

# Disaster Recovery Evolution - Enter The Cloud -



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facebook



Windows Live™  
Hotmail



bing™

- Facebook
  - 500 million users (Dec 2010)
- Hotmail/Windows live
  - 360 million users (May 2010)
- Yahoo
  - 275 million users (May 2010)
- Twitter
  - 190 million users (June 2010)
- Gmail
  - 170 million users (Feb 2011)
- Skype
  - Over 550 million users (mid 2010)
  - Up to 25 million users *at the same time*

# ... a Generational Technology Shift



## Technology

## Economic

## Business



Centralized compute & storage, thin clients

Optimized for efficiency due to high cost

High upfront costs for hardware and software



PCs and servers for distributed compute, storage, etc.

Optimized for agility due to low cost

Perpetual license for OS and application software



Large DCs, commodity HW, scale-out, devices

Order of magnitude better efficiency and agility

Pay as you go, and only for what you use

# The Big Picture



- In terms of uptake in 2009, the global market size for the cloud was US\$60bn, this is predicted to rise to \$150bn in 2014\*.
- Cloud services growing at a CAGR of 25%\*
- Over the next 5 years, enterprises and government will spend over US\$112b in cloud services – IaaS, PaaS and SaaS\*
- What we are also seeing is a trend in cloud promotion to the CIO and the CEO/CFO

\* Gartner Group 2010

# The numbers - by 2020 computing will process;



- 2 trillion financial transactions\*
- 31 billion devices\*
- 4 billion internet users\*
- 25 million applications\*
- 1.2 Zettabytes of storage<sub>1</sub>

\* Gartner Group 2010

1 Digital Universe 2009 EMC-IDC

1Zt =1000 Exabyte's or  $10^{21}$  bytes

# Too much data to protect... too important to neglect



## DATA GROWTH:

- Total disk storage revenue (new capacity) grew 20.7% in Q2 <sup>1</sup>
- 74% manage more than 50 TBs of storage capacity <sup>2</sup>
- 45-fold data growth by 2020 <sup>3</sup>

## IMPORTANCE:

- 73% rank BC/DR as a top 2010 IT initiative priority <sup>4</sup>
- American Eagle Outfitters retail website outage for 8 days
- Virgin Blue had a 21 hour reservation system outage, massive delays
- Facebook down for 2 ½ hours! OMG!

1 - IDC's Worldwide Quarterly Disk Systems Tracker, Sept. 2010

2 - Gatepoint Research survey of 1,000 respondents, Sept. 2010

3 - IDC's "The Digital Universe Decade – Are You Ready", May 2010

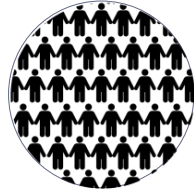
4 - Webbush, Wave Q4, Dec. 2009

# Storage Challenges

## The growth problem

Ever-increasing data

Limited bandwidth



## The performance problem

Limited protection windows

Increased recovery SLAs



## The protection problem

Move data offsite

Secure data offsite

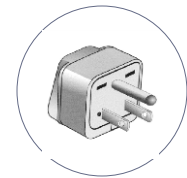
Easy recovery for offsite data



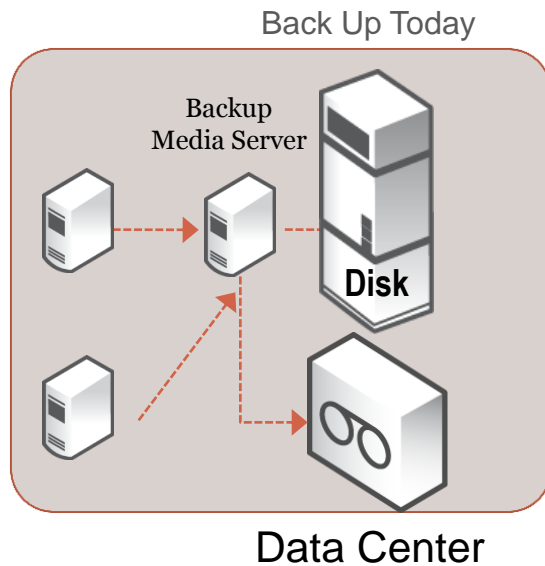
## The integration problem

How do I leverage existing systems?

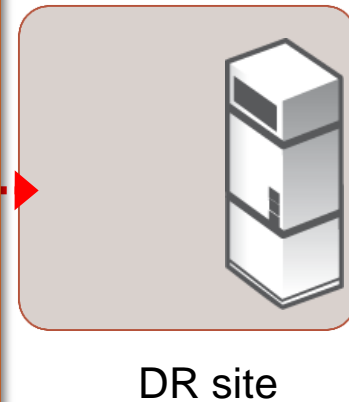
How do I minimize disruption?



# Backup & Disaster Recovery Today



- Slow
- Off-siting is tedious
- Difficult to restore quickly
- Risk of loss, theft in transport
- Media obsolescence



# Tape versus network backup

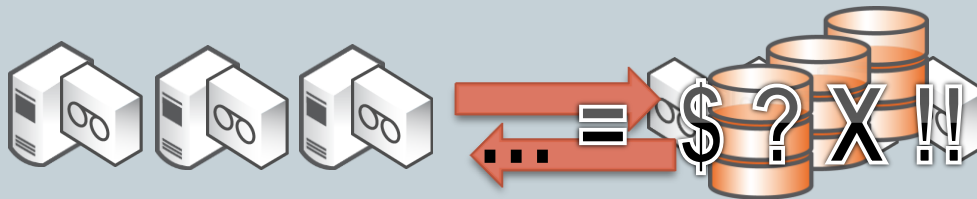


- Local tape backups

- Requires expensive hardware in every office
- Heavy administration
- Low recovery rates
- Increased security risk for lost or stolen tapes

- Eliminate local tape backups

- Reduces costs in every office
- Lights-out administration
- Much more reliable
- Reduced security risk



# Tiering storage versus comprehensive coverage

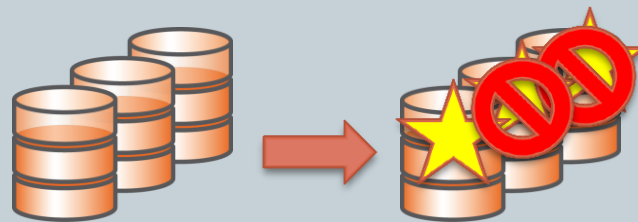


- Protect only “mission critical” data

- Hard to identify
- Changes frequently
- Unclear inter-dependencies
- Limited coverage of enterprise data

- Protect all enterprise data

- Everything is ready to recover
- Go live instantly when you need it



# Disaster Recovery Needs:



- 1) FASTER!!!! - Long recovery times are prohibitive in today's business
- 2) Cheaper!!!! – Can no longer duplicate the corporate headquarters
- 3) Flexible!!! – Elastic Capacity, better business model (Opex)

# Faster! Need to send less data - DEDUPLICATION



- **Normal transfer – NOT deduped**
- **Limited bandwidth**
  - Due to prohibitive costs or capacity availability
  - Constrains maximum throughput
  - Limits rate of backup or replication
- **Deduplicated**
- **Expanded WAN capacity**
  - Adaptive Data Streamlining delivers up to 50X more space
  - Deduplicates redundant data from the WAN
  - Compresses new data for transfer



NOT compression, NOT caching, but the ABSENCE of data - deduplication

# Cheaper – by enabling 100 % utilization of bandwidth pipe



- Unoptimized
- High Latency
  - Lowers throughput over long distances
  - Sometimes congestion causes loss
- Bandwidth under-used
- Optimized
- High throughput
  - Transport Streamlining, MX-TCP, & HS-TCP
  - Tune the network
  - Fill the whole pipe
  - Mitigate loss and retransmission



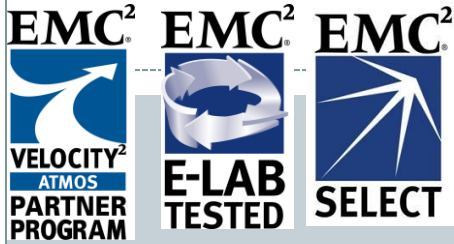
# Balancing traffic between DR and business apps



- Unoptimized
- Traffic contention
  - One network for both DR and normal business operations
  - Congestion
  - Impacts both DR and user applications
- Optimized
  - Prioritized sharing on common network links
    - Quality of Service (QoS)
    - Guarantees performance
    - Gives you control



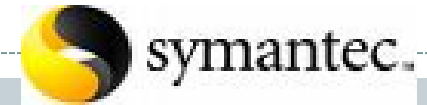
# Selected Technology must be flexible to support many DR Solutions



data domain



Tivoli  
Storage  
Manager



NetBackup  
Backup Exec  
PureDisk



SnapMirror  
SnapVault



XP  
EVA



AT&T Synaptic Storage as a Service

HITACHI  
Inspire the Next

BLUE ARC<sup>®</sup>

vmware<sup>®</sup>



BROCADE 7500



Microsoft



MDS

# Disaster Recovery in the Cloud



# Implementing Cloud Storage



## Benefits

ROI is great - 3x less costly

OpEx vs CapEx

Growth on demand

## Challenges

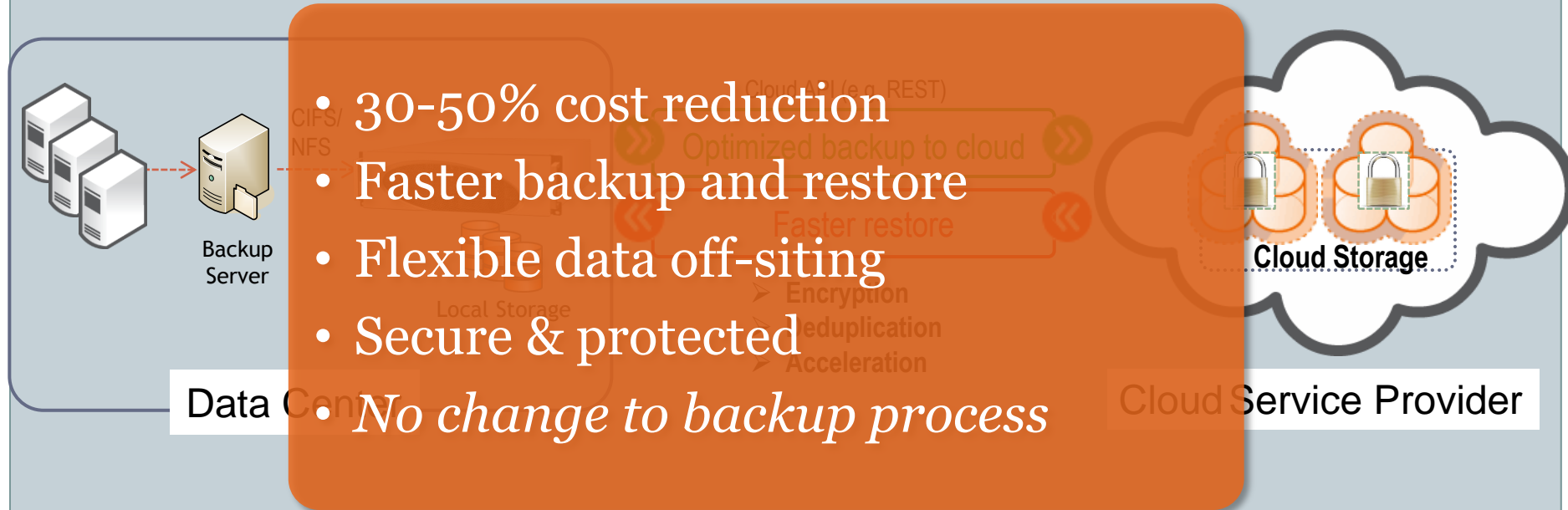
Need to speak "cloud"

Requires changes (tech & process)

Latency kills performance

Security concerns

# Backup Tomorrow – In the Cloud



Single-ended solution – only one box in the DC

# Value Proposition for DR in the Cloud

## Accelerated Backup & Recovery

Shorter Backup Windows  
Quicker Restore Times  
Optimized over the WAN

## Secure data in motion & at rest

Encrypted data onsite,  
inflight and at rest  
256-bit AES , SSLv3  
Easy key management



## Cut Storage Costs

Deduplicate cloud storage  
Use cloud for pay-as-you-consume storage

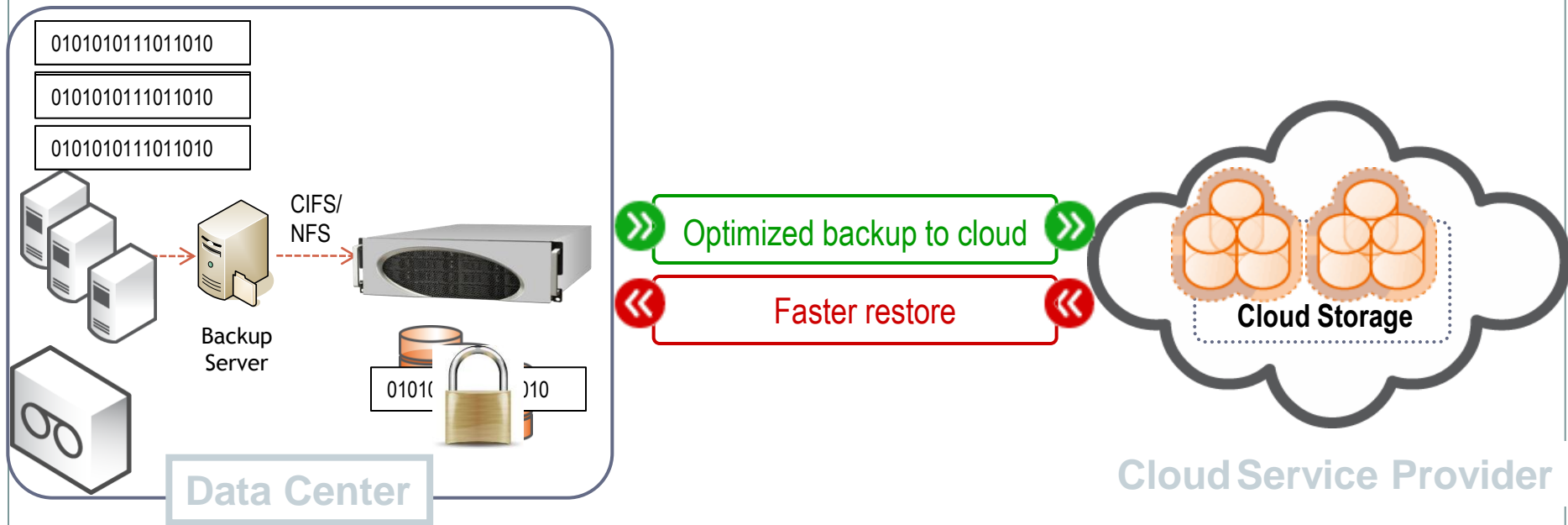


## Simple Deployment & Integration

Works with existing backup  
software  
Flexible – Hardware or Virtual



# Example Implementation : Accelerated Backup

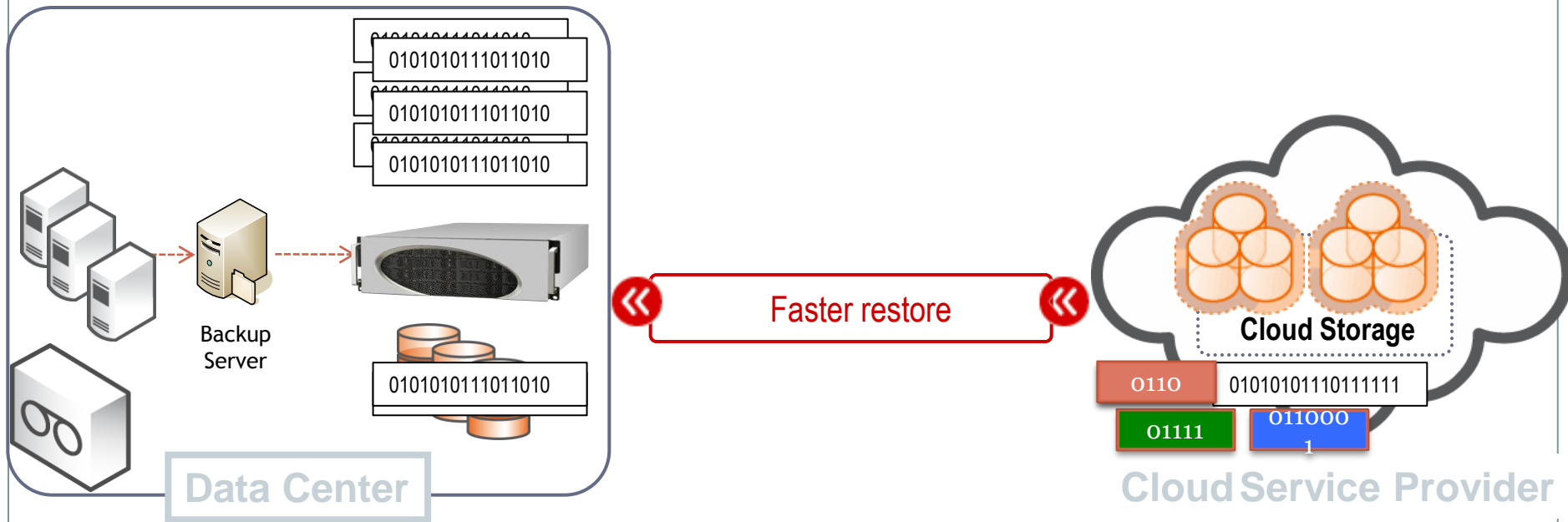


- Uses existing backup tools
- 10-30x average dedupe
- Local restore for recent data

- Accelerated cloud backup and restore
- Works with cloud storage protocols

- Limitless storage
- Elastic & low cost
- Optimized dedupe

# Example implementation - Local-like Restore



- Recent backups are still on appliance disk
- Disk retains up to a month of backups

- Recent restores are on the LAN

- Older data is restored on demand from Cloud
- “local-like” restore over the WAN

From the customer perspective – it is just a simple local-like restore

# How do you move forward?



- **Identify the primary goal of the project**
  - Compliance – Data Sovereignty ( EU Unified standards?) while controlling costs
  - Meeting data backup windows
- **Engage all IT teams to understand environment and requirements**
  - Data residency, storage, network, server, applications.
- **Design, validate & prove – risk assessment**
- **Build your business case**
  - Improved RPO/RTO for business continuity goals
  - Use of existing IT assets
  - Balancing DR versus other apps on the WAN

# The OCA



- UK based global ICT industry policy think tank, with advocacy
  - Members are technology leaders in Asia Pacific economies
- Creating Dialogue on Technology Policy...
  - Open Innovation and Competition
  - Open Standards
  - *Cloud Computing* and Secure & Trusted IT
  - Energy efficient IT processes
- ...to drive positive outcomes for all stakeholders - both public and private

# Thank you



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