

BADR CAD – Backup, Archiving, and Disaster Recovery for the Design Professional

James Gerth
Senior Engineering Designer

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Class summary

In this class we will cover the essentials of data backup and restoration of critical design information, and we'll differentiate between normal backup strategies and archival technologies and methods.

The class will also cover disaster recovery planning and techniques to maintain business continuation and data security in extreme circumstances, from fires, to natural disasters, to zombie apocalypses.

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- Who doesn't need to be here?

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Key learning objectives

At the end of this class, you will be able to:

- Evaluate the risk factors that are important to your operation, from unavoidable, to probable, to worst case scenarios
- Understand and describe what your organization needs to backup
- How backups need to be implemented from a technical perspective
- Understand data retention in the context of your industry
- Differentiate between backups and archives and implement an archival strategy appropriate to the organization
- Develop a disaster recovery plan for business continuation

Backup

Archive

Disaster Recovery

- What all of these concepts share is the fundamental need to preserve, protect, and recover information essential to the continuation of the organization.
- The primary focus here today is design information, in particular the digital data that makes up the design information.

BADR - Time and Circumstance

- Backups can be considered the short tem storage and protection against loss
- Archiving is not just a longer time frame backup, but has to incorporate searching against metadata, a secure data store, migration, & redundancy
- Disaster Recovery is where it comes together, how we plan for the inevitable, the unavoidable, and put Humpty Dumpty together again.
- P P P P P P P

Evaluating Risks

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Technology Risks

- Undetermined file corruption
- User error / blunder / deletion / 'phat fingers'
- PEBKAC / ID10T errors
- Disk failure – workstation
- Disk Failure – server
- WAN/LAN infrastructure issues – from switches and routers to cabling
- Malware / Ransomware / Virus / Malverts / Botnets
- DDOS – victim or perpetrator

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Human Factor Risks

- Disgruntled employee
- Ex employee
- Soon-to-be Ex employee
 - Passwords unauthorized encryption
 - Home Depot experience
 - RIAA/BSA/Other
- Network Intrusion
 - Industrial Espionage
 - Sabotage
 - Political Activism

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The C-Suite



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Other Risks

- Fire, Flood, Lightning
- Earthquake, Tsunami
- Tornado, Hurricane, Blizzard
- Extreme Weather
 - Katrina, Sandy,
 - Climate change
- Litigation and liability
- IRS, FBI, LEO (Swatting)
- NSA, FISA,

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Zombie Apocalypse



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Backups

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Back up Mechanics

- 3-2-1 Rule
- Don't backup up everything
- Disk Imaging
 - Server
 - System
 - Data
 - Workstation
 - System
 - Data

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Disk Imaging

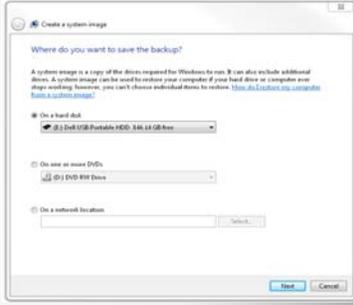
- To
 - Disk - stored offline
 - Network - normally unshared
 - NAS - dedicated NAS for system images
 - Tape - appropriate for servers



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Disk Imaging

- Tools
 - OS Native
 - Clonezilla
 - 3rd Party commercial



The screenshot shows a 'Create a system image' dialog box. It asks 'Where do you want to save the backup?' and provides three options: 'On a hard disk' (selected), 'On one or more DVDs', and 'On a network location'. The 'On a hard disk' option is expanded to show a dropdown menu with 'D:\2013 Portable HDD - 3.00 TB GPT' selected. There are 'Next' and 'Cancel' buttons at the bottom.

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System Image Backups

- Restore to bare metal
 - or
- Repair damaged system
- Only take snapshots at system changes or set intervals
 - Weekly
 - Monthly
 - Quarterly

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Data Backups Individual Workstations

- External Disk
 - Hot swap SATA disk dock, USB or eSata
 - For eSata make sure that Hot Swap is enabled in Bios
- NAS
- Workstation to Server
- Tape – primarily on servers
- Cloud / FTP / Remote hosting

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Backup Strategies

- How much can you afford to lose?
 - The more you keep, the more it costs
- What to backup?
 - Design files, spreadsheets, specs, docs, email, databases
- 3-2-1 rule
- Incrementals and Fulls
- Backup Sets

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Full and Incremental

- Weekly full backups
 - Once a week, outside of business hours, backup all the data files
- Daily incrementals
 - Every business day, back up every file that has been modified since the last backup, whether a full or an incremental
 - Software used to backup must set the archive bit.
- Provides one week's worth of file versioning

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A Backup is only as good as the recovery

- Test, Test and Test
 - Set up a schedule, and stick to it, to test your backups and verify that you can recover any given file, from any date within your backup range.
- If you're not testing, you're not backing anything up

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Off Site Storage

- Sometimes the only safe place to be is elsewhere.

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Special Circumstances

- Data retention prompted by a legal hold
 - Consult with competent legal counsel in your jurisdiction.
 - Generally triggered by notification of litigation
 - May also be triggered if you are aware of the possibility of litigation
 - Deleting or recycling backup media is not permitted

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Software Options

- What's important to you?
 - Versioning Cataloging
 - How many, how far back?
 - Logging
 - How else will you know about problems?
 - Notifications VIA Email, SSM
 - Vendor support
 - Database handling
 - Continuous Data Protection

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Freeware, Commercial, Online

- Clonezilla
- DRSyncPro
- Obnam
- Rsync
- tar
- Paragon
- Acronis
- BackupExec
- NetBackup
- TimeMachine
- Retrospect
- SpiderOak
- Carbonite
- Barracuda
- CrashPlan
- DropBox
- SugarSync

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Archiving

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This is not an Archive



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Neither is this



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Archival Media



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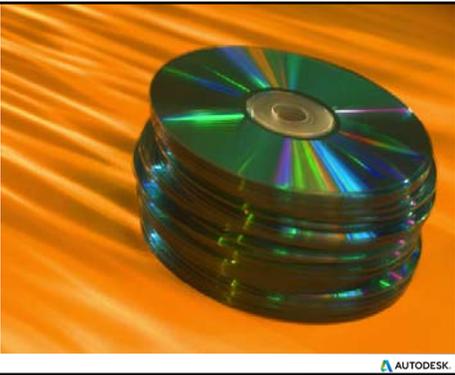
Archival Media



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Archival Media



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Managing Archives



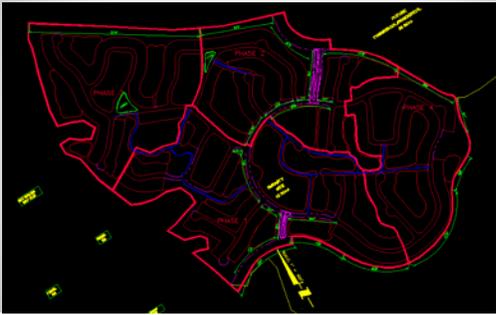
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The Day before Yesterday



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Metadata Matters



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Archiving for the Short Term

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CD Catalogs

- SmartCD Catalog
 - www.smartcdcatalog.com
- WinCatalog

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Managing Archives for the Long Term

- Think in terms of a library

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Long Term Thinking

- Long Now Foundation
 - Est 01996 to “creatively foster long-term thinking and responsibility in the framework of the next 10,000 years”
 - Projects include the 10,000 year clock, the Rosetta Project
- Georgia GuideStones
 - Monument in Elberton, GA that will be legible for multiple millennia
- Mt Rushmore
 - In 10,000 years, Washington's nose will be ½” shorter

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Physical Storage

- Salt mines
- Limestone mines
- Natural Caverns

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Document Retention

- Legal requirements mandated by legislation

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Disaster Recovery

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Stuff Happens



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Image: FEMA.Gov
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Disaster Risks

- Assess your location
 - Vulnerabilities to extreme weather or other natural disasters
- Widen your point of view
- Be Realistic
 - Sorry – that means no zombies or werewolf attacks
- Be unrealistic – consider extreme events from a Class 5 hurricane, to a New Madrid type event, or a Mt Pinatubo class eruption. As long as it's possible in your geographic location, it's worth considering.

Business Impact Analysis

Business Impact Analysis Worksheet

Event / Scenario	Operational Impact	Financial Impact

Instructions:

- Identify events or scenarios which interruption would have a greater impact (e.g., revenue, risk of health/safety, etc.)
- Identify the location of the interruption or point in time when the operational aspect of the organization will cease.
- Considerations (contingency for your business):
 - Operational Impact:
 - Loss sales and revenue
 - Employee and team working from alternate sites
 - Reputation
 - Customer retention (e.g., goodwill value)
 - Compliance, regulatory, ethics, etc.
 - Regulatory fines
 - Contractual penalties or loss of contractual business
 - Customer dissatisfaction or defection
 - Energy increasing business plan or strategic initiatives
 - Financial Impact:
 - Quantify operational impacts in financial terms

Download worksheet and reference material from ready.gov

Mitigation Efforts

- What can you do to minimize impacts?
- What is the cost of that effort compared to the cost of the impact?
 - Cost benefit analysis
 - ROI is tricky --
- Preventing problems is cheaper than rebuilding

Rubber, Meet Road
or
Business Continuity Planning

- Gather the stakeholders

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Rubber, Meet Road
or
Business Continuity Planning

- Gather the stakeholders
- Plan for the worst, hope for the best
 - Test, Tune, and Re-Test

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Rubber, Meet Road
or
Business Continuity Planning

- Gather the stakeholders
- Plan for the worst, hope for the best
- Who What Where When How

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Proper Prior Planning Prevents Poor Performance



Disaster Planning and Recovery Resources

- Ready.Gov
- Drj.Com



Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2015 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time





