

Is it safe?

The business impact  
of data protection.

**Bruce Master  
IBM  
LTO Program**



Linear Tape-Open, LTO, LTO Logo, Ultrium and Ultrium Logo are trademarks of HP, IBM and Quantum in the US and other countries. Other symbols may be trademarks of other companies.

Gartner Summit-Orlando-June, 2007



# Agenda

- Management Concerns
- Impact of a Security Breach
- Data Encryption Methods
- LTO 4 Encryption
- What does LTO 4 technology offer?
- Question and Answer Session
- Customer case study



# Management Concerns

- Many government agencies are requiring disclosure of security breaches
  - 32 states have security breach similar legislation
    - Source: [www.Privacyrights.org](http://www.Privacyrights.org)
  - Similar United States legislation has been proposed
    - Source: [www.epic.org/privacy/bill\\_track.html](http://www.epic.org/privacy/bill_track.html)
- Industry organizations are also increasing scrutiny of security procedures.
  - Source: Payment Card Industry Security Audit Procedures Version 1
- Over 150 million consumers have been notified of potential security breaches regarding personal information since 2/2005
  - Source: [www.Privacyrights.org](http://www.Privacyrights.org)

Protection of consumer information has become a significant business issue

# Security Breaches Can Be Costly

- Direct cost of mitigating a security breach
  - Analyst firm estimates the cost per lost record ranges from \$25 to \$150\*
- Fines and Penalties
  - Security breach costs UK Financial institution nearly £1 million
- Lost consumer confidence
  - Publicly held companies also suffer a 5% stock drop in the wake of such a disclosure\*



Source: Industry analyst. Security study.

Gartner Summit-Orlando-June, 2007



# Management Concerns continued

---

## Compounding the problem:

- **Data growth up to 100% yearly**
- **Over 160B gigabytes created last year**
- **Data archive and disaster recovery are paramount**
- **Managing TCO including energy costs a must**

*“Estimate that for every dollar spent on computer hardware, another 50 cents is spent on energy.”\**



Source: Industry analyst.

Gartner Summit-Orlando-June, 2007

# Need a better way to secure your data?



# Best Practices in Data Security\*

- SAN - secure against unauthorized access
  - LUN Masking
  - Zoning
  - Port binding
  - Virtual or logical SANs
  - Fibre Channel Security Protocol (FCSP)
- Data in flight – encrypt all data leaving the network
- Data at rest – encrypt tape data that will be transported off-site

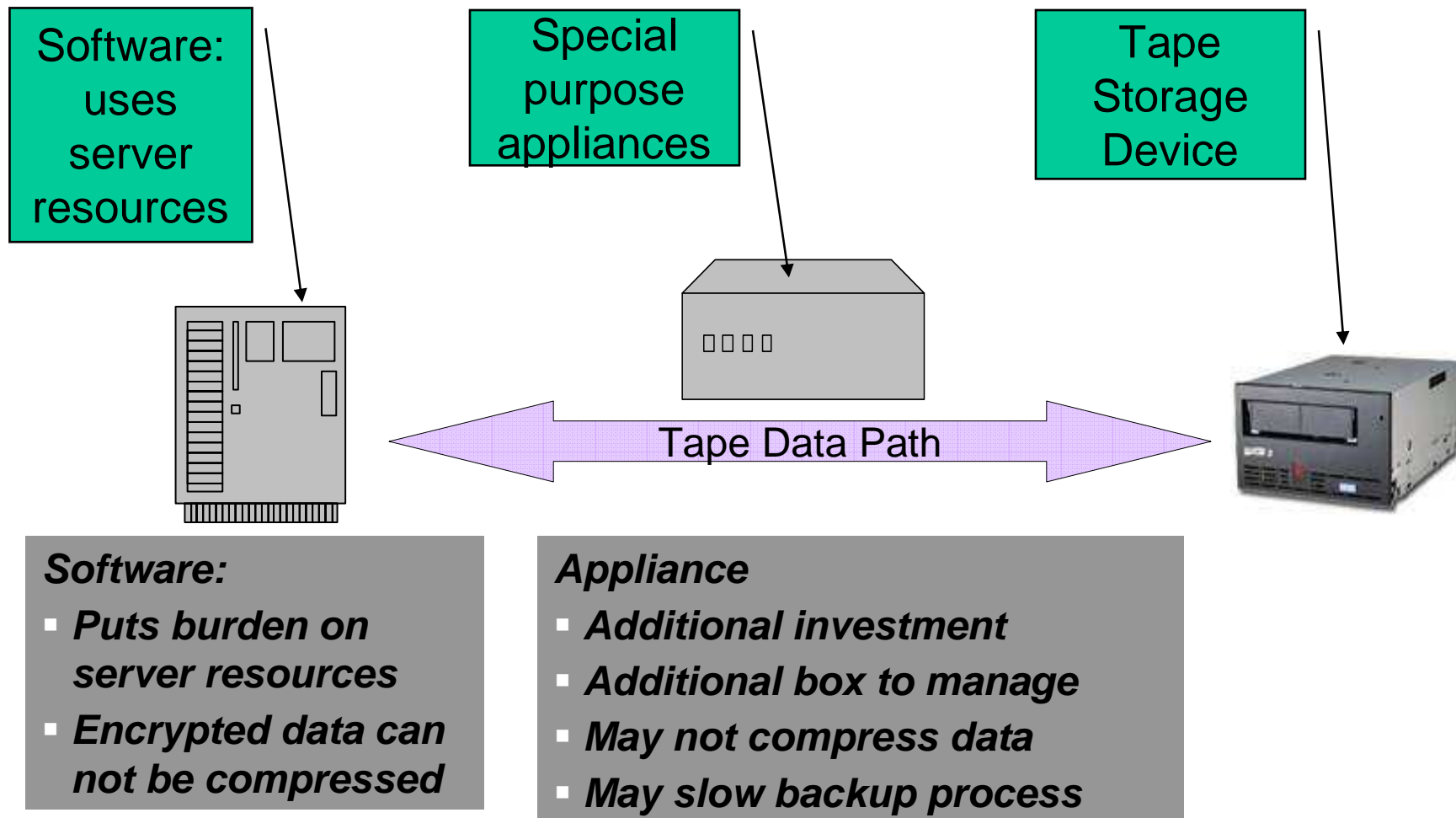


Source: Industry analyst.

Gartner Summit-Orlando-June, 2007



# Data Security - Encryption Methods





# Tape Encryption – The Best Option

- **High performance**

- Compress the data then encrypt
- Encryption at tape drive speeds
- Off-loads encryption task from server



- **Cost effective**

- Leverages existing tape automation infrastructure
- Can eliminate need for encryption appliances

# LTO Ultrium 4 Program Standards Specification

- AES-256 Bit Symmetric Data Key is used to encrypt data
- Supports T10 SSC-3 Standards based Security Protocol Commands
- Symmetric Data Key is stored in key store



# LTO Ultrium 4 Can Help Secure Your Data

## Tape Drive Encryption Process Overview



1. AES 256 bit encryption data key provided to tape drive
2. Data is compressed then written to tape cartridge in encrypted form
3. Encrypted data helps protect sensitive information
4. Key management is “key” and is offered by system suppliers

# LTO 4 – Speed, Capacity and Choice

- **Data rate up to 240MB per second data rate\* (120MB/sec native)**
  - Enhanced productivity – up to 864GB\* per hour per drive
  - Improved batch window management
    - A four drive library could perform up to 3.5TB\* per hour.
- **Cartridge capacity up to 1.6TB\* (800GB native)**
  - Holds contents of up to eight LTO 1 cartridges; 4 LTO 2
  - Equivalent to storing up to 300 DVD movies \*
  - Uses standard & WORM cartridges to help address compliance matters
  - Can read back 2 gens and write back 1 gen to help ease implementation and protect investments
- **Multiple Providers**
  - Choice
  - Interchange



# LTO 4 Can Provide Substantial Benefits

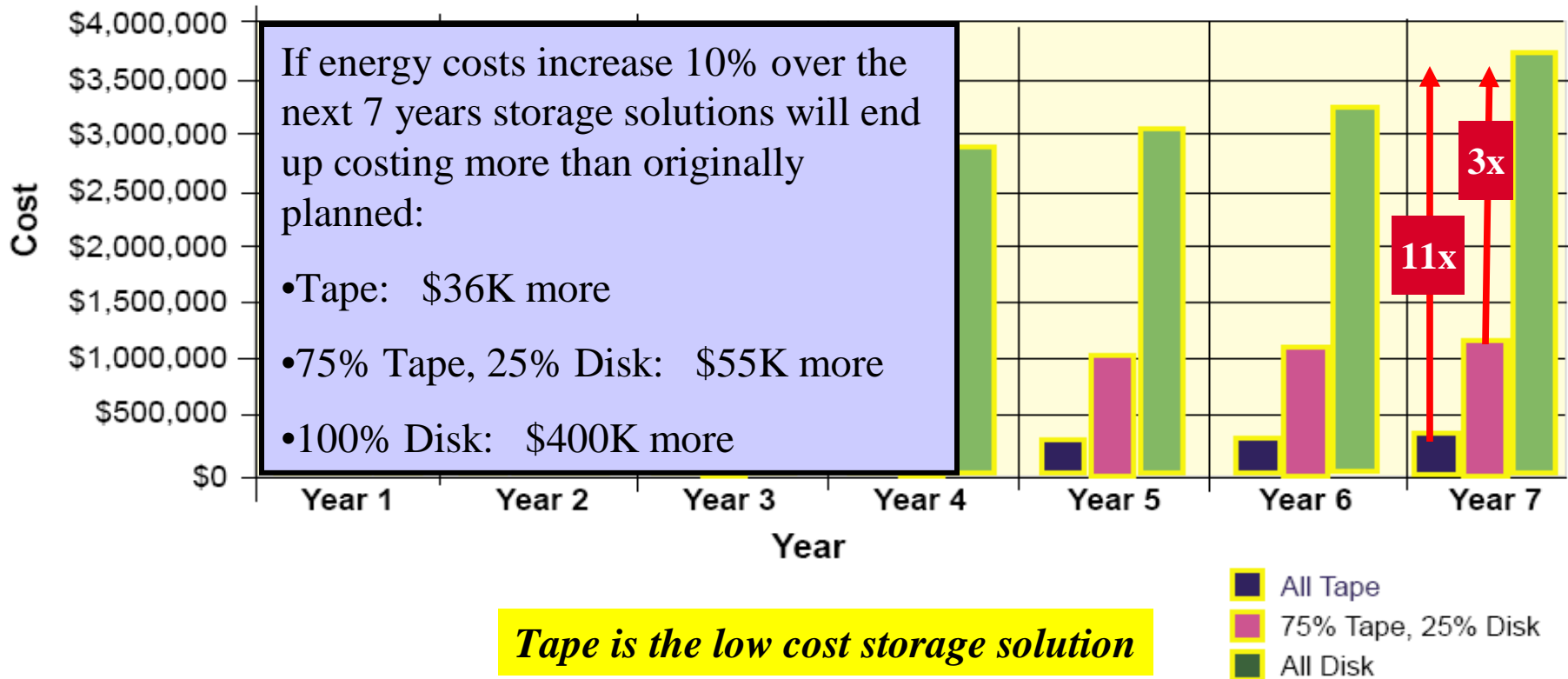
## – Can help you:

- Reduce space consumption
- Address storage consolidation
- Enhance library utilization
- Reduce tape handling
- Protect investments in tape technology
- Protect sensitive data with encryption at an affordable cost
- Address TCO and energy concerns



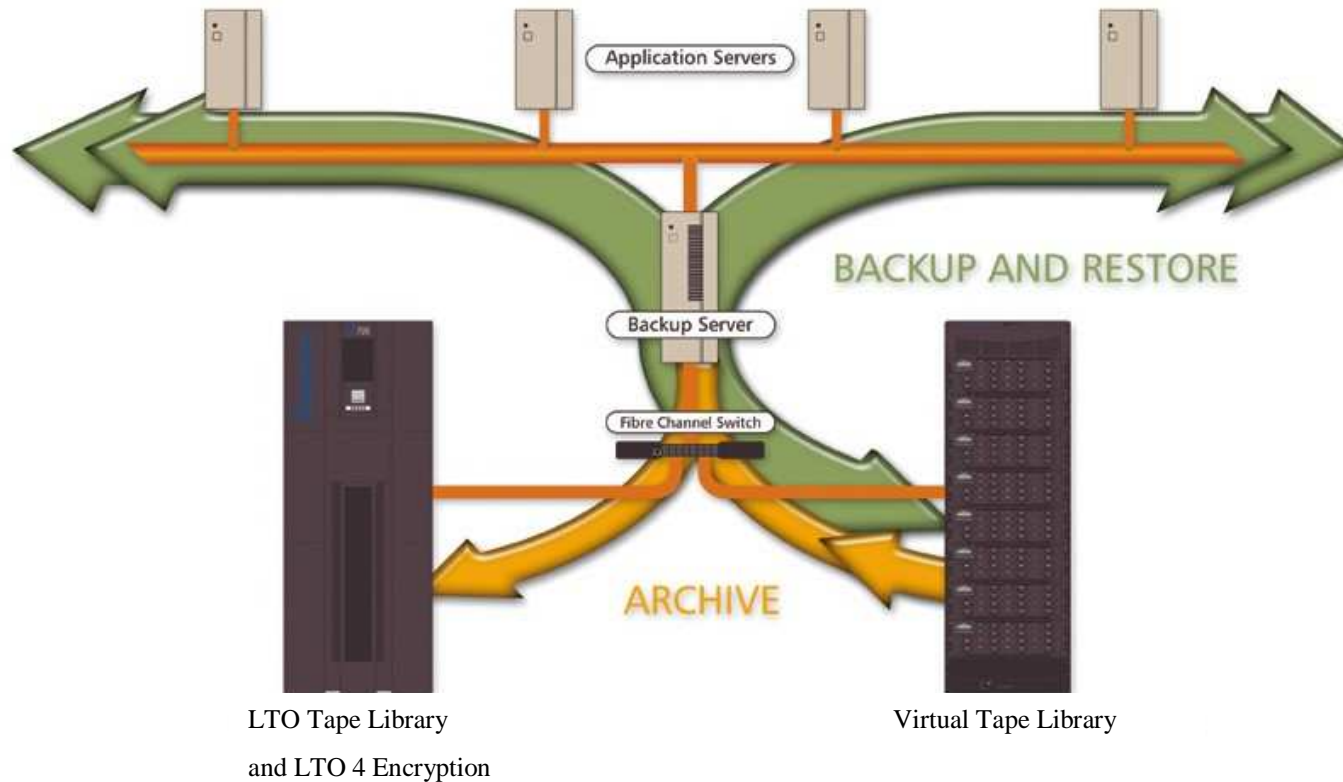
# LTO3 Tape Library vs. SATA Disk System TCO

Cumulative Cost of All Tape, 75% Tape - 25% Disk, and All Disk\*



\* Source: Data Mobility, "Is tape really cheaper than disk?" [www.ultrium.com/whitepaper](http://www.ultrium.com/whitepaper)

# Tape and Disk are Complimentary for Optimal Performance, Archive, Data Protection and TCO



Customers may require fast access to data as well as data protection and low costs:  
A tiered hybrid solution that integrates disk and tape may address both.

# Upgrade to LTO 4 Technology

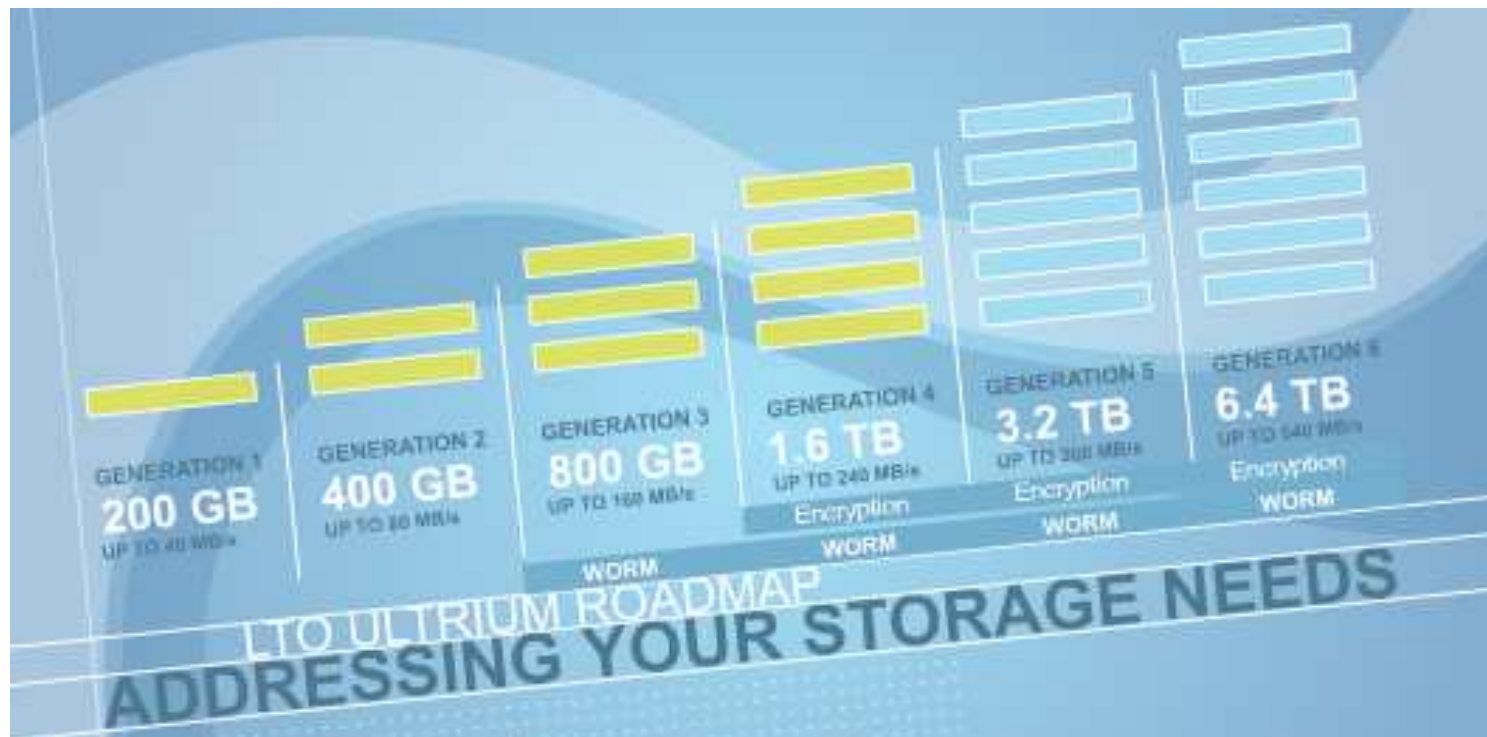
- **LTO 4 can dramatically increase your GB per slot**
  - Up to 2X over LTO 3
  - Up to 4X over LTO 2
  - Helps avoid library expansion costs
  - Protects current library investment
- **LTO 4 can improve productivity**
  - Up to 4X the speed of LTO 2
  - Up to 1.5X the speed of LTO 3
  - Can help you do more with less
- **LTO 4 can help secure your sensitive data**
  - Can use tape drive hardware data encryption
  - Helps avoid security breach recovery costs and PR problems
- **LTO 4 can read back 2 Gen's, write back 1 Gen**
  - Eases implementation
  - Helps to protect technology investments





# A Solid Plan for Addressing Storage Needs

- LTO Technology Roadmap



The roadmap represents intentions and goals only and is subject to change without notice.

# LTO Marketplace Acceptance is High

Nearly 500,000 LTO drives shipped in 2006  
90% shipment share of midrange tape drive segment\*

Over 2M LTO drive shipments



Over 75M LTO cartridge shipments

*Reliable Data Archive and Protection*

\*Based on 2006 shipments in a 2007 analyst report

Gartner Summit-Orlando-June, 2007



# Address Data Security Concerns

- LTO 4 Hardware Encryption
  - Compresses the data and then,
  - Encrypts at drive speeds
  - Helps avoid burden on server
  - Helps remove need for encryption appliance
- Helps to avoid costly security breaches
- Helps to protect valuable image and customer relations
- Can provide low TCO....High Data Protection



Thank You!

# LTO Ultrium Technology

*Helping to reduce storage  
costs and protect data!*

Go to [ultrium.com](http://ultrium.com)

*Visit the LTO booth and register to win a  
Ninetendo Wii Game Console and Game!*



NEXT....

at 4:50pm in this room

User Case Study



## *Rock Solid Disaster Recovery Strategies*

**Dick Cosby**

**System Administrator**



# Question and Answer Session

---

