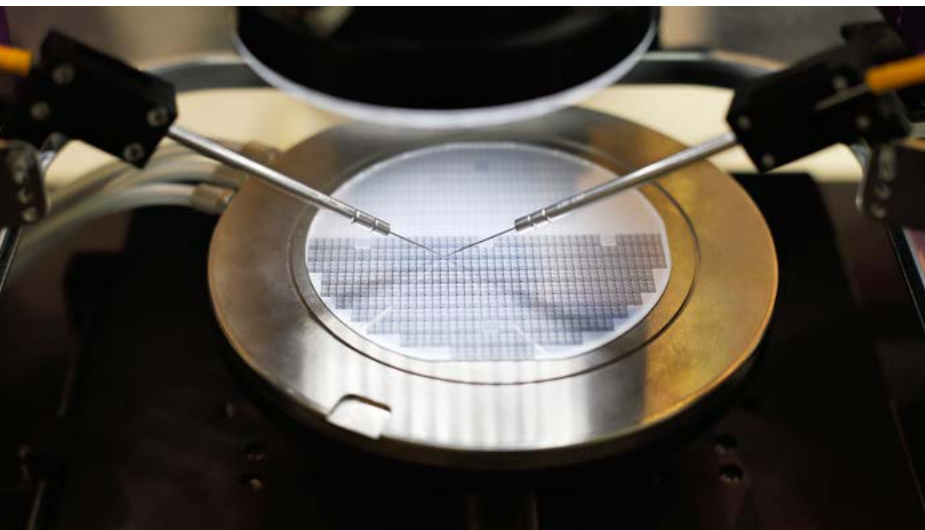
24x7 Data Access

The benefits of having instant access to business data via the cloud are tough to overlook, especially in today's go, go, go world. For remote, distributed teams especially, quick data accessibility enables all operations to run more smoothly—from making informed, data-backed decisions to collaborating, analyzing, and more. Businesses who can do this remain agile and, more importantly, competitive.



3 Air-Gap Security

While tape has been a great solution for achieving air-gap security, today's top-tier cloud storage providers are leading the way in data protection. This is achieved by meeting stringent custody requirements during the physical migration process, ensuring adherence to important certifications, such as ISO 27001 and SOC 2, offering added security measures through always-on encryption and multi-factor authentication, as well as providing object immutability so that data can never be tampered with or deleted.



Lattice Semiconductor Trusts Lyve Managed Migration by Seagate for 'Tape to Cloud' Initiative

Lattice Semiconductor, headquartered in Hillsboro, Oregon, is the world's largest volume supplier of field-programmable gate arrays (FPGAs). The company designs and manufactures devices that help enable secure control, flexible connectivity, and lower power compute acceleration, which are used throughout communications, computing, automotive, industrial, and consumer markets.

When the decision was made to update their data storage, they had more than 2,500 tapes stored at a well-known facility—one which was costly and difficult to access. Turning to Lyve™ Cloud Managed Migration Services offered by Seagate, they were able to quickly process a substantial number of tapes and digitize 1PB data into a browsable format in Lyve Cloud.

"The biggest imperative for us," said Sudhakar Chilukuri, Lattice Semiconductor's CIO, "is a cloud solution that enables us to store data without having to redo the economics, [or] rearchitect and revisit things every few cycles. When we saw Lyve Cloud in action, we recognized how it is built for large volumes of data and enables any application around it. It became easier for us to think of many data types that can benefit from moving to Lyve Cloud."

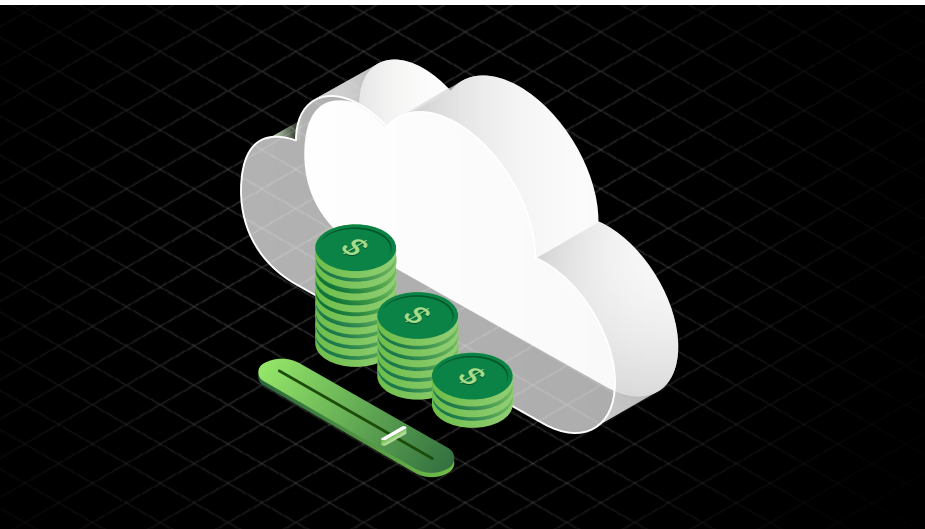
Check out the full story:

www.seagate.com/resources/lattice-case-study



4 Saving Time & Reducing TCO

Companies relying solely on tape may not even realize the savings of switching to the cloud. But think about it. No technology upgrades. No system, software, and vaulting costs. No hiring experts to plan and execute regular tape migrations to newer media types. When time and budgets aren't tied up by these things, they're available for other things—like innovating.



5 Modernized Backup/Archives

As many tape-based data backup customers have come to realize, your company may need to keep updating its tape generations and related software to ensure compatibility when the contained data needs to be re-utilized. In contrast, migrating data from tape to the cloud alleviates this concern, especially if you go with a vendor that can help merge, consolidate, organize, and modernize your company's backup/archive tape data by cataloguing and ingesting only the useful stuff.



Simplified Auditing

Legal compliance requirements vary across industries. Health care and engineering companies, for example, often require data to be archived for decades or more. By consolidating data in the cloud, businesses can easily meet these long-term demands. Additionally, if their cloud provider enables frictionless, 24x7 access to data, then it's no sweat when compliance and regulatory audits come up.



Seagate Tests Its Own Tape-to-Cloud Solution

Until 2020, Seagate used a common backup method—tape—to address both short- and long-term needs. Long-term data was sent offsite for backup onto large tapes requiring physical transportation, sometimes via third-party vendors, to offices when necessary. But, there were some challenges, including time spent locating specific tapes in vendor facilities; restoring data from the tapes; dealing with the possibility of tape malfunction and degradation; and searching for the most current software to extract data when the tapes arrived. In an effort to apply and better control its own data retention rules (including purging), Seagate's IT team realized they could devise a better solution. Enter Lyve Cloud.

Seagate's Lyve Cloud Tape Migration and Storage service makes it easy to migrate data from any tape format to the cloud, where it can be backed up, stored, and retrieved via the user's preferred networks and software tools. To ensure its functionality, Seagate began migrating its own tape records to Lyve Cloud. The process proved quick and seamless, plus the company no longer had to pay for external vaulting services. Beyond that, Lyve Cloud object storage provided an ultra-secure data repository with 24 x 7 access and increased the company's ability to meet governance and compliance standards. Instead of waiting for tapes to be recovered, packaged, and shipped, and then for the contained data to be extracted, Seagate can now access their business data almost immediately (dependent on network latency).

Check out the full story:

www.seagate.com/resources/seagate-lyve-cloud-case-study



7 Powerful Analytics

One of the biggest benefits of migrating data from tape to the cloud is being able to quickly activate cold data for new business opportunities. The freedom to gain fast visibility into insights and trends by leveraging cloud-based applications for advanced analytics, AI, and machine learning, and then turning those insights into valuable revenue streams, is how today's leading companies stay ahead.



8 Staying Current

Investing in technology is part of doing business. However, companies need to make smart spending decisions on their IT hardware and software. As mentioned, LTO tapes have evolved since their introduction and continue to do so. Companies invested in storing data on tape must frequently update their tape technology (both the hardware and the software) to keep up. Cloud-based storage, however, never becomes obsolete.

Another thing to consider is this. Letting cloud storage professionals handle data storage and archiving means you don't need to purchase, maintain, and/or replace the on-premises hardware needed for such tasks. In turn, the expense shifts from CapEx to OpEx—a growing aim for many companies.



9 Avoiding Vault Costs

Tape-based data storage was meant to provide an air-gapped solution for data recovery. So, it makes sense that organizations either transport their tapes to external facilities (far enough away from any central processing point) or entrust their tapes to second-party external tape storage companies. Since most businesses can't afford space dedicated solely to tape storage, "vault" companies have proliferated—and so have the costs of their services.



10 What Supply Chain?

No event in recent times has revealed the immense fragility and unpredictability of the global supply chain quite like the pandemic. The storage industry and those relying on the storage industry have experienced firsthand that the availability of LTO tapes, and on-prem storage hardware in general, can be unpredictable during uncertain times. Which is why, aside from its many other benefits, the cloud is such a desirable alternative for storing and backing up data. When the choice is between having to wait months for tapes or having immediate access to the storage you need, the winner is clear.





Calculating Time Savings for Tape to Cloud

Imagine that one thousand LTO-6 tapes containing 2.5PB of data need to be transferred to the cloud. The result of the migration is a full backup of 300TB that would take about one year to complete due to limited network bandwidth and limited human resources. Not exactly ideal, is it?

That's why Seagate offers Tape Migration and Storage services. Taking on the leg work from start to finish, we get your data to the cloud fast while also ensuring that only unique data gets transferred. That way, you don't have to go in later and fiddle around with data that you don't actually need.

If you're curious how much time you could save, find out here with this calculator: www.seagate.com/solutions/data/managed-data-migration-tco-calculator



An abstract graphic consisting of numerous small green dots arranged in a series of overlapping, curved lines that sweep across the top half of the page. The dots are more densely packed in some areas, creating a sense of depth and movement.

Move to the Cloud with Confidence

When you're ready to start storing, managing, and activating your legacy data on your terms, we've got your back. With Lyve Cloud Tape Migration and Storage, our team quickly and efficiently moves your data to Lyve Cloud, where it will live in an infinitely scalable, highly secure S3 bucket. From there, you'll have 24x7 access to its insights, and endless potential for unlocking new revenue streams. No costly on-prem technology upgrades. No frustrating and frequent system and software costs. And all you'll ever pay for is the storage you use.

You can learn all about it here: www.seagate.com/migrate

References for Later

- Lyve Cloud Tape Migration: www.seagate.com/services/data/data-migration
- Lyve Cloud Tape Migration Use Case: <https://branding.seagate.com/documentpreview/ca8145ad-5a3d-4f0c-b4b0-780e5c77bb77>
- Lyve Cloud Tape Migration Video: www.youtube.com/watch?v=J1w60x-8adI&t=4s

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