



**Hewlett Packard
Enterprise**

KEEP YOUR DATA FOR LONGER, FOR LESS, WITH HPE STOREEVER AND COMMVAULT®

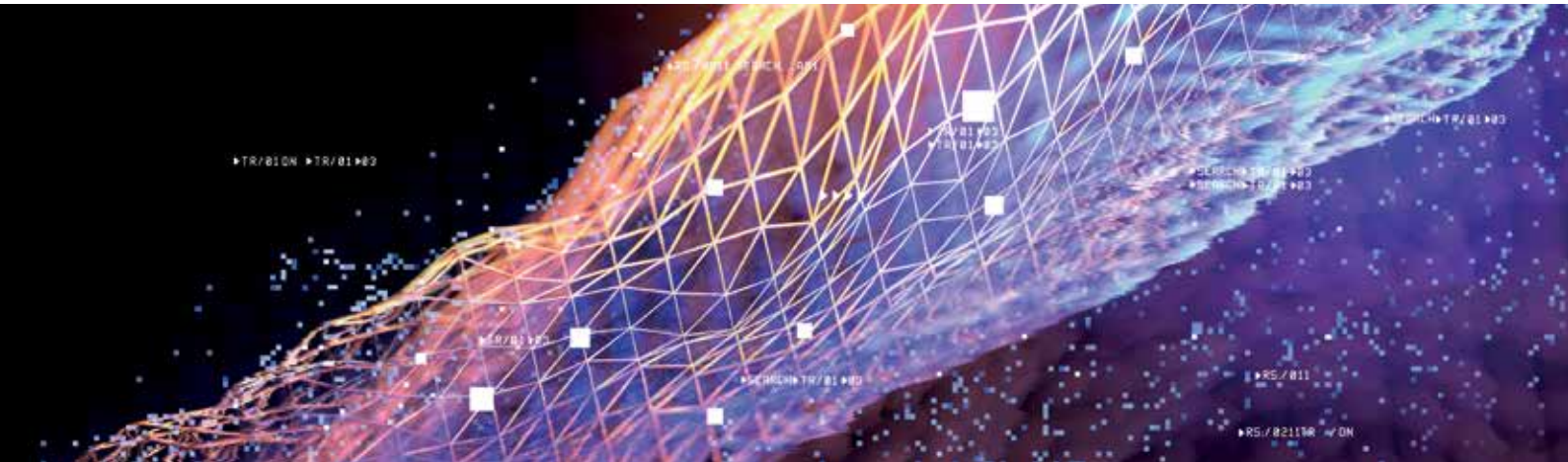
Executive Summary





According to the analyst, IDC, the volume of digital data created over the next three years will be more than the data created over the past thirty years.¹

This volume and velocity of data creation is unprecedented. But the constant improvement in data processing speeds and network bandwidth; the relentless development of new ways to create, share and use data; and the expanding numbers of data creators and consumers means that this exponential growth will only accelerate.



As a consequence, the global economy is being transformed. Data will enable an explosion of new business opportunities, both through the curation of (mostly unstructured) data itself and through the proliferation of new data creation sources, such as sensors in the Internet of Things or the synthetic data generated through the training and validation of deep learning algorithms.

In the past, a company's digital archive was often referred to as "cold data": information was captured and retained for compliance purposes, or for a disaster recovery, but it remained relatively inert and inaccessible. In the future, however, data will increasingly be the sole business asset for many firms, while for others, there will be enormous value to be derived from monetizing their static data to create new products and services. Burying it away in a moribund state of hibernation will be a thing of the past.

All of which presents a critical technology challenge. Businesses want to energise their static data but there will be too much of it to economically manage using primary storage like flash or secondary disk arrays and object servers. Archiving to the cloud offers many benefits but even here challenges remain because the rental costs for storage and retrieval will be prohibitive for many organisations because data growth rates continue to soar – as will the charges.^{2,3}

¹ Worldwide Global DataSphere Forecast, 2020–2024: The COVID-19 Data Bump and the Future of Data Growth, IDC, May 2020

² Tape Landscape Study, Enterprise Strategy Group, October 2020

³ The Economic Benefits of HPE StoreEver as Active Archival Storage, Enterprise Strategy Group, August 2020



This is why many companies are now creating so-called ‘active archives’ as a means of managing their static data, with LTO tape as its foundation.

Enterprise Strategy Group defines an active archive as “a tiered storage topology/ solution that gives IT systems or human end-users access to data through a common, unified file system that automatically retrieves and places that data on the appropriate storage tier.” These storage tiers may be multi-vendor, on-premises and/or the hybrid cloud and comprise different storage media types.

Using HPE StoreEver tape for archiving vast quantities of static content helps you manage your data with greater efficiency and reduced risk from the threat of ransomware. In an active archive, which is optimised for easy access, low-cost, and reliable long-term retention, primary storage budgets go further, performance improves, retention requirements are addressed, and new analytical doors are opened.

Meanwhile the active archive environment eliminates the traditional misconceptions about the practicality of tape in big data environments. Far from being an outdated technology, LTO tape should be considered an essential component of any future solution for managing big data.

THE HPE STOREEVER AND COMMVAULT ACTIVE ARCHIVE SOLUTION

By using HPE StoreEver and Commvault software in an active archive solution, you can balance the widening gap between exploding storage requirements and flat budgets. Policy-based file management enables you to remove inactive data from your more expensive primary storage and backup cycles – onto an accessible, cost-effective, and self-protecting storage tier.

As a result, you benefit from an effective archive workflow that not only enables business growth by making data more accessible for a longer time but also reduces storage costs.

UNDERSTANDING BACKUP VS. ARCHIVE

It’s important to emphasise the distinction between backup and archive strategies. As the table below illustrates, archive and backup applications are distinct processes with different objectives, and therefore, impose different requirements on the storage systems that they utilise.

	BACK UP	ARCHIVE
METHOD	Copies data	Moves data
PURPOSE	To recover data in the event of data loss	To retain data for reuse, repurposing and monetization
DATA POLICIES	Recovery time objectives (RTOs) Recovery point objectives (RPOs)	Retention periods Access controls
DATA HANDLING	Duplicate copies are periodically overwritten	Data cannot be altered or deleted
RETENTION PERIOD	Short term	Long term





A backup is a secondary copy or copies of production data used for restore or disaster recovery in the case of data loss or data corruption. By contrast, an archive is a one-of-a-kind, unique instance of less frequently accessed information that has been moved off primary production disk to lower cost secondary or tertiary storage for data management or governance and regulatory compliance purposes. Backup copies may exist in multiple locations whereas an archive version resides in a single place.

And a backup data set is ultimately overwritten whereas archive information is typically a permanent record or data set stored without alteration or deletion for an extended time until it is no longer needed.

By their very nature, therefore, backup applications are not suitable for archive use cases. Archives are designed to be retrieved for a specific operation use. They need to be directly accessed by applications and users and stored in a file system – as opposed to being retrieved by a backup admin going through a backup data repository. Simply put, backups do not give you the visibility and accessibility that archives require.

The best archive platforms should be able to scale to multi-petabyte capacity, offer high reliability, long life of the stored data, easy access, simple integration, and low cost.



WHY ARCHIVE?

What is the value of data archiving for your business? The answer lies in the fact that there are two distinct data growth and data usage dynamics that put pressure on your organisation's ability to manage data economically and efficiently.

1. Data growth is unrelenting and exponential. But the majority of the content driving these trends is unstructured file data as opposed to structured database data. For example: documents, spreadsheets, presentations, rich media content such as video and audio, engineering drawings, and scanned images of paper documents. Large unstructured data sets can be difficult to backup and some types of unstructured data, like media files, may not dedupe well (if at all), so it is necessary to think differently about how we store this type of data.
2. Most of this unstructured data is static and yet it has an important strategic value for the organisation, whether that is because of the compliance and regulatory dimension, or because it is increasingly the vital foundation of new business ideas and opportunities.

Data storage requirements are growing at 40 percent per year, but IT budgets are relatively flat. So it doesn't make sense to maintain this infrequently accessed data on relatively expensive production Tier 1 storage infrastructure that is designed for high IOPS and low latency. It makes more sense to move it to archive storage designed for low-cost and long-term retention. This is where HPE StoreEver tape continues to offer significant advantages because although the cloud can offer extremely low entry costs, it's less ideal for retaining expanding data sets for long periods of time. The reason is that the cost of storage and additional fees for retrieval quickly overtake the CAPEX costs associated with purchasing tape infrastructure. So using a mix of cloud and tape for long term archiving, with the majority of your data stored on tape, remains the most cost effective and secure approach.





SPECIFIC BENEFITS OF ARCHIVING

Imagine the efficiencies you could achieve – from a lower total cost of ownership (TCO) and better return on investment (ROI) perspective – by removing large volumes of infrequently accessed, but strategically important, data from your Tier 1 production environment.

Lower storage TCO and better application performance

Your storage budget will go further by purchasing lower cost archive storage rather than relatively expensive primary storage. Unclogging your production storage environment of stale data will improve the response time and effectiveness of your primary storage, optimising the performance of your business applications.

Improved backup performance

Now you don't have to keep continually backing up infrequently accessed data, your backup performance and service-level agreements (SLAs) will improve. Backups and restores are smaller and, therefore, faster.

Increased storage ROI

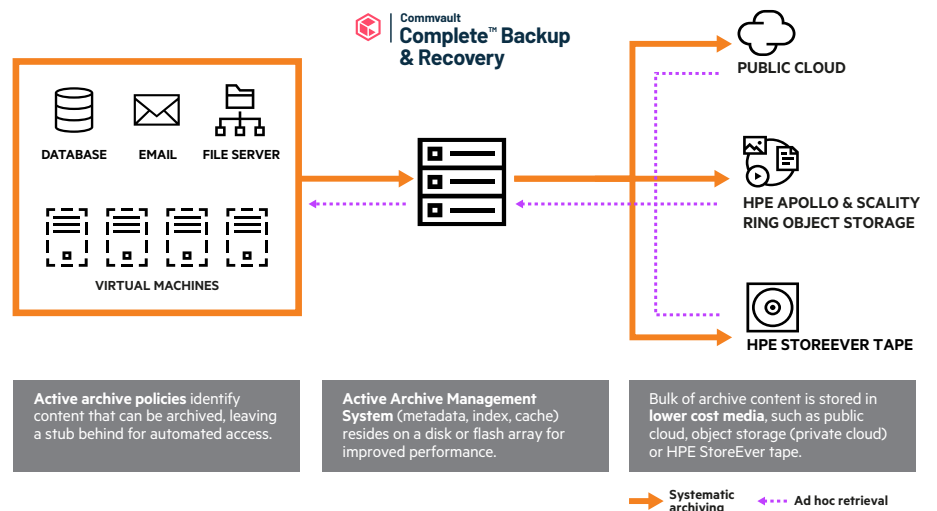
Being able to extract value from your digital assets optimally determines whether the data is useful to you or not. Could you generate additional revenue streams if you could quickly find, retrieve, and reuse digital assets? This is particularly important for industries such as media and entertainment, where content is king and assets, such as videos, need to be securely restored and easily available for repurposing or monetization purposes.

IMPLEMENTING AN EFFECTIVE ARCHIVE SOLUTION HPE STOREEVER AND COMMVAULT

The traditional approach to managing unstructured data growth has been to purchase more primary storage and more backup servers. In the ideal world, you could use ultra-fast storage for all of your data, forever. But the days of unlimited IT budgets are long gone. And that's why archiving with secure, low-cost HPE StoreEver technology is more important than ever.

Using Commvault Complete™ Backup and Recovery software, you can set policy-based file management routines that allow you to remove inactive data from your more expensive primary storage and backup cycles – onto an accessible, cost-effective, and self-protecting storage tier.

As a result, you benefit from an effective archive workflow that not only enables business growth by making data more accessible for a longer time but also reduces storage costs.



This will deliver the following key benefits:

Data access

Your users need simple, consistent access to their data without any impact on their existing workflows. With Commvault software, files will always be presented and visible – enabling users to easily search, find, and retrieve archived files – even though it may be stored on media that is offline. Commvault software complements HPE StoreEver with sophisticated tape lifecycle management, including the ability to inventory and track tapes that are sent off-site for long-term storage.

Reliable

An archive file is a one of a kind that has been taken out of the primary storage data protection process for cost saving purposes but still needs to be protected as well as it was on primary storage.

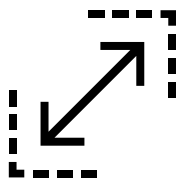
The overriding customer-defined metric for a successful archive is whether the data can be retrieved when needed. Your users need the peace of mind that their business data has been reliably archived, is protected from unauthorised access or online threats, and is retrievable and accessible multiple years in the future. HPE LTO Ultrium data cartridges are tested to extremes, using additional processes that are unique to the HPE Brand Specification to ensure that your tape media will perform reliably for up to thirty years of archival storage. And with HPE Command View for Tape Libraries Data Verification software complementing your Commvault application, you can periodically run specialised processes to check on the health of your archived data cartridges.

Lowest TCO

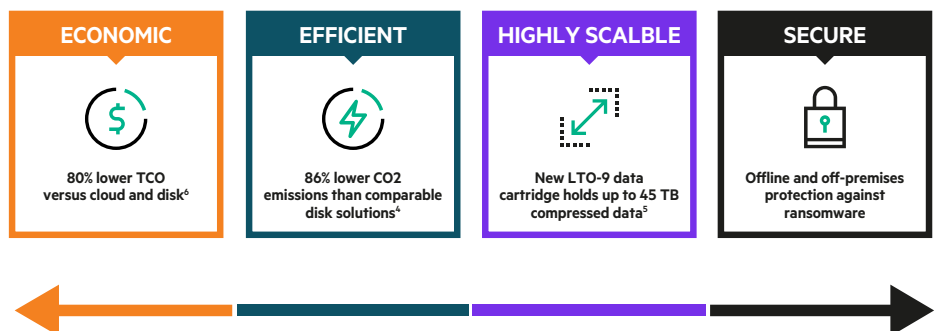
Using HPE StoreEver tape allows you to complement the performance of flash and disk with the cost profile of tape. By taking advantage of solutions that can intelligently leverage different tiers of storage, you can afford to provide online access to all valuable user content. According to the analyst, Enterprise Strategy Group, over a ten year period, you could save up to 80% when storing a large and growing dataset compared to all-disk or all-cloud solutions.⁶

Scalability

Cost-effectively and efficiently scaling to multi-petabyte capacity, to match exponential long-term data retention growth, is a top requirement for any effective archive solution. With HPE StoreEver MSL3040 and 6480 tape libraries, it is easy to add additional modules and slots to expand your archival storage capabilities.



Using HPE StoreEver tape allows you to complement the performance of flash and disk with the cost profile of tape.



⁴ Brad Johns Consulting, 2021

⁵ Assumes 2.5:1 compression

⁶ The Economic Benefits of HPE StoreEver as Active Archival Storage, Enterprise Strategy Group, August 2020

KEY BENEFITS OF COMMVAULT COMPLETE™ BACKUP AND RECOVERY WITH HPE STOREEVER

Save resources with a single, global index

Commvault uses a single, intelligent index to provide customers with global awareness into their data and multiple methods for retrieving information. This makes accessing data easy, so customers can quickly find what they need, when they need it. A single data scan is highly efficient and saves customers valuable compute and infrastructure resources as it takes one scan for dedupe, archive and index. Customers can view, analyse, report, and manage their data wherever it resides.

Eliminate data silos with virtual repository

Data protected by Commvault snapshot, backup and archive solutions is protected in a virtual repository. Data stored in the virtual repository is automatically indexed, which provides fast, single-step recovery, on-demand data access, and the ability to leverage data across all locations and storage tiers eliminates storage or data silos typically found in legacy solutions that require multiple point products.

Save time and effort with orchestration

Commvault has automation capabilities to save customers time, resources, minimise risk, and create greater data value. Orchestration capabilities help customers tailor their use for the cloud, virtual or physical to their specific requirements, while simplifying the management, movement, monitoring, backup and retirement through automated and self-service workflows. Orchestration and automation saves staff time and eliminates the risk of traditional manual scripting.

Secure user administration ensures data integrity

Data without security is suspect data. Commvault protects data value by providing two types of user administration and security; role-based and owner-based. Role-based administration security is assigned to administrators and based on their permissions, they may perform tasks such as backup, restore, or administrative operations specific to their role. Owner-based security enables individual end-users to have self-service capabilities over their own data and assets (i.e. mobile device or laptop).

Freedom to migrate data and workloads

Commvault provides one of the industry's broadest coverage of storage arrays, hypervisors, cloud storage options, and enterprise applications. The integration with HPE Storage solutions including HPE StoreEver enables customers to easily migrate and manage data wherever it resides, and whenever they need to. No longer are customers locked-in to a specific vendor or technology, but are free to move their data to leverage the best solutions and technologies for their business.

Save time with an easy user interface

To make it easier for users to quickly and easily configure, run and monitor their environment, the Commvault Command Center™ includes role-specific user interfaces for database and virtualization administrators to help run and monitor their Commvault environment. These role-specific views enable users to run extensive graphical and visual representations of KPIs, utilisation, operational health and other metrics, and can be personalised based upon their role within the organisation.





Reduce your costs with low TCO for long-term retention

ESG estimated that an organization can achieve total cost savings (considering storage, infrastructure, maintenance/support, egress, and administration) of approximately 86% (\$2.358M versus \$329K) over a ten-year period using HPE StoreEver for a 1 PB archive over the public cloud. Since organizations incur monthly storage costs and egress costs when using public cloud⁷ storage, ESG noted how they accumulate quickly over longer time periods. Also, organizations that opt for public cloud storage as an active archive must purchase additional storage to accommodate backups and snapshots over time, further increasing monthly costs.

HPE StoreEver tape offers one of the lowest costs per terabyte for any type of storage, particularly when you factor in energy and footprint cost. Active archiving using LTO tape enhances use of production storage, reduces backup storage requirements, and helps shrink backup windows.

Additionally, you can manage the up front cost of new tape or upgrade purchases by using [HPE Financial Services](#). This allows you to spread the acquisition cost of new equipment and removes concerns about technology obsolescence.

- With the total price converted into monthly or quarterly payments, you can acquire more equipment and support than your capital budget allows.
- Plus, a monthly or quarterly payment option helps minimize risk by offering flexible terms, refresh options and the ability to upgrade the assets easily at end-of-term.
- HPEFS can fit the most appropriate HPE StoreEver tape solution according to your data storage requirements and business SLAs.

Grow effortlessly

HPE StoreEver technology sets the industry benchmark for scale-out performance and capacity. The modular design of both the MSL3040 and MSL6480 scales vertically enabling you to store up to 4.2 PB (MSL3040) or 8.4 PB (MSL6480) of data, at speeds of up to 105.8 terabytes per hour (using LTO-8) in a single 19-inch rack.

That effortless scalability preserves your initial capital investment – whatever degree of data growth might lie around the corner.

Plus, LTO has a well-defined technology roadmap, which for twenty years has met customer expectations for scalability and investment protection; so you know you can rely on this technology today and in the future. The LTO technology roadmap has been recently expanded to 12 generations, increasing capacity expectations to 480 TB per cartridge.

ACTIVE ARCHIVING USE CASES

There are two prime use cases for HPE StoreEver with Commvault Complete™ Backup and Recovery software.

Manual offload

Do you need a simple way for your users to offload finished project data from primary storage to access low-cost and long-term HPE StoreEver tape storage? Departments can simply move their data by creating an 'ad hoc' archiving job which will perform a one-off archive of their data – still readily accessed via the stubs in their primary storage.

Automated offload

Do you need an automated way to move inactive data from primary storage to HPE StoreEver tape while ensuring that your user's workflow remains the same?

Commvault Backup and Recovery provides you with an automated, policy-based archive of inactive data to HPE StoreEver tape based on data age and access profile. Migration leaves behind a "stub" file, which redirects the read request to the new file location. This automated set and forget process allows you to reclaim expensive primary storage capacity by migrating cold files to lower cost StoreEver storage, all implemented seamlessly to your users.

⁷ The Economic Benefits of HPE StoreEver as Active Archival Storage, Enterprise Strategy Group, August 2020



CONCLUSION

HPE StoreEver MSL tape libraries with Commvault Complete™ Backup and Recovery software allows you to leverage the tremendous economic and long-term retention benefits of LTO Ultrium tape storage.

And thanks to Commvault’s end-to-end data protection and data management software, you can move away from an infrastructure-centric view toward a more service-oriented approach to data protection. Implementing a tiered data protection and recovery strategy is fundamental to modernising data protection. With Commvault, you can bring together all the elements of the HPE Storage portfolio - flash, disk, tape and cloud - to improve operational efficiencies and maximise use of resources.

In summary, you can keep more data longer, in an affordable way, and in a way that keeps the data accessible to your business line owners.

This comprehensive, tiered, and converged intelligent archive workflow – spanning software, flash, and tape – helps you save time, money, and reduces risk.

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