

IT DISASTER RECOVERY

& BUSINESS CONTINUITY PLANS

IT DISASTER RECOVERY (DR)

- ▶ **Business Continuity** is planning and preparation to ensure an institution can continue to operate in case of serious incidents or disasters and is the ability to recover to an operational state within a reasonably short period of time.
- ▶ **DR** is a set of procedures to enable the recover or continuation of vital technology infrastructure and systems following a natural or human-induced disaster. **DR** focuses on the technology systems supporting critical business functions. **DR** is a subset of the Business Continuity Plan for institutions.

What Can Lead to Utilizing DR

- ▶ Natural Disasters

- ▶ Fire
- ▶ Flood
- ▶ Tornados
- ▶ Hurricanes
- ▶ Earthquakes

- ▶ Impossible to prevent

- ▶ Human-Induced Disasters
(Intentional and Unintentional)

- ▶ Infrastructure Failure
- ▶ Bio-Terrorism (Ransomware, SPAM, Viruses, etc.)
- ▶ IT “Bugs” in software or hardware components

- ▶ Not always possible to prevent

Wyoming Community College DR Project

- ▶ Executive Council made DR a priority in June 2016 as Shared Services Project
- ▶ LCCC and Casper College took the lead in a joint project
 - ▶ Evaluated several industry standard solutions
 - ▶ VMWare Site Recovery, Veeam, Zerto, and VMWare Cloud
 - ▶ Piloted Two Solutions
 - ▶ Veeam and Zerto
 - ▶ Easy of Use
 - ▶ Cost - Licensing and Infrastructure
 - ▶ Point in time Recovery
 - ▶ Recovery back to primary location
 - ▶ Which technology systems are critical for DR protection

LCCC Technology At a Glance

▶ LCCC Hosted Technology

- ▶ College ERP - Ellucian Colleague
 - ▶ Web Advisor
 - ▶ Self-Service
- ▶ Recruiting Software - Recruit
- ▶ Document Management - ImageNow
- ▶ Virtual Servers and Desktops - VMWare
- ▶ Campus Website - OU Campus
- ▶ File and Data Storage
- ▶ Security Cameras - OnSSI

▶ Vendor Hosted Technology

- ▶ Learning Management System - D2L
- ▶ Campus Portal - Eagles Eye
- ▶ Care Team Software - Maxient
- ▶ Assessment Software - Campus Labs
- ▶ Yuja
- ▶ Email
- ▶ Emergency Alert - RAVE
- ▶ Curriculum Management - Curricunet

Common Strategies Used in DR

Industry Options

- ▶ Technology Systems Backups and Redundancy
 - ▶ Data Backup
 - ▶ Tape Backups
 - ▶ Disk Backups
 - ▶ Data Replication
 - ▶ High Availability - at more than one location
 - ▶ Off-site
 - ▶ Private and Hybrid Cloud DR Solutions

LCCCs Current Method

- ▶ Technology Systems Backups and Redundancy
 - ▶ Disk Data Backup
 - ▶ Data Replication
 - ▶ Disk Backup stored in Main Server Room in Fine Arts, Copy in Telephone Room EEC and Monthly Copy at ACC
- ▶ Formal Business Continuity and DR Plan to be established as part of ITGC and IT Strategic Plan

LCCC - Thoughts on Pilot

- ▶ Critical Systems On-Campus Systems (13 total Servers)
 - ▶ Any production product for College ERP - Colleague, Recruit, ImageNow, VMWare Servers
- ▶ Point in Time Recovery
 - ▶ 1 hour would be sufficient
 - ▶ 6 seconds and to the minute recovery would be awesome
- ▶ Hybrid DR solution may be the best fit
- ▶ Cost is very important
- ▶ Veeam is already LCCC's backup solution - just need to update the current licenses

Piloted Solutions

Veeam

- ▶ Cost effective solution - about \$10,000 for Enterprise Plus Edition
- ▶ Replication via snapshot backup
- ▶ Can get point-in-time recovery to as little as 1 hour
- ▶ File and VMDK level Backup
- ▶ Is currently used by a few institutions for backup solution
- ▶ Requires more overhead on storage and server resources
- ▶ 3 Wyoming CC already use Veeam for Backup solution, with 1 planning to move to Veeam Backup

Zerto

- ▶ Cost effective solution - 25 pack license 1st-Year \$25,000 - can be divided among institutions as necessary
- ▶ 1 license allows an institution to send their files to two locations at no additional costs
- ▶ Easy setup and configuration - setup can be done in less than two hours
- ▶ Replication method is done as a trickle over a broadband connection - 6 second point-in-time recovery
- ▶ Can recovery or failover to an exact minute
- ▶ Technology Agnostic

Cost Comparison - Not Apples to Apples

Zerto New Customer License Estimate

	Year 1*	Year 2**	Year 3**	3yr Total	Avg. Cost per yr
Zerto 25 licenses and maintenance	\$24,948	\$5,002	\$5,002	\$34,952	\$11,651

SPLIT ESTIMATE	Year 1*	Year 2**	Year 3**	3yr Total	Avg. Cost per yr
LCCC 13 Zerto	\$12,973	\$2,601	\$2,601	\$18,175	\$6,058
Additional Overhead - 7% in Storage^	\$25	\$25	\$25	\$76	\$25
Total	\$12,998	\$2,626	\$2,626	\$18,251	\$6,084
CC 12 Zerto	\$11,975	\$2,401	\$2,401	\$16,777	\$5,592
Additional Overhead - 7% in Storage^	\$25	\$25	\$25	\$76	\$25
Total	\$12,000	\$2,426	\$2,426	\$16,853	\$5,618

*Includes purchase and 1st year of maintenance

** Zerto maintenance

^ Is total GB of Space for LCCC Production multiplied by 7% overhead, multiplied by \$.24 per GB; these costs will vary by institution based on size of Colleague production, and the price per GB for storage.

Veeam Enterprise New Customer vs Existing Customer with Veeam Standard License Estimate

PRICING IS PER INSTITUTION	Year 1	Year 2	Year 3	3yr Total	Avg. Cost per yr
<u>New Customer - Veeam Enterprise CPU Socket and 3 Yr Maintenance - Estimate based on 4 hosts with 2 CPU socket = 8 licenses</u>	\$9,799	\$0	\$0	\$9,799	\$3,266
Additional Overhead - 30% in Storage^	\$108	\$108	\$108	\$325	\$108
Total	\$9,907	\$108	\$108	\$10,124	\$3,375
<u>Existing Customer - Upgrade To Veeam Enterprise - Estimate based on 4 hosts with 2 CPU socket = 8 licenses</u>	\$7,360	\$0	\$0	\$7,360	\$2,453
Additional Overhead - 30% in Storage^	\$108	\$108	\$108	\$325	\$108
Total	\$7,468	\$108	\$108	\$7,685	\$2,562

^ Is total GB of Space for LCCC Production multiplied by 30% overhead, multiplied by \$.24 per GB; these costs will vary by institution based on size of Colleague production, and the price per GB for storage.

Solution Recommendation

- ▶ Either Solution would be viable for any Community College in Wyoming
 - ▶ Colleges could choose what technology best meets their situation
- ▶ A Hybrid solution is very common, especially in Financial institutions, why not for Higher Education
 - ▶ Use Veeam for Non-critical technology solutions, files and data
 - ▶ Use Zerto for mission critical, can't be down, technology solutions
- ▶ Veeam provides:
 - ▶ Lower cost of entry into DR solution
 - ▶ Adequate RPO (best case is one-hour)
 - ▶ Adequate RTO (best case is one-hour)
- ▶ Zerto provides:
 - ▶ Best solution for RPO (6 seconds or designate exact minute)
 - ▶ Best RTO (19 minutes)
 - ▶ Ease of Use, In a DR situation you don't want to have to think about the process.
 - ▶ Ability to restore back to original site with ease

Questions????

Thanks for your time!

Chad Marley, CTO - Laramie County Community College