

A Guide to Backing up Your Computer

1. Do you need to backup your computer?

There are those who declare openly that they don't need to backup their computer and because they don't, you also should not. How do you decide? The answer to this question is quite simple. Ask yourself if you have anything of value stored on your computer, anything in the way of information or software that has any intrinsic value to you. That is to say anything that if irretrievably lost because of the failure or loss of your computer or its software (malicious or otherwise) would cause you significant hardship or cost you your time and money to recover. Simply put, if you have nothing of value stored on your computer then you do not need to back it up, if you do, you do!

To users who are working on computers attached to local area networks (LAN), you may be lucky. If your data resides on a network drive on the LAN it may be being backed up for you. To be sure you will need to check with your network administrator. If you are unsure, need additional protection or just want to be able to take data to another PC not connected to the LAN, just read on.

2. What is the threat?

What is the threat to the information stored on a computer? There are various threats. The failure of a component such as a hard disk, may destroy the data recorded on it. Theft, fire or natural disaster may deprive us of the data. More likely is a threat from a computer virus, software malfunction or our own misadventure (oops, I accidentally pressed the delete key or I forgot to save my changes) can damage or destroy data to the point where the latest copy stored on your computer's hard disk is inaccessible or rendered unusable. It happens and it's advisable to protect yourself against such misfortunes so that one disaster does not beget another.

3. What is a "backup"?

Backup is simply a process that creates a copy of your computer information, that is to say the files, applications and data stored on the hard disk of your computer, in another form that makes it easy to restore this information onto the hard disk of the same or another computer.

In this document I will use the word "backup" as both a noun and a verb: for example, today we will learn about how to backup a computer to create a backup of the information that we can use to restore the same information, information that might otherwise be irretrievably lost.

From this point on I will look at what you may want to consider in determining how to backup you computer using the following approach:

- a. how to determine what information you need to backup,
- b. how to organize what is to be backed up,
- c. how to arrange yourself and the processes needed to perform the backup,
- d. on what media should you back it up to, and
- e. when, or how often to run a backup.

Basically these questions boil down to: what to backup, how, on what media and when? I will tell you how to find the answers to these questions in the pages that follow and fulfils your own backup requirements.

4. What information *could* you Backup?

There are basically three types of information on your computer's hard disk that you might want to backup:

- a. the operating system, e.g. Microsoft Windows,
- b. the software applications that run on a computer and the settings that you use to tell these applications how you want them to do things, and
- c. your own information and data files that reside on your computer.

5. What information *should* you backup?

The simplest approach to backing up the information on your computer is just to periodically copy everything onto backup media. However, in practice this approach creates as many problems as it solves. Backing up in this manner may not be an optimal solution because it creates large backup files that are difficult to manage and difficult to recover information from. Additionally backing up this volume of information takes lots of time. It is clearly a process that you do not want to do very often, especially if there are better alternatives.

Fortunately there are smarter ways to backup the information on your computer. The process of backing up should be as painless as possible: it should take the minimum time possible while providing the protection needed against loss of important information. Let us look at some of these smarter ways to backup under the three headings in the previous section.

A. Operating System

Here is an area we can make economies. You may not need to backup your operating system at all! Do you have the original media it was installed from, the original installation CD, for example? If you do have the installation CD then the operating system can be re-installed from this if needed. All it will then take is your time and effort to install and reconfigure the operating system so that it can be put back as it was before. It is common for some manufacturers to provide the installation and configuration files on the hard disk of a PC. These files will typically reside on another partition of the computer's hard disk and the operating system can be reinstalled from this partition, if required.

If you are concerned about your ability to carry out such an installation or don't have the time to reconfigure the operating system to get it back to how it was, then you will need to consider backing up the operating system. The most accurate and reliable way to put back the operating system the way it was is using an image backup application. There are a number of these applications available: products such as Acronis True Image, Paragon Drive Backup and others. Image backup products suitable for personal use will generally cost \$40 to \$80 US. Their details can be checked on any of the shareware sites on the Internet. Be aware though that a backup product that does not use the words "image backup" is very likely not a product that will successfully and reliably backup your operating system. Such a product is more likely to be a "file backup" product (covered later). File backup products, which predominate in the backup software offerings, will backup your operating system but will not reliably restore it to the point it was at the time of the backup. Some may claim to do so, but I would be entirely sceptical of such claims. If you need to backup your operating system, use an image backup product.

How often should you back up your operating system? Personally, I would not consider doing it more often than once a month. For most people this will be too frequent and once every three or six months may be perfectly adequate. I would generally adhere to the rule: if there is no good reason why you should backup your operating system then don't.

B. Software applications

Your software applications can be treated just like the operating system when it comes to deciding if they should be backed up or not. If you have copies of their original installation files and their product registration keys, then the main consideration for you will be the time that it takes to reinstall and reconfigure these applications if they are lost from, or rendered unusable on,

your computer. I would consider factors like the number of applications I have installed. If for example, I had fewer than ten I would not bother backing them up. If I had more than fifty I certainly would! In between these two extremes it's your call. How much downtime are you prepared to suffer while you re-install applications when a restore from a latest applications backup may only take ten minutes? Compared this time with the several days or even weeks that it might take to reinstall and reconfigure the same applications from their original installation files.

If you decide yes, you really do need to backup your applications, there is the question of what form the backup should take. My own recommendation is that an applications backup should be an image backup, the same type as we used for the operating system. The reason is straight forward. If a file backup approach is used for your applications the risk is that these applications use the Windows registry and specific files and libraries that are part of the operating system itself. So if the application is backed up and restored to another computer, or even the same one after the operating system itself has been restored, the application may no longer work reliably because those registry keys and operating system files are now different ones to those that existed at the time of the application backup.

Furthermore, and for the same reason, I would recommend that the operating system and applications are backed up and are part of the same image backup. If you have your operating system and applications software installed on the same hard drive partition (a new term we will learn about later) then you won't have a choice anyway. But if you have the operating system and applications residing on different partitions, back them up together in the same image backup and then you can be sure that they will restore and run reliably.

Now that you have your operating system and applications software together on the one image backup, there is one further suggestion. If you have a little used partition somewhere on your hard disk it would pay to relocate the Windows swap file (or page file as it is also called) to this partition. Doing so reduces appreciably the amount of information that needs to be backed up in an image backup and therefore reduces the time taken.

How often should you backup your applications? The same considerations apply here as for the operating system. If you add new applications at the rate of one or two per year then a six-monthly or even annual backup might be perfectly adequate. If you add several per month then more frequent backups will be appropriate.

C. Your information and data

Your information and data is, with few exceptions, the most valuable component of your computer. After all, this component is the one that very possibly exists nowhere else except on your computer. Reconstruction of such data without a backup will be entirely impracticable for most people because of the time it would take to reconstruct the information by manual means.

Protecting your information by backup is a challenging task because at the same time we need to make it as quick and painless an exercise as possible. My goal has always been to reduce the time it takes to back up my files to under a minute a day and to do it without bogging down the computer by imposing needless overheads. It can be done fairly easily.

The first thing we may need to do is make a distinction between two categories of the personal information we store on our hard disk:

- archival data, and
- non-archival data.

Whether data is archival or not is dependent not so much on its age but on its volatility. If a file will not, or is extremely unlikely to, change in the future it is archival; if it will or might change then it is non-archival. Here are a few examples:

- archival data: movies, digital photos, music files, scanned images, install files for software downloaded from the Internet (plus keys for the same).
- non-archival data: the novel you are writing, your business or personal financial accounts, word processing files, family tree research material, your current email.

If you are uncertain which it is, then it is non-archival. It is not so important to correctly identify non-archival data but more so to identify those files that are clearly archival and classify them accordingly by moving them to a location reserved for archival data. In this way you can concentrate your efforts on backing up smaller and more volatile files that need to be backed up more frequently while removing from consideration larger non-volatile files and placing them (preferably on another partition or removable media such as DVD or CD) where they do not need to be backed up on a regular basis.

The reason we need to make this distinction is because we are going to backup archival and non-archival information differently in the interests of saving effort, time and cost of backing up this information. This may sound hard but it isn't, it's easy and very much easier than say, spending 20 to 30 minutes per day backing up files when only one or two minutes, maybe even less, is really necessary.

The next thing to be done is to create separate locations to store your archival and non-archival data. If you have only one hard drive with a single partition (most always the C: partition) then it will be sufficient to create two separate folders, one for your non-archival data and another for your archival data. Microsoft Windows comes with a folder named "My Documents". This is an ideal place for your non-archival data.

If you have a spare partition on your hard disk then this is an even better location for your archival and non-archival data. Getting your data off the same partition as your operating system and application software makes backing up simpler and more efficient. For example, if your data, operating system and application software all reside on your C: partition your three-monthly image backups will include your data too. But your data is already backed up separately on a daily or weekly basis and therefore an image backup that includes your data is not necessary, but there is no way to exclude individual files and folders from an image backup. Your operating system and applications will need to be backed up separately and on a different frequency from your archival and non-archival data.

Here is a summary of where you should consider placing your archival and non-archival data:

Solution	Type	Hard disk configuration	How to organize your data
1.	OK	One hard disk with one partition	Non-archival data stored in "My Documents" folder and its sub-folders (e.g. on C: drive). Archival data stored in an "Archives" folder and its sub-folders (e.g. on C: drive).
2.	Better	One hard disk with 2 or more partitions	Set up folders for your archival and non-archival data on a partition separate from the one containing your operating system and applications. Move your "My Documents" folder, its sub-folders and all contents to this partition (e.g. D: drive). Retain the same name

			<p>“My Documents” for your new non-archival data. Assign a new name such as “Archives” to the folder where your archival data will be located.</p> <p>Make sure that data you create is now saved to the new locations rather than to the old ones on the same partition as your operating system.</p> <p>.If you can, relocate the Windows swap (page) file to a partition where it will not get included in an image backup. There is no need to backup the Windows swap file.</p>
3.	Best	Two hard disks, each with multiple partitions	<p>Organize your archival and non archival data as for solution 2. There is nothing to be gained by having your non-archival data in a partition on the second disk. But it is important to have this in a partition separate from the operating system and from your applications.</p> <p>The second hard disk can be used for locating you archival data and backing up your non-archival data to. It is important that your non-archival data and its backup should not be on the same hard disk.</p>

Figure 1 - how to organize your own information and data

6. How to back up your own information and data

Now that you know how to organize your archival and non-archival data the question is how best to back it up. You will need to use software to do the backup and whatever solution you choose, you will want it to provide the following features:

- a. fast,
- b. reliable,
- c. convenient and easy to use,
- d. economises on storage by compressing backup information in a non-proprietary, easily transportable format.

If you need to backup your operating system and applications, an image backup product will be required. If you need to backup your archival and non-archival data a separate file backup product will be required. I will return to this subject later.

7. What media should you backup to?

There are several candidates for backup media. Whatever candidate you chose it should be:

- a. fast,
- b. reliable,
- c. big enough to at least contain your largest backup,
- d. economical, and
- e. convenient and easy to use.

The three main candidates for most people will be CD, DVD and a second hard disk. My favourite for backups is a second hard disk. Large hard disks have never been cheaper; they are the fastest option of the three, are reliable and are re-usable almost indefinitely. The least desirable media for backups is CD because they are often not big enough to contain large backups and so the backups have to be split so that each “chunk” can fit on a single CD. Chunking your backups in this manner is a nuisance because it takes additional time and you have to be present to change CD disks as each is filled. Working out the chunk sizes is a nuisance too. If you under calculate you waste unused space on the CD; if you over calculate, you have to repeat the entire backup run because each chunk will not fit on a single CD.

Never the less, if CD is an acceptable backup solution for you then stick with it. You can easily upgrade as the need arises. And when you do upgrade consider the purchase as large a hard disk as you can afford. They are easy to install with instructions are available off various Internet web sites. You can even transfer data between computers or store your backed up files in a secure location separate to the computer by installing the second hard disk in a removable caddy. The caddies are procurable from computer stores and come with instructions for easy installation.

If you are backing up to CD or DVD you have a choice of two formats in which to backup: write once CD/DVD R or write many CD/DVD RW formats. The RW format offers advantages because it is less susceptible to burn errors and is easier to work with.

8. Backup performance targets

To give an idea of how long it should take to backup everything on your computer, here are some performance targets that be easily met when by following the guidelines presented in this document.

Description	Backup type	Typical duration
Backup operating system and applications	image	5 to 10 minutes
Backup non-archival data - full backup	file	3 to 5 minutes
Backup non-archival data - changed files	file	less than 1 minute
Backup archival data	synchronize	10 to 20 minutes

Figure 2 - Target backup performance levels

These targets can be readily achieved on any computer. You may well be able to do better. The benchmark I used to achieve these figures produced the following results:

Backup type	Size (GBytes)	Backup product	Compression	Compressed size (GBytes)
Operating system (image)	2.8	Acronis True Image 7.0	Acronis proprietary	1.95 (includes applications)
Applications (image)	2.9	Acronis True Image 7.0	Acronis proprietary	Included in above
Non-archival data (file)	1.0	QwikBak 1.0	non-proprietary zip format with	0.45

			standard compression	
Archival (sync)	3.5	Beyond Compare 2.0	nil	3.5

Figure 3 - Backup benchmark results

These results were achieved on a personal computer with the following characteristics.

PC CPU: 2400 MHz Pentium 4
Memory: 512 MB
OS: Windows XP Professional

9. How long will your backups take?

For obvious reasons I cannot tell you exactly how long your own backups will take to run. But based on the information detailed previously I can tell you how long you can expect your backups to take.

Firstly, you can observe readily that I am fairly fastidious about backing up my computer. I have to be because I use it for both personal and professional work. I cannot afford to be without it for any prolonged period. So my first goal is to backup all my own data at the end of each working day and be able to recover it from any of the previous 30 working days within 2 minutes. My second goal is if my computer fails completely then I should have a second computer up and running with the same applications within 24 hours. I keep a second computer at hand for this purpose and I backup the operating system and applications at the end of each month or sooner if I need to, for example if I have just installed a large new application.

So here is my backup schedule.

Backup operation	Typical duration	Frequency
Operating system and applications	10 minutes	once a month
Non-archival data – full backup	4 minutes	once a month
Non-archival data – changed files	1 minute	daily
Archival data	20 minutes	Once every 3 to 6 months

Figure 4 - Typical durations for backups

Routine monthly backups take me therefore about 14 minutes per month and about 1 minute per day to backup my non-archival data. This affords almost total protection and provides me with the level of backup I require while using a minimum of my time.

Do I schedule these backups to run automatically? No, I do not and I do not wish to. I used to schedule them automatically but found it to be a big nuisance. The scheduled backup runs would often pop-up at the most inconvenient of times when the last thing I wanted to do was run a backup. If I want to be reminded when to run backups, and I do not, I would most likely record the event in my Microsoft Outlook calendar. But I don't do this because I do not need, nor want, to be reminded when to do them. I just do them and if I forget and miss by a few days one of my monthly backup tasks it doesn't really matter because I still have a daily backup.

10. A strategy for large backups

The two biggest hassles I find with backups is firstly when they take too long and secondly having to be concerned about changing removable media during the backup run. The advice in this document will help you organize your backups so they take an absolute minimum of your time so I don't have to worry about the first problem. What is to be done about the second problem though?

I personally don't like having to sit in front of my computer while running a backup just so that I can change media when I use up all the available space. Changing media introduces a number of risks into the backup process, for example:

- a. I have to sit and watch the backup so I can be there when it uses up all the space (I have better things to do with my time!)
- b. The interruption may result in a problem which causes the backup to fail.
- c. The interruption may result in a problem with the media which I don't find out about until I come to try and restore information from the backup.
- d. I may not be able to recover files that I need because when I come to use the backup I find one of the media in the backup set is missing.
- e. The backup software may not know when the space is about to run out (especially true of CD and DVD burning limitations on write-once media) and your backup will therefore fail.

So I organize it so that I never have to split a backup across multiple media. Essentially I do this because it improves the reliability of my backups and it reduces the time needed to perform a backup. How do I do it? My strategy is simply to make sure my media are big enough in the first place to accommodate my backups. It's not easy to work out how much space is available on media, more especially with CD and DVD write-once technologies that make it impossible to determine in advance with accuracy. You may have to experiment a little to find out how big your backups are so that you can implement a similar strategy.

11. How to manage large backups - recommendations

Here are examples of the maximum sizes of various media.

Media type	Typical maximum storage (GBytes)	Maximum data re-write speeds
CD-RW	0.65 to 0.7	24x good 36x better
DVD+RW	4.7 to 8	4x good 8x better
A second hard disk	200 or more	up to 150 Mbps best

Figure 5 - Typical maximum storage for various media

A few suggestions and recommendations follow in relation to use of media for backup purposes.

- a. **Convenience considerations for media.** Rewritable CD and DVD media are more convenient to use and because the media are re-usable so you don't end up with boxes full of old used media for disposal. They can also be used for simple drag-and-drop or synchronize file operations, unlike write-once formats which cannot.

- b. **Portability of rewritable media.** If you use re-writable media, make sure the format can be read on any computer you may want to transport them to for use. Because Windows itself does not support RW formats you may need to pre-install software on any computer you wish to read the media on.
- c. **DVD formats.** DVD+RW's faster format and write speeds gives it an edge over DVD-RW. If you are buying a new DVD writer chose one that supports DVD+RW 8x speed (or faster if it's available by the time you read this).
- d. **Buying a CD writer.** If you are thinking of purchasing a new CD writer, don't. See the previous recommendation. Instead purchase a DVD writer with CD write capability. It will not cost a lot more and it will certainly be more versatile in the long run.
- e. **Confused over CD/DVD formats?** Are you confused about the different formats of CDs and DVDs? You wouldn't be alone here. I read that some manufacturers are confused too! What I am interested in here is using the re-writeable format for CDs and DVDs to help make the file backup process as easy and straight forward as possible. To check if a CD or DVD rewriteable RW media is formatted correctly for re-writeable operations, open the Windows Explorer and try copying a file to your re-writeable media. Then try deleting this same file. If this process works normally as if you were copying and deleting files from magnetic media such as your hard disk, then your media and software supports re-writeable operations. If the operation does not complete properly and, for example, tells you that the delete cannot be done or the operation is pending, then the media is not formatted for re-writable operations. If you are buying a new CD or DVD writer, look for one that provides RW support using Mount Ranier technology or comes with writer software such as Nero that supports the UDF RW format.
- f. **Speed Ratings of CD and DVDs.** When you purchase re-writable media for CD and DVD writers, make sure the media are rated for a speed at or in excess of the rated speed of your writer. For example, if you purchase CD-RW media rated at 12 speed, don't write files to the media at the 24x maximum speed of your writer. If you do you will get errors on trying to read the data back from the media. The RW maximum rated speed of the media should always be on the packaging when you buy it, if not don't buy it.
- g. **Hard disk formats.** If you need to format your second hard disk you have three options: FAT, FAT32 and NTFS. For compatibility with Windows 95 or 98, use the FAT or FAT32 format (respectively). For use with Windows XP, 2000 or NT computers format with NTFS. The maximum file size on a FAT or FAT32 formatted disk is 4 GBytes. For NTFS there is essentially no file size limit because it is just the available space that limits the maximum file size.
- h. **Hard disk partitions.** If you use a second hard disk for backups you will very likely need to format appropriately sized partitions and, from time to time, change partition sizes non-destructively (that is to say without destroying data that already resides on the partition). There are several good partition managers around that enable you to do this. I use the Acronis Partition Manager, there are a number of other good ones available too. They generally cost around \$40 to \$50 US.
- i. **No need to change.** If you currently use an older technology (e.g. CD write-once) for your backups and it works for you and you are happy with it, you do not have to change. Stick with it until you find a reason why you should change.
- j. **Choice of backup media for archival data.** If your archival data is large (say over 3 or 4 GBytes) it is probably best housed on a DVD or second hard disk. The main consideration here is convenience. If it takes numerous CDs to back it up and you have

no space available on your hard disk for it then it's time to consider the DVD or large second hard disk.

12. Putting it all together - how it works in practice

Here is an example of how my backup procedures are organized and how these works in practice. You need not organize yours this way, you can just pick out the bits that appropriate for you and use them as you wish.

Firstly my backups are based around a 120 GB second hard disk. It is organized into two partitions:

- One of 20 GBytes for my archival data (J: partition), and
- One of 100 GBytes for my image backups and file backups of my non-archival data (I: partition).

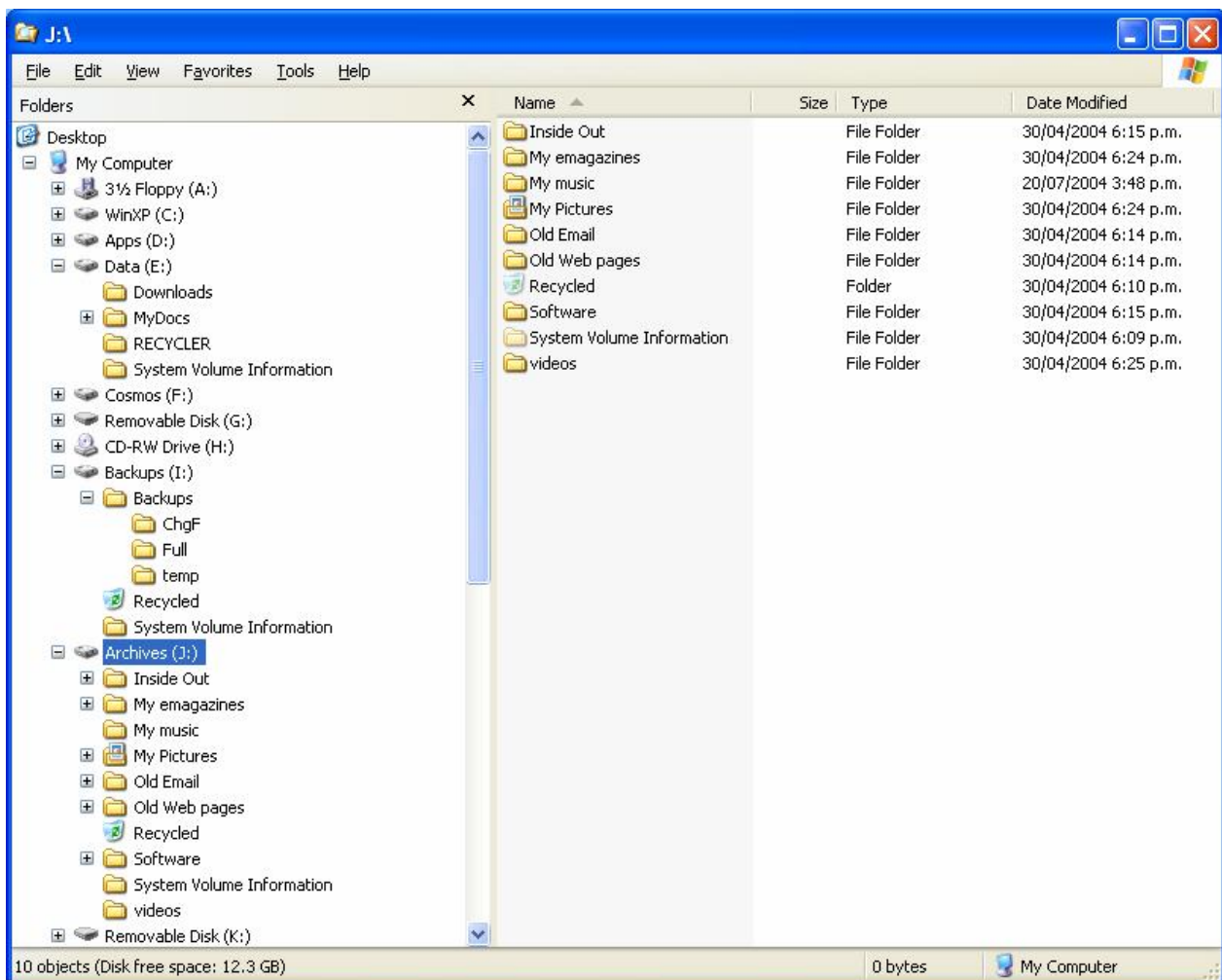


Figure 6 - Sample layout for archival, non-archival and backup folders

My primary hard disk is an 80 GByte drive partitioned into four as follows:

- a. C: partition contains the operating system,
- b. D: partition contains my applications,
- c. E: partition, this is where I have relocated the “My Documents” to. All my non-archival data and application settings (at least all where the applications allow me to) have been relocated to sub-folders here.

- d. F: partition, largely free but where I have relocated the Windows swap (page) file to avoid having to include it in image backups of my C: and D: partitions.

So when it comes time to run a backup of my information and data I have everything in just two places:

- The E: partition containing all my non-archival data in the “My Documents” folder, and
- The J: drive containing all my archival data.

The backups I run are as follows:

- My C: and D: partitions are backed up together by using an image backup process (Acronis True Image, \$50 from www.acronis.com) which I run once per month. It takes about 15 minutes.
- My non-archival files are backed using a file backup process (QwikBak, \$14.95 from www.qwikbak.com) which I run daily. It usually takes less than a minute.
- My archival backup is run about once every three to six months using a file synchronizing process (Beyond Compare, \$30 from www.scootersoftware.com). It takes from about 5 to 20 minutes depending on the number and size of archive files that need to be synchronized.

13. Organizing archival data

A large part of my archival data tends to be uncompressible music and photo files, images etc. which do not benefit much from compression. In fact trying to compress largely uncompressible files is wasted effort, so I don't bother.

The largest component of my archival data is my collection of digital photos. Here is how I organize them. I create subfolders under the “My Photos” folder in my archival data folder that are named thus: January 2003 would be “2003-01”, July 2004 “2004-07” etc. I just upload my camera periodically to the latest folder. If I have more than one upload in any single month I will name the folders in sequence B, C, D and so on. See the following example.

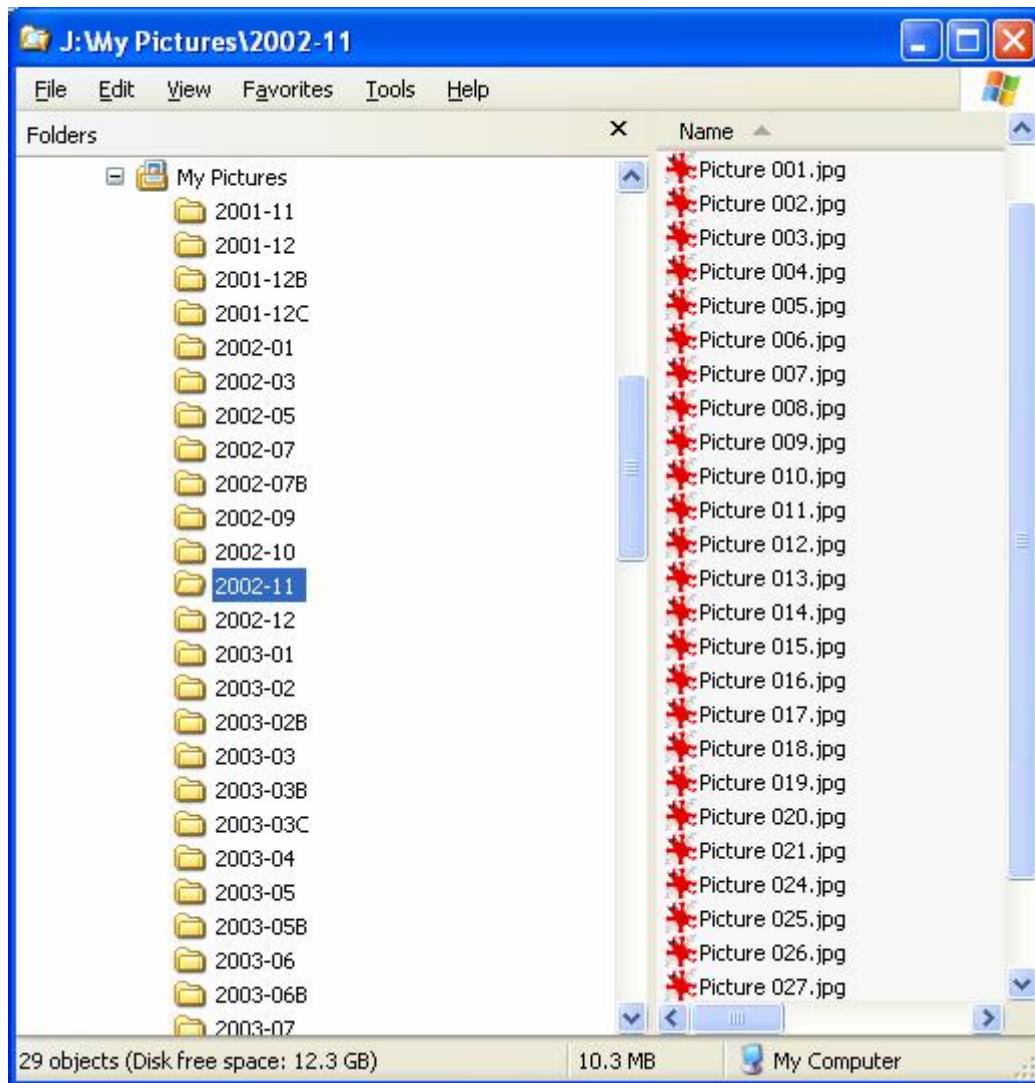


Figure 7 - How to organize a photographic collection

I do not bother indexing my photos in any way. There is software that will do this but the indexing process takes me too much time as I have to manually enter classifications for all the photos I take of Aunt Flo, baby Charlotte or Lucky the cat, etc. So I use instead the process I have described because it takes much less time.

If I want the photo I took of baby Charlotte at Christmas time, I know near enough where to look - it's in the 2003-12 folder. If I want the photo of baby Charlotte on her first birthday, it's in the 2004-07 folder. Or of Great Aunt Flo on her 100th birthday it's in (or will be if she makes it) the 2005-03 folder. Simple and barely any effort required on my part.

Now to back up the archival data I have another simple approach. I can use a big rewriteable DVD+RW and synchronize my archive data folder on my hard disk to the same one on my DVD backup media. My synchronizing software tells me exactly what files have yet to be placed on the DVD to bring it up to date and with one click I does it, well actually it takes it about 10 to 20 minutes, but you can leave and do something else while this is in progress.

Synchronizing files in this manner is easy and quick but only so long as you can fit everything on a single media. Once it starts spilling over onto second and third media it quickly loses its effectiveness as a backup medium because it takes more time to organize and do it takes more effort to ensure it occurs without error.

You may have other collections such as digital music that need to be backed up. You can organize these in a similar manner to a photographic collection, perhaps using the artist name or

music genre as the organizing folder as I did for photos in selecting the day and month. Just use whatever will make them easiest to work with and locate when the time comes to find individual compositions.

More about file backups - what you should know

In the preceding document I have covered in some detail the subject of how to backup your PC. I have indicated how you can do this effectively and accurately and in a manner that reduces the time and effort required. I have stated that the most important part of the information that should be backed up on your PC is your own information and data for, in most instances, this will be the component that is the hardest to replace if things go wrong. It may be irreplaceable if you don't take steps to protect your own information and data.

A key instrument in protecting your information and data is the use of a file backup software application to do this for you. There are several file backup applications available as shareware applications that can be downloaded from the Internet, trialled and purchased. Cost are generally in the \$30 to 70 US price range.

How do you find one that works for you? Well, you may already have a file backup application that works and you are happy with. That being the case you need not read on. But do read on because you will surely learn something new.

Firstly, how do you know if an application is a file backup or not? Well this is often not clear as many promoters of such products don't seem to know themselves. Basically, if a product allows you to select folders and files by name and also allows to selectively restore files by name then the product will be a file backup application. Disregard any claims about also being able to backup system files, such as the windows registry. On their own system files such as this may not be able to be reliably restored in isolation to the rest of the operating system anyway. Only an image backup application will achieve this with substantial reliability.

So we are interested in a file backup application to backup our non-archival data. We can also use it for our archival data too. Here are the features we will be looking for:

- a. Runs quickly and reliably.
- b. Able to backup any and all files and folders.
- c. Allows us to identify by name all the files and folders we want backed up.
- d. Allows us to exclude files and folders we do not want backed up.
- e. Compresses the backed up files to take up less storage space.
- f. Backs up files in a standard (non-proprietary) format so we can readily take them to another computer.
- g. Allows us to select either a full backup of all the folders and files needed or only those that have changed. This latter requirement saves us a lot of time because we do not need to backup absolutely everything at every backup run if only a few files have changed since the last backup.
- h. Allows us to select a "changed files" backup as either differential (include only those files that have changed since the last full backup) or incremental (include only those files that have changed since the last backup of whatever type).
- i. Will locate our "My Documents" folder and subfolders, even though it may be concealed within Windows or we have relocated it somewhere else ourselves.
- j. Allows us to specify a maximum size for backup files and to split them into smaller parts if this limit is exceeded.
- k. Is able to handle media file size limitations.

Over a five year period I personally trialled around a dozen different file backup products. I purchased five or six over this period and used them for periods of a year or more, then I discarded them, why? It took me in some cases that long to work out what I really needed in a file backup product. In some cases I found the product meeting all my requirements failed in one

key aspect, it was not reliable and I only discovered this after a period of using it or trying to restore files.

I have been unable to find a file backup product for under \$100 US that fully meets my needs and expectations. I am disappointed in the quality of such products and I am not alone. I noticed that the U.S. based Shareware Industry Association in their latest awards for the year 2004 did not make an award to any backup software application category or to any backup product specifically.

So I decided to do something about the problem by writing my own shareware file backup product. Furthermore I decided to give it away free! That is how my shareware file backup application, **QwikBak**, came into existence.

You do not have to use **QwikBak** as your file backup application. You can equally well use another product and implement the exact same backup strategy I have described earlier. But you if you use **QwikBak** you can be certain of some things: it will fulfil the requirements outlined above at a price that is hard to beat!

Of course I cannot develop and support good software for nothing. I hope that you will agree that **QwikBak** is well worth the \$14.95 US registration fee and pay to register it so I can continue to develop, support and enhance **QwikBak**.

If you decide to use **QwikBak** I can promise you several things:

- a. **QwikBak** will meet the requirements I have outlined above.
- b. It will allow you to backup your information and data quickly, effectively and reliably.
- c. You can evaluate it for free for the first 30 days.
- d. If you are using it for personal non-commercial purposes, you can continue to use it for free indefinitely (but I hope you will agree with me the purchase price of \$14.95 US represents about the best value in backup software there is and buy it).
- e. The free version of **QwikBak** is not dysfunctional in any area, it works exactly as the fully paid version.
- f. **QwikBak** does not contain any advertising, annoyance-ware, pop-ups, surreptitious phone-home-while-you're not-looking features, spyware or anything at all that will detract from your use of it.
- g. Your details will remain confidential and I will not disclose them to anyone else.

Furthermore I will offer for a limited time to foundation purchasers of **QwikBak** a free-for-life upgrade policy – pay for it once and get all future upgrades. All of this is about as good a deal as I can possibly do without actually paying you to use **QwikBak**, and I of course cannot afford to do that.

So try **QwikBak** and I am sure you will not be disappointed. Let me know of any improvements you would like or of any problems you experience. As always please be specific. Well formulated and considered submissions are likely to receive more attention than just cryptic comments.

Good luck, I hope you enjoy using **QwikBak**.

Brett E. Sinclair
Author of **QwikBak**
Web site: www.qwikbak.com

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QwikBak Frequently Asked Questions

Q1: I have downloaded and printed your guide on how to backup my computer but I don't have time to read it. Can you tell me in just a few words what I need to know?

A1: Sure. My message is essentially that backups are a hassle and take more time than they often need to for most people but you can save yourself a lot of time, effort and expense if you concentrate on your actual needs. If you need to backup your operating system and applications, and quite possibly you don't, use an imaging backup product and backup your applications and operating system together. More likely is that you will need to backup your own information and data and this can be achieved in as little as a minute per day (or one minute week if you only use your computer infrequently) by splitting your data into archival and non-archival parts. The non-archival part files can be backed up using a file backup product such as QwikBak. The archival backup files can be backed up using QwikBak or a synchronizing product. Backup media that should be used for backups are CD, DVD or a second hard disk. Critical to the strategy of saving time, effort, expense while improving reliability is how to organize your computer files so that only files that actually need to be backed up are backed up. But you will have to find time to read my article to discover how to do this.

Q2: I don't need to backup my computer. Why should I?

A2: Not a problem. There may be nothing of value on your computer that needs backing up. But it would pay to be sure by checking just what information you have on your computer and asking yourself what if you lost it through no fault of your own? Would it matter and if it would, would you be able to recover this information by other means?

Q3: Why should I use QwikBak?

A3: It is a product built just for file backups to address the shortcomings that appear to be prevalent in many backup offerings. It's affordable and easy to use. But you do not have to use it if you already have a file backup application that meets your needs. Even so could be the best option you have for backing up your files and you can't lose by trying it.

Q4: Does QwikBak support CD and DVD write-once media.

A4: Not directly. QwikBak will not "burn" its backups to CD and DVD write-once media. The reason for this is simple. Write once media are susceptible to many problems when used for large backups: running out of space, burn errors, buffer over and under runs, hardware and software limitations, etc. An error at any stage can force an abort and restart of the backup resulting in wasted time and wasted media that is useful as coasters or decoration only. But QwikBak does support write-once media indirectly by allowing you to specify a maximum size for your backups. QwikBak automatically and optionally will break your backup into smaller chunks that will fit onto your write-once media in a separate burn process. In this way you can then use your favourite CD or DVD burning software to copy the chunks to your media and do it without having to concern yourself with the need to run the backup again if the process fails. Rather than provide additional CD and DVD burning software that may have its own bugs and problems, QwikBak allows you to use the existing CD and DVD burning software you already have on your PC or that accompanies your DVD or CD writer when you buy it.

Q5: Does QwikBak support CD and DVD re-writable media?

A5: Yes, absolutely. If Windows Explorer can see the device and it says there is space available on the media there, then QwikBak write to it.

Q6: How does QwikBak handle compression of backed up files.

A6: To provide maximum reliability in operation, QwikBak uses existing tried and tested software to deliver compression. It uses the latest version of the WinZip data compression capability. Version 9.0 or later of WinZip is required, along with the command line support add-on, because this version delivers superior levels of performance and reliability.

Q7: Does this mean I need a copy of WinZip on my computer for QwikBak to work?

A7: Yes, if you do not already have a copy of the latest version of WinZip installed on your computer, you should visit the WinZip web site, download and install the latest version. As well while there make sure you download and install a copy of the WinZip command line add-on which is a free additional component of WinZip that is not included with the distribution of WinZip itself.

Q8: Why does QwikBak use the zip compression format?

A8: The zip format is the most widely used compression format. It is also now built into Windows XP.

Q9: I don't use WinZip. Can I instead use <another compression product> with QwikBak?

A9: No, not in the current version. But other compression options may be considered if there is sufficient interest.

Q10: Can I password protect my QwikBak backup files?

A10. Not in version 1.0 of QwikBak. This feature will be added in an early future release.

Q11: What features can we look forward to in future releases of QwikBak?

A11: Password protection of backup files, a backup run progress meter, strong encryption of backup files, enhanced compression levels, enhanced packaging and improvements to the user interface are just some of the improvements currently being considered.

Q12: How do I relocate my Windows swap file to another partition.

A12: Windows XP users can check out this link:
<http://support.microsoft.com/default.aspx?scid=kb;EN-US;307886>

Q13: How do I relocate the "My Documents" folder.

A13: The process consists of five steps: 1. Create a new "My Documents" folder on your hard disk partition of choice. 2. Copy all your existing folders and files to the new location. 3.

Change any location settings in your applications that reference the old location (look in the applications preferences or tools/options settings for this information). 4. Go in to Windows Explorer, locate the old “My Documents” folder, right click on it and select properties, then change the “Target” setting to your new location. 5. When you are happy that everything is changed over, delete the files and folders from your old “My Documents” folder.

Q14: My backups take too long. What can I do?

A15: Oh my gosh, haven't you come to the right place! There are several things you can do to solve this problem involving identifying the information you really need to backup and organizing it to expedite rather than hinder the backup process, identifying the frequency your information needs to be backed up on and then using a product such as QwikBak to do it. You can also make improvements on the reliability and effectiveness of your current backups by a change of backup media as this might reduce your backup run times appreciably too. All in all these steps can make your backups less time consuming and certainly less onerous. But you will need to find out more by reading my document entitled “A guide to backing up your computer”.