



Agenda

- Business Continuity, DR and Data Backup
- Business Costs of Data
- Historical Review of Backup Devices
- Recovery Point Objective and Recovery Time
- Tape vs. Disk
- Cost of Data Protection
- A Complete BDR Solution for Small to Medium Size Businesses

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Business Continuity, DR and Data Backup

What's the difference between business continuity planning, disaster recovery planning, and back ups?

- Business Continuity encompasses Disaster Recovery, Backups and even business succession planning. It provides the strategy and process involved to make sure your company survives the loss of key individuals, data, equipment, or facilities.
- Disaster Recovery typically refers how companies recover from large scale disasters, like an earthquake or terrorist attacks.
- The basic building block of both is how you back up your data. On site, off-site, frequency, total, incremental...
- Both business continuity plans and disaster recovery plans determine how a company will keep functioning after a disruptive event until its normal facilities and capabilities are restored.

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By the Numbers

- 93% of companies that lost their data for 10 days or more filed for bankruptcy within one year of the disaster, and 50% filed for bankruptcy immediately. (Source: National Archives & Records Administration in Washington.)
- 20% of small to medium businesses will suffer a major disaster causing loss of critical data every 5 years. (Source: Richmond House Group)
- This year, 40% of small to medium businesses that manage their own network and use the Internet for more than e-mail will have their network accessed by a hacker, and more than 50% won't even know they were attacked. (Source: Gartner Group)

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By the Numbers

- About 70% of business people have experienced (or will experience) data loss due to accidental deletion, disk or system failure, viruses, fire or some other disaster (Source: Carbonite, an online backup service)
- The first reaction of employees who lose their data is to try to recover the lost data themselves by using recovery software or either restarting or unplugging their computer — steps that can make later data recovery impossible. (Source: 2005 global survey by Minneapolis-based Ontrack Data Recovery)

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Causes of Catastrophic Data Loss

Natural Disaster

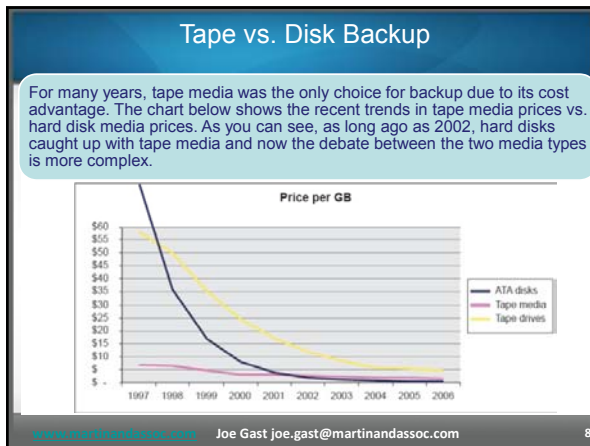
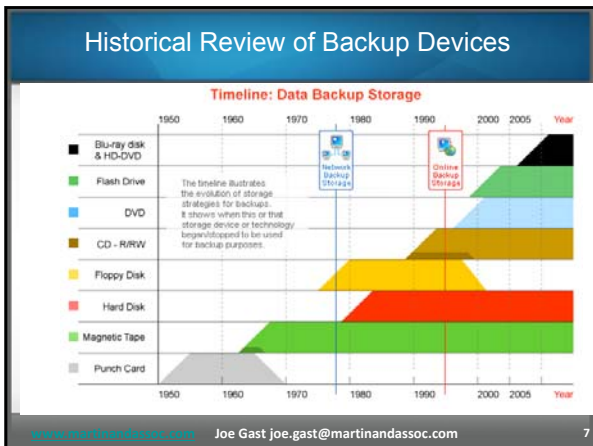
- Hurricanes
- Floods
- Fires
- Lightning
- Power Surges

Man-made Disaster

- Viruses
- Theft
- Hardware damaged
- Software corrupted
- Human error

Are You Ready?

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Tape vs. Disk Backup

The fundamental question is: What are your restore or recovery objectives? If you're trying to pick the right backup solution and your business couldn't survive a day or two without quick access to data you need to ask, how quickly can this solution get my critical data back up and running if I suffer a failure?

With disk storage the answer is, pretty quick. Unlike tape, which typically stores data in a linear fashion, meaning you have to start at the beginning and run through it until you find what you're looking for. Disk storage is more like a mirror, reflecting every aspect of your system at once.

All a tape does is store data, whereas the best disk-based software can take a complete image of your OS, your settings and your applications. With a disk solution, you don't have to search for media; you don't have to search for applications. It is all right there.

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Tape vs. Disk Backup

	Advantages of Tape	Advantages of Disk
Portability	More compact and lighter weight than hard disk.	
Reliability		Low MTBF (mean time between failure). Hard disk is invariably significantly more reliable than tape. The only exception to this is that tape can in some instances have better resistance to shock.
Random Access		No winding or seeking to find information. Within backup applications this contributes to much faster backup and restore times. Hard disk access times are typically 10 milliseconds whilst it can take minutes to seek the correct place on a tape.
Long Life		Whilst each tape is specified to have only a limited number of read/write cycles, hard disks have virtually no limitation in this regard.
Price		As shown in the graph, hard disks seems to be cheaper than equivalent tape media. However this trend may not continue if new tape products are launched.
Speed		Raw data transfer rates tend to be superior, although the interface via which the device is connected can tend to limit the transfer rate. With the advent of USB2 and SATA, the raw speed advantage of hard disk is confirmed.
Rewritability		Instant ability to write over data, whereas tapes can require erase cycles and re-ensencing.

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Business Costs of Data

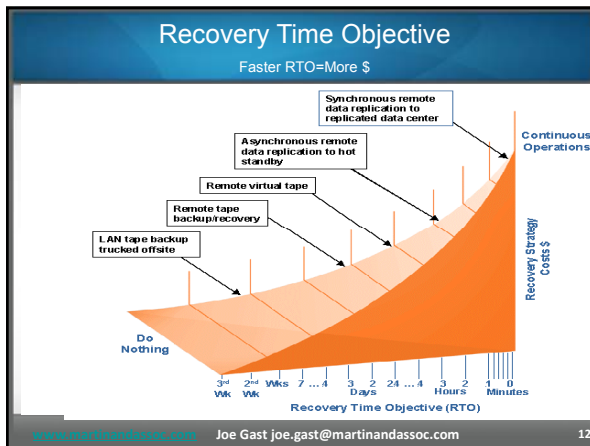
The value of data varies significantly among industries, the size of the company and even by an application within the same firm. The lost business opportunity due to a website outage for a small law firm may be inconsequential. The cost to a company such as Amazon, American Express, eBay or Visa may be on the order of several million dollars per hour.

To determine the value of data, answer the following questions:

- What are the costs for lost data per hour for the applications that are being protected?
- What are the costs for delayed processing (data not lost, although application isn't running for some time) on a per hour basis?

The SLA metrics must be specified by the business application owners and should include the recovery point objective (RPO) and the recovery time objective (RTO). The RPO is the amount of data that may be lost, and the RTO is the amount of time it takes to perform the recovery.

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A Clear Difference- RP & RT

	TAPE	VS.	Disk
Backup Window	A significant backup window is required to complete a full backup — time lost for access to vital systems.		There is no backup window...your critical business systems remain up and running.
Recovery Point	Systems are typically backed up every 24 hours. Are you ready to lose a day's worth of work?		Data snap shots take place every 15 minutes ...about the same length of time as a coffee break.
Recovery Time	There's nothing automatic about restoring with tape. The process is time-consuming and labor intensive.		Recovery is as simple as a pushing few buttons (or clicking a mouse). Systems are restored in less than a half hour.

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Cost of Data Protection

Hardware & Software Costs	Example
Total # of Servers to Backup (all sites)	10
Total current backup system hardware cost (all sites)	\$5,000
<i>ROI calculation assumes 3 year depreciation</i>	
Total current backup software cost (all sites)	\$10,000
<i>est. \$750 per server + \$900 per Exchange or SQL plug-in</i>	
Annual backup system hardware maintenance cost	\$750
<i>est. 15% list price of system hardware</i>	
Annual backup system software maintenance cost	\$ 2,000
<i>est. 20% list price of system software</i>	
CURRENT MONTHLY HARDWARE & SOFTWARE COSTS	\$ 645.83
Tape & Tape Storage Costs	
Total tapes in use (total for all locations)	26
<i>e.g., 10 day + 4 wk + 12 mo = 26 tapes</i>	
Cost per tape	\$65.00
<i>est. \$65 per tape</i>	
Monthly offsite tape storage cost (total for all locations)	\$300.00
<i>est. \$300</i>	
CURRENT MONTHLY TAPE & TAPE STORAGE COSTS	\$440.83

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Cost of Data Protection

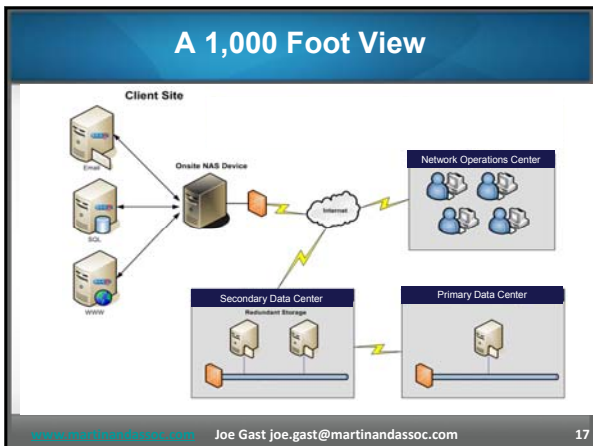
Operational Costs	
How many days a week do you Backup	5
Hours of backup system operation per day	est. = 1 hour
Backup system operator hourly rate	est. \$37.50
Number of restores per month	est. = 5 restores
Average time per restore in hours	est. = 2 hours
CURRENT MONTHLY OPERATIONAL COSTS	\$ 1,125.00
Estimated Off-Site Service Costs if Data Sent to Remote Data Center	
Multiply # of GB by cost per GB	est. \$3 to \$12 per GB. Amt of data & options affect cost
	\$1,000.00

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A Comprehensive Solution Must

Protect
Valuable Data &
Minimize
Downtime!

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- ### Solution Details
- A Microsoft Windows Server only solution-no desktops (set up network shares for critical desktop info)
 - A NAS is required at each end-client location
 - Block Level Backups vs. File-level
 - Incremental Forever Methodology-near real-time backup (every 15 minutes).
 - Smart Data Transport-UDP vs. FTP
 - Security -256 AES Encryption on NAS and off-site
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State-of-the-Art Technology

- Standby server- NAS speedily converts to a virtual server
- Our solution allows for seamless, daily off-site storage, if this option is selected.
- Data stored at two XO highly available, highly secure Data Centers in Phoenix and Baltimore
- Easy restoration – remotely done by our engineers.
- NAS provides capability to perform bare metal restores to dissimilar hardware with minimal downtime

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Restoration and Virtualization

- All restores-individual files, file folders, email messages, and Exchange mailboxes can be restored by our engineers.
- The NAS comes with built-in virtualization software making it a stand-by server. This allows a server which has failed to be restored on the NAS as a virtual image giving you working server in less than 20 minutes (in most cases after notification of an actual server crash) Backup of additional servers can also continue at the same time.

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Additional Features

- Bare metal restore to dissimilar hardware- when new hardware/spares arrive, the virtual image can be shutdown and the latest backup image can be used to perform a bare metal install on the new hardware.
- In the event of catastrophe (such as a natural disaster or fire), a new NAS that will be imaged at our collocation facility and sent out to you next-day business air
- For security purposes, your data will never be hosted, only stored at the collocation facility. It is encrypted without the encryption key, it won't be accessible.

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Factors to consider when selecting a solution

- A viable BDR solution should cover all the computing platforms in the business that it is being utilized.
- The solution should provide protection for all data, whether that data resides on a servers, laptops or desktop computers.
- Off-site and on-site backups should occur at regular intervals to meet individual clients' needs.
- Backups should occur rapidly and seamlessly to avoid interfering with server performance while the backup process is being executed.

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Factors to consider when selecting a solution

- For best results, off-site backup should be provided at a hardened, secure data center, and that has a high level of physical security in place along with internet and power redundancy. Data should be secure on-site as well as off-site by using a high level of encryption. The encryption key should be kept in a secure location either by the end-client themselves, or their respective solution provider.
- The Backup and Disaster Recovery solution should restore server images to dissimilar hardware. This is essential, as it prevents VARs from being limited by the type of new server that will be installed.

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Factors to consider when selecting a solution

- It's important to know the recovery time frame following a server crash or catastrophe. The procedure for rebounding after the latter two disasters must not be complex, but rather, comprised of a few simple, straight-forward steps.
- Ensure that there are no hidden fees — the cost to maintain and manage the solution on a weekly, monthly, and annual basis — plus any labor expenditures — should be taken into consideration before signing a deal.
- Are you being provided with coverage 24 hours per day, 365 days per year?

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