Backup Imperative: Effectively Managing Costs and Risk with Deduplication Storage

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Organization Overview:
St Luke's Healthcare System

Our mission: "To improve the health of people in our region"

- – Idaho's largest and most advanced health care organization
- – The only Idaho based not-for-profit hospital with an open-door policy, caring for all patients regardless of their ability to pay
- – 4 full-service hospitals, >25 outpatient treatment facilities and clinics
- – Served 699,900 patients last year
- – Over 7,600 employees

Technology Environment

- 165 Employees in IT Organization
- Major Data Center Locations
  - Primary data center: Boise
  - Disaster recovery site: Twin Falls
- Diverse IT Environment
  - ~300 TB of Compellent and IBM SAN storage
    - ~260 TB in Boise
    - ~38 TB in Twin Falls
  - HP Blade infrastructure
  - 500+ Windows servers, AIX, Linux, Solaris
  - 22 VMware ESX servers
    - 200+ VM Guests

St. Luke's Backup and DR

- Legacy Backup Environment
  - Backup to tape
    - StorageTek Powderhorn tape library
      - Eight 9940B tape drives and 6000+ slots
    - One NetWorker Server/Storage node
    - One Windows Storage node
  - Tapes transported offsite for DR
- Current Backup Environment
  - EMC Data Domain deduplication storage systems
    - Two DD690 systems (each 48 TB raw) for backup/DR
    - EMC Data Domain Replicator software
      - WAN-based replication to DR site
  - EMC NetWorker for centralized backup and recovery management
    - One Windows NetWorker Server/Cloning server
    - Two SUSE Storage nodes
    - One Windows VM for NetWorker Management server

Challenges

- **Inefficient, Unreliable and Costly Tape Processes**
  - Tape infrastructure nearing end of life
    - Vendor no longer supporting
    - Cost prohibitive to replace
  - Massive data growth
    - Struggling to meet backup windows
  - Tape media management and costs
    - Consuming 180 tapes per month just for cloning
    - Administrative burden
  - Slow and unreliable recoveries from tape
    - Always heroic measures to meet SLA's

Backup Redesign Objectives

- Regain Control Over Backup Processes
  - Consistent, reliable processes across data centers
  - Attain excellent business value and ROI
- Improve DR Capabilities
  - Manage risk and reduce costs
  - Achieve data consistency across sites
- Faster Backups/Restores
  - Reduce backup window
  - Improve recovery SLA's
- Reduce Administrative Burden
  - Free network administrator
  - Automate management and policies
  - Implement a maintainable and scalable infrastructure

Technology Selection Process

- **Selection Process**
  - Identified deduplication as critical technology
    - Without deduplication, an additional 300 TB of disk was not financially feasible
      - And double that capacity for DR considerations…
  - Compared the following solutions
    - EMC: Data Domain and Avamar
    - Others: Copan, Exagrid, FalconStor and Quantum
  - Selection decision based on 'real world' scenarios
    - Considered:
      - Staging requirements
      - Avamar grid requirements
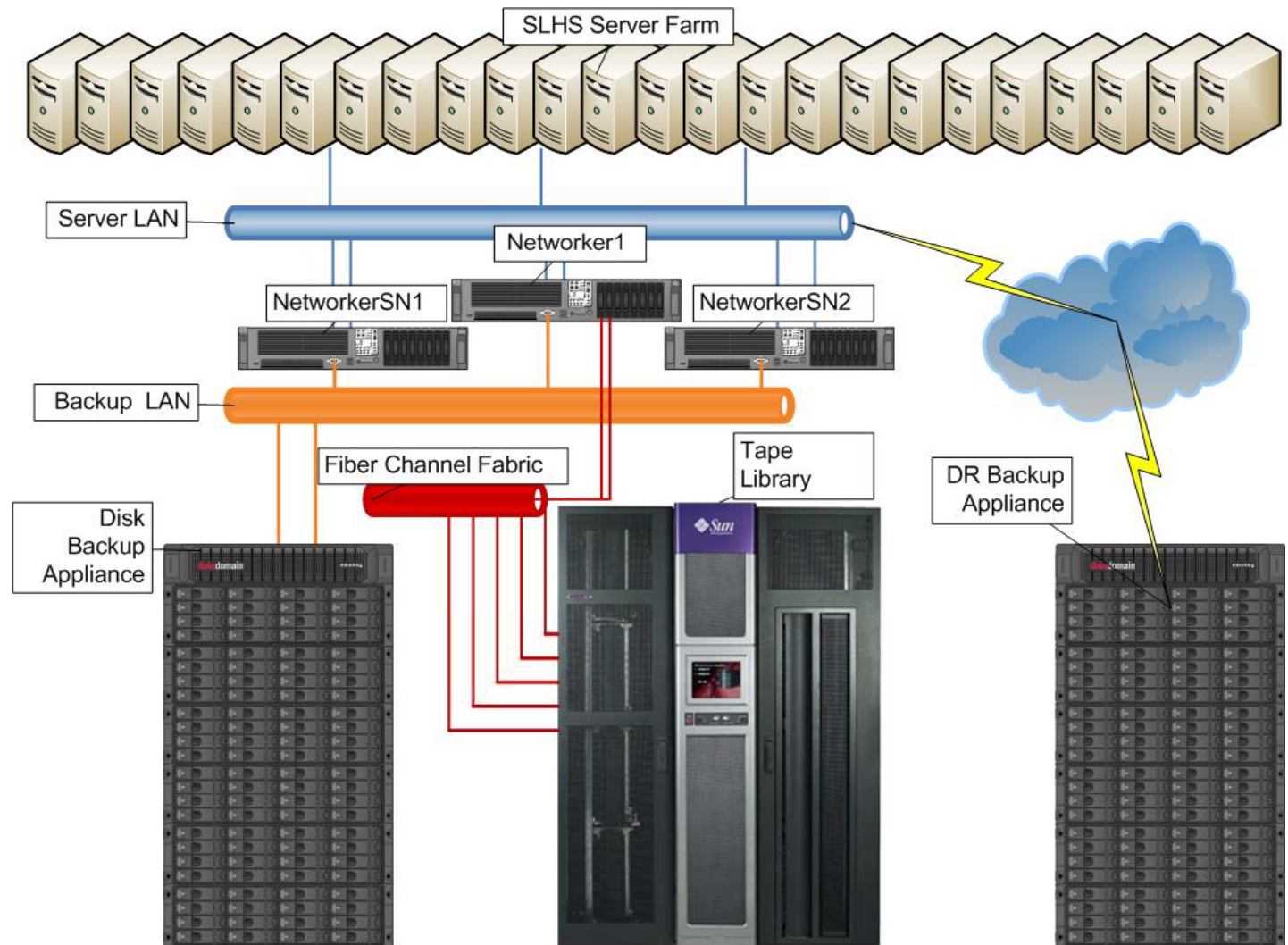   - Inline deduplication requirement
      - Cost of each solution

St. Luke's Environment Today

Backup and DR Results

- Eliminated Tape
  - Except for tertiary copy of specific data sets for legal requirements
- Effectively Managing Storage Growth
  - Approx. 228 TB of backups stored on 26 TB of deduplication storage disk
    - 8.6x reduction across all applications
- Maintained Backup Window
- Improved Recovery Times
  - Recoveries 4-10x faster, 45 minutes to 4 minutes
- Data Consistency Between Primary and DR Sites with Replication
 - Bandwidth-efficient and fast replication over existing WAN

Business Benefits Achieved

- Complete Backup and DR Process Automation
  - Reduced 480 hrs/month administration or 3 FTE

- Considerable Cost Savings
  - More than $450K in capital expenditures
  - About $75K per year in tape costs

- Faster Backups and Recoveries
  - Backups easily achieved within designated window
  - Improved SLA's

Business Benefits cont.

- Enhanced DR Processes
  - Fast time-to-DR synch, near instantaneous
  - Enhanced business continuity capabilities
    - Successful tests using non-technical employee following documented recovery procedures
    - Able to start recovery processes from DR facility in 3.5 hours
- Simplified Management
  - Offsite DR copies automatically replicated
  - NetWorker indexes replicated every 5 minutes
  - No more broken tapes
- Better Data Center Utilization
  - Removal of Powderhorn will significantly reduce space, cooling and electrical Requirements
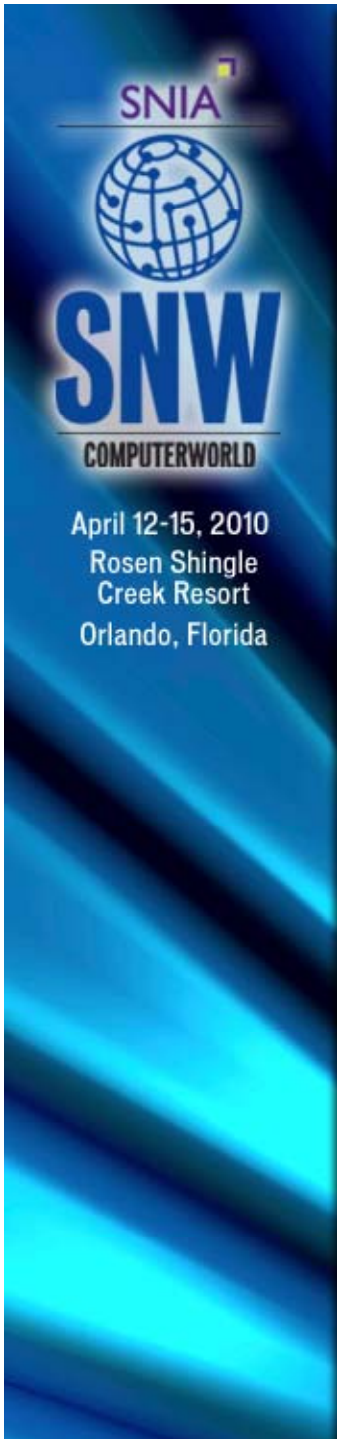
Summary

Major Step in Data Center Modernization

- Reduction in Overall Data Protection and Operating Costs

- Complete Backup and DR Process Automation

- Deduplication Storage that Scales with Environment

- Reduced Risk, Improved Service to Customers

Q&A

Thank You!