

# The Modern Mainframe Data Center – Sharing a Tape Infrastructure Session #10932

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# Agenda

- Similarities in Tape Usage & Goals
  - Mainframes and Open Systems
- Differences in Mainframe Tape Use
- Advantages of Sharing a Tape Infrastructure
- Modern Mainframe Virtual Tape Solutions
- Enterprise Wide Virtual Tape & DR
  - Customer Example – Agribank
- Additional Q&A

# Most Data Centers Have Similar Challenges and Goals...



Specific Challenges and/or Goals :	Agribank	LexisNexis	Texas DPS
Must replace aging tape products or products facing End of Support	✓		✓
Reduce tape drive or library maintenance cost	✓	✓	✓
Reduce tape media, shipping & storage cost	✓	✓	✓
Reduce or eliminate physical tape	✓	✓	✓
Need long term access to existing tape volsers	✓	✓	✓
Improve & simplify all tape operations	✓	✓	✓
Physical tape limited the ability to improve the disaster recovery plan RPO & RTO	✓	✓	✓
Improve remote disaster recovery plan (RPO & RTO)	✓	✓	✓
Reduce network bandwidth requirements to replicate virtual tape data to the DR site	✓	✓	✓
Prefer a common virtual tape storage solution for mainframe & open systems DR	✓		✓

# Similarities

## Vendors/Suppliers In Common

- Iron Mountain for tape vaulting/transportation
- Sungard or IBM BCRS for 3rd party DR locations
  - Or self (internal) DR site
- IBM & Sun/STK for tape, virtual tape & libraries



**SUNGARD**

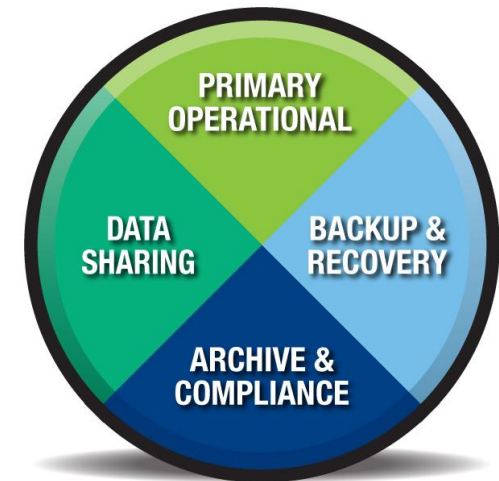


Business Continuity and Resiliency Services

# Differences

## Mainframe Applications are Unique

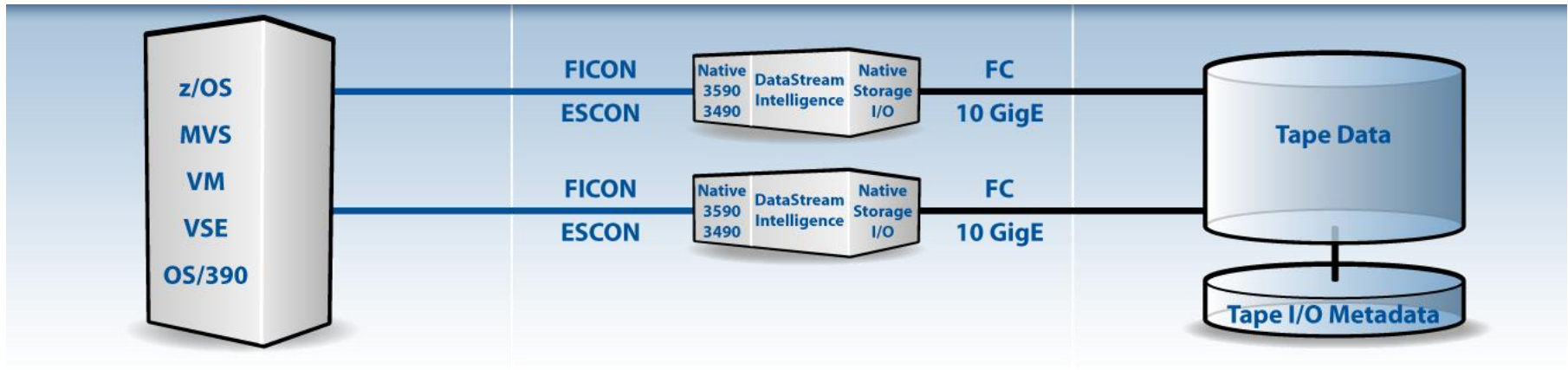
- Backup and Recovery:
  - IBM's DFDSS, DDR & IEBGENER
  - TSM
  - Innovation FDR Products
  - BMC for DB2
- Tape Management Software:
  - CA-1, TLMS
  - RMM
  - Control T
- HSM & Archiving:
  - DFHSM, CA Disk, OAM & Mobius
- Database Software – DB2
- Batch processing – Custom Applications



# Advantages of Sharing a Virtual Tape Infrastructure

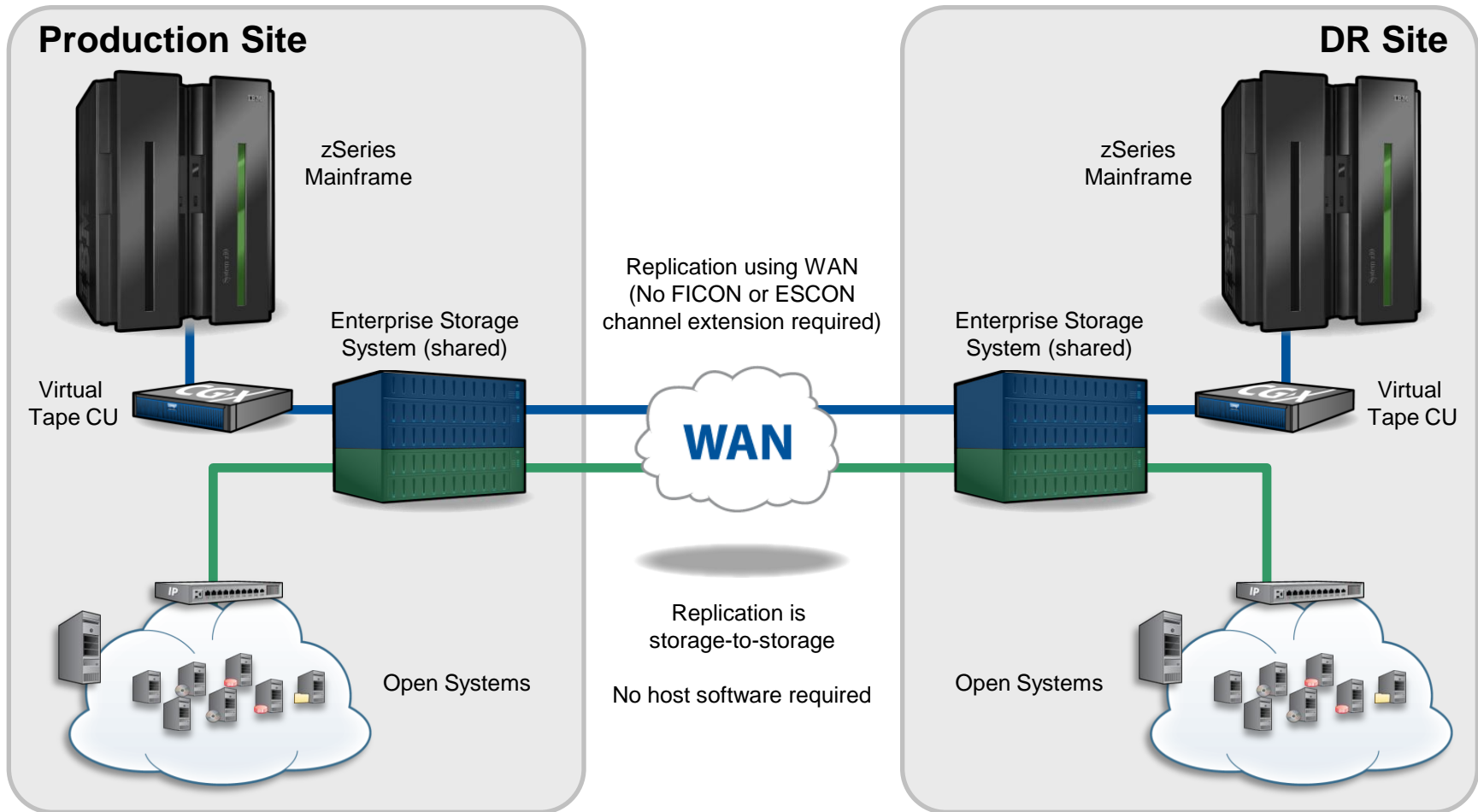
- Common
  - Disaster Recovery Plan
  - Data Protection and Security Plan
- Simplification
  - Storage Administration
  - Replication Policies and Management
  - Support Plan
- Reduced Costs
  - Storage Administration
  - Leverage buying power with storage vendor
  - Floorspace, energy and cooling

# How Luminex MVT Solutions Work...



Mainframe	Luminex Channel Gateways	Enterprise Storage System
<ul style="list-style-type: none"> <li>▪ Application transparent – non-intrusive</li> <li>▪ No MIPS required</li> <li>▪ z/OS, MVS, VM, VSE and OS390 supported</li> <li>▪ Works well with all major tape management systems</li> <li>▪ SMS, MTL or Esoterics can be used</li> </ul>	<ul style="list-style-type: none"> <li>▪ Emulates 3490 or 3590 mainframe tape drives</li> <li>▪ DataStream Intelligence optimizes deduplication</li> <li>▪ Compression &amp; replication options</li> <li>▪ Active – Active with NSPOF</li> <li>▪ Multipathing for HA configurations</li> <li>▪ Writes blocks of data exactly as the mainframe wrote it</li> </ul>	<ul style="list-style-type: none"> <li>▪ NFS or FC attached</li> <li>▪ Use new or existing storage systems</li> <li>▪ Mainframe Tape Volumes stored as standard files</li> <li>▪ Deduplication options</li> <li>▪ Replication for backup and Disaster Recovery</li> <li>▪ RAID 6 data protection</li> </ul>

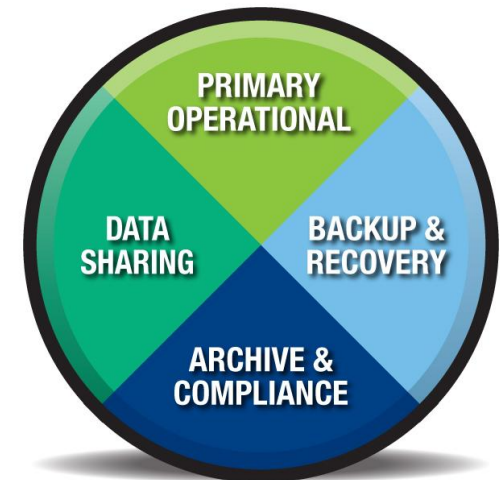
# Typical Tapeless Production and DR Configuration





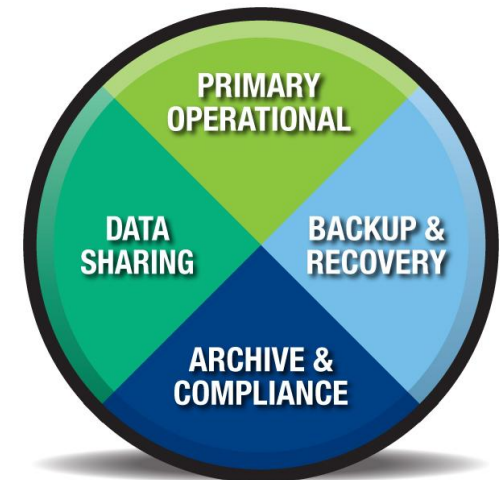
# The Results with Modern Mainframe Virtual Tape

- Improve all categories of mainframe tape use
- RPO & RTO for backup & DR is improved
- Mainframe applications remain unchanged
- No additional MIPS (CPU cycles) are required
  - No host software required
  - Eliminate STK HSC
- IT OPEX is improved



# The Results with Modern Mainframe Virtual Tape

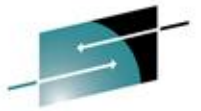
- Batch processing, HSM and archiving are improved
  - Batch processing improved through faster mounts
  - No “dual recall”



# Luminex Tape Migration Services

- Elegantly designed 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 for z/OS





# AgriBank<sub>FCB</sub>

## End User 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 7<sup>th</sup> 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 the aging IBM 3494 tape library
- Replace the tape library before relocating Agribank's data center.

## Previous Tape Environment

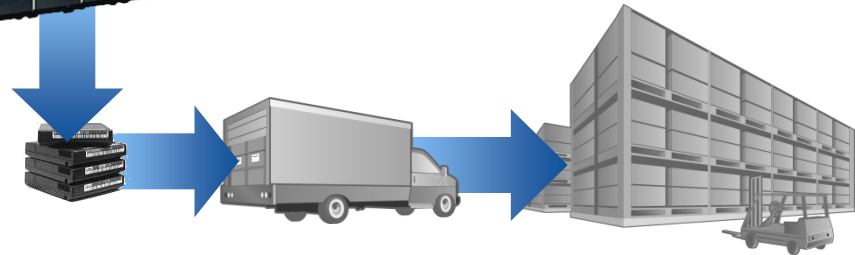
### Production Site



zSeries  
Mainframe



IBM 3494  
Tape Library

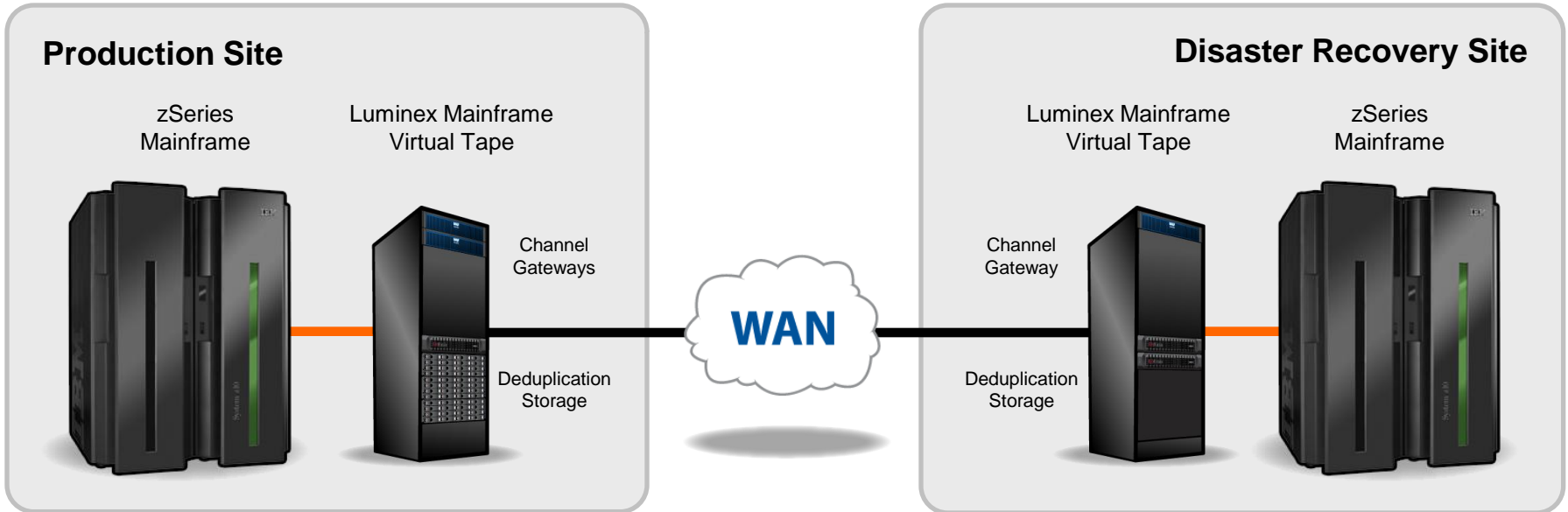


Shipping  
Tape Media

Offsite Storage

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

## New Tape Environment





### 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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