

Avoiding Humpty Dumpty approach to data backup

Greensburg, May 4, 2007. *The worst case scenario:* the very reason there is such a thing as a disaster recovery plan. The tornado that devastated the entire town also took out the city's and Kiowa County's computers. Treasurer/Clerk Pam Reves explained, "We had everything on the computers: budget, utilities, billing. Our *brain* is on that computer." They employed standard, widely practiced procedures for backing up crucial data including storing onto tapes and archiving them.

Pam also recalled, "We had tape backups. We thought we were doing a good job. Then after this, I'm thinking, 'hmmmm. . .'"

The tape drive was gone. The computers were destroyed. "But we were fortunate. We had some great tech support with InfiniTec," she noted. This software solutions company located in Hays, Kan. was able to salvage the hard drives and save current data.

This incident ignited reflection about current data backup and

recovery planning, prompting many to sit down and take stock of their current situation. We have to ask, "What, when, where, how, why!"

What?

"What sort of files do we need to include in a backup procedure? How much and what kind of data do we have?"

Most of the time, we refer to data as the files you create and store on your computer. However,

when you are considering backup and recovery, it is equally important to consider the software applications you use to create those files. The data can be stored in one place and backed up regularly, and the software can be stored separately, backed up only

applications or solutions.

Another form of critical data that might escape backups is e-mail. For many e-mail client applications such as Outlook, e-mails and contact lists are indeed "backed up" even automatically. However, this backup file can be

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when you purchase new applications or apply upgrades to existing ones. Along with the software backups, remember to include activation and license numbers as well as username/passwords for online

difficult to locate. It is usually stored with your program files, not your data files. Online e-mail clients such as Google, Yahoo, Gmail, etc., can be advantageous for this reason. In addition to easy access from

anywhere, your e-mails are stored and backed up offsite and you are not using your resources for file storage.

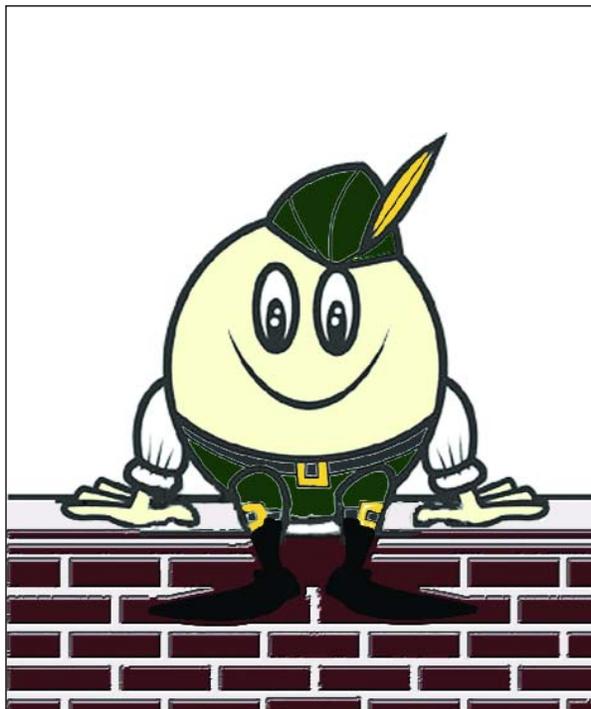
When?

"How much time do we have to devote to backing up data? How often should we back it up?"

Your time schedule for backing up data is determined by the amount of data you have and how much time you can afford to lose recovering files.



Jen Sharp
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Some guidelines . . .

Daily backups of critical data or e-mails would be necessary if your volume is high and the nature of attention needed is urgent. Organizing the folders on your computer to reflect the urgency of files can save time when you back up. CDs work well for small to medium volume daily backups, but can become expensive. Online storage solutions are a great choice for daily backups as long as there is not a huge amount of data to copy. Tape storage that is external and automatic works well for larger volume daily backups, but retrieval can be difficult. Having your folders well organized to begin with is imperative for backups that are necessary daily.

Weekly backups are very similar to daily backups, but with a greater threshold for larger volume, less critical data. Some data is not necessary to back up daily but important enough to do more often than monthly. Again, analyzing your situation; organizing folders to facilitate ease of backups is a must here. Weekly backups are most common and popular in the struggle between risk and convenience.

Monthly backups take more resources, both time and hardware. However, they can be worth the extra time. Depending on the amount of data, good options could include online backup or external hard drives carried to offsite locations.

Annual backups are a good idea regardless of whatever other time schedule you choose. In addition to verifying data and backing up software, you could take the opportunity to clean out your hard drive, delete old files that are archived elsewhere, reorganize directories to fit your backup schedule, and defrag your hard drive. It is vital that these backups are stored offsite with the most permanent medium available.

Where?

“What media do we use to store our data? CDs? DVDs? Tape? What hardware or software do we need to do this?”

Here is where you have to take a look at your specific situation.

Regarding *software*, often the hardware you purchase comes with an application you can use. If not, there are many solutions available, some at cost and some equally good for free. Do your research and read reviews of

Is it really backing up data when your external drive sits right next to your computer?

Combining different *media and hardware* solutions on different time schedules can be helpful. Here are the most common types and their advantages and disadvantages:

Offsite storage is a must for effective data backup & recovery. Choose a location that is likely to survive a major physical disaster, such as a bank vault, underground cave, or a location in another state.

software on sites such as cnet.com or download.com. Here are three possible free options for small and medium sized operations:

VuBrief <http://www.vu-brief.spb.ru/eng/index.htm>

Good Sync www.goodsync.com/index.html (there is a free version; PRO version that can purchased)

WinBackup 1.86 www.backupanswers.com/freewinbackup/

Media	Pros	Cons
Optical media like CDs/DVDs	Easy, quick, require inexpensive hardware, and somewhat inexpensive if you use RW, very easily portable for offsite storage	Limited life span as they can become unreadable over time, more so with use, less so if stored carefully
Tape	More permanent, scalable, very reliable as a backup, but not so much as an access replacement; can be portable to offsite location	Can require more expensive hardware, retrieval of specific information can be difficult as data is stored sequentially
Online storage	Offsite location backup, great for physical disasters or hardware problems	Can be difficult and slow in speed during backup or restore
Thumb drives	Small, compact, easy to use, very portable for offsite storage, very affordable	Not good for large amounts of data, i.e. over 1 Gigabyte
External Hard drives	Can be spinning hard drive type or tape type, can be portable for offsite, can be inexpensive; One-touch solutions are easy to operate	Somewhat fragile and not as portable as other media

How?

“How do we know which to choose?”

According to Chris Hubbell, managing software systems engineer at Westar, “Any shop that has moderate or large amounts of critical data are going to look at tape storage. It has the best combination of benefits and cost.”

Even for smaller systems, tape can be affordable and practical, especially for data needing to be stored long term, such as financial records for seven years. External portable USB or firewire tape drives are available starting around \$450 depending on capacity and ease of use.

What if there was a way to get the fast, random access that CDs provide, but with the durability and permanence of tape? There is, as Hubbell again explains, “Some technologies bridge the gap with disk based systems that virtualize the disk to look like tapes to popular tape management software. These virtual tape system (VTS) products look and feel like tape storage to your software; but have fast disk-speed access. VTS allows you to keep a local copy of recently stored data, while copying it also to tape for off-site and long-term storage.” Especially for those without an IT department, the trend towards online storage and disaster

recovery plans is an attractive solution. Some software solution companies go one step further: not only can you outsource a company to backup your data, you can also purchase “hosted software,” where solutions that you purchase are

cost for recovery of data? Does it require special knowledge for maintenance? Do you have to buy or upgrade software to use that particular hardware or medium? Sure, you already have the hardware to burn your data to CD,

	Urgent	Not Urgent
Important	Urgent and important files are of highest priority and need to be backed up most frequently, also possibly backed up two ways and two locations, such as on tape offsite for long term and optical media or VTS for quicker recovery and redundancy.	Files that are important but not time sensitive can be backed up less often. Duplication or offsite backups would be helpful.
Not Important	Files that are updated frequently but are not crucial can be backed up easily and frequently onto CD for quick recovery without more time consuming task of storing to tape.	Recovering certain files could add to convenience but are not crucial or time sensitive. Making a plan to include these types of files should piggyback on other methods so you can use your time & resources appropriately.

housed at the company you purchase from. You do not have to worry about software installation, hardware or maintenance, yet your data is secure and someone else worries about the backups.

Consider the total cost of ownership when deciding on a system. How much does the media cost? Is it scalable? Could I expand the system later if I needed to? How much would it

but how many CDs are you storing and how long will they last?

“How do we restore data in case we have a failure?”

When recovering after a virus crash, make sure your backups go back far enough before your system was infected. Archiving multiple versions of files can prove invaluable in these situations. When recovering from a physical disaster, it is likely you would want to be up and running quickly. To aid in this process, InfiniTec President Travis Rozean who assisted with the Greensburg recovery advises, “Give your software vendor [or data recovery provider] a backup cell phone number in addition to regular contact information. Because it is likely in a physical disaster that power and phone lines would be down, they can provide quicker recovery if there is a number where they can reach you.”

Why? How likely is a disaster?

“Why go to all the trouble and expense of reworking our data backup and recovery plan? How



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Ten Questions to ask your online backup provider

1. How secure is your data: Does your backup provider use encryption when they store your data?
2. Is the software easy to install?
3. Is the backup continuous or does your online backup service only back up files when you tell it to?
4. Does your online backup service keep multiple versions of files to prevent accidental backup of a corrupted file?
5. Does your backup tool backup the whole file every time it changes?
6. What happens if the backup gets interrupted, such as by Internet connection drop or power outage?
7. Will they delete your files without asking?
8. Can you back up multiple PCs, servers, or networks or is there a charge per machine?
9. Does your backup service require you to buy more storage than you need, then what happens if you exceed your storage plan?
10. Will you be able to access your data remotely?

likely is that kind of disaster for us?"

Greensburg's approach to backing up their data is a very common one, but one that obviously leaves holes in a disaster recovery plan. It doesn't take a devastating tornado to leave a city or system in a situation like this. *A more likely scenario:* A simple false fire alarm that sets off sprinklers could produce similarly destructive results. By putting a little more thought and research into structuring a data backup and recovery plan, you can find a solution to fit budget considerations, hardware capabilities, staff support, and ease of maintenance. The key is finding a solution combining the advantages of all these methods, finding something that will allow you to back up easily, be cost effectively and perform routinely. Then you won't need all the King's horses and all the King's men to put you back together again.

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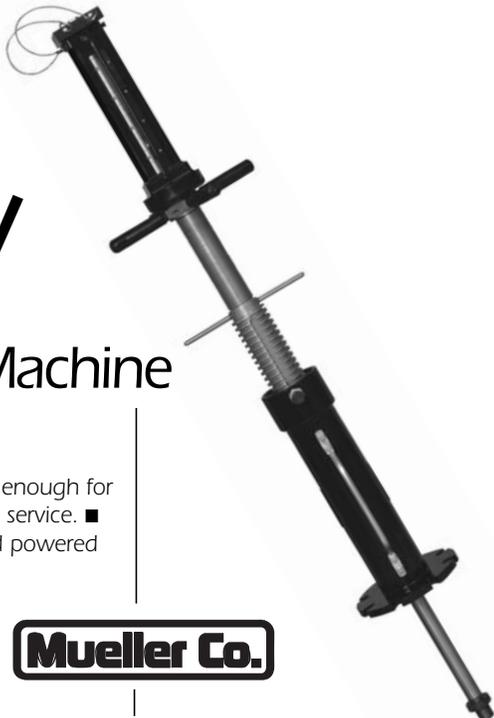
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