Backup and Recovery at Dell
lessons learned

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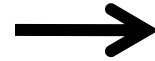
PURE **DELL**

Introduction

- **Simple is good**

- **First adopters work out the bugs**

- **Understanding the technology**

- **Getting the right people involved**

- **Studies can misrepresent the truth**

- **Know your environment**

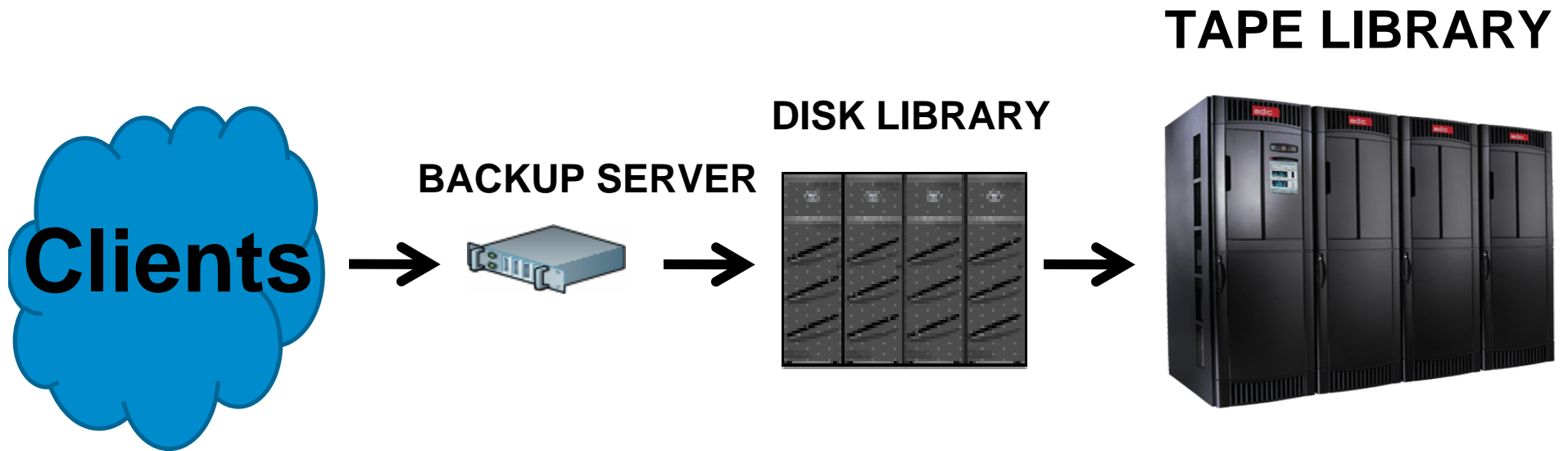**Dell** | Information Technology

Simple is good

TAPE LIBRARY

BACKUP SERVER

Clients

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Simple is good

Clients → **BACKUP SERVER** → **DISK LIBRARY** → **TAPE LIBRARY**

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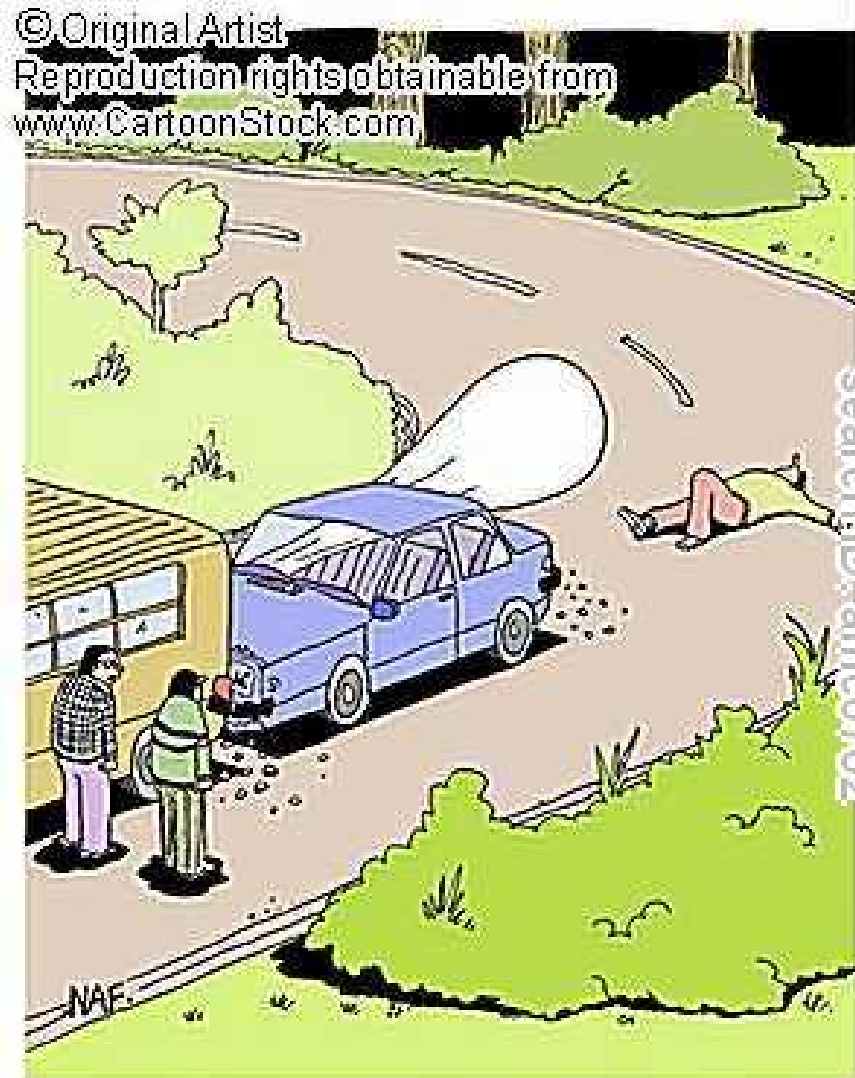
First adopters of new technologies work out the bugs

First adopters of new technologies work out the bugs

- Incident reports double

- Mean time to repair skyrockets

- Corrupt virtual tapes

- Failing exports and imports

- Capacity exceeded

- Engine failovers

- Massive restore failures

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First adopters of new technologies work out the bugs

Three things are certain:
Death, taxes, and lost data.
Guess which has occurred.

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First adopters of new technologies work out the bugs

Disk libraries launch denial of service attack

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First adopters of new technologies work out the bugs

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Understand the technology

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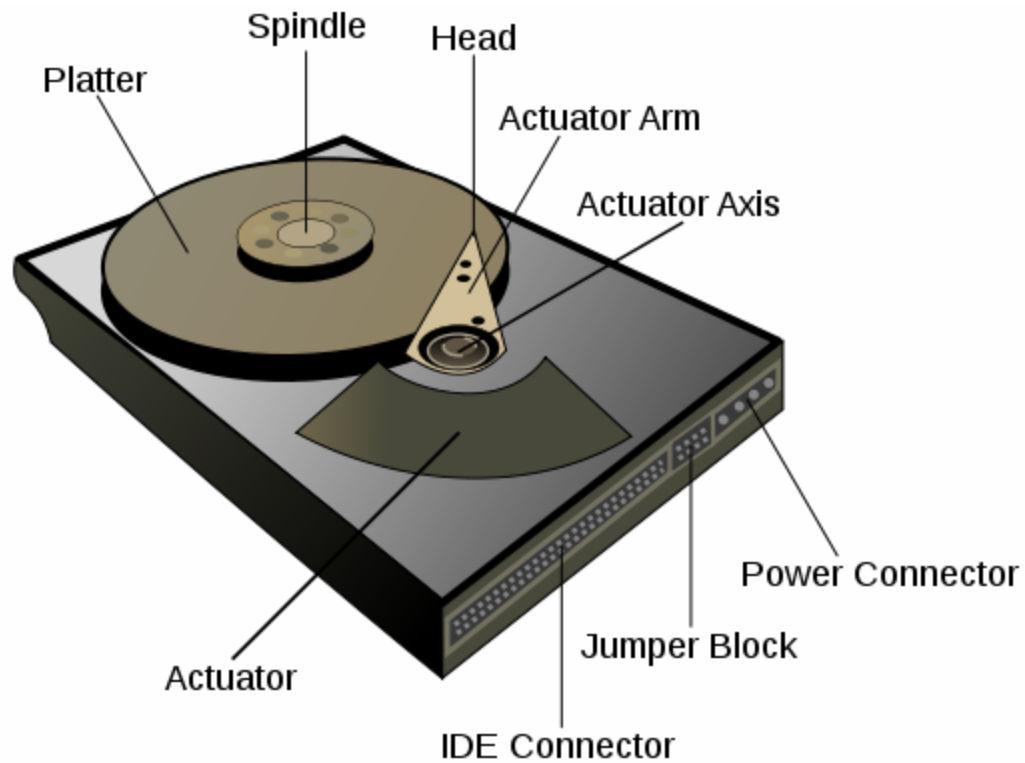
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Get the right people involved

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Datasheets and studies can misrepresent the truth

- Disk is faster than old tape technology

- Disk is faster with small datasets

- Disk is faster with interleaved restores

- Disk is different than tape

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Know your environment

- **Backup and recovery bottlenecks**

  - **Client data type**

  - **Client backup medium**

  - **Client-side compression**

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Know your environment

- **Improve backup and recovery performance.**

  - **Class 3 data**

  - **Small files**

  - **2TB LUNS**

  - **Interleaving**

- **Recommendation: back up over gigE to tape.**

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Know your environment

- **Improve backup and recovery performance.**

  - **Class 1 data**

  - **1TB dataset**

  - **Oracle database**

  - **Interleaving**

  - **100Mb backup medium**

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Know your environment

Restore speeds for 1TB, interleaved Oracle database

Medium	Tape Library	Disk Library
100Mb	36 hours	28 hours
1000Mb	5 hours	4 hours
Fibre	1.3 hours	1 hour

Recommendation: backup over gigE or fibre to disk.

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