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# Lunch and Learn: Modernize Your Data Protection Architecture with Multiple Tiers of Storage

Session 17174, 12:30pm, Cedar

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# A New Data Protection Solution is Needed

## 63% Share

EMC Data Protection Market Share<sup>1</sup>

## Broken

#1 Top IT priority:

Improve data backup and recovery<sup>2</sup>

<sup>1</sup>IDC Worldwide Purpose Built Backup Appliance Tracker , <sup>2</sup>ESG Research Report, IT Spending Intentions Survey



“If a hacker with a grudge managed to break into CERN’s data center, he could delete all 50 petabytes of the disk-based data in minutes.”

— *Alberto Pace, Head of Data Storage, CERN, explaining why they employ a second tier of data protection*

*The Economist*

<http://www.economist.com/news/technology-quarterly/21590758-information-storage-60-year-old-technology-offers-solution-modern>

# The Broken State of Data Protection

## Oracle Data Protection Solutions Address These Concerns

### Cost

- Acquisition
- Integration
- Scaling
- Maintenance
- Staffing

### Complexity

- Effort required to support:
- Existing Systems
  - Virtualization
  - Mobile Devices

### Capability

- Meet SLA's for:
- Backup
  - Restore
  - Availability
  - Performance

*Source: Best Practices for Repairing the Broken State of Backup, Dave Russell, Gartner*

# Defining Data Protection and Archive

## The Most Efficient Data Protection Utilizes Proper Archiving

### Data Protection

- **Restore** lost or corrupted content
  - *Business Continuity* – day-to-day restores of applications, user files, emails, etc
  - *Disaster Recovery* – massive restores of disk arrays, server nodes, or entire data centers

### Archive

- **Access** strategic content
  - Permanent record of fixed content
  - Allows for collaboration and global sharing of archive data

**Unfortunately, the most popular archive architecture is to keep old backups!<sup>1</sup>**

<sup>1</sup> IDC Survey: Managing and Protecting Explosive Structured and Unstructured Data Growth

# Too Much Data is Being Backed Up



“Up to 70% of the capacity of every disk currently deployed could be reclaimed through the proper application of data hygiene and archiving...”

- Jon Toigo  
Search CIO-Midmarket  
Storage Tiering and Storage Reclamation Reduces Budget Strain

# Oracle's Simple Approach

# 1

- Only backup what you need...  
**Archive** the rest

# 2

- Engineer your solution for  
**Disaster Recovery** and test regularly



# How Can Archiving Help Data Protection?

## **Cost**

Save up to 80% by using the right technology for the job

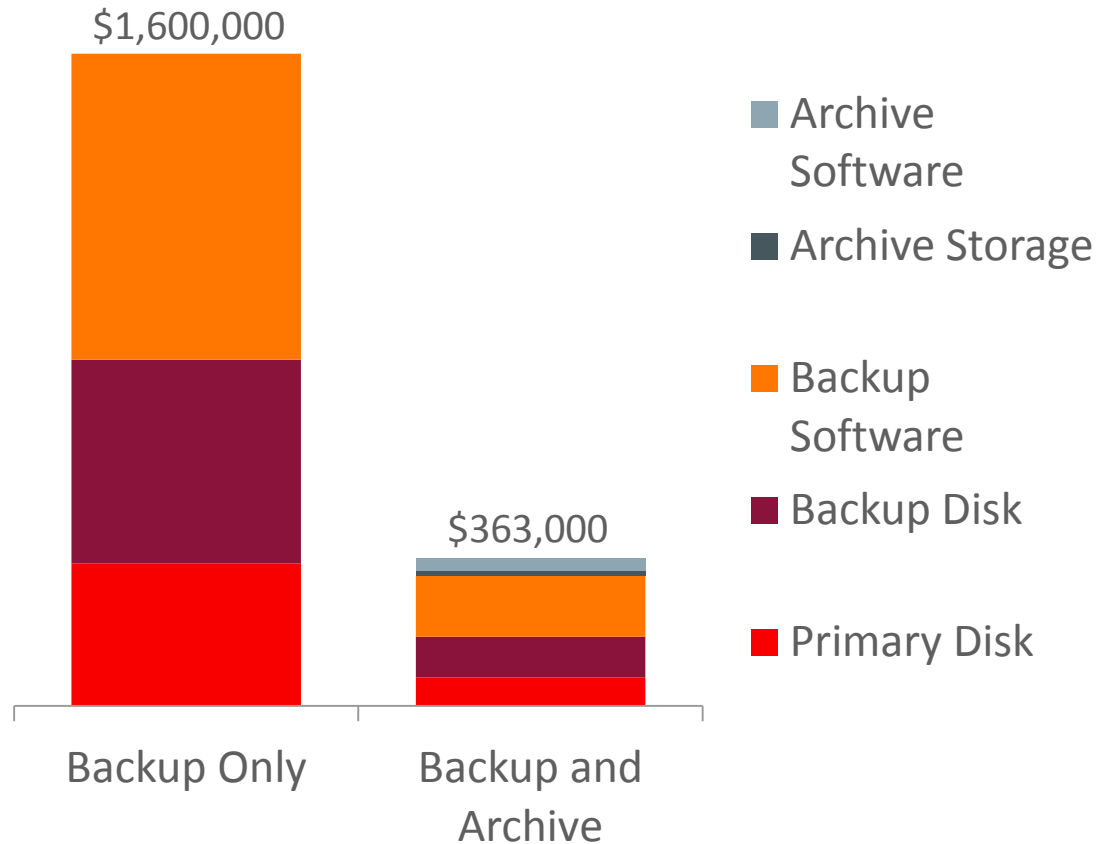
## **Complexity**

Ease administrative burden and reduce backups

## **Capability**

Improve backup performance

# Save 77% by Archiving Rarely Used Data



**Backup software savings alone,**  
pays for the entire archive solution

Save **5X** on Software

Save **5X** on Primary Disk

Save **5X** on Backup Disk

# Comprehensive Data Protection

Requires Both Business Continuity and Disaster Recovery



## 1. Business Continuity

Protection against instances of **data** corruption or loss



## 2. Disaster Recovery

Protection against partial or complete **data center** loss or destruction

# Business Continuity

## A Second Tier Adds Security and Lowers Cost of First Tier

### First Line of Defense

- Individual and small files may backup and restore faster to meet RTO targets
- Snapshots and CDP can provide more restore granularity for RPO targets
- Data that deduplicates well
- Fast replication of deduplicated data

### Second Line of Defense

- Offline copy to prevent logical corruption that could be quickly replicated to other systems
- Lowest cost storage tier, also reduces amount of first tier storage required
- Infrequently accessed data
- Data that does not deduplicate well
- Secure and lasting storage for sensitive data
- Faster and more predictable restoration of large data sets



# Many Vendors Don't Address Disaster Recovery

# Disaster Recovery Requires Two Lines of Defense

## First Line of Defense

- A remote site live copy of data through replication
- Automated failover system for quick recovery
- Fast replication of deduplicated data

## Last Line of Defense

- Protection from:
  - **Human error:** operator error, file deletion
  - **Hardware failure:** disk crashes
  - **Environmental disaster:** fire, flood, earthquake
  - **Deliberate sabotage:** hackers, viruses
- Offsite, offline storage
- Fast and predictable restores of large data sets
- Lowest cost storage tier
- Easily portable

# Cyber Attack Without a Last Line of Defense: Distribute IT

## 4800 Australian Businesses Wiped Out in 30 Minutes

“...not only was the production data erased during the attack, but also key backups, snapshots and other information...” the company said in its final blog post.

*The Register*  
*June 21, 2011*



The screenshot shows the ABC News website interface. At the top, there's a navigation bar with 'ABC' logo and links for Radio, TV, Shop, News, Sport, Local, Children, Science, Environment, and more Topics. Below this is a 'NEWS' banner with a play button icon. A secondary navigation bar includes 'Just In', 'Australia', 'World', 'Business', 'Sport', 'Analysis & Opinion', 'Fact Check', and 'More'. The main content area is titled 'Business' and features a video player with a play button. The video title is 'Cyber crime wipes out thriving internet business' and the duration is 4:41. Below the video are social media sharing options: Print, Email, Facebook, Twitter, and More. The article headline reads 'Cyber crime wipes out millions of dollars and a thriving internet business', updated on Mon 20 May 2013, 10:13pm AEST. The text states: 'Distribute IT was a small web-hosting and domain registry business which had captured a sizeable chunk of the Australian market. But two years ago its systems were hacked for no apparent reason, causing millions of dollars in losses and years of anguish for the business's owners and staff.'

ABC, The Business, story aired May 20, 2013

<http://www.abc.net.au/news/2013-05-20/cyber-crime-wipes-out-millions-of-dollars-and-a/4701836?section=business>



# Offsite Data Storage: Fujieda, Japan



Many local Japanese governments lost valuable information as a result of the 2011 Tsunami.

The city of Fujieda now employs a complete disaster recovery strategy, and regularly backs up data on a second tier, stored 1,700 km away.

Tape Makes a Comeback, *NHK World*

<http://www3.nhk.or.jp/nhkworld/newsline/201312090922.html>



The background of the slide is a grayscale aerial photograph of a dense urban skyline, featuring numerous skyscrapers and buildings. A solid red horizontal banner is positioned across the middle of the image, serving as a background for the main text.

# **Oracle's Data Protection Seamlessly Integrates Disaster Recovery Solutions**

# To Ensure Complete Data Protection Use the “3-2-1 Rule”

Oracle Offers a Complete Data Protection Solution

*Maintain at least...*

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EMC<sup>2</sup>

3	Copies of the Data	✓	✓
2	Different Technologies	✓	
1	Copy Offsite and <b>Offline</b>	✓	

# Recent Network Security Breaches

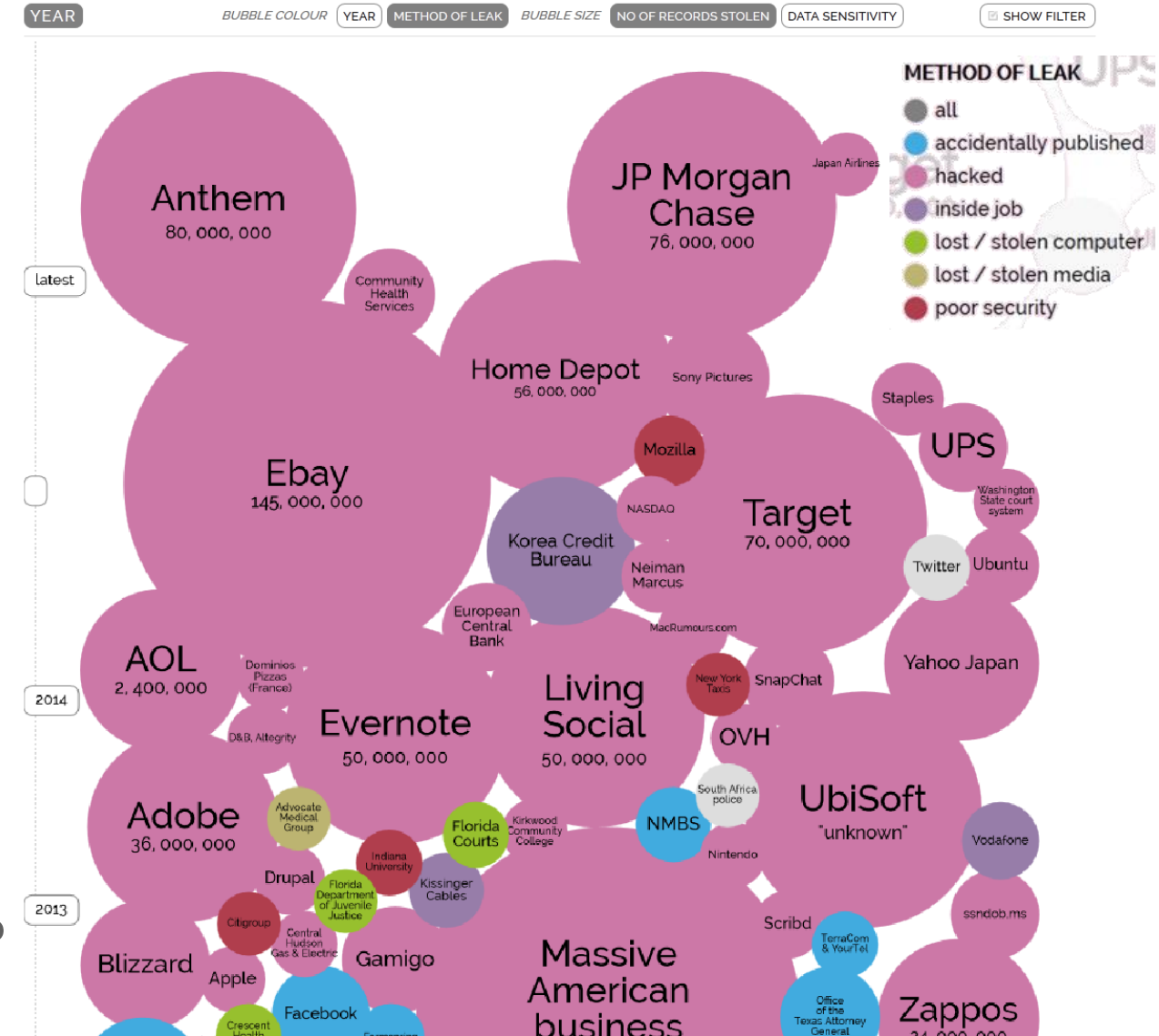
Large corporations are hacked every year, exposing millions of online records.

Would they recover if the records were corrupted or destroyed?

Are your security measures impenetrable?

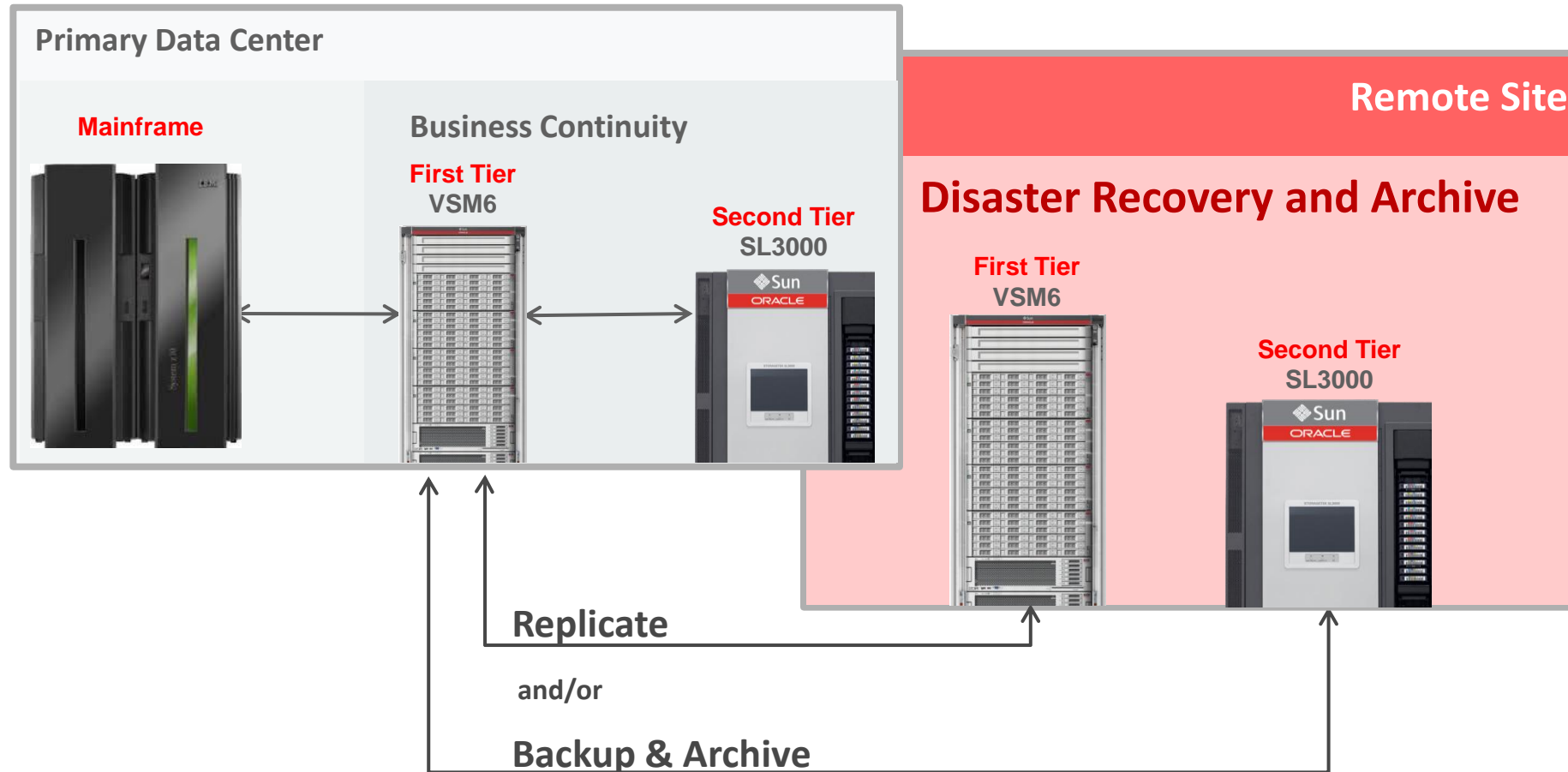
## World's Biggest Data Breaches

Selected losses greater than 30,000 records  
(updated 5th Feb 2015)



<http://www.informationisbeautiful.net/visualizations/worlds-biggest-data-breaches-hacks/>

# Oracle's Complete Data Protection Solution



# Complete and Efficient Data Protection

## StorageTek VSM6: 6th Generation of Proven Virtual Storage for the Mainframe Market

### Economical

- 2-5x less expensive than a single storage tier\*
- Multi-generation support

### Simple

- Easy, policy-driven data management
- Single point of control
- Easy to grow as needed

### Complete

- Complete disaster recovery protection
- .99999 system availability
- Integrated data integrity protocols

\*ESG

# Lowest Total Cost of Ownership

## StorageTek VSM6: 6th Generation of Proven Virtual Storage for the Mainframe Market

### Economical

- Including tape is 2-5x less expensive than pure disk\*
- Reduce total storage capacity requirements through proper archival to tape
- Offloads tape backup processes
- Investment protection: supports multiple generations



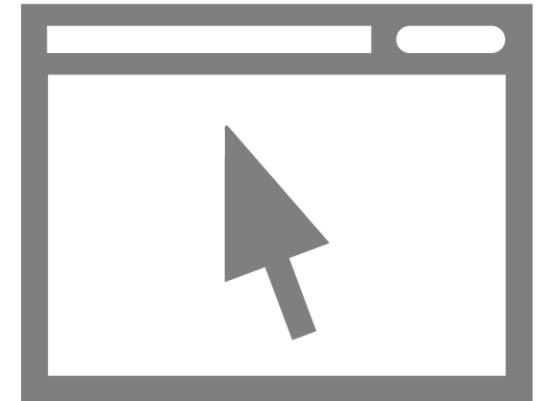
\*ESG

# Simplify Your Data Protection Infrastructure

## StorageTek VSM6: 6th Generation of Proven Virtual Storage for the Mainframe Market

Simple

- Easy, policy-driven data management
- Only architecture supporting multiple tiers under a single point of control
- Easy to grow as needed



# Meet Every SLA and Minimize Risk

## StorageTek VSM6: 6th Generation of Proven Virtual Storage for the Mainframe Market

- Complete disaster recovery protection
- .99999 system availability
- Integrated data integrity protocols
- Offers the most configuration options

Complete







# Economical, Simple, and Complete *Data Protection Solutions*



# **Hardware and Software**

## **Engineered to Work Together**

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