

Data Backup & Disaster Recovery
SCAMPS Annual Meeting 2016
Joe Foster, VC3

The slide features a light blue cloud at the top with arrows pointing down to various devices: a server rack, a desktop monitor, a laptop, and a smartphone. The text is centered and in a dark blue font.



Session Goals

- ✓ The essential building blocks of data protection – identify where you are now
- ✓ What impacts the creation of a successful backup process
- ✓ Understanding disaster recovery options



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The slide has a white background with a blue border. At the bottom, there is a decorative bar with a grid of blue squares.



DATA MANAGEMENT

The slide shows a magnifying glass over a document with a bar chart and an upward-pointing arrow. The text 'DATA MANAGEMENT' is in bold blue letters at the bottom left.

Data Management

First step of data protection

- Identification and organization of critical data
 - Databases
 - Critical files
 - Legal files
 - Staff files
 - Email
 - Customer facing applications and websites



Data Management

Continuous review, design and training

- Organizational changes
 - New positions
 - Reorganizations
 - New staff
- Application changes
 - Upgrades
 - New programs
 - Desktop software



Data Management

Continuous review, design and training

- Customer facing systems
 - Websites
 - Bill presentment
 - Outage notifications
- System design considerations
 - Production storage redundancy
 - Backup objectives
 - Disaster recovery objectives





Data Backup

Recovery Point Objective (RPO)

- The RPO is a measure of the maximum time period in which data might be lost if there is a Major Incident affecting an IT Service- not a direct measure of how much data might be lost

Bare metal

- A backup and restore method that extracts the hardware from the backup set and allows the backup data to be restored on a system with less impact due to operating system and hardware

Dataset size

- The amount of structured data being protected by your back up process

Security requirements

- Additional components added to your back up process due to organizational need or imposed on the organization by a regulatory agency

Hosted (cloud) services

- Organizational data stored or developed outside of the organization's premises based systems
- 3rd party file storage utilities
- SaaS or hosted applications


Server virtualization

- Allows for greater backup flexibility
- Increases speed to recovery in disaster
- Allows for hybrid cloud / premises rapid recovery

Data Backup Considerations

Data source considerations

- Multi Layered – One size doesn't fit all
 - Traditional hardware
 - **Virtualization**
 - **Cloud impact**
- File data
 - Centralized data
 - Local PCs
 - Hosted services (cloud)



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Data Backup Considerations

Data source considerations

- Server data
 - Database
 - Email
 - **Virtual machines**
 - *the advantage of virtualization*
 - **Hosted services (cloud)**
- Mobile devices
 - Inspectors
 - Meter reading
 - Senior staff



Data Backup Considerations

Data retention

- Daily
- Weekly
- Monthly
- Quarterly
- Annually



Security concerns

- Encrypted data storage
- Encryption at rest
- Encrypted transport
- Secure staff



Data Backup Considerations

Retention requirements

- Business priorities
- Freedom of Information Act (FoIA)
- E-Discovery
- Financial audit
- SC Department of Records and Archives (<http://rm.sc.gov/generalschedules/Documents/genskedmun.pdf>) Subarticles 9 and 11
- Federal Code
 - Title 18 CFR 125.3 - Schedule of records and periods of retention
- Payment Card Industry (PCI) security standards
- Personally Identifiable Information (PII)
 - RedFlag
 - SC State Identity Theft Regulations



Data Backup Considerations

Retention storage (Media)

- Outdated
 - Tape
 - External drives
 - CD/DVD Optical
 - USB memory device
 - FTP
 - Local drives
- Current Media types
 - Tape
 - Data replication
 - Dedicated disk appliance
 - Cloud storage options
 - Hybrid cloud appliance



Data Backup Considerations

Backup strategies

- Onsite
 - Temporary
 - Immediate access
 - Most vulnerable
- Off-site
 - Local off-site – another office
 - Geographic disparate locations
 - Record management companies
 - Cloud storage (private or public)
- Hybrid
 - Local onsite
 - Cloud storage



Data Restoration Situations

- File loss
 - Accidental deletion
 - Data corruption
 - Loss of end point
- Compliance request
 - Audit
 - FoIA
 - eDiscovery
- Data migration
 - New infrastructure
 - Move to cloud
- Testing





Disaster Recovery

Recovery Time Objective (RTO)

- The recovery time objective (RTO) is the desired time and services when a process or services must be restored after a disaster declaration to avoid undesirable consequences related to an interruption of service.

Disaster Recovery Decisions

Design and planning

- Back up choices guide DR strategy

Not all servers and services may be needed in your DR program

- Use a desktop planning exercise to direct your choices

Disaster Recovery Decisions

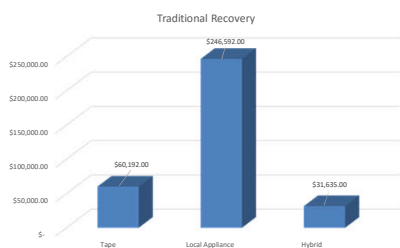
Desktop planning exercise recommendations

- Determine all internal and customer focused services being provided
- Set reasonable RTO timelines for each service
- Not all services may require the same return to service
- Review RPO timeframes
- Include services and processes in exercise not equipment

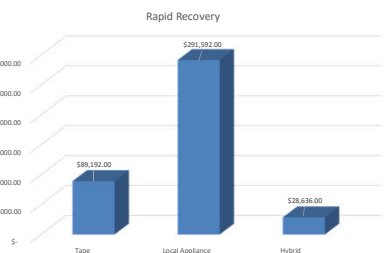
- Payroll
- Communications
- SCADA access
- Bill presentment
- Notification systems
- Offsite workspace



DR Options – 20 Tb Total Storage



DR Options – 20 Tb Total Storage





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