The future of data archives and nearline storage

Simon Watkins
WW StoreEver Product Marketing Manager
HP Storage
Agenda

- Why archive?
- Why HP for archiving?
- Why HP StoreEver Tape for archiving?
Understanding backup vs. archive
What's the difference?

<table>
<thead>
<tr>
<th>Method</th>
<th>Backup</th>
<th>Archive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Secondary copy</td>
<td>Primary copy</td>
</tr>
<tr>
<td>Purpose</td>
<td>To recover data in the event of data loss</td>
<td>To retain data for re-use, repurposing and monetization</td>
</tr>
<tr>
<td>Data policies</td>
<td>Recovery Time Objectives (RTO)</td>
<td>Retention periods</td>
</tr>
<tr>
<td></td>
<td>Recovery Point Objectives (RPO)</td>
<td>Access controls</td>
</tr>
<tr>
<td>Data handling</td>
<td>Duplicate copies are periodically overwritten</td>
<td>Data cannot be altered or deleted</td>
</tr>
<tr>
<td>Retention Period</td>
<td>Short term</td>
<td>Long term</td>
</tr>
</tbody>
</table>
Archiving Drivers

Drivers: Data footprint and data management costs

Compliance Drivers: Internal and governance compliance requirements

Litigation Drivers: eDiscovery and Legal Hold

Insight Drivers: Business intelligence, Monetization

IT Reduction and Cost Savings

Business Governance & Compliance

Litigation Readiness

Innovation and Data Insights
HP Archive Ecosystem

Archiving Applications (HP Ecosystem)
- HP Consolidated Archive
- Commvault Simpana
- Symantec Enterprise Vault
- ECM – OpenText, Perceptive
- PACS – Agfa, GEHC, Sectra
- CCTV – Milestone, Genetec
- LTFS - QStar
- Quantum StorNext

Sources of archival data
- File Servers
- Email
- SharePoint
- ERP e.g. SAP
- Medical Images
- Genomic and scientific data
- Video Surveillance footage

HP Archival Platforms
- Disk
- Tape
- Cloud
- Optical Media
- SDS

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The evolving value of HP StoreEver Tape

• Tape’s role is evolving to meet retention demands of accelerating data growth
• Transition from backup medium to solution that addresses wider set of storage goals and vertical markets
• Key usage model for tape is archiving
• LTFS is a key “ease of use” enabler for tape archive solutions
The Business Value of StoreEver Tape for Archive

Lower Costs

Capex: ~ $12/TB for tape media - $60/TB for tape library
Opex: Low power/cooling/energy costs
Opex: Optimise rack space - 116 TB per 1U for ESL G3

Reduce Risks

Investment Protection: backwards compatibility, long term roadmap
Security: Encryption, off-site storage
Reliability: 30 year archive life, better bit error rate than disk!
Availability: redundancy, failover, predictive monitoring

Improve Productivity

Grow effortlessly: Non disruptive scale-out performance and capacity
Save Time: Easy to deploy, scale, use and manage
Exhibit 3 — The Mix of Disk and Tape Greatly Affects TCO

Picking the Right Mix of Tape and Disk to Meet Your Archiving Requirements and Your Budget

9-Year TCO Sums for the Mix of Tape and Disk Indicated

- TCO for Tape
- TCO for Disk

Mix of Tape and Disk

- All Tape
- 90% Tape
- 75% Tape
- 50-50 Mix
- 25% Tape
- 10% Tape
- All Disk

Note: The percentage shown above each column is the percentage of the TCO for an all-disk solution that can be realized by using tape for the percentage of data shown on the x-axis.

Source: The Clipper Group
The Value of Linear Tape File System (LTFS) for archive

Creates access to data on tape similar to a 6.25TB* memory stick!

A file system for tape

• It presents a LTO tape as another drive letter, icon or folder like a disk or memory stick or tape as NAS

• Manage content easily with drag and drop directory tree access

• Uses LTO-5 or LTO-6 dual partition capability to store the index and the content

Self-describing tape

• No application software dependencies

• Cross platform sharing of content

• Ideal for managing long term archives

* LTO-6 compressed capacity
The Value of HP StoreOpen

Extending the value of LTFS on HP Tape Drives and HP Tape Libraries

• Intuitive interface that makes the most of LTFS across the HP tape family
• Select, prepare and mount a tape drive or tape library for use with LTFS
• Native GUI’s provide a familiar look and feel
• Automatic installation as part of the LTFS download package from HP
• Easy access to advanced LTFS features

The Value of HP StoreOpen with LTFS video: www.youtube.com/watch?v=wNyED2S9vic
HP StoreEver Tape as NAS – Active Archive solution

Ease of use

• Multi-user access and retrieval of all archived data via CIFS/NFS files share(s)
  − No media management, media is self-allocated
  − Data stored and accessed from standard subdirectories available through Explorer

Low cost and reliable

• Tape is the lowest cost storage
• 30 year media life
• Integrity checks, checksums and CRC validation
HP StoreEver Data Verification Software
Protecting data throughout its lifecycle

Central Data Center

Online Partition
Thousands of tapes in library partition
Managed by an application

“Data Verification Partition”
Managed by library; not presented to host. License 100 cartridge increments

Archive Partition

CVTL Management Station
CVTL can configure & control Data Verification on multiple libraries at any location.

Remote Site
Data Verification scans tapes in library located at remote site

Off site Vault
Tapes shipped back to central data center for periodic scanning/verification
HP StoreEver Tape Automation Family

Whatever the archive environment – there’s a StoreEver platform that fits

HP StoreEver ESL G3
HP StoreEver MSL6480
HP StoreEver MSL4048
HP StoreEver MSL2024
HP StoreEver 1/8 G2 Autoloader

SMB & Distributed Environments
Mid-Range
Enterprise

Entry Level
# HP StoreEver MSL6480 Tape Libraries

**Setting the gold standard for mid-range tape automation**

<table>
<thead>
<tr>
<th>Category</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale-out</td>
<td><strong>Best in class scalability</strong>&lt;br&gt;Pay as you grow with non-disruptive scale-out performance and capacity</td>
</tr>
<tr>
<td>Save Time</td>
<td><strong>Best in class ease-of use</strong>&lt;br&gt;Customer installable, expandable &amp; serviceable, enterprise-class manageability and tape as NAS</td>
</tr>
<tr>
<td>Save Money</td>
<td><strong>Best in class economics</strong>&lt;br&gt;Optimise rack-space, plus library partitioning and ability to leverage existing tape investments</td>
</tr>
<tr>
<td>Reduce Risk</td>
<td><strong>Best in class reliability and security</strong>&lt;br&gt;Simplest, lowest cost data encryption solutions, broad compatibility and HP integration</td>
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</tbody>
</table>
## Architecture matters and HP is ahead of the market

<table>
<thead>
<tr>
<th>Feature</th>
<th>Oracle SL150</th>
<th>IBM/Quantum/Dell</th>
<th>HP MSL6480</th>
</tr>
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<tbody>
<tr>
<td>Max Scalability</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Max Performance</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Max Density</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Customer Expandable</td>
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<td></td>
<td></td>
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<tr>
<td>Library Encryption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Library Management</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

- **Oracle SL150**
  - 3.5 PB
- **IBM/Quantum/Dell**
  - 60.4 TB/hr
- **HP MSL6480**
  - 81 TB/1U
HP StoreEver ESL G3 library delivers…

<table>
<thead>
<tr>
<th>Scalability</th>
<th>Manageability</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Only buy what you need today, add capacity and performance on demand.</td>
<td>• One pane of glass to manage multiple libraries</td>
</tr>
<tr>
<td>• Scale up to 75PBs and add capacity without downtime</td>
<td>• Provision libraries across applications, shared environments</td>
</tr>
<tr>
<td>• Flexible resources within the library with media pooling</td>
<td>• TapeAssure advanced reporting and alerts</td>
</tr>
<tr>
<td>• 3 million MSBF</td>
<td>• Data Verification for archived tapes</td>
</tr>
<tr>
<td>• Active-active dual robotics</td>
<td>• Bulk load/unload</td>
</tr>
<tr>
<td>• Redundant power supplies</td>
<td></td>
</tr>
<tr>
<td>• Control path/data path failover capabilities</td>
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<table>
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<tr>
<th>Security</th>
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<tr>
<td>• Tape-based Data Encryption</td>
</tr>
<tr>
<td>• Secure key management (with ESKM or 3rd party KMIP solutions)</td>
</tr>
</tbody>
</table>
Case Study: DreamWorks Animation

Challenge:

- Replace outdated backup system with reliable, cost-effective and scalable long-term active archive solution
- Safeguard 2PB of content for monetization and repurposing
- Support long-term (30-50 years) asset preservation architecture

Archive Solution:

- Multi-frame ESL G3 LTO-6 tape library with high density cabinets for long term archive storage on-site
- LTFS for asset preservation and portability

Click here for full case study
HP is the leader in Tape

- HP is the number one LTO tape drive vendor with **39%** share
- HP is the number one Tape Autoloader vendor with **43%** share.
- HP is the number one Tape Library vendor (1-100 slots) with **25%** share
- HP is the number one LTO Tape Media vendor with **31%** share
- HP manufactures more tape drives than any other vendor

Source: IDC Tape Market Report Q4 CY13
SCCG Tape Media Tracker Q1 CY14

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HP StoreEver Tape wins customer vote

**HP ESL G3 Voted Best Quality Enterprise Tape Library**

The HP StoreEver ESL G3 Tape Library notched the fourth best winning score ever in enterprise awards, scoring the highest marks in four of the five rating categories, ahead of the Quantum Scalar i6K, IBM TS3500 and Oracle SL3000/8500 enterprise class libraries.

**HP MSL Voted Best Quality Mid-Range Tape Library**

The HP StoreEver MSL Tape Libraries – including the recently launched MSL6480 Tape Library – won top spot for quality in the mid-range category, ahead of the Dell PowerVault, IBM TS3100, Oracle SL150, and Quantum Scalar i40/i80 mid-range libraries.
For Further Information

www.hp.com/go/storeever

www.hp.com/go/ltfs
Thank you