Inexpensive Alternatives for Backing Up Data

IT professionals will tell you that there are only two kinds of computer users: Those who needed their backup files to recover from a problem and those who will need them in the future. It isn't a question of "If". It's a question of "When".

Almost all of us know that important computer applications and data should be backed up. Many of us make sure that backups are being done lest the unthinkable happen. But there are still some among us who do not regularly back up their data for a variety of reasons…

- Backup software is expensive. They think that they cannot afford a good back up utility.

- Backup software is complicated to set up and use. It's too expensive to hire consultants to come in and set up a good back up procedure.

- Back up utilities can only output files to tape.

- Tape drives and the tapes they use are expensive.

Yes, but…

There are many backup utilities out there and some of them can cost thousands of dollars. Those back up utilities would probably require the services of an experienced IT professional to implement because they are very complicated to use. And tape drives of any reasonable capacity can also cost thousands of dollars. Like all computer hardware, the sky is the limit. But what kind of a backup system does your organization really need? Is it possible that there are ways to perform reliable data back ups without incurring huge expenses for hardware and software? We think so. It's not that difficult.

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Backup utilities are able to back up data to more than tapes. Backup files can also be created on CDs, DVDs, USB external hard drives, or even to another computer on the network. Tape may be the officially correct medium to use, but the other media are just as good.

How Much Data Must Be Backed up?

This is the starting point. You must determine how much data needs to be backed up. The choice of back up medium is really dictated by the amount of data to be backed up.

For really small amounts of data, a CD might be a good choice. A CD can hold 800 Megabytes of data at a cost of about 20 cents a piece. Somewhere within every organization, a CD burner exists. If not, one could be purchased for as little as $50.

DVDs might be a good choice for slightly larger backups. DVDs have a data capacity of 4.7 Gigabytes and cost approximately 40 - 80 cents a piece. A double-layer DVD has a data capacity of 9.5 Gigabytes for a slightly greater cost. A DVD burner capable of creating single or dual layer DVDs can be purchased for $100-$130.

CDs and DVDs while very inexpensive, are probably not a good choice except for the smallest of organizations that do not have much data to back up. Larger amounts of data can be backed up to an external hard drive. These devices connect to the file server or workstation via a USB connection. Since virtually every computer manufactured in the last few years has at least one USB port, these drives can be almost connected anywhere. And, they are portable.

Data capacity of external hard drives suitable for use as a backup device range in size from 40 Gigabytes to 2.0 Terabytes (1 Terabyte = 1,000 Gigabytes). Prices vary from $40 for the smallest, $250 for a 500 Gigabytes, $500 for 1 Terabyte, and $900 for 2 Terabytes. Expect the announcement of larger capacities and lower prices in the near future.

But What About Tape Drives?

We already stated that backups to tape are considered to be "Best Practice". But it comes with a relatively large price tag. Data capacity of tapes range from as little as 36 Gigabytes all the way up 400 Gigabytes. But increasing data capacity is not as simple as buying a bigger tape. There are physical differences that make this impossible. If you require large data capacity tapes, you will need to buy a tape drive that was designed to handle large capacity tapes. It's mostly a matter of money.

While price for a 36 Gigabyte tape drive start at around $400, the drive capacity is too small for most organizations. That isn't a lot of data capacity. As stated above, $250 would buy a 500 Gigabyte external hard drive that would hold almost as much data as 14 of these tapes.

There are tape drives that can handle tapes that have a capacity of up to 400 Gigabytes of data per tape. But, the price just jumped to $2,300 for a drive

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that will handle a single 400GB tape. External hard drives have a capacity of up to 5 times that amount for a cost of $900.

Some readers of this article may wish to point out that tape drives can store compressed data. It's true tape can store data in compressed form, which would mean that a tape of any given capacity could contain more than that amount of data. Data compression is a function of the back up utility. Back up data can also be compressed when it is written to CDs, DVDs, hard drives, or any other medium. Tape does not provide any advantages with regard to data compression.

Tape becomes the medium of choice when dealing with huge amounts of data, because tape drives can be fitted with autoloading mechanisms. These devices will automatically load tapes and unload them after they have been written to. Depending on the number of tapes held by the autoloader, the amount of data that can be backed up can increase dramatically. But this feature isn't cheap. The least expensive of these autoloading units holds 3 400GB tapes. The cost is around $4,000. Need even greater data storage capacity? We found one autoloading tape drive that hold up to 500 200GB tapes. If you have $87,000, it's yours.

There is no question that tape has its place in large IT operations. But the cost can be very high. On the other hand, the use of external hard drives connected to the file server or workstation via USB (or FireWire) cable is a simple, highly cost-effective means to store backed-up data.

Good Backups on the Cheap

If money were no object, getting data backed up would be simple: Hire a consultant to tell you how to spend thousands of dollars on hardware and software to implement the perfect back up. Unfortunately, none of us have money to burn. We need to get the important tasks done well at a minimum cost.

System backups are critical to allow organizations to recover from natural disasters, hardware, or software failures. If back ups are not done, an organization is betting its very existence on the kindness of Mother Nature or the infallibility of hardware and software. Continued survival is dependent on reliable back ups. There is a way to accomplish this without spending a lot of money. So, here are our recommendations…

Previously, we discussed the use of external hard drives as cost-effective data storage devices. They hold large amounts of data and are relatively inexpensive. These drives are ideal for most small-to-medium sized organizations to use for back ups.

But, what program can be used to back the data up?

If your file server is running Microsoft File Server NT, 2000, or 2003, you already have a backup utility. It came with the file server software. It's free. It works—But it's not that user-friendly. If only it were easier to use…

As it turns out, Microsoft's backup utility can be given a personality transplant.

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Through the use of a product called BackupAssist, the entire process of scheduling, running, and keeping track of backup data sets can become a more pleasant experience.

What is BackupAssist?

BackupAssist (www.backupassist.com) is not a replacement for Microsoft's backup utility. Instead, it provides a more user-friendly interface that allows users to control the process of data backup. The software costs just $79 for non-profits and allows the storage of backup files on a CD, DVD, USB hard drive, tape, or even another computer. It facilitates all of the important backup functions needed to implement a secure back up strategy:
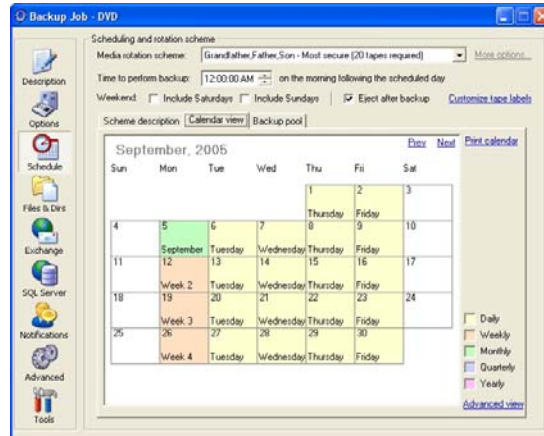
- Initial installation is a simple, straightforward process. The setup screens are easy to understand.
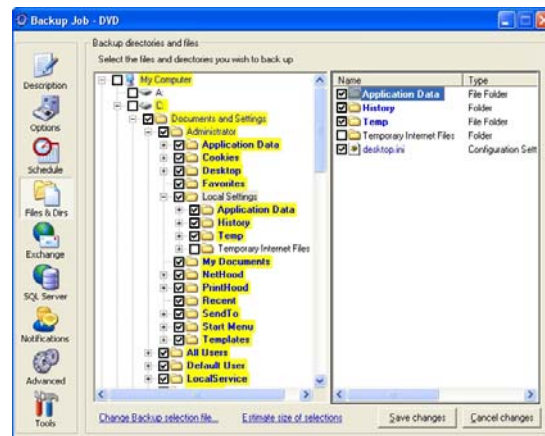

- It provides wizards that help users schedule the type of back up.
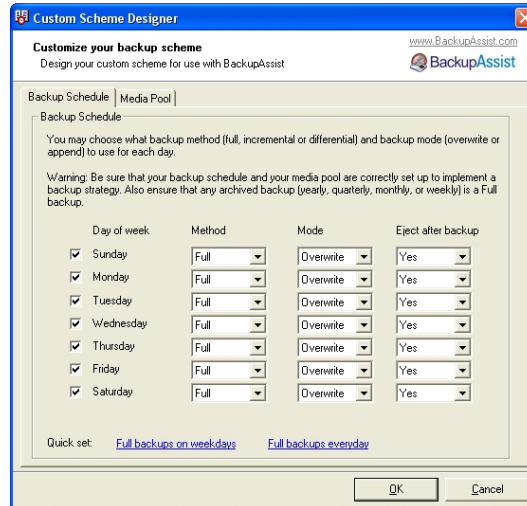
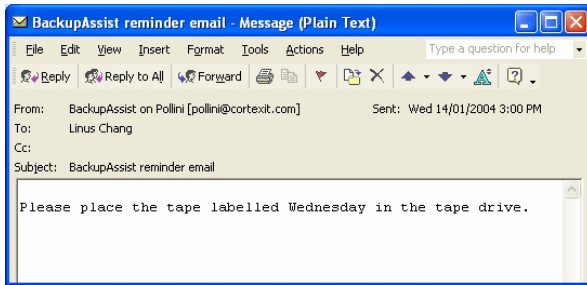

- Schedules when each backup should run.

- Specifies which files are to be backed up.
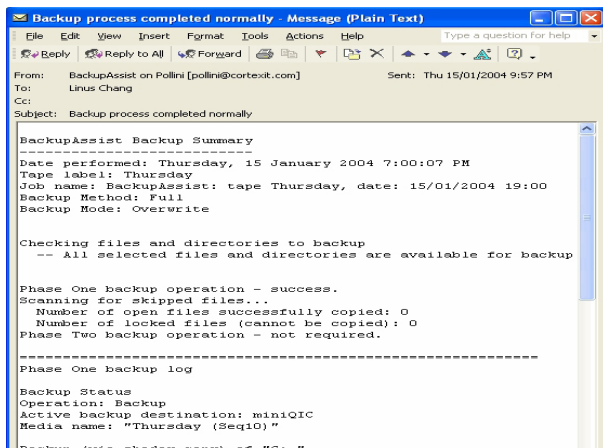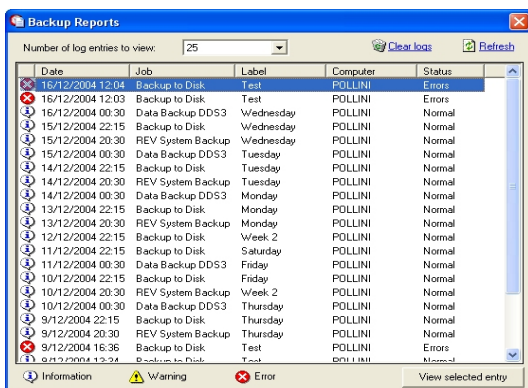
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- Emails reminders to insert or remove backup media.

- Emails the results of the backup to specified users, telling them whether the backup succeeded or failed. If the backup failed, the email includes the reasons for the failure.

- Reports backup job history and status of each job. Users can view a detailed report created by the backup utility.

- Backs up open files (Server 2003 only. There is an optional, extra-cost add-on for other server operating systems). There are times that, for one reason or another, staff members don't close the applications that they were working on before leaving for the day. Prior to the availability of this feature, the back up utility could not back up any files that the application had still open. The end result was word processing documents and case management data files that never got backed up. Now, because of this feature, the data in the open files will be written to the back up medium.

- Backs up Online Exchange Server information

- Creates backup files that are verified, encrypted, and/or compressed.

- Can create multiple different backup jobs that run on different schedules and back up different data files.

- Performs automatic media rotation according to industry-standard media rotation schemes, or user-specified custom rotation schemes.

Large IT operations can afford to have highly sophisticated (and expensive) backup utilities. They can also afford to pay for a technical staff to monitor back up functions. Most legal services programs are not large enough to justify that cost.

Combining BackupAssist with one of the low-cost alternatives to tape drives can allow small and medium sized organizations to use non-technical staff to perform the critical task of preserving the data needed to continue their operation should the unthinkable happen.

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WNYLC Web Statistics For January 2007

Total Hits.......................………351,235
Total User Sessions.....................……66,896
Average Hits/Day (Mon-Fri) ……..13,483
Average user Sessions/Weekday..…..2,405
Number of Pages Viewed....….……151,101
Avg Number of Pages /Day..………4,721
Number of Documents Viewed.…...76,759
Accessed Using Internet Explorer…...89%
Accessed Using Netscape..........…..…6%

Operating Systems Used:
Windows XP.....................……………57%
Windows 2000.....................…………11%
Windows 98.....................…………....7%
Windows ME.....................……………1%
Windows 95.....................…………..<1%
Windows NT.....................…………..<1%
Macintosh.....................………....…<1%
Linux/Unix.....................…………...<1%

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