

Data Center Relocation – No Physical Tapes Means No Problem!

Session #10930

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Agenda – Data Center Relocation

- Relocation planning is a good time to “organize” and consider the end-result
- Physical Tape vs. Virtual Tape
 - Inventory of tapes
 - Shipping
 - Legal and Audit
 - Datacenter floor space
 - Summary
- Agribank – A Customer’s Perspective
 - Steve Schwietz, Senior Systems Programmer
- Q&A

Data Center Relocation with Physical Tape



Data Center Relocation with Physical Tapes

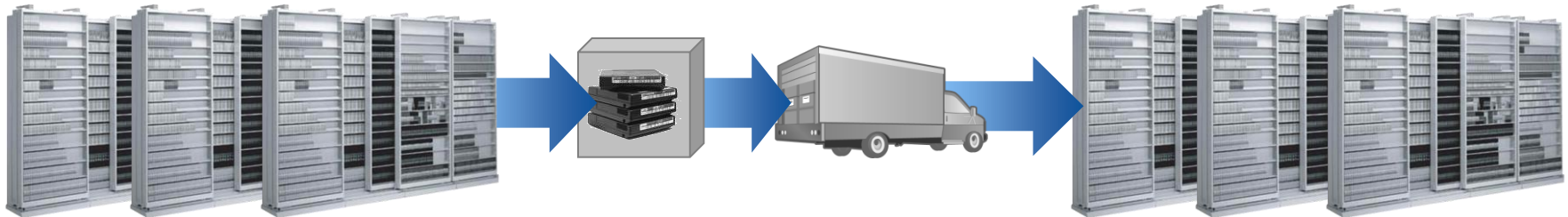
Inventory of Tapes

- Scan or manually record every single tape
 - Are your tapes barcoded?
 - Do you own a scanner?
- Example
 - 18,000 physical tapes
 - Scan, box and shrink wrap
 - 2 full days, non-stop just to prepare for shipping
 - X full day(s) just to check the tapes in at the new location
 - Reconcile list with your TMC
- Main Problems
 - Wasted time and effort
 - A high probability of error

Data Center Relocation with Physical Tapes

Shipping

- Logistics – Example
 - Shipping from New Jersey to Texas
 - 2 person crew, minimum
 - No stop longer than 10 minutes
- Some shippers will only transport tapes between your data center and their warehouse
 - No direct shipping between 2 customer sites



Data Center Relocation with Physical Tapes

What Happens if a Box of Tapes Gets Lost?

- Fines and Expenses
 - Possible regulatory fines
 - Millions of dollars on credit reports
- Example
 - In most cases of lost data the remediation actions taken are to provide 1 credit report for each affected customer.
 - Now imagine 1 million customers affected
 - Most shippers will not accept that liability
 - Most will only refund you the \$100 cost to replace the tape
 - If they do, how much more does that add to their fees?



Data Center Relocation with Physical Tapes

What Happens if a Box of Tapes Gets Lost?

- Damage to:
 - Reputation
 - Stock Price
 - Customer Confidence

Iron Mountain loses 40 Time Warner tapes

Jo Maitland, News Director
Published: 3 May 2005

Barely a week goes by these days without a major company losing some of its confidential customer or employee information -- or both.

The latest incident involves Iron Mountain Inc., one of the first companies to offer data storage services.

Bank tape lost with data on 90,000 customers

People's Bank in Connecticut said the tape contained data on 90,000 customers.

Zurich Insurance fined £2.3m over customers' data loss

The UK operation of Zurich Insurance has been fined £2.27m by the Financial Services Authority (FSA) for losing personal details of 46,000 customers.

It is the highest fine levied on a single firm for data security failings.

Margaret Cole, the FSA's director of enforcement and financial crime, said: "Zurich UK let its customers down badly."

Stephen Lewis, chief executive of Zurich UK, said: "This incident was unacceptable."

The data on policyholders, including in some cases credit card information, went missing in August 2004.

However, Zurich did not become aware of the loss until it then began notifying customers.

The information went missing during a routine transfer of data to a new data centre in South Africa.

16 December, 2005 - 16:12

ABN Amro customer data tape lost in transit

ABN Amro Mortgage Group, a US subsidiary of the Dutch banking giant, says a computer tape containing the confidential data for two million customers was lost while being transported to a credit bureau.

The company says the tape contains names, account information, payment histories and social security numbers for residential mortgage customers.

Former IBM Employees' Data Lost in Transit

By Nicholas Carlson | May 16, 2007
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At advises businesses to encrypt their customer data, the company is in the same boat as employees that was not cloaked.

for losing data tapes that contain the personal information of former employees. security numbers, addresses, lengths of employment and other private

Lost Tapes at TRICARE Potentially Expose 4.9 Million Military Personnel

By Mike Lennon on September 29, 2011

TRICARE Breach Potentially Puts 4.9 Million Individuals at Risk

A massive data breach that could potentially affect 4.9 million individuals who received services from TRICARE, a provider of health care services to active and retired military personnel, was disclosed this week.

According to a statement from TRICARE, on September 14, 2011, Science Applications International Corporation, a third party technology contractor, reported the data breach that occurred as a result of lost backup tapes. The tapes were apparently lost during a transfer between Federal facilities and San Antonio, Texas.

A representative from SAIC's Incident Response Call Center told *SecurityWeek* that the data on the tapes was encrypted, but I'm not convinced that is the case. In a public statement announcing the breach, the company said, "The risk of harm to patients is judged to be low despite the data elements involved since retrieving the data on the tapes would require knowledge of and access to specific hardware and software and knowledge of the system and data structure." This statement is far from convincing that the risk level is low, and knowledge of specific hardware and software typically doesn't matter much when it comes to encryption. If the data had been encrypted, one would think they would explicitly say so in the statement. Also, it's typically not required to disclose an incident like this if the media had been properly encrypted.



Data Center Relocation with Physical Tapes

Legal and Audit

- Lawyers – goal to limit liability of company
 - Lengthy review process
 - Focus on chain of custody
- Auditors – their job is to find issues
 - Tape transport is an easy target
- Auditors will require:
 - Meetings
 - Diagrams
 - Proof of Compliance
 - Change Control Tickets



Data Center Relocation with Physical Tapes

Legal and Audit

- Be prepared to provide a plan and documentation:
 - Is your data encrypted?
 - Is this the only copy of your data?
 - If you lost a tape, can you find out exactly which of our customers are affected?
 - Will the tapes ever be left alone during shipping?
 - What happens if the driver goes to the restroom?
 - Is there a tamper proof SEAL on the boxes?
 - How do you know you're not missing any tapes?
 - Did you compare your list to the mainframe TMC? (What are the chances that they will even match?)
 - How do you know the tapes didn't get damaged in shipment?
 - Are you going to READ all of the tapes to prove it?

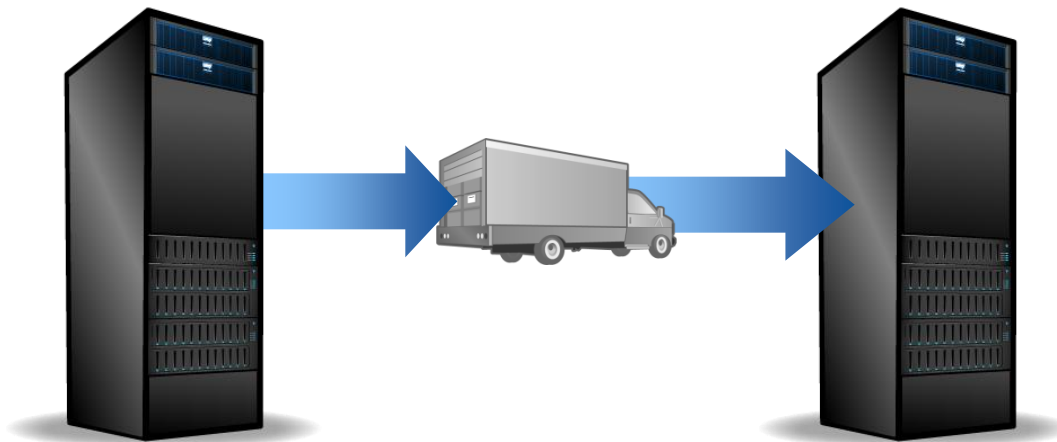
Data Center Relocation with Virtual Tape



Data Center Relocation with Virtual Tapes

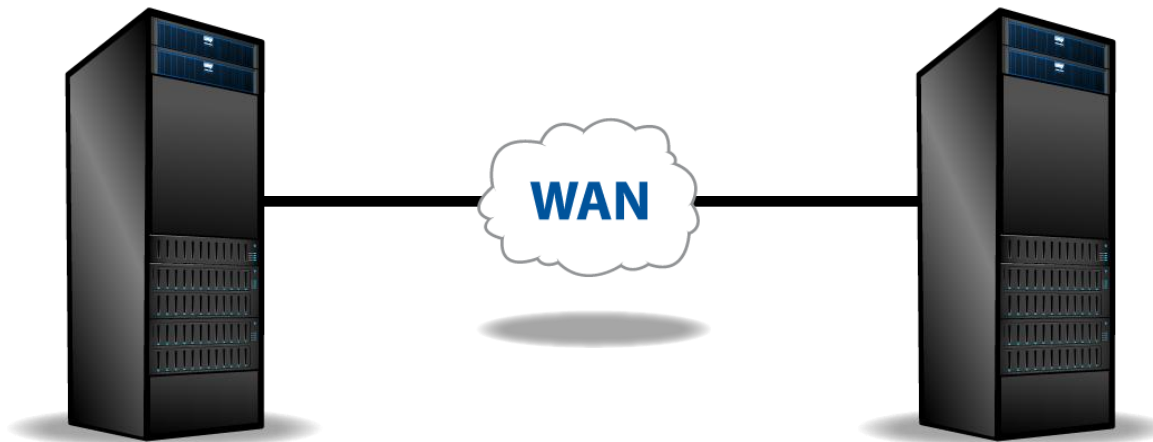
Relocation – Option 1

- Small foot print, can be packed and shipped in 1 day
- Data can be encrypted on storage system
- Significantly lowers risk of data loss and cost of shipping



Data Center Relocation with Virtual Tapes Relocation – Option 2

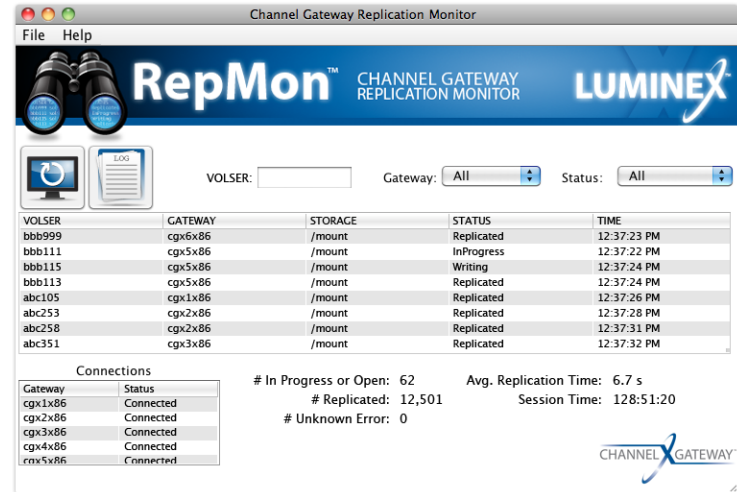
- Only need to ship the storage, data replicated via WAN
- Data can be encrypted on storage system or WAN links
- Significantly lowers risk of data loss



Data Center Relocation with Virtual Tapes

Legal and Audit

- Satisfy legal and audit concerns
- No chain of custody issues
- Replication logs
- VOLSER-level monitoring
- Detailed reporting



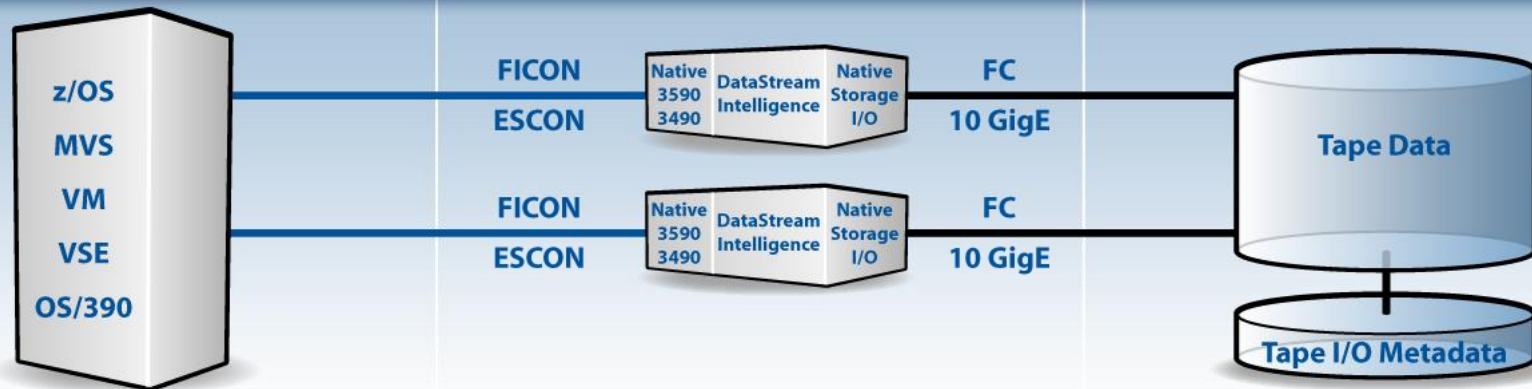
VOLSER	GATEWAY	STORAGE	STATUS	TIME
bbb999	cgx6x86	/mount	Replicated	12:37:23 PM
bbb111	cgx5x86	/mount	InProgress	12:37:22 PM
bbb115	cgx5x86	/mount	Writing	12:37:24 PM
bbb113	cgx5x86	/mount	Replicated	12:37:24 PM
abc105	cgx1x86	/mount	Replicated	12:37:26 PM
abc253	cgx2x86	/mount	Replicated	12:37:28 PM
abc258	cgx2x86	/mount	Replicated	12:37:31 PM
abc351	cgx3x86	/mount	Replicated	12:37:32 PM

Gateway	Status
cgx1x86	Connected
cgx2x86	Connected
cgx3x86	Connected
cgx4x86	Connected
cmx5x86	Connected

In Progress or Open: 62 Avg. Replication Time: 6.7 s
Replicated: 12,501 Session Time: 128:51:20
Unknown Error: 0

Luminex MVT Environment

How the Solution Works



Mainframe

- Application transparent – non-intrusive
- No MIPS required
- z/OS, MVS, VM, VSE and OS/390 supported
- Works well with all major tape management systems
- SMS, MTL or Esoterics can be used

Luminex Channel Gateways

- Emulates 3490 or 3590 mainframe tape drives
- DataStream Intelligence optimizes deduplication
- Active – Active with NSPOF
- Dual PS, Fans & Mirrored OS
- No tape data on gateways
- Multipathing for HA configurations

Enterprise Storage System

- NFS or Fibre Channel attached
- Mainframe Tape Volumes stored as standard files
- Replication for backup/DR
- RAID Data Protection

Ensure a Smooth Transition from Physical Tape to Virtual Tape

Tape Migration Services

- Elegantly designed to work with TMACS to move tape data without touching the tape catalogs
- Current VOLSER #'s and all historical information are retained in the new environment as well
- Supports all existing tape library and virtual tape environments



TMACS

- Tape Monitoring and Allocation Control System
- Optional host-based software to automate allocation steering
- Integrates with z/OS subsystem allocation interface and co-exists with other allocation control software

Data Center Relocation with Virtual Tapes

Summary



- Data center relocations are difficult with physical tape
- There is increased scrutiny of physical tapes
- Virtual tapes take the difficulty out of relocating
- Customers are combining data center moves with going tapeless to reduce risks associated with relocating physical tape
- Consider the “cost of retrieval” for maintaining offsite tape archives
- Data center relocations can help you justify the investment in virtual tape
- The time to go tapeless is now



A Customer's Experience



The Company

Background

- Over 300 years of history and expertise in banking
- A major global financial services provider engaged in retail banking, credit cards, corporate and investment banking and wealth management
- Operates in over 50 countries
- Serves over 48 million customers worldwide
- Employs 147,500 people

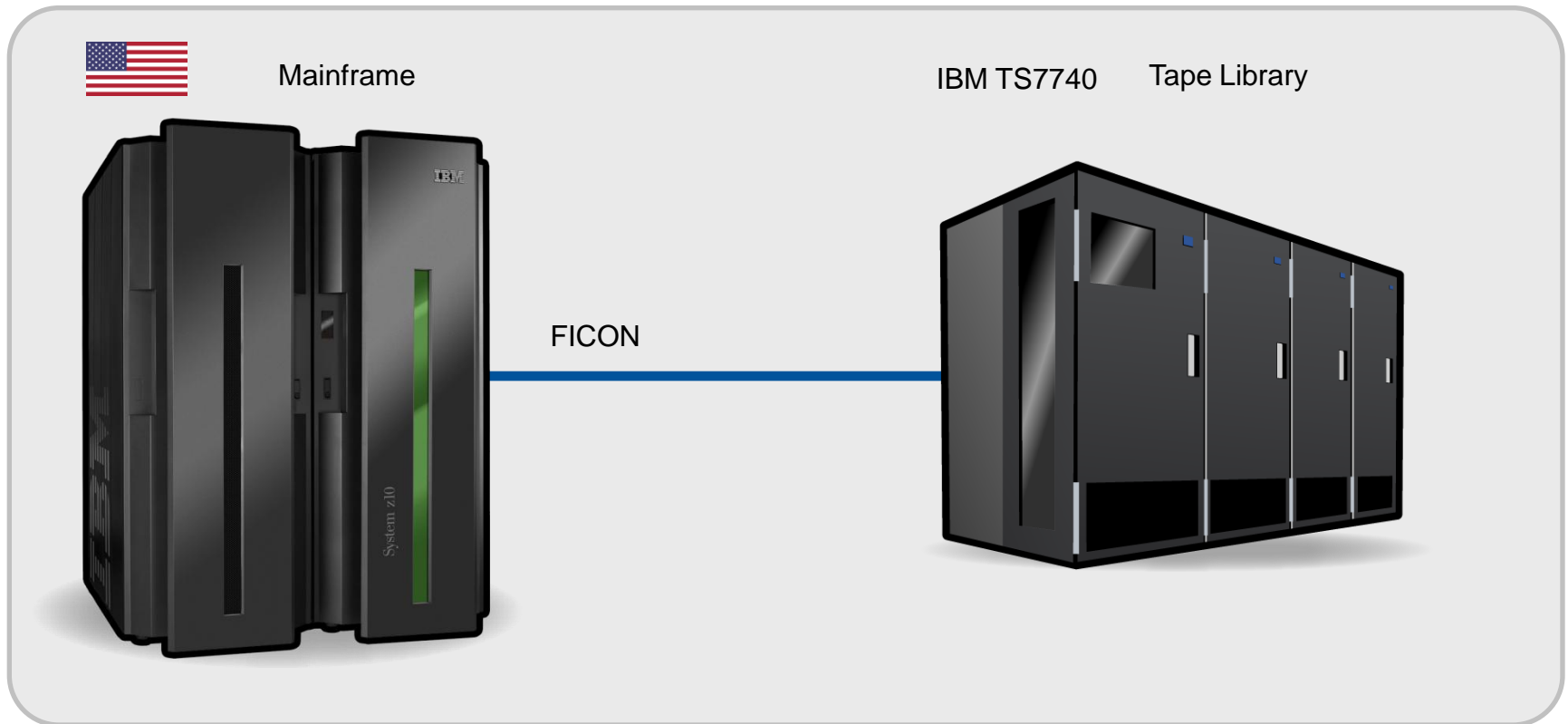
What were our Goals and Objectives?



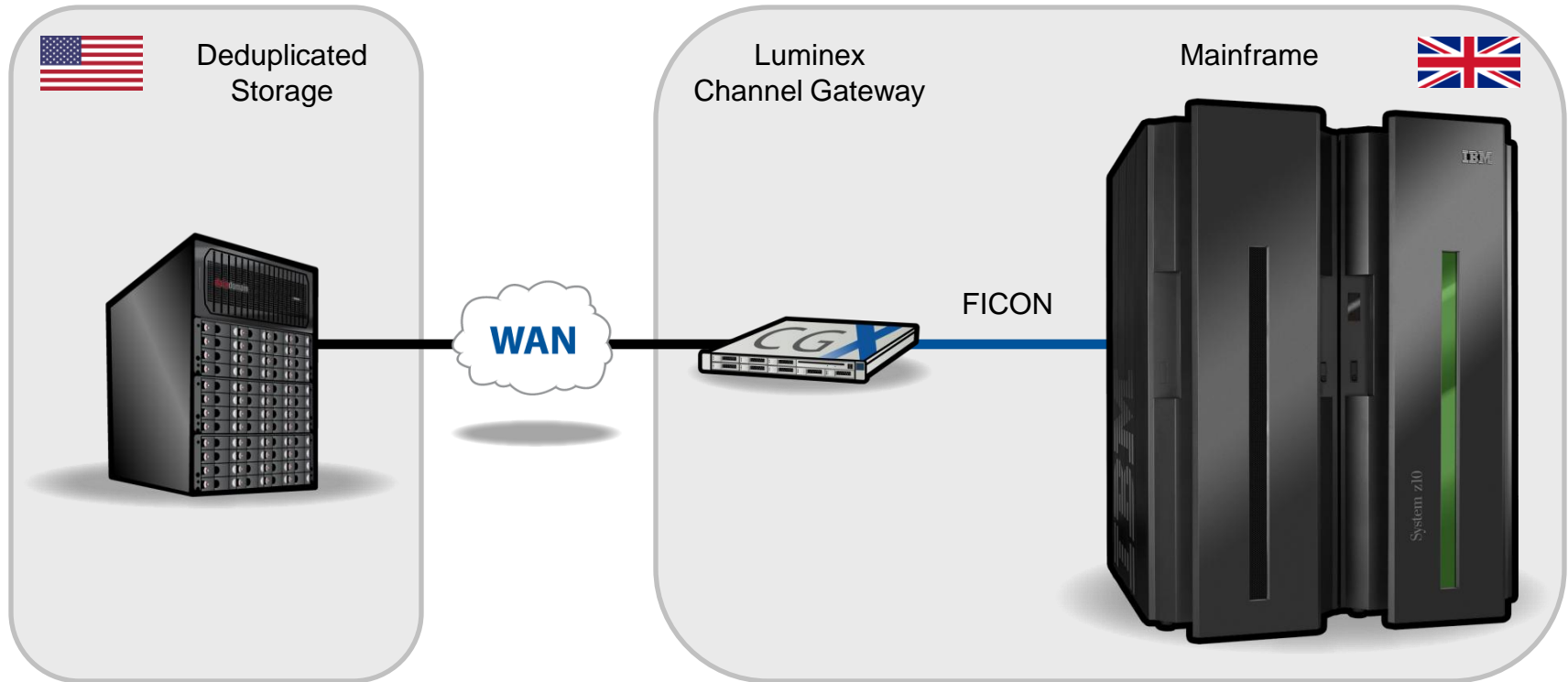
Challenges/Goals:

- ☐ Consolidate mainframe operations
- ☐ Shipping tape library deemed too risky
- ☐ Maintain remote access to archives from UK to US without expensive channel extenders
- ☐ Mainframe lease term expiring, need to migrate 380,000 VOLSERS in 60 days (or faster)

Previous Mainframe Environment



New Environment



How Did We Do?

We Achieved Our Goals:

- ☑ Tape migration completed within 60 days
- ☑ Eliminated cost of channel extenders with deduplication and low cost WAN
- ☑ Eliminated risk of physically moving the tape library
- ☑ Eliminated expense of keeping multiple frames vs. a single rack solution:
 - ☑ Power
 - ☑ Cooling
 - ☑ Physical floor space



A Customer's Experience

Steve Schwietz

Senior Systems Programmer

Agribank

The Company

- AgriBank, FCB is one of the largest four banks within the national Farm Credit System, with \$71 billion in total assets, representing the 7th Farm Credit District.
- As the district hub, Agribank provides IT services for associations across 16 states in the Midwest.
- Agribank employs 225 people in their St. Paul MN corporate office.
- Mainframe Software:
 - z/OS, DB2 (Image Copy), DFdss for backup & recovery, HSM ML2, batch processing and RMM

What were our Goals and Objectives?

Challenges/Goals:

- ☐ Improve disaster recovery time
- ☐ Eliminate the delays that physical tape imposes on the DR plan
- ☐ Replace their aging IBM 3494 tape library
- ☐ Replace the tape library before relocating Agribank's data center.

Previous Tape Environment

Production Site

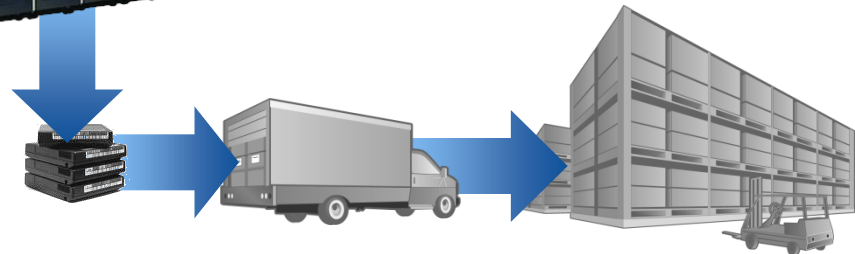


zSeries
Mainframe



IBM 9494
Tape Library

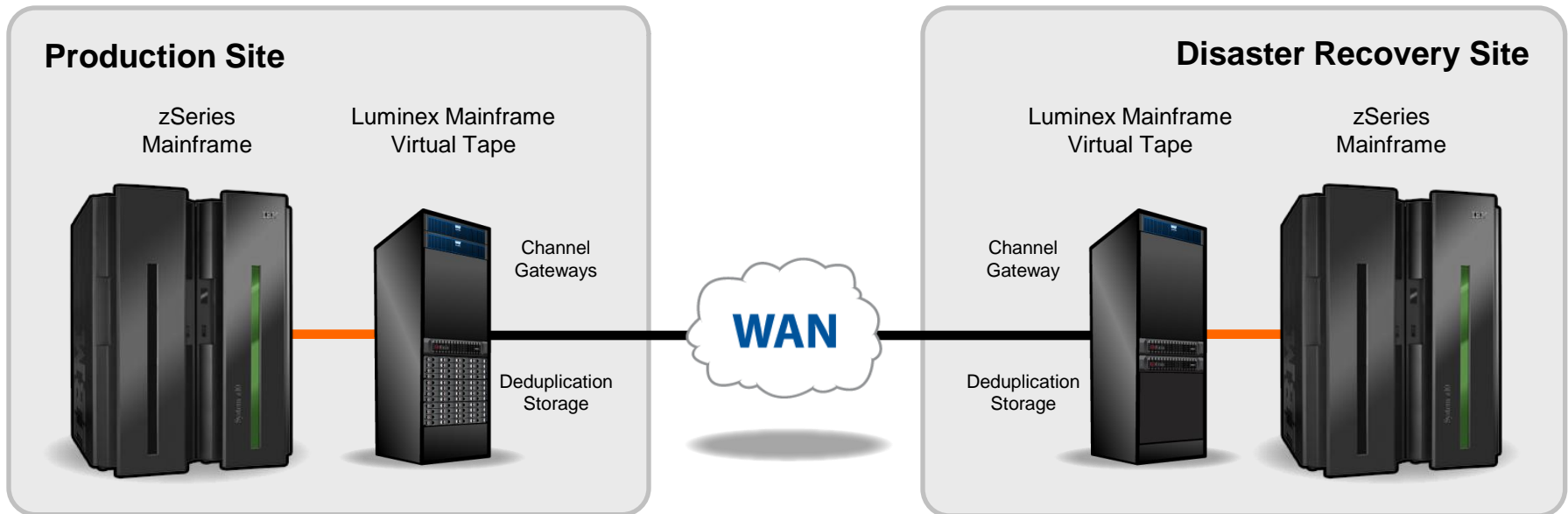
- 12 frames!
- 8x 3590 tape drives
- 4x 3592 tape drives with encryption



Shipping
Tape Media

Offsite Storage

New Tape Environment



How Did We Do?



Benefits/Achievements

- ☑ We're completely tapeless!
- ☑ Reduced floor space - From 12 IBM frames to a single 19" rack
- ☑ Recovery time went from 3 days, to 4 hours
- ☑ Several DR test have been successfully completed
- ☑ Replaced and removed the 3494 tape library, before the data center relocation, which saved significant \$ and floor space

Thank You

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