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Computer Corner

Archiving Data for $1 Per Year

Many of the subjects covered in previous *Computer Corner* articles have included information about backing up data. After all, what else matters more in the automated office then keeping accurate and up-to-date electronic information?

For purposes of this article we will divide data backup into two types:

1) Media that can be written to, altered, deleted and added to. This would include:

   a) Disks: CDRW's and DVDRW's. CDR and DVDR media burned as 'multi-session' disks, can be appended to and like CDRW's and DVDRW's are more susceptible to corruption than 'non multi-session' CDR's and DVDR's.

   b) Devices: flash (thumb) drives, external hard drives, additional internal hard drives, removable rack drives, and same hard drive backups (copying data to another location on the same hard drive).

   c) Services: cloud backups (online backup services)

   d) Obsolete Backup Methods: tape backup, floppy disks and zip cartridges. Anyone using older equipment and counting on any of these last three types of backup should consider if their computer finally fails, if the only place data is stored is on one of these archaic media, the new computer WILL NOT provide devices to read files in any of those formats.

2) Media that stores data securely without the ability to change, delete, or add information:

   a) Disks: CDR or DVD+R or DVD-R burned as 'non multi-session, i.e. finalized disks. This is the only choice that will not allow for any type of alteration

Using Microsoft Windows To Make a CD/DVD Backup of selected data from the hard drive

First, make sure that any data to be backed up is not being accessed during the process. Generally, the best idea is to just close all programs. And, if the computer is networked, make sure no others are accessing any of the data that is to be burned to the disk.

Next, get a blank DVD+R. or if your computer requires it, a blank DVD-R or a CDR. If there is less than 4.7 gigabytes of data to backup, a DVDR will work. If there is less than 700 megabytes of data to backup, a CDR will be adequate. A message will appear during the burning process indicating that more data is selected than will fit on the disc if you attempt to backup more data than will fit on the disc you have selected.

To begin, press the button to open the drive; place the disc on the tray label side so you can read it. Close the tray by pressing the button again.

Burning a CDR, DVD+R, DVD-R or Blu-Ray disc using Windows 7/Vista (Similar in XP)

1. Go to the icon labeled COMPUTER. Usually this can be found on the main DESKTOP screen or on the START MENU (If using Windows XP it will be called "My Computer"). If making this choice at the main DESKTOP, double click the icon using the left mouse button. If making the choice from the START MENU, click the left button once. This will display the various types of drives within or attached externally to the computer. The drive labeled C: is the computer's main hard drive and is likely the drive containing the data to be backed up. Some computers have other hard drives and may have the data in question stored on one of those other drives. Some computers are not stand alone machines but are connected over a network to other computers in an office. If this is the case the drive containing the data to be backed up may even be stored on a hard drive labeled T or L, etc.

2. Select the drive containing the data to be backed up. In most cases, this is the LOCAL DISK (C:). To select and open the C: Drive, double click on the drive icon, causing the drive contents to be displayed

3. Most likely the files will be contained within a yellow FILE FOLDER/DIRECTORY, though sometimes people may wish to backup only a single FILE. It may be that the file or file folder will be revealed and be apparent in the list of items on the C: Drive because it is located directly on the C: rather than in a folder that is within a folder that is within a folder, and so on. If it is not located there, open the drive it is in (the C: or H: or whatever the label is), and then choose the folder containing the desired information. If there is a folder within that folder, select it. Once the FILE or the yellow FILE FOLDER/DIRECTORY containing the data to be backed up is located, click it one time with the right mouse button. This will reveal a menu. Listed on that menu is a command for SEND TO. The CD or DVD will be among the list of choices. Click one time on the CD/DVD. This places the information to be written to the CD or DVD on an invisible clipboard waiting for the command to actually burn the CD/DVD. The problem is many people assume that this is all there is to the procedure and believe that they are finished and have successfully backed up their data. But that is not the case! The previous actions DO NOT accomplish anything permanent. A backup has not yet been completed!

4. The 'Burn A Disc' window will appear and give the opportunity to change the name of the disc from 'Today's Date' that is automatically filled in. If desired, type a name for the disk and click OK.

5. Choose burn 'With a CD/DVD player' (The most common method). If using a USB Flash drive or RW type disc, select 'Like a USB Flash Drive'

6. Then, choose NEXT

7. A window will appear showing 'copying in progress' and the estimated time until completion. Once again, at this point, some people misunderstand and believe the process is complete and their backup is made. It is not! Even when the copy process is finished, the only thing that has been accomplished is that the data has been tagged in preparation for burning the CD.

8. When the copy process is finished, a screen will appear indicating 'Files Ready to Be Written to the Disc'. The data selected earlier should show on the screen indicating that it has now been copied to a TEMPORARY location waiting to be actually 'BURNED' onto the CD/DVD disc.

9. On the top left corner of this screen, select the option BURN TO DISC.

10. The 'Burn To Disc' screen will appear again providing the opportunity to Name the Disc what you wish, select a burning speed to ensure you don't attempt to burn beyond the quality limits of the discs you purchased. It is usually safe to select a speed half what the drive is capable of doing. There is an option to close the wizard "Help" when completed. Finally, select NEXT to actually begin the laser 'burning' of the data onto the disc.

Upon completion a screen will appear with a message that "Files have been written successfully." Select FINISH or wait a few seconds and it will close on its own.

or deletion. These disks are extremely inexpensive and are excellent for creating a permanent record, expected to last several decades, of where things stood at that moment in time. By setting them up in the software to be a one-time only backup, they are a very solid and dependable form of data protection and are not prone to corruption. One cannot simply highlight files and copy and paste to transfer data from a source to a CDR the way the floppy disks were used. Data must be selected then 'burned' permanently to the CDR disk.

> **The decision as to how often to perform these backups can be determined with one question: Do we want to, or could we, do all the work we have done since the last backup again?**

The 'EOM' backup

Why would anyone ever prefer the less versatile disks mentioned in the second category? What occasion would there be to select a media that allows less latitude rather than more? The answer is the EOM (End of Month) Backup. Most utility offices conduct business based on a month-long cycle. That cycle may not follow a calendar month, but it usually follows a thirty-day (give or take a few days) period of time. When one period comes to an end and the new cycle is about to begin, an End of Month (EOM) backup performed on an unchangeable sturdy media like CDR's or DVDR's provides a tamper-proof snapshot of the files in use at that point in time. CDs, at an investment of around a dime each or even less, provide anyone the

ability to archive their monthly data for the bargain price of around $1 or so per year.

This does not mean only one backup a month is desired. The other forms of backup are fine for protecting data throughout the rest of the cycle. The decision as to how often to perform these backups can be determined with one question: Do we want to, or could we, do all the work we have done since the last backup again? If the answer is no, then it is time to do a backup. Some people backup data daily, some weekly, but all should, in addition, do an EOM backup once each cycle. Online backup services, automatic NAS or DAS unit backups are wonderful, but should not be counted on exclusively. We keep seeing instances in which a water office found an automatic backup solution they thought they could depend on, only to have it let them down when it was needed the most. For this reason, we are including step-by-step instructions on doing an additional periodic selective backup, manually, to CD or DVD.

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