

Storage Decisions

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Creating RFPs for Tape Libraries

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How will you use tape?

- **Data Protection: Backup**
- **Space management**
 - Move infrequently accessed data to tape
- **Archival storage**
 - Short term: Keep data for the duration of a project.
 - Long term: Keep e-mails for regulatory compliance.

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Sizing the backup environment

- **Depends on the backup software**
 - Full backups on weekend; incrementals during the week
 - Full backups once; incrementals forever
 - Capacity and performance needs will vary.
- **How many generations of backup do you want to keep in the library?**

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Sizing the archive environment

- **E-mail**
 - How long do you need to retain data?
 - Average worker gets about 50 e-mails a day
 - Small e-mail is 30 KB
 - $30\text{KB} \times 50 \text{ a day} = 1.5 \text{ MB a day or } 300 \text{ MB a year}$
 - Attachments such as Word or PowerPoint dramatically increase size.
 - Consider content reduction software

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How Much Automation Do You Need?

- Can tapes be loaded/unloaded by an operator?
- Do you want to be "operator free"?
- Do all tapes have to be in the library?
- **Autoloaders:** Process cartridges serially
- **Libraries:** Process many cartridges randomly
 - Monolithic design
 - Modular design

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Do you already have tape libraries?

- **No:** Then you have lots of options
- **Yes:** Inventory the current environment
 - Expand on current environment, or
 - Replace it

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Inventory Current Environment

- **Number and types of tape drives**
 - Calculate *theoretical* maximum throughput
 - Number of drives x drive throughput
- **Number and types of cartridges**
 - Calculate *theoretical* maximum capacity
 - Number of cartridges x capacity
- **Current and planned operating systems**
- **Backup software in use**

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Tape Drive Considerations

- **Drive Performance**
 - Different drives for different applications
- **Connectivity options**
 - Fibre Channel, SCSI, FICON, ESCON
- **Compression**
- **Upgrades available**
- **Reliability of drives**
- **Error reporting**
- **Roadmap**

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Tape Cartridge Requirements

- **Long-term retention**
 - Retention duration
 - Does vendor support compatible for media 1 - 2 generations back?
 - Do you require WORM technology?

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Tape Cartridge Requirements

- **Number of copies of data required**
- **DR copy sent offsite**
 - Manually
 - Electronic vaulting
- **Media conversion required**
 - Use utility programs or professional services.
 - Convert to new media as old media expires.
 - Length of the conversion

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Tape Library Considerations

- **Number and types of drives supported**
- **Throughput of library**
 - **Robotic Performance**
 - **Drive performance**
 - **Connectivity options**
- **Partitioning of library**

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Tape Library Considerations, II

- **Number of slots available**
- **Mail slots**
 - **Number of cartridges that can be entered/ejected at one time**
- **Scalability**
- **Roadmap**

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Tape library considerations

- **Physical environment**
 - Electrical
 - Cooling
 - Footprint
- **Installation costs**
- **Reliability and redundancy**
- **Error reporting**
- **Maintenance**
 - Ease of service: Hot swap

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What about Virtual Tape?

- **Self-contained systems**
 - Disk systems integrated with tape drives and libraries
 - Improve cartridge utilization and performance
 - Require fewer tape drives
 - Vendors have tools to size configuration

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Virtual Tape

- **Disk-to-disk backup (D2D)**
 - Some vendors have libraries and D2D systems.
 - Is backup software supported?
 - How flexible is the configuration?
 - How scalable is it?
 - How easy is it to copy volumes to tape cartridges?
 - What about performance?

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Common Mistakes

- **Underestimate growth requirements.**
 - Make sure the solution will scale.
- **Underestimate conversion costs and time required.**
 - Include costs in RFP.
- **Underestimate performance and capacity requirements.**
 - Know your environment.

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Common Mistakes, II

- **Not plan for future requirements**
 - Remote vaulting
- **Not include cost for additional software required**
 - Include costs in RFP

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Questions?

More details on worksheet

Contact information:

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Ms. McAdam will be available at the
Ask-the-Experts booth in the Exhibit Hall:
Monday 5-6 PM
