#SHAREorg

SHARE
Technology · Connections · Results

Replicating Mainframe Tape Data for DR – Best Practices

Lee Reiersgord
Luminex Software, Inc.

Scott James
Luminex Software, Inc.

John Fair
Hormel Foods

Wade Juza
Acuity Insurance

Tom Wiatt
NWRDC

Tuesday, February 5, 2013

9:30 AM - 10:30 AM

Golden Gate 7

Session #12960

SHARE in San Francisco 2013

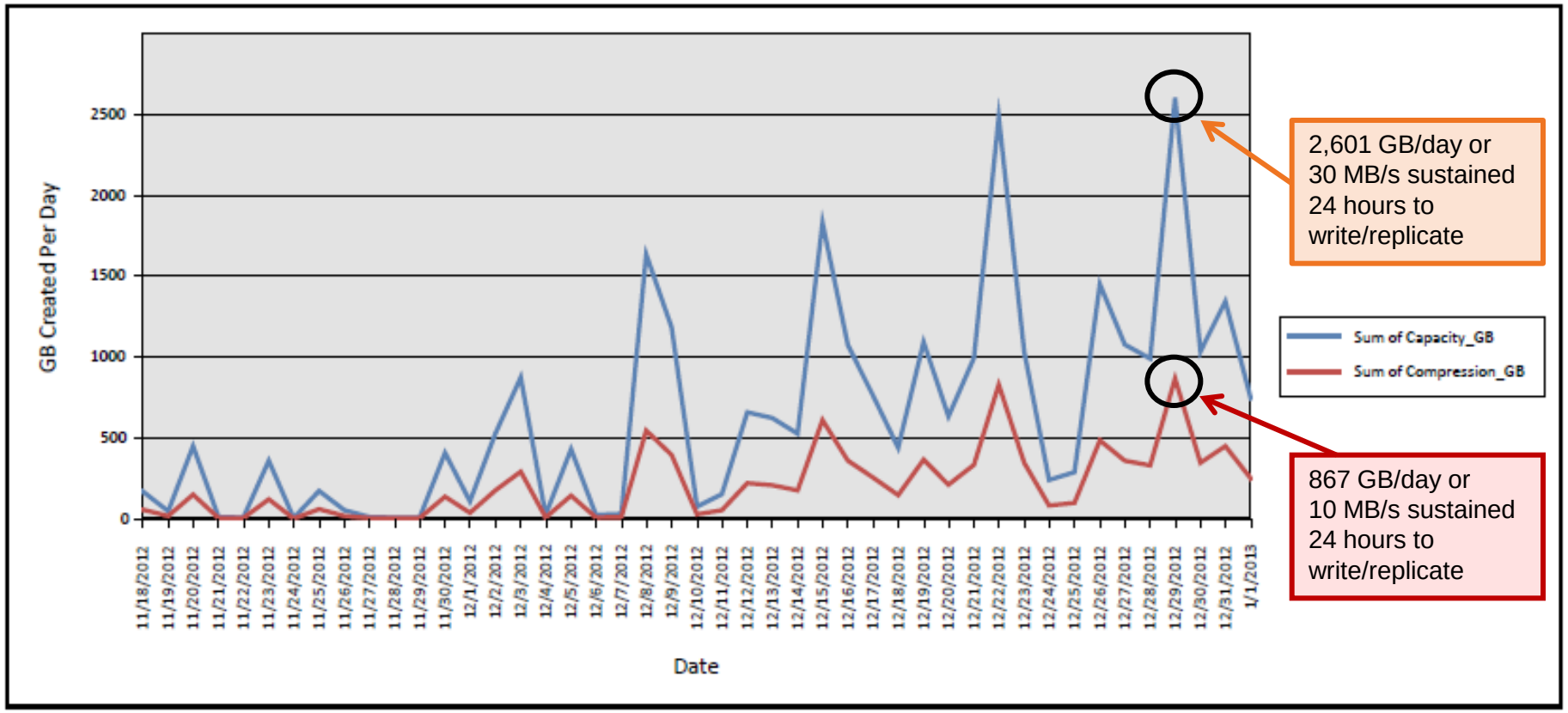
Discussion Topics

- Why Replicate Mainframe Tape Data?
- Network Bandwidth Requirements for Replication
- Replication Options
- Replication Architecture
- Monitoring Tools for Replication
- Summary - Best Practices
- Customers Share Their Experience with Tape Replication for DR

Why Replicate Mainframe Tape Data?

- It is the best way to move tape data between the production and disaster recovery site
  - Much faster than shipping physical tape
  - Eliminates security risk associated with shipping physical tape
  - Eliminates the cost of physical tape media, shipping & storage
- Dramatically improves the remote disaster recovery plan
  - Improve RPO through continuous replication
  - Recovery time is significantly reduced

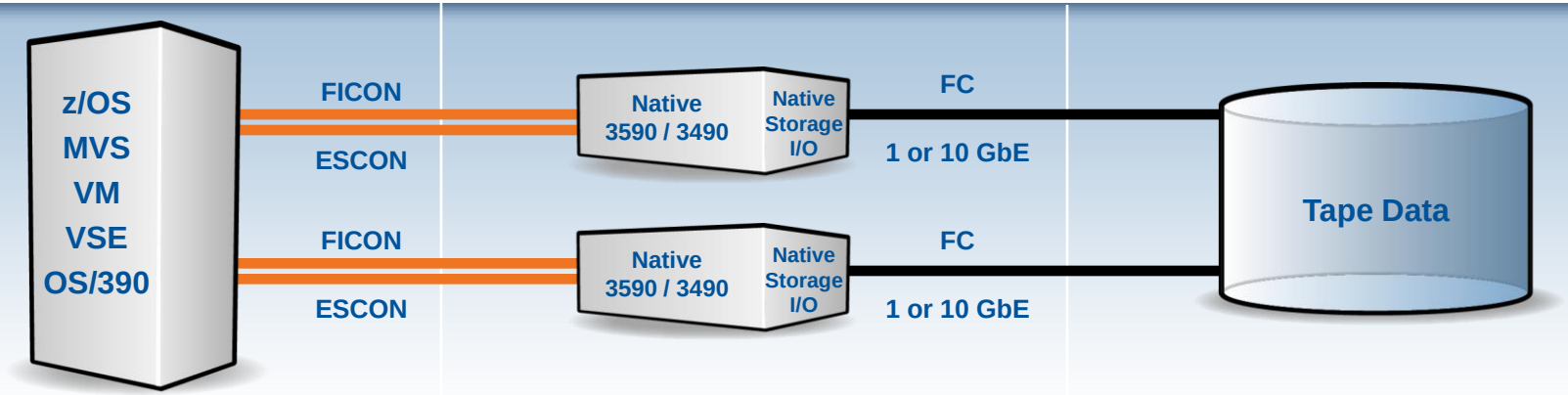
Network Bandwidth Requirements for Replication – Use TMC & SMF records to calculate network requirements



Replication Options

- Replication Management
  - Control Unit-based
    - Luminex Replication
  - Storage-based replication
    - Hitachi Universal Replicator (Asynchronous)
    - HDS TrueCopy (Synchronous)
    - HP, Data Domain, NetApp or Oracle replication

Virtual Tape Control Unit Architecture



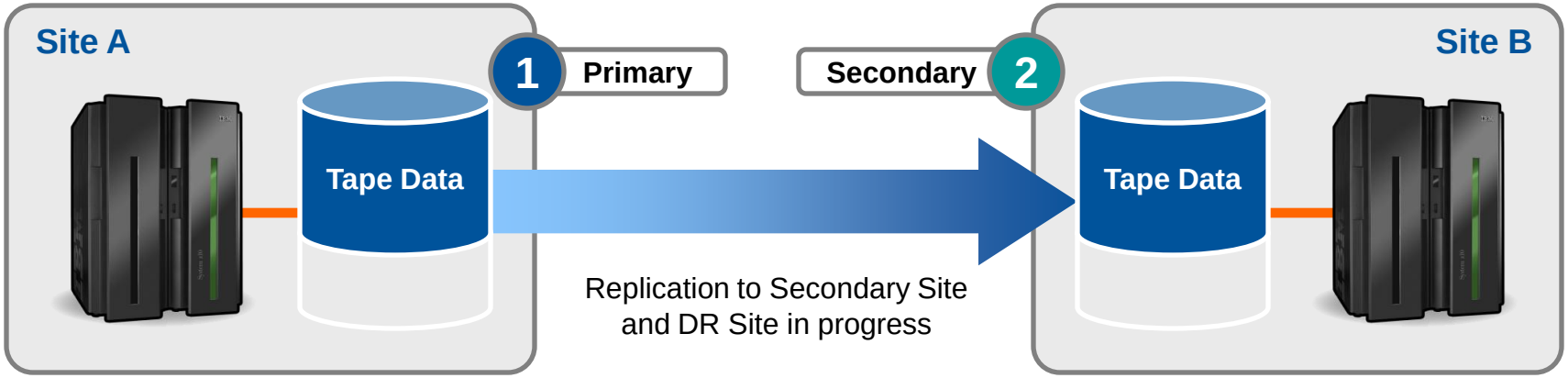
Mainframe	Virtual Tape Control Units	Storage Systems
▪ Application transparent – non-intrusive ▪ No MIPS required ▪ z/OS, MVS, VM, VSE and OS/390 supported ▪ Works well with all major tape management systems ▪ SMS via MTL or Esoterics can be used	▪ Emulates 3490 or 3590 mainframe tape drives ▪ Hardware Compression Option ▪ "Wire Speed" up to 8 Gb FICON ▪ Active – Active with NSPOF ▪ Dual PS, Fans & Mirrored OS ▪ Multipathing for HA configurations ▪ Encryption and Key Management	▪ Internal, NFS or Fibre Channel attached ▪ Mainframe tape volumes stored as standard files ▪ Replication for backup/DR ▪ RAID 6 Data Protection

Replication Architecture
Goals

- Continuous protection of production tape data – replication never stops
- Allow customer to setup for DR test and clean up after test
- One-time configuration of remote CG for multiple future DR tests

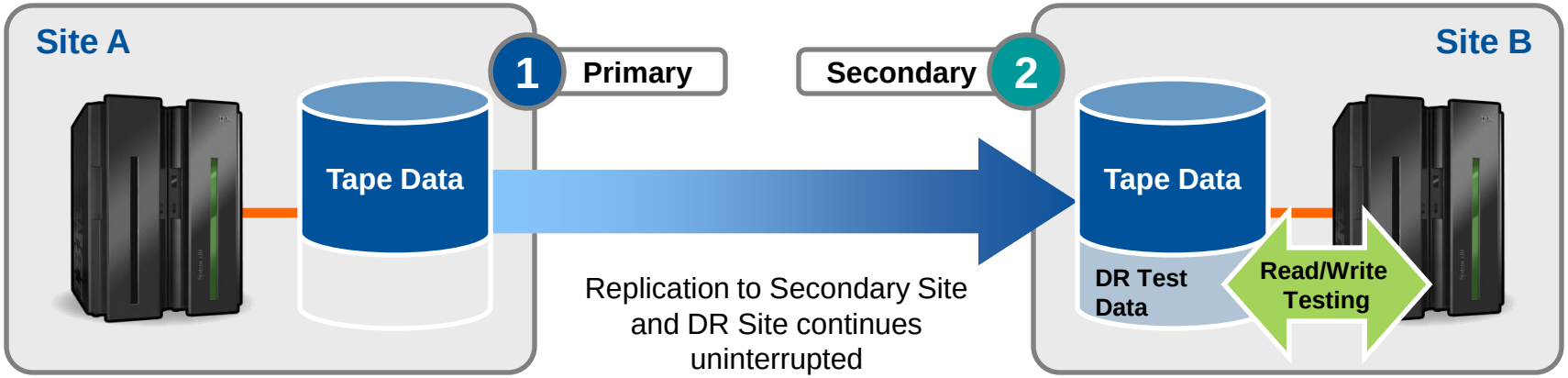
DR Test Mode Feature

Replication During Normal Operations



DR Test Mode Feature

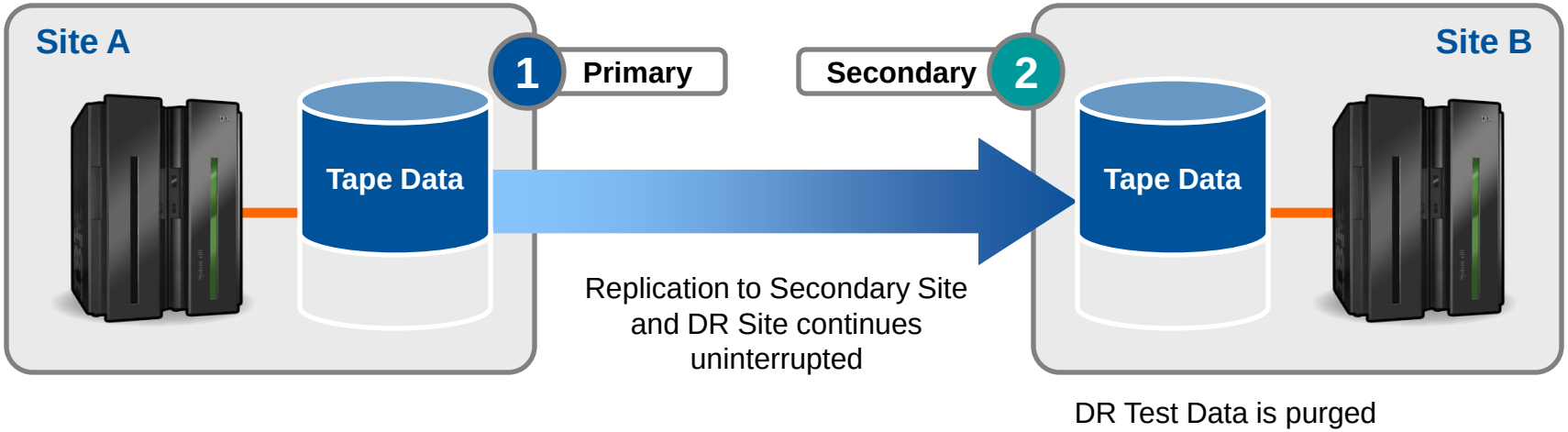
Replication During DR Testing



Space efficient clone of Tape Data is created for read/write testing; original Tape Data remains untouched

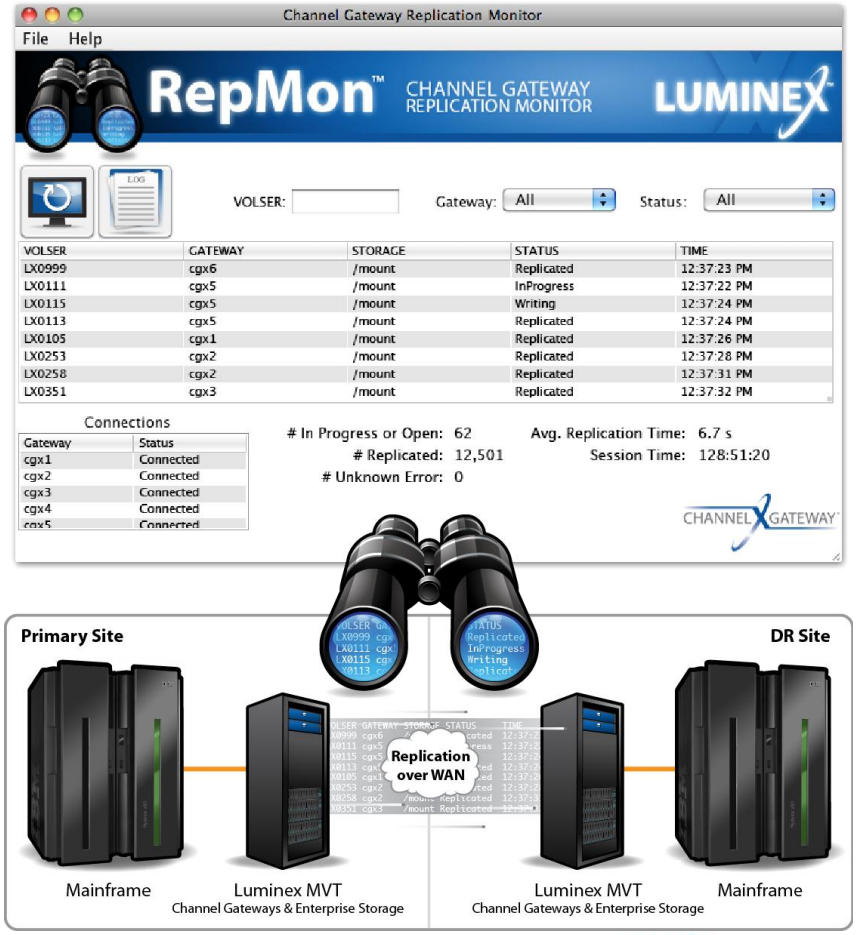
DR Test Mode Feature

After DR Testing is Completed



Monitoring Tools for Replication

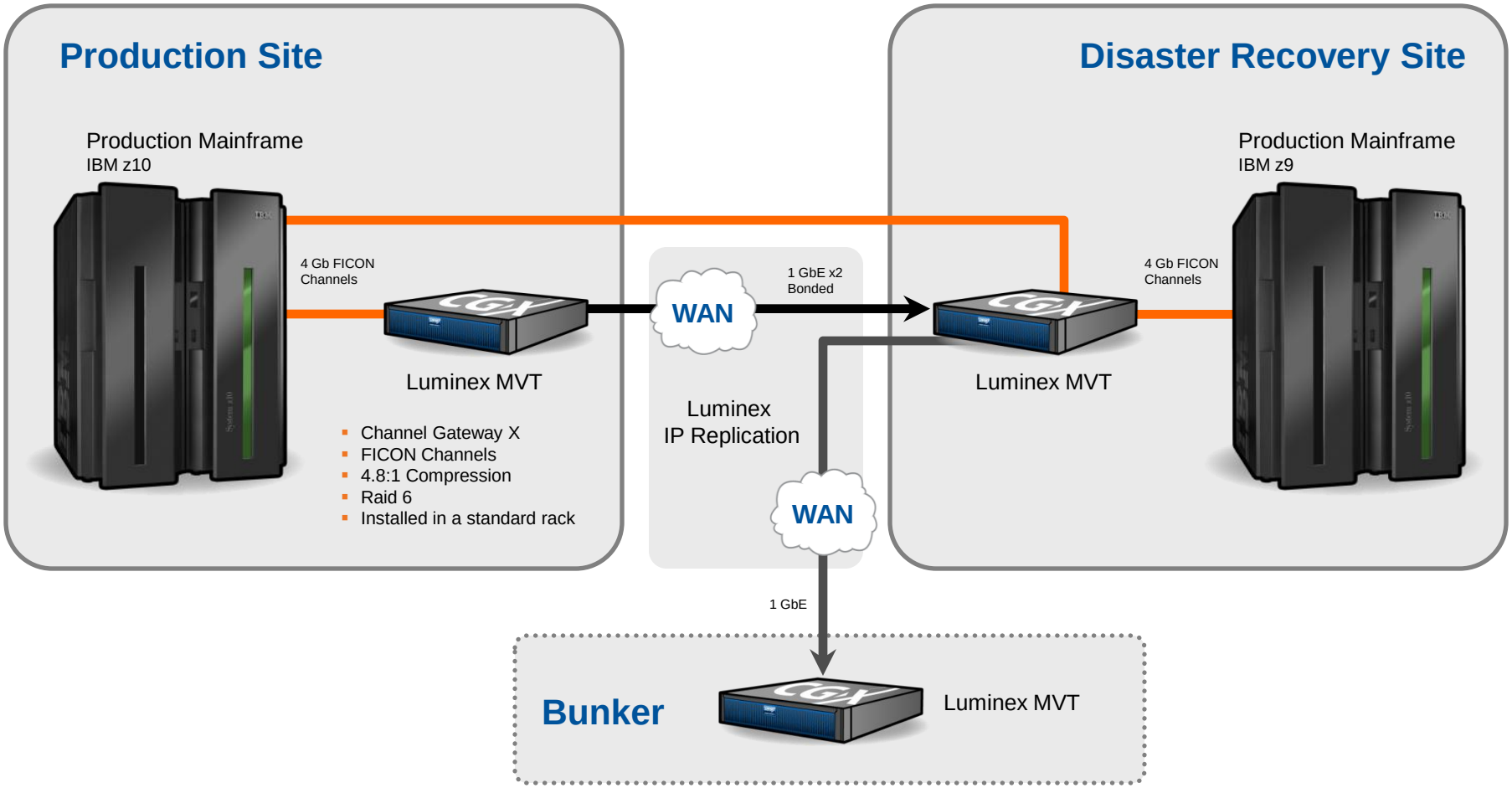
- Satisfy legal and audit concerns
- No chain of custody issues
- Replication logs
- Detailed reporting
- VOLSER-level monitoring



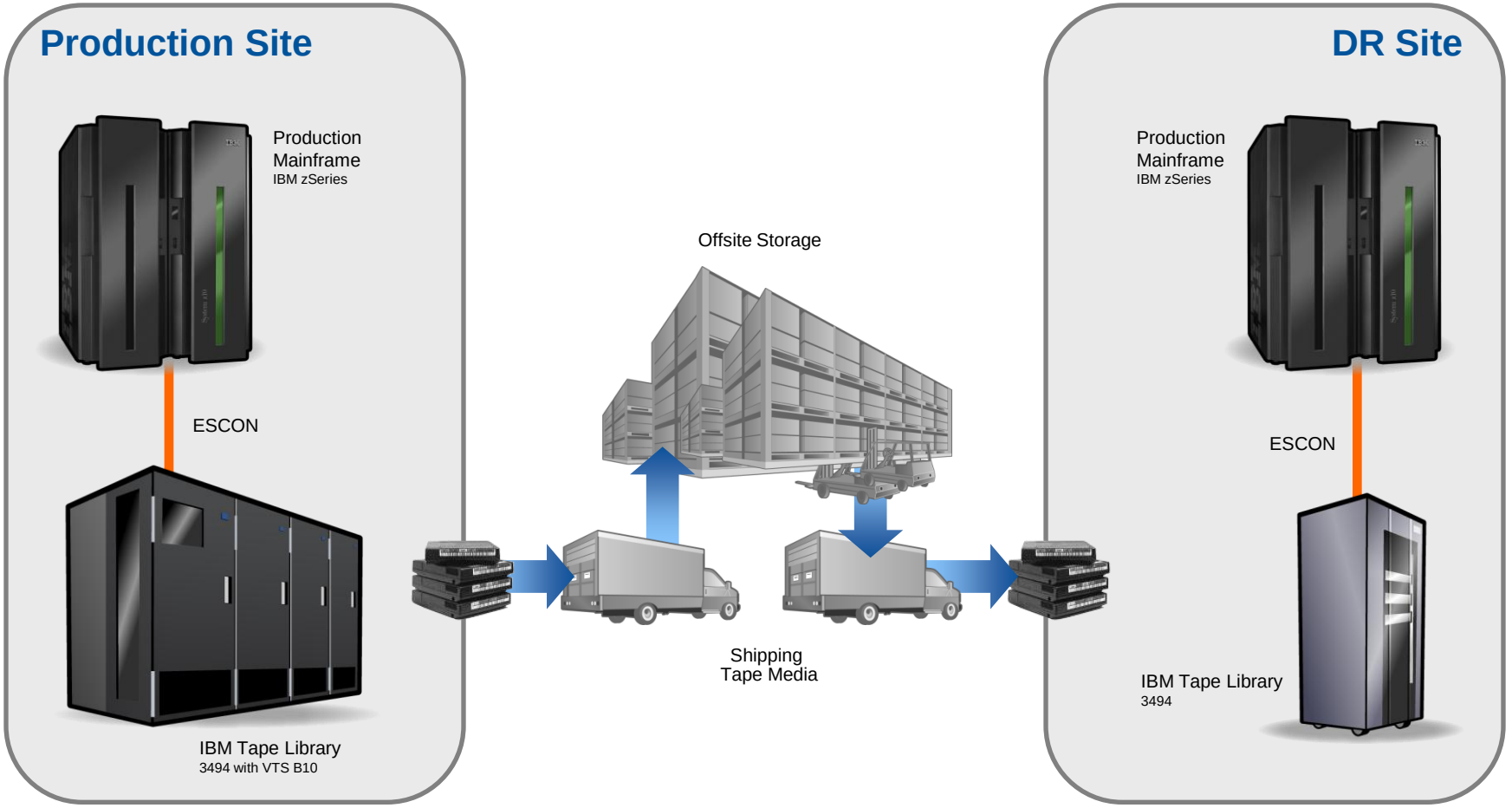
Best Practices for Continuous Replication and DR Exercises

- Use a Non-disruptive tool & process
  - It will provide continuous protection of the production site's data
  - Enables non-disruptive remote DR tests
- Replication monitoring at the VOLSER level is recommended
- Detailed documentation for selectively or completely replicating tape data should be established

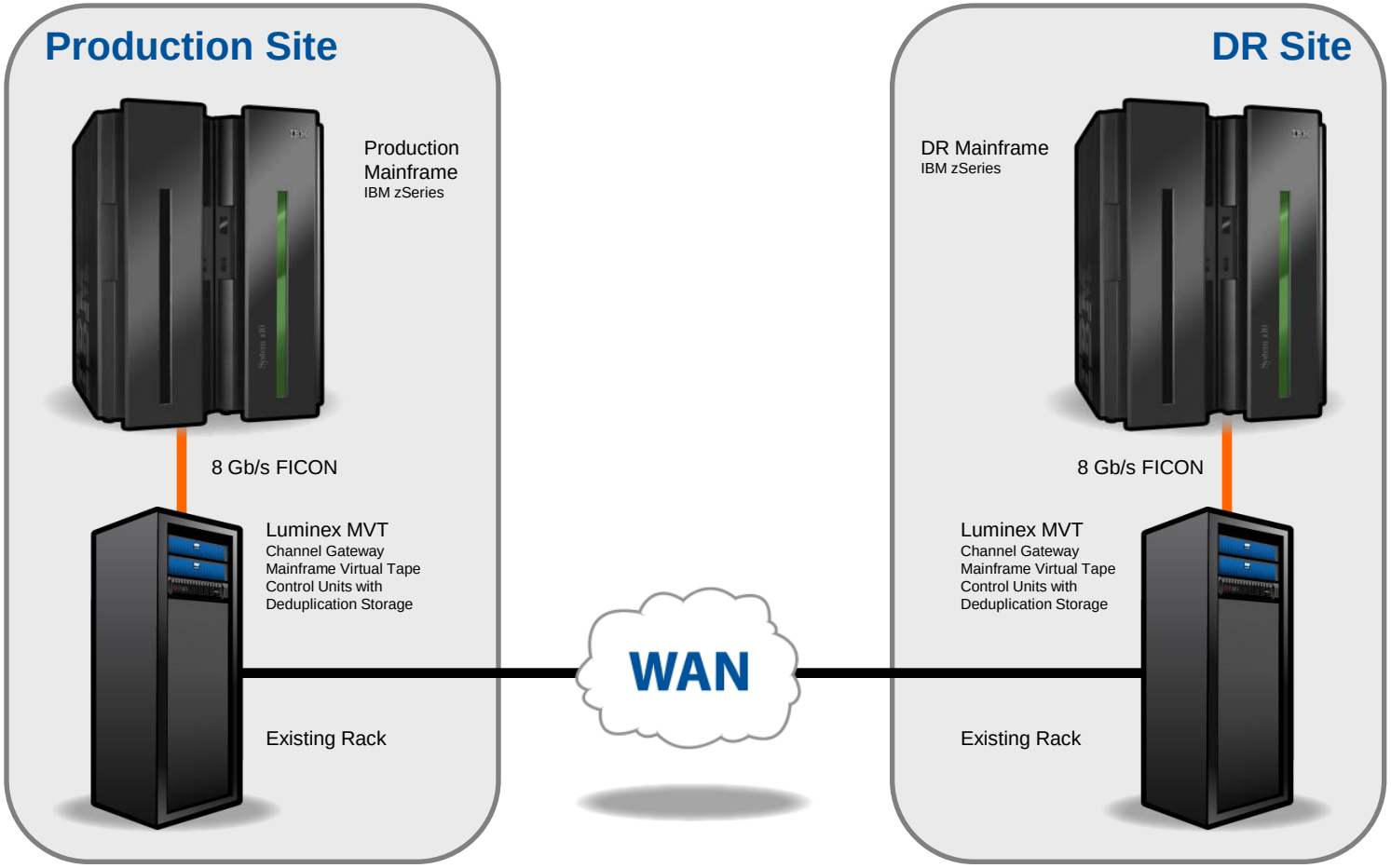
Hormel's Solution & Configuration



Previous Tape Environment



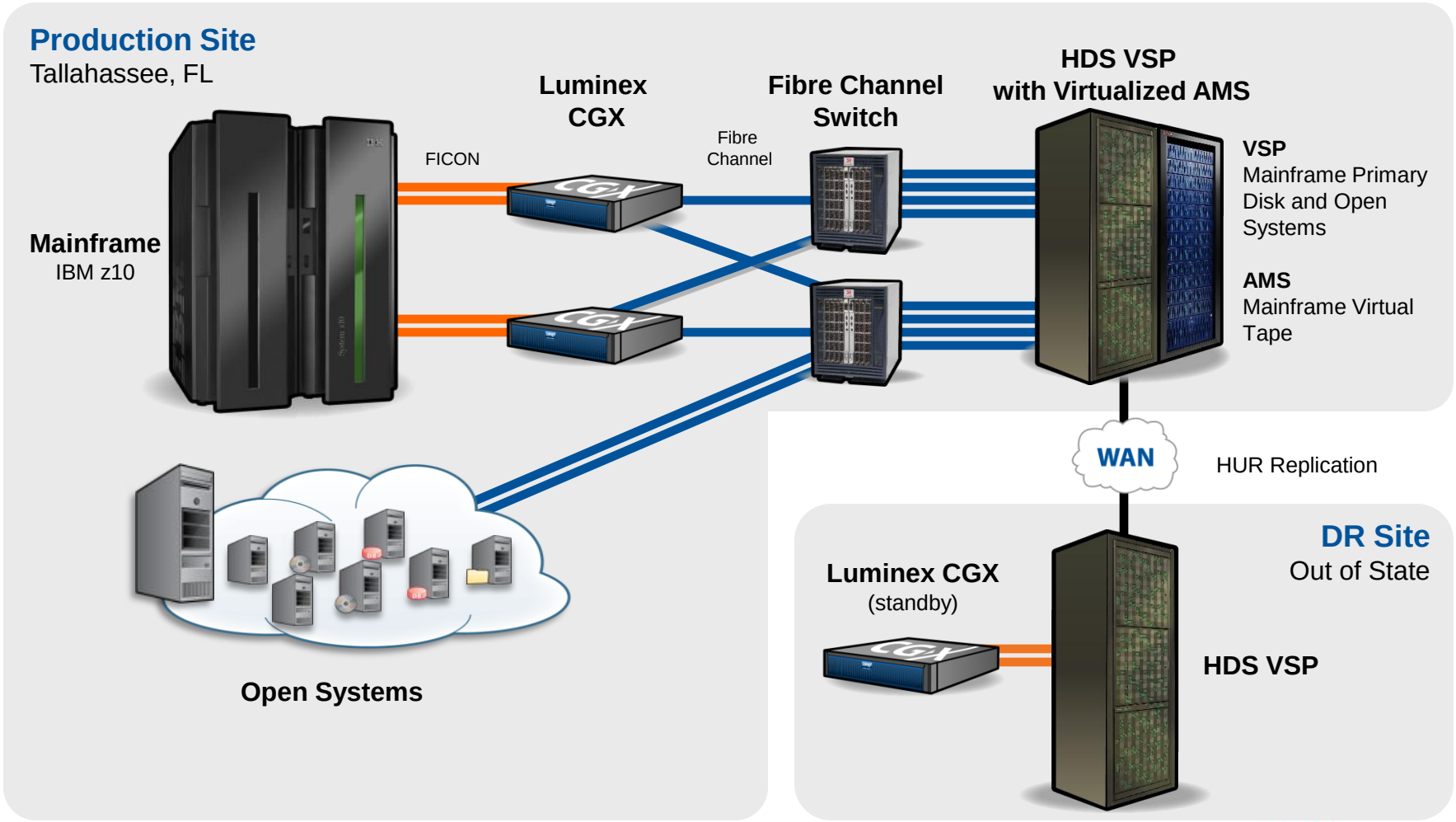
Current Tape Environment



NWRDC
Northwest Regional Data Center

SHARE
Technology · Connections · Results

NWRDC's Solution & Configuration



#SHAREorg

SHARE
Technology · Connections · Results

Thank You

Lee Reiersgord
Luminex Software, Inc.

Scott James
Luminex Software, Inc.

John Fair
Hormel Foods

Wade Juza
Acuity Insurance

Tom Wiatt
NWRDC

SHARE in San Francisco 2013