Backing Up

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Two types of files are required to be backed up. There are your personal files, normally stored in the following folders under your login account in Windows: Desktop, Documents, Downloads, Favorites, Music, Pictures, and Videos. Each user that has an account on a PC has their own set of these folders. If the user only uses the programs that come with Windows or has a standard set of programs that they add to Windows that can be easily re-installed either from a DVD/CD backup or a download file, then that makes backup and recovery much easier. The other type of files to be backed up would be the Windows System Files. These include the Windows Operating System itself plus all of the programs/apps, files, and data used by those programs/apps.

If you have all of your personal files backed up and you have the files required to reinstall your programs, then you can easily get a replacement PC or hard drive restored completely.

Just about every PC user has heard that they should back up their PC, but based upon what I've seen, only about 20% have an active plan in place.

The reasons that I've been told that users do not perform backups regularly are along these lines:

- I don't know how to set it up
- It will slow down my computer too much
- It's too costly
- I forget to do it

None of these are acceptable excuses anymore!

Let's go through these one by one and see how to address the issues.

Setting up your backup

In Control Panel, under every version of Windows since Vista, there is an app named Backup and Restore or Backup and Restore (Windows 7). In Windows 10, in the search box on the taskbar, type **control panel**. Then select **Control Panel > System and Security > Backup and Restore (Windows 7)**. This app is suitable for 99% of the user community.

This app lets you pick a target location for where your backup will be stored either on a local drive or a network storage location, which can include cloud storage. A schedule can be set for what frequency you want to use for creating your backups – daily and what time of day or weekly by day of the week and time of day or monthly by day of the month and at what time of day. You can also determine if you want just your file libraries backed up or the whole disk(s). If you choose 'Let Windows choose (recommended)', your file libraries will be backed up and a System Image will always be created as well. If you choose 'Let me choose' then you can choose what to backup on your computer and you can choose whether to create a system image or not. The System Image can be used by a restore program to exactly duplicate your hard drive onto a new PC or a new hard drive. (You can restore by creating a system repair disc from the Backup and Restore interface or you can use a Windows installation disc or USB to run the restore). The retention period can also be set for how long to keep a backup for or you can allow Windows to manage the space and to automatically replace the oldest backup with the newest.

Selecting the best time to perform your backup

When you select the time of day to run the backup as described in the previous section, you must pick a time that will be when your computer will be powered on. The backup program cannot power on a PC that is turned off to perform a backup. So if you use it each Sunday at 7 pm, make sure you leave your PC on every Sunday evening. A backup that runs when you are using the PC can impact your responsiveness and will take longer to complete than running at a time that no one is using the PC.

Cost of running the backup

Since the backup program is included with every copy of Windows, there is no software cost. In addition, almost all external backup drives include a backup program of some sort. Cloning/backup software from Macrium is also recommended. The only cost is that of providing a backup drive, either as a local hard drive or a network-accessible location such as a Network Accessible Storage (NAS) or cloud storage. This drive can be used for other purposes so even that cost can be split across other activities. An external 5TB USB 3.0 drive can be bought for less than $130 lately, so that's cheap insurance for not losing all of your data.

Set it once and it's automatic

As we saw in the sections above, once you set up the backup program, it will run automatically as long as the backup location is accessible and the computer is turned on at the scheduled time. Perhaps a repeating calendar reminder note will help make sure that you are always protected!

Restoring from a backup is best suited to situations where your hard drive is damaged and some files can no longer be accessed or the system won't even boot up. I've seen a lot of computers recently, where the owner complains of poor performance and upon investigation, I've been able to determine that it was a hard drive failure that was causing the lack of responsiveness. The hard drive would sometimes retry reading a file hundreds of times before either being successful or unsuccessful. This causes the hard drive to fall behind in any other requests for data and therefore the whole system slows down.

The File History app, which was introduced in Windows 8, is the best program to use for restoring individual files. Every time a file is created, changed, or deleted a copy can be written to the file history backup drive. This drive can then be used to restore a previous version if required. This is a great recovery tool if you are ever a victim of a ransomware attack where your personal files are encrypted. You can add additional directories to be backed up in addition to the normal set of personal file folders.

The option of Save copies of files specifies how often File History runs automatic backups. The default is hourly, but you can set the frequency to 10, 15, 20, or 30 minutes; 3, 6, or 12 hours; or choose to back up files once a day. Please note that a new version is created only when at least one item has changed in the file. The Keep saved versions option specifies how long to keep the backups. By default, these are kept forever, but you can also select 1, 3, 6, or 9 months, or 1 or 2 years. If your backup drives are tight on space, you can select the "Until space is needed" option and risk losing older backups quickly.

The best approach is to use the Backup and Restore program regularly, perhaps just using the System Image backup function, together with File History to fully protect all of your important files and folders. That way you will be protected against both hardware failures of the hard drive as well as accidental deletion or corruption of important documents.

Don't pass up the free cloud storage from Microsoft, Google, and others that can supplement what you backup to a local/network drive. Cloud storage is impractical for full drive/image backups due to the extremely long time that it would take to do a full recovery over the internet, but for individual files, it's great.

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