One Petabyte and Beyond: Reinventing Storage for Rapid Data Growth

Steve Phillips
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Avnet Overview

Fast Facts
• Headquartered in Phoenix, AZ
• 100,000 customers
• 82 acquisitions since 1991
• 17,000+ employees worldwide

An Industry Leader
• Named *Fortune’s* “Most Admired Companies” for technology distribution: 2009 – 2012
• #108 on the 2012 *Fortune* 500 (U.S.)
• #414 on the 2012 *Fortune* Global 500
Avnet from an IT perspective

**THE TEAM**
- Global team
- 650 full time IT staff, 150 contractors
- 8 major IT locations worldwide

**THE TASK**
- Mature industry with low margins
- IT more than a utility
- Must create value
- Operational reliability is key
- IT leaders: business first, tech second
Last year WE cracked the 1 zettabyte barrier for the first time!

1.2 ZETTABYTES OF INFORMATION CREATED AND REPLICATED IN 2010

2009
2008
1.8 ZETTABYTES

(1.8 trillion gigabytes) of information will be created and replicated in 2011 and growing fast (it has grown by a factor of 9 in just five years)
While 75% of the information in the digital universe is generated by individuals, enterprises have some liability for 80% of information in the digital universe at some point in its digital life.
25 Years of Change in Avnet’s Data Center

<table>
<thead>
<tr>
<th></th>
<th>1987</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenues</strong></td>
<td>$1.5 Billion</td>
<td>$25.7 Billion</td>
</tr>
<tr>
<td><strong>Employees</strong></td>
<td>~ 9,500</td>
<td>~ 17,000</td>
</tr>
<tr>
<td><strong># of data center computers</strong></td>
<td>5</td>
<td>1,700</td>
</tr>
<tr>
<td><strong>Data storage</strong></td>
<td>&lt;1 terabyte</td>
<td>&gt;1,000 terabytes</td>
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Limitations of 2010 Avnet Solution

- Existing tape silo reaching end of life.
- Tape management a growing logistics concern.
- Tape-based backups taking too long.
- Less viable continuity strategy as data volumes increased.
- Not able to backup laptop PCs, especially Outlook .PST files.
New Storage Tape Library

- Handles up to 1.1 Exabytes at maximum compression.
- Can be chained to up to 32 other tape libraries.
- Allows changes & additions without taking offline.
- Mixed-media support.
- State-of-the-art robotics.
- 50% less floorspace & reduced cooling & power compared to previous tape silo.
Virtual Tape Library

- Looks like tape to backup jobs that write to tape.
- No manual cutover to write to disk needed.
- Much higher backup speeds and capacity than tape.
- Technology is mature.
Workforce Mobility & BYOD Trends

- More powerful phones
- Free WiFi everywhere
- Real-time access anywhere, anytime
- Broader wireless broadband
- Multiple file copies across multiple devices
- The tablet explosion
Server-side de-duping solution

- Fast, in-line deduplication (up to 8.1 Tb/hour).
- 10X – 30X reduction in backup file size.
- Up to 14.2 petabytes of long-term storage & backup available.
- Replicates up to 270 sites.
Client-side de-duping solution

- Client-side de-duplication device.
- Reduces backup times by 90%.
- Reduces network bandwidth needs by 95%.
- Data encryption at rest and in flight.
- Immediate data recovery via one-step backup.
- Allows Avnet to backup company laptops & Outlook PST files.
Backup & Networking

- Onsite backup recovery disk installed.
- Mirrors to offsite DR node.
- Responds in minutes.

- 10-Gigabyte Ethernet.
- Deployed in data center.
- 10X speed advantage.
<table>
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<tr>
<th>Current vs. Proposed Solution</th>
<th>2010</th>
<th>Proposed</th>
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<tbody>
<tr>
<td>Tape library</td>
<td>End-of-life</td>
<td>Next gen</td>
</tr>
<tr>
<td>Backup media format</td>
<td>Tape</td>
<td>Virtual Tape</td>
</tr>
<tr>
<td>De-duplication device(s)</td>
<td>N/A</td>
<td>One server side, one client side</td>
</tr>
<tr>
<td>DR backup option</td>
<td>Offsite tape</td>
<td>Onsite disk</td>
</tr>
<tr>
<td>Networking bandwidth</td>
<td>1 Gigabit/sec.</td>
<td>10 Gigabits/sec.</td>
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</tbody>
</table>
Benefits to Date

1. De-duping reduces backup size by 90%.
2. Able to backup laptops & Outlook PST files for the first time.
3. Most backups < 1 hour, full backups ~30 hours.
4. 50,000 less tapes used, 1,000 man-hours saved.
5. Business continuity plan reacts in minutes.
6. Gained 440 sf, cut $10,000/year on power.
Final Thoughts & Takeaways

1. Consider a de-duping solution if you haven’t already.

2. Enroll in Tapers Anonymous.

3. Be proactive about BYOD planning & policies.

4. Embrace the new data storage reality.

5. Don’t rely on the business case to sell itself.
Q & A

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