WHITE PAPER

Protecting your Data

Grow with the changes

If you're in charge of data protection for a small business, only one thing is certain: change. Company growth and advances in data backup technology require regular reviews of data backup processes and solutions.

The good news is that small businesses have more choices for data backup than ever before. Read on for the essentials that can help you evaluate and refine your data backup strategy.

Related guides:

Preventing security threats and stopping unwanted activities

Maintaining compliance

Managing data storage

Maximizing your Internet connection

Do you know what you're missing?

Many small businesses don't have an IT expert in-house, but even those that do may not use them to their best benefit. Dean Parnell was often the only IT resource in a number of small businesses throughout his 13-year career. In his considerable experience, small businesses often fail to:

- Make data backup an ongoing priority
- Update backup solutions as data outgrows them
- Develop an emergency plan for data loss incidents and educate employees
- Test their data backup and recovery systems (quarterly or annually)

"Most small businesses don't realize what data backup does for them until they have a problem and it's not there," Dean points out. "That's what happened in a DVD replication business I worked for."

For the full case study, please see our *Protecting your data* brochure.

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Data protection, step by step

Naturally, your data backup strategy will vary based on the size and type of your business, but here are the basics.

1. Identify the information you need to back up

- Mapping out your vital information will help you determine how and when to back it up.
- List your accounting information, business plans, customer databases, vendor information, marketing documents, etc.
- Include older records as well as current information.
- Next, divide your list into confidential and non-sensitive data.
- Finally, define and limit who has access to your business' confidential data.

2. Choose your backup solution

- Your best bet will depend on how much data and IT support you have.
- If you have only a small amount of confidential data to back up and not much else, an offline solution may be ideal.
- If you also have lots of non-sensitive data and little in-house tech support, an online backup service can be a lifesaver.
- Compare offline vs. online solutions and get more guidance in the following section.

3. Set a backup schedule

- How frequently you back up your data will depend on what kind it is and how often it changes.
- You may need to back up certain files only once a month if they are rarely updated, but other items may need backup every day.
- Also consider if and when you need to keep older versions of your data, and be sure to dispose of outdated information securely.

4. Test and review your solutions regularly

- Once you invest time, energy and money in a backup system, it only makes sense to ensure it passes the ultimate test: full data recovery.
- Do a test restore shortly after launch, then once every few months. (If you use a hosted solution, ask your vendor how often they test the system.)
- Review data backup options regularly — you may find better or more cost-effective solutions as technology advances.

Perhaps the only sure thing about backup today is that the amount of data involved will continue to increase.

— SearchDataBackup.com[1]

[1] "The state of data backup in 2009, Part 1: Backup hardware" Beth Pariseau, Senior News Writer 16 Dec 2008. http://searchdatabackup.techtarget.com/news/article/0,289142,sid187_gci1342719,00.html

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Offline vs. online solutions

Data backup solutions fall into two categories: traditional offline technology and full-service solutions that are hosted online.

Offline solutions: budget-friendly and do-it-yourself (DIY) options

Traditional or offline backup solutions include tapes, virtual tape libraries, CDs, DVDs, flash drives, external hard drives, on-site servers, virtual servers, and network attached storage (NAS) devices.

If you use hard drives, you can connect them in a RAID (Redundant Array of Independent Disks) configuration to act as one large logical drive that "can be configured for fault tolerance (guarding against data loss), performance (two or more drives working together), or a combination of both."[2]

PROS	CONS
• **Cost:** Tapes, CDs, DVDs and flash drives are quite affordable even on a shoestring budget, and they may be all you need if your store of data is small and slow-growing.	• **Storage risks and costs:** Unless you also regularly store data backup media offsite your backed up data will be susceptible to fire or natural disasters just like your original data. You can use an offsite tape vaulting service to store offline backup media securely — but of course this will increase your backup costs. Also, it's advisable to encrypt your backup media to help prevent data theft in case your backup media are lost or stolen. Encryption software encodes data into an unreadable series of characters with a secret key or password so you can send or store it securely.
• **Recovery time:** All offline data backup methods offer the advantage of fast recovery — you'll be able to restore files quickly since you have your backup media close to hand.	• **Physical vulnerabilities:** Tapes must be rotated and can eventually wear out; DVDs scratch easily; and offline storage devices such as tape and optical libraries often have many moving parts that can fail and corrupt your data. (Even worse: A faulty device may appear to be working normally, resulting in backup failures that go undetected until a restore is attempted, often just when data is needed.) Also, the software applications that send data to backup servers or other devices can cause stability issues with some servers.[3]
• **Mobility:** If your business is largely mobile (with a sales force in the field, for instance), they may not always be able to connect with a network to save and access files, so having offline backup options on hand will be more practical for them.[4]	• **Management:** If your data is substantial and growing, managing backup schedules and media will also become more complex, possibly requiring more resources and expertise.

[2] http://www.brighthub.com/computing/smb-security/articles/9323.aspx [3] "Hybrid cloud backup for the SMB.: April 24 2009. http://www.storage-switzerland.com/articles/entries/2009/4/24_Hybrid_Cloud_Backup_for_the_SMB.html
[4] www.wisegeek.com/what-is-an-offline-backup.htm

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Online solutions: flexibility and experts on your side

Online data backup solutions (a.k.a. cloud or remote access services) collect, compress, and transfer your data to a remote backup service provider's servers.[5] (Providers typically also offer the option to encrypt stored and transmitted data.) It's essentially the "set it and forget it" option — you can automate your online backups and eliminate both the human error and effort that data backup normally requires.

While these services were once designed primarily for enterprise-level business, small and midsized businesses now have a choice of more affordable and appropriate services from a number of providers.

PROS	CONS
• **Less IT burden:** You don't have to be (or have) a data backup expert to get all the benefits of secure, offsite backup. Once the backup software is installed and your preferences configured, backup operations are completely taken care of for you.	• **Restoration speed:** If disaster strikes and you need complete data restoration, you may be waiting days, not hours, for it to cross the Internet, depending on your bandwidth and the size of your data set. (Some providers may offer disk-based restoration as a faster alternative.)
• **Flexibility for growth:** If you use up your allocated space, it's simple to expand capacity.	• **Security:** Online backup providers typically offer the option to encrypt stored and transmitted data. Be sure to ask whether encryption is included in your service and whether it's performed automatically or requires action on your part.
• **Mobile access:** You can access your important data anywhere, anytime, as long as you have an Internet connection.	• **Upload speed:** Depending on how much data and bandwidth you have, backups could be slow. Each server you back up is vying for your Internet bandwidth, so you don't want too many servers or systems backing up data simultaneously.[6]
• **The option of continuous data protection (CDP):** What if you could automatically save a copy of every change made to your data? CDP does just that, enabling you to restore data to any point in time. That means if your data is corrupted, you'll be able to easily access a previous, uncorrupted version.[7]	• **Provider continuity:** What happens if your provider goes out of business? How will your data be transferred and will there be service interruptions? These issues should be addressed in your provider service level agreement (SLA).

[5] http://en.wikipedia.org/wiki/Remote_backup_service[6] "Hybrid cloud backup for the SMB.: April 24 2009. http://www.storage-switzerland.com/articles/entries/2009/4/24_Hybrid_Cloud_Backup_for_the_SMB.html
[7] http://en.wikipedia.org/wiki/Continuous_data_protection

Intellectuals solve problems; geniuses prevent them.

— Albert Einstein

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The hybrid route

What if your company's backup needs don't fall neatly into either the offline or offline category?

Say you need to ensure speedy recovery (within a few hours) for a portion of data essential to your daily business. However, more than half of your data requires less urgent restoration and would benefit from the convenience and capacity of an online backup service.

Several providers now offer services that combine an on-site appliance for quick restores of your data with cloud backup services for disaster recovery. Splitting the difference by using both methods would save you time and money: You'll pay less for online capacity since some of your data will be backed up offline, but most of your backup management burden will be relieved by the online service.

No matter which option you take, you'll rest easier knowing that you have protected your data.

According to DTI/PriceWaterhouse, 7 of 10 small firms that experience a major data loss go out of business within a year.

— The Anti-Virus Insider[11]

Trends to watch

- SMB in the cloud: More and more small and midsized businesses are exploring cloud-based backup and storage services.
- Disk-based Backup 2.0: According to DCIG's Jerome M. Wendt, data storage solutions will go beyond deduplication to "actually automating the entire backup process, including the replication, placement and recovery of the data" in 2010. Watch this space: www.dciginc.com.[8]
- Continuous Data Protection (CDP) is on the rise. Business of all sizes are starting to consider CDP a new standard for data protection. The benefits, according to DCIG: "expediting and simplifying not only backup but recovery, disaster recovery and even lowering test and development costs."[9]
- Data protection laws are tightening, and the potential penalties for losing or leaking data are growing. "Fines may come not only from general data protection bodies, but also individual industry regulators in verticals such as financial services or healthcare," The Register reports.[10]

[8] "Subtle Storage Trends for 2010." Jerome M. Wendt, DGIC, January 15, 2010. www.dciginc.com/2010/01/subtle-storage-trends-for-2010.html

[9] Ibid.

[10] "Should we be encrypting backups?" Andrew Buss, Security That Fits blog, June 1, 2010. www.theregister.co.uk/2010/06/01/encrypting_backups/

Need more? We're with you.

Your community representative is always happy to help. You can count on them as a resource for compliance solutions to consider that fit your specific business needs, budget and level of expertise, as well as advice and resources on a range of small business technology issues.

Visit **http://centurylink.com/smb-resources** to contact your community representative, and learn more about how technology can boost your business. You'll find information sheets, videos, case studies and more.

[11] "Small Business Backup – Data Loss Statistics." The Anti-Virus Insider blog, March 30, 2010. http://site-press.com/antivirus/antivirus-news/small-business-backup-data-loss-statistics/

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