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PRESENTS

# STUFF HAPPENS

THE BACKUP AND RESTORE GUIDE

By Tina Sieber





# STUFF HAPPENS: THE BACKUP AND RESTORE GUIDE

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# What is a backup and why do I need one?

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A computer backup is a copy of electronic data stored separately from the original files. In the event that the original data set gets corrupted, damaged, deleted or lost, the backup can be used to recover or restore the data. A backup therefore minimizes the risk of irretrievably losing data.

The concept of backing up information is much older than computers themselves. In the 1950s, the first backups of computer data were made onto punch cards, a simple technology that at the time was already over a hundred years old. In the 1960s, paper was replaced by magnetic tape. Due to its low cost and longevity compared to modern hard drive technology, magnetic tape is still being used for backups in many companies. [[The History of Backup](#)]

Backups are necessary because data has value. Whether this is sentimental, commercial, or legal value, a backup is a way of securing valuable information. In a world where a great deal of information is traded digitally, almost everyone owns data that has financial value, for example purchased music or eBooks. Many files on our personal computers don't have monetary value, but we are spending a lot of time collecting them. The worst loss, however, would be files of which we own the only copy in existence, such as personal documents or photos.



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If you can afford to lose your files and have them restored by a specialist, then you certainly don't need to waste time on preparing a backup. There is an entire

industry that depends on people who don't make backups, lose critical data, and subsequently need someone to retrieve the information for them. In other words, should your hard drive break down, there is a good chance that your files can be recovered. However, the expert service comes at an incredible price tag, while backing up your data yourself is almost completely free.

This manual will guide you through the process of setting up and maintaining regular backups in Windows 7. The procedures are almost identical in Windows Vista, and the concepts can be adopted for Windows XP and other operating systems. I will help you decide which files and folders to back up and how to organize data for an easy backup. I will give you an estimation of how often you should back up different types of files, which backup media or destinations you can or should use, and how to best organize the backup procedure. Finally, I will also show you how to backup your operating system for a quick recovery in case things go wrong. I know that preparing a backup is a hassle; thus, the strategies I propose are as simple and straightforward as possible, maximizing both user comfort and data safety.

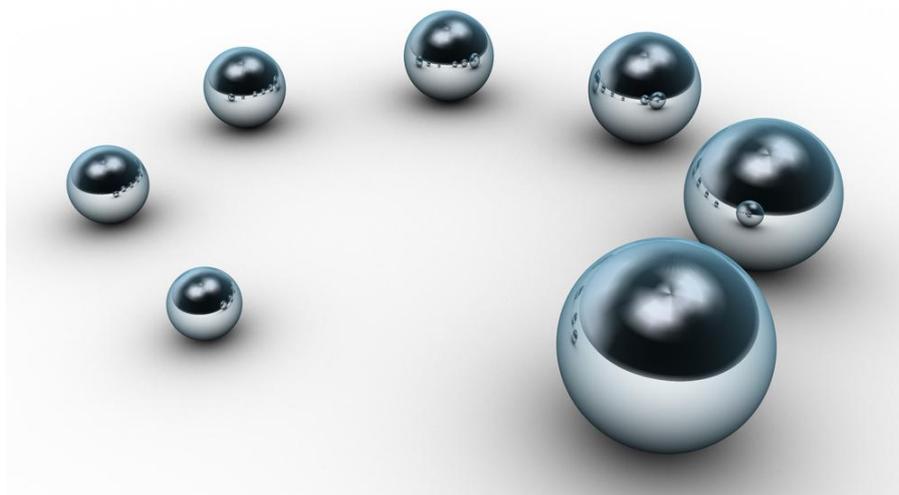
# The Master Backup Plan

---

The following chapters will help you organize your data and provide you with many tools and information. Since much of it may seem overwhelming and challenging at first, I would like to show you my master plan before we dive in. This is a simplified overview of the steps you need to take from beginning to end to create a simple and automated backup routine.

1. Get an overview of your files, so you know what is where.
2. Move User Profile to a non-system partition or drive.
3. Move all personal files off the system partition.
4. Decide which files to back up, how often and where to, for example:
  - a. Photos – seasonal, incremental – external hard drive
  - b. Music, movies, and videos – monthly, incremental – external hard drive
  - c. Bulk personal files – weekly, differential – external hard drive
  - d. Frequently edited and used documents – daily, synced – online or flash drive
  - e. Highly important files – frequently, full – CD / DVD / Blu-ray or flash drive
5. Decide which tools to use and set them up. Don't forget to schedule the backup.
6. If the tools you picked do not provide scheduling, create a scheduled task.
7. Back up your operating system once to save time the next time you need to reinstall.

That's it. Seems pretty straightforward, right? Then let's have a look at the messy details.



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## Where are my files and what should I back up?

Below you will find a list with all the folder locations you should consider for your backup. It is a guide that can help you find the files that matter. It cannot cover your individual system setup, the way you organize your private data, or all the programs you have installed.

### TIP: HIDDEN FILES

Note that some folders listed below may be hidden. To view them, open the respective parent folder, go to > *Organize* and click > *Folder and search options*. In the > *Folder Options* window, switch to the > *View* tab. Under > *Files and Folders* select > *Show hidden files, folders, and drives*. Click > *Ok* in the bottom right to apply to selected folder only. Click > *Apply to Folders* in the top left to apply to all folders.

### Quick Backup List

If you have sufficient storage space and time to run backups, you might as well take a shortcut and update all folders specified in the Quick List below. You will back up a lot of junk that you will never need, but at least you won't forget anything.

- C:\ProgramData
- C:\Users\
- C:\Windows\Downloaded Program Files
- C:\Windows\Fonts
- C:\Windows\System32
- custom folders not covered above
- other hard drives or partitions containing important data

### Detailed Backup Checklist

Take the follow checklist as a rough outline and personalize it to reflect your individual system setup. If you find that your files are all over the place, consider the next chapter and take some time to organize your files and folders in a smart way. You will find that small changes will increase the safety of your files and make your backup project easier.

I broke down the list into three categories:

1. **personal files** = default locations for files you personally created
2. **media files** = default location for media files you have copied or downloaded
3. **application data** = default locations of software user profiles and settings

<b>Personal Files</b>	<b>Default Location</b>	<b>Notes</b>
<input type="checkbox"/> contacts	C:\Users\<<user name>\Contacts	
<input type="checkbox"/> desktop	C:\Users\<<user name>\Desktop	
<input type="checkbox"/> documents	C:\Users\<<user name>\My Documents	
<input type="checkbox"/> downloads	C:\Users\<<user name>\Downloads	
<input type="checkbox"/> favorites	C:\Users\<<user name>\Favorites	
<input type="checkbox"/> images	C:\Users\<<user name>\Images	
<input type="checkbox"/> music	C:\Users\<<user name>\My Music	
<input type="checkbox"/> pictures	C:\Users\<<user name>\My Pictures	
<input type="checkbox"/> videos	C:\Users\<<user name>\My Videos	
<input type="checkbox"/> custom folders:		

<b>Media Files</b>	<b>Default Location</b>	<b>Notes</b>
<input type="checkbox"/> documents	C:\Users\Public\Public Documents	
<input type="checkbox"/> downloads	C:\Users\Public\Public Downloads	
<input type="checkbox"/> fonts	C:\Windows\Fonts	
<input type="checkbox"/> images	C:\Users\<<user name>\Images	
<input type="checkbox"/> movies	C:\Users\Public\Public Videos	
<input type="checkbox"/> music	C:\Users\Public\Public Music	
<input type="checkbox"/> pictures	C:\Users\Public\Public Pictures	
<input type="checkbox"/> ringtones	C:\Users\<<user name>\AppData\Local *1 \Microsoft\Windows\Ringtones	
<input type="checkbox"/> screensavers	C:\Windows\System32\<file name>.scr	
<input type="checkbox"/> themes	C:\Users\<<user name>\AppData\Local \Microsoft\Windows\Themes	
<input type="checkbox"/> user account pictures	C:\ProgramData\Microsoft\User Pictures	Account
<input type="checkbox"/> videos	C:\Users\Public\Public Videos	
<input type="checkbox"/> wallpapers	C:\Windows\Web\Wallpapers	
<input type="checkbox"/> other file locations:	*1 per default the AppData folder is hidden	

### Application Data

- Google Chrome
- Firefox
- Internet Explorer
- iTunes
- Scanner
- Skype
- Thunderbird
- Windows Live Mail
- other applications:

C:\Users\**<user name>**\...

... \AppData\Local\Google\Chrome  
 ... \AppData \Local\Mozilla\Firefox **and**  
 ... \AppData\Roaming\Mozilla\Firefox  
 ... \Favorites **and**  
 ... \AppData\Local\Internet Explorer  
 ... \My Music\iTunes  
 ... \AppData\Roaming\**<manufact. name>**  
 ... \AppData \Roaming\Skype  
 ... \AppData \Local\Thunderbird **and**  
 ... \AppData \Roaming\Thunderbird  
 ... \AppData \Local\Microsoft\Windows Mail



Alexander Kirch via [Shutterstock](#)

## How can I best organize my files for an easy backup?

A popular saying states 'organized people are just too lazy to look for things.' Indeed, it is very easy to find data on a computer; after all there is a search feature. However, it gets a lot more complicated when you are trying to create a backup. In this case, organized people have a major advantage. We will get to that later, but for now...

### Just Back It Up!

Organizing files means that you have to move them and that in itself is a risk. Hence, before you follow any of the very smart advice further down in this guide, I recommend that you don't get fancy, but **prepare a raw backup right now!**

#### INFO: SKIP THIS STEP

You can skip the backup if all your personal files are already located on a hard drive or partition that is **not** your C: drive or system partition!

As your backup destination you can use an external drive or a local partition other than your C: drive. You can either back up the entire drive or select the folders located on your C: drive from the Quick List above. Just make sure you have enough free space in the backup destination.

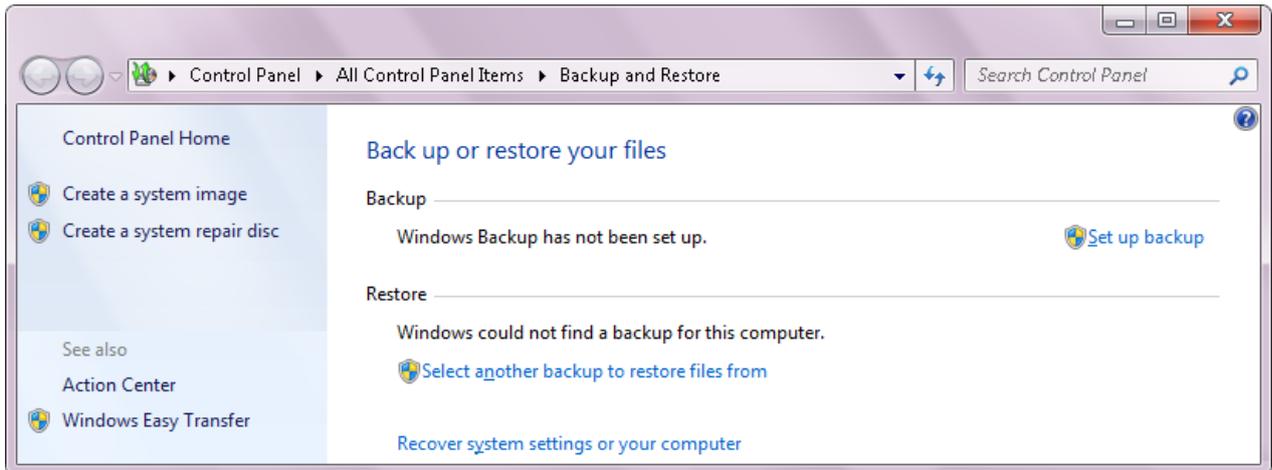
#### INFO: TIME INTENSIVE STEP

If you want to back up many gigabytes of data, let the backup run overnight as it could take a few hours.

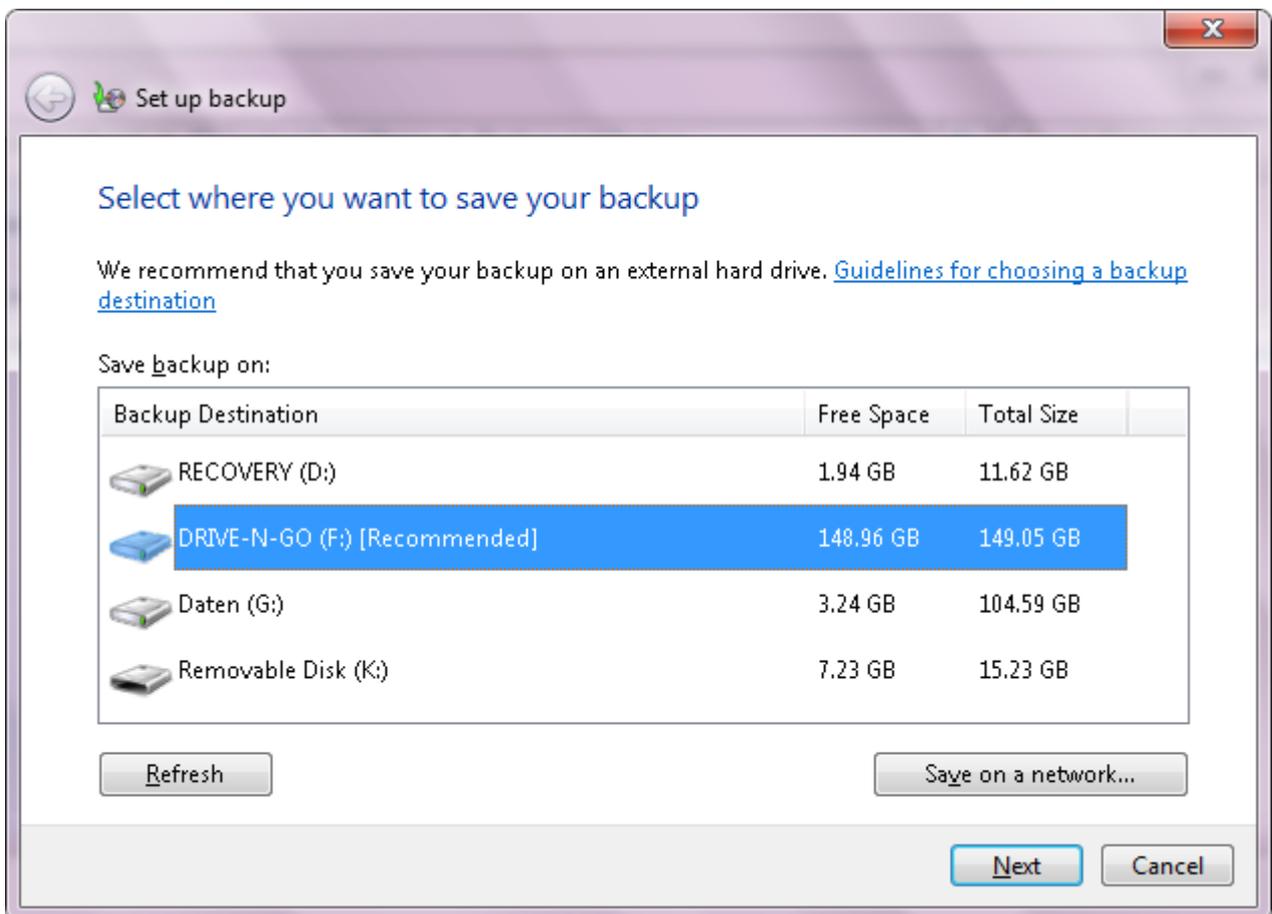
### Windows Backup and Restore

If you want to make a backup to an external hard drive, connect it now. To launch the Windows 7 Backup and Restore feature, go to > *Start* and type > *Backup* into the search field. From the results select > *Backup and Restore* and hit > *Enter*.

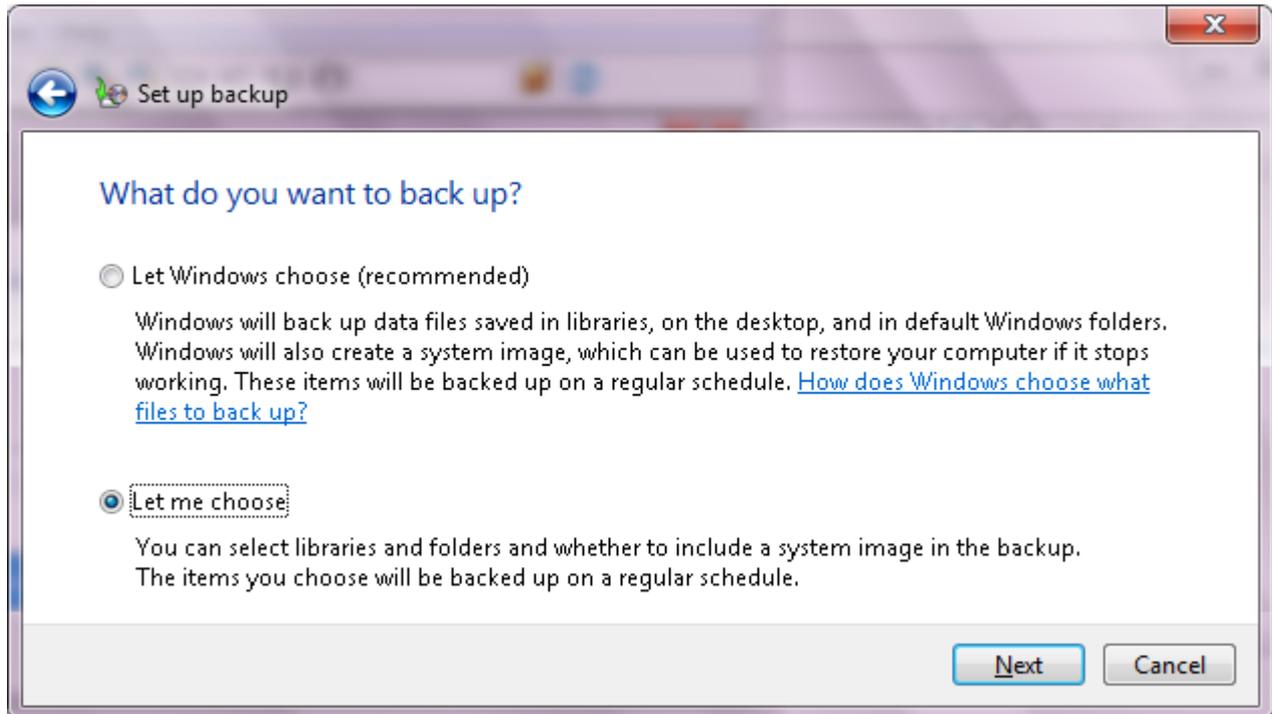
In the window that opens, click > *Set up backup* on the right.



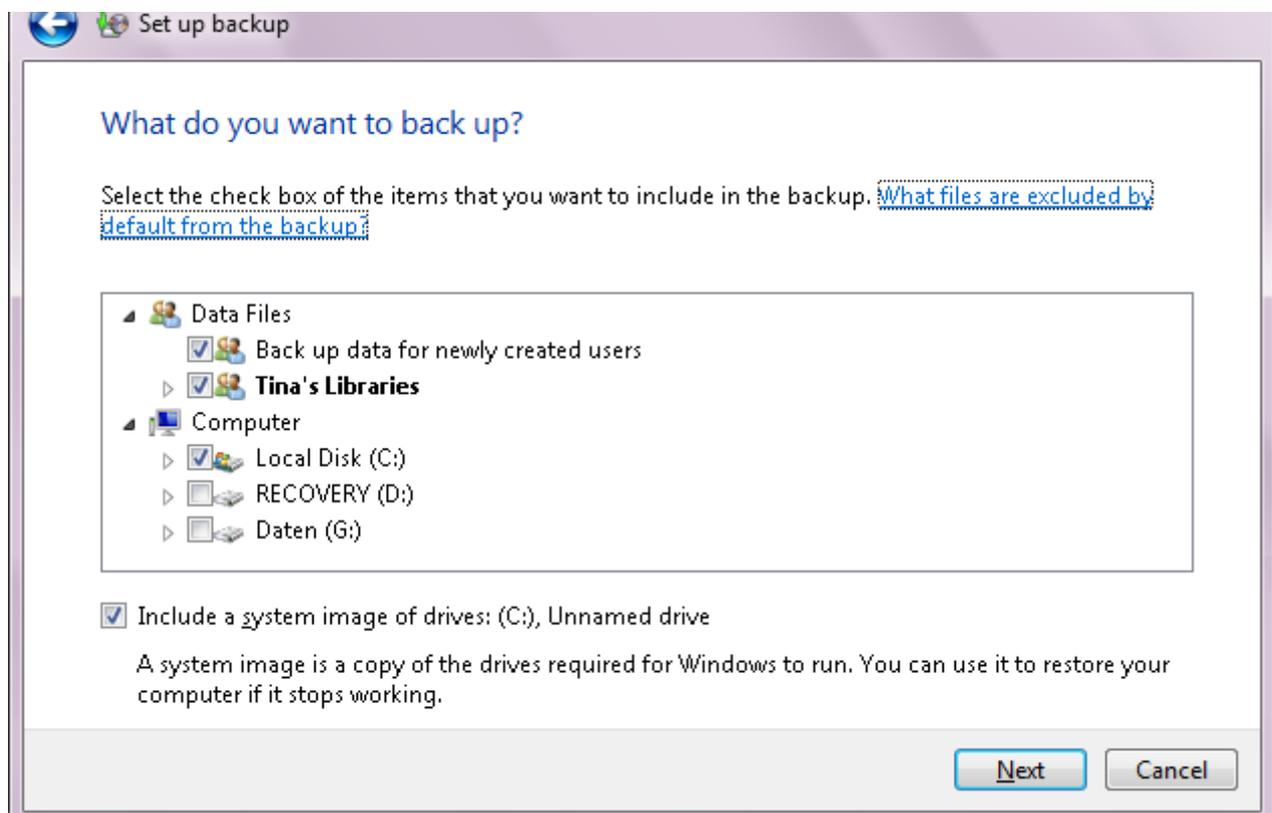
In the new window, select the drive you want to save your backup to and click > Next.



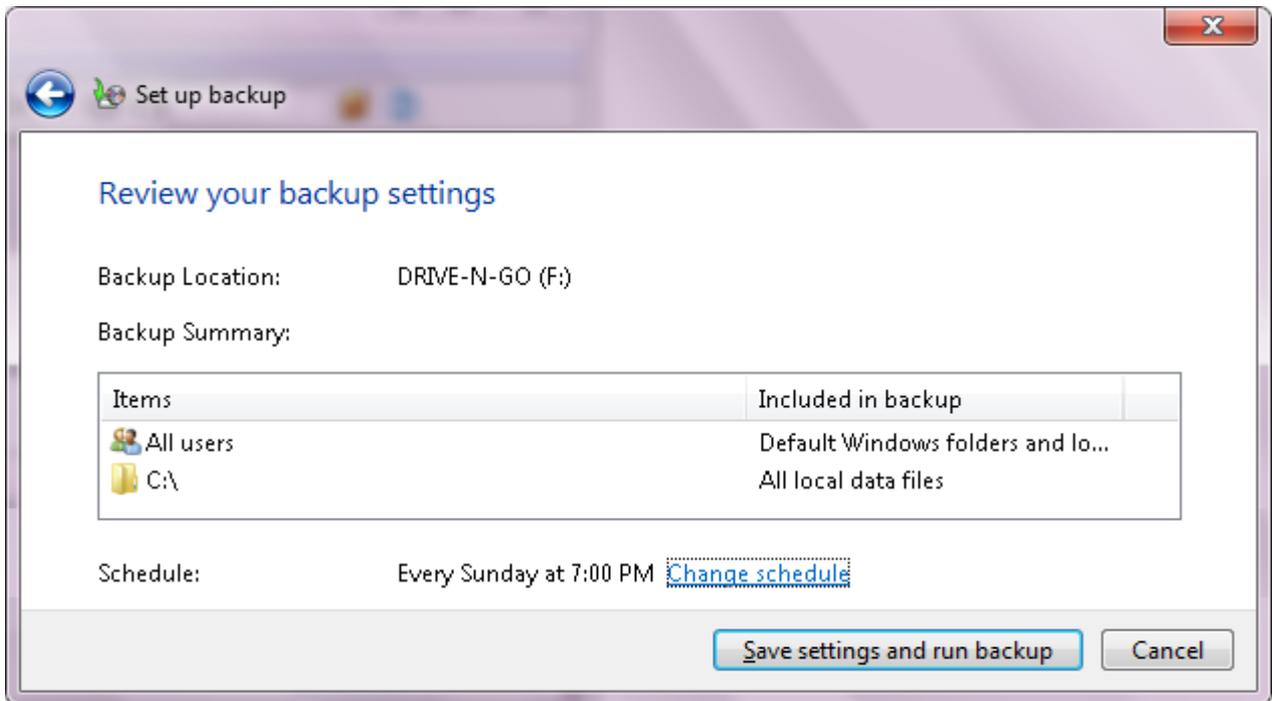
Now you can choose what you want to back up as you can see. For the raw backup click > Let me choose and > Next.



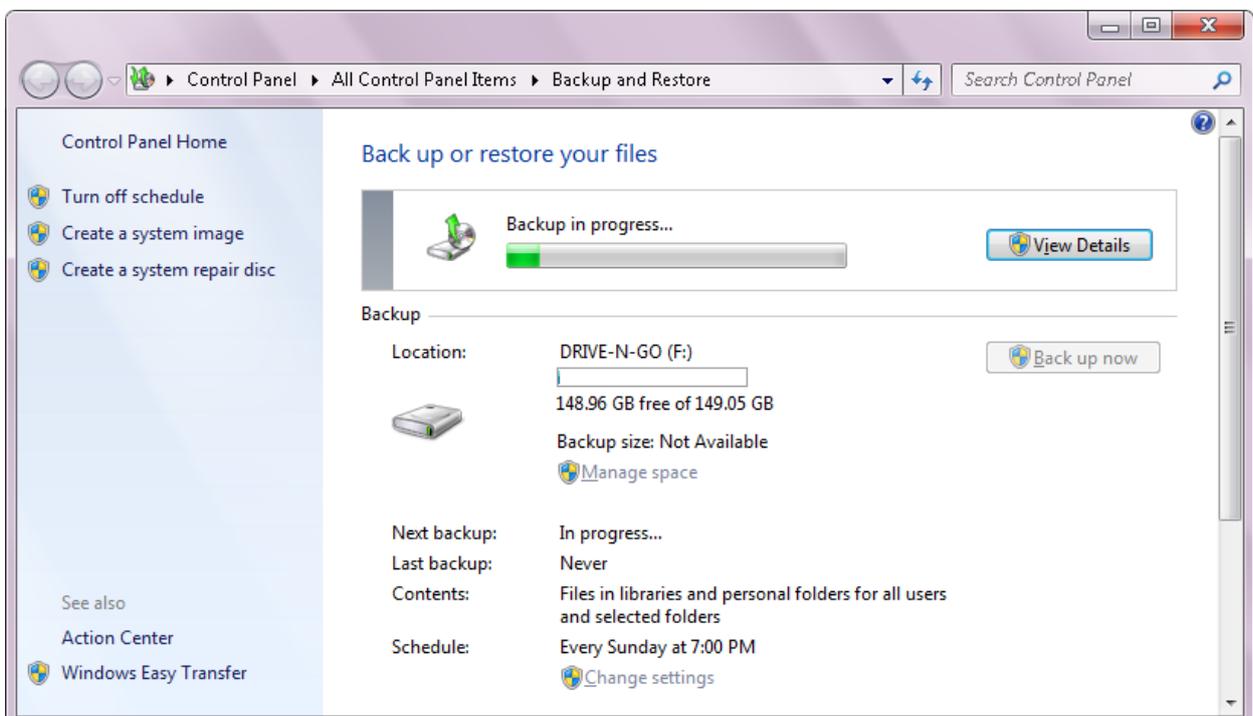
Check > *Local Disk (C:)* , but note that Windows will not back up known system and program files. If you would like to make a system image right now, check the respective box in the bottom left. You can leave the items under > Data Files checked.



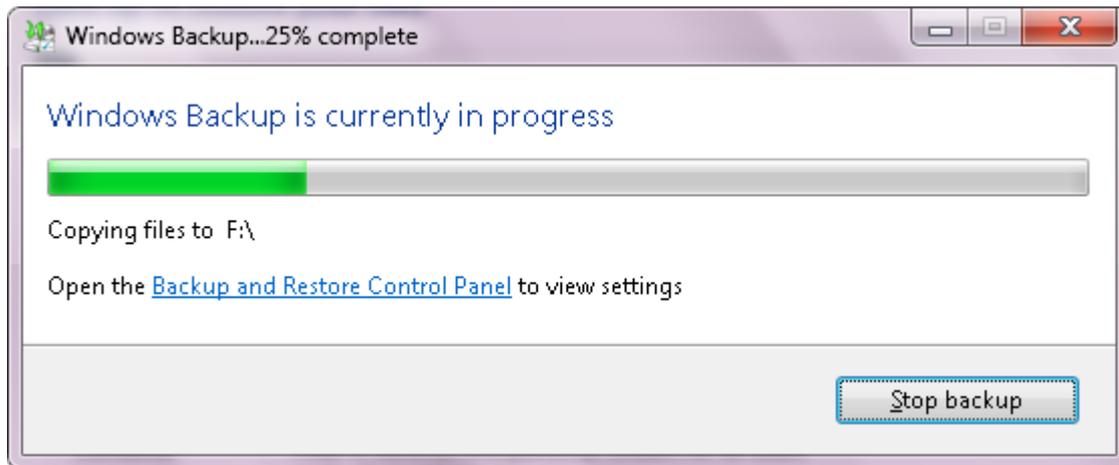
Finally, review your settings, change the schedule if you want, and click > *Save settings and run backup* to proceed with backing up your files.



You can use your computer lightly while the backup is underway, e.g. browse the internet or read your mail. However, it's safer to leave your computer alone.



The backup could take some time to complete. If you realize that you cannot wait for it to finish, click > *View Details* and then click > *Stop backup*.



If necessary you can restore the backup you just made by opening > Backup and Restore as described above and selecting a backup listed under the > Restore headline or browsing for another backup.

I guess what I just did was show you how easy it is to run a backup. If you paid attention, you will have spotted some additional features in the default Windows Backup and Restore tool. Actually, by referring you to the scheduling option, this could be the end of this guide. However, there is a lot more to be said about storing data and setting up smart automatic backups. So let's return to the real topic of this chapter: organizing files!

### **Separate Personal Files from Windows Files and Programs**

My first and most important advice is to organize your files in such a way that very little is stored on your system drive or partition. Ideally, all your personal data should be stored on a separate partition or hard drive. This strategy has several advantages:

1. Your personal data will be safe if your system fails. Nothing to worry about!
2. Your personal files will live in one location. Simple to backup!
3. When reinstalling your system, you have to restore less data. Faster setup!

To move personal files from your system drive, you either have to install a second hard drive or create an additional partition on your primary hard drive. The latter option is completely free and can be done anytime without installing additional tools.

#### **INFO: SKIP THIS STEP**

You can skip creating a data partition if you already have a second hard drive or partition installed that you can use to routinely store and access user profiles and personal data. Note that this space cannot double as your future backup location, as it will obviously store original data!

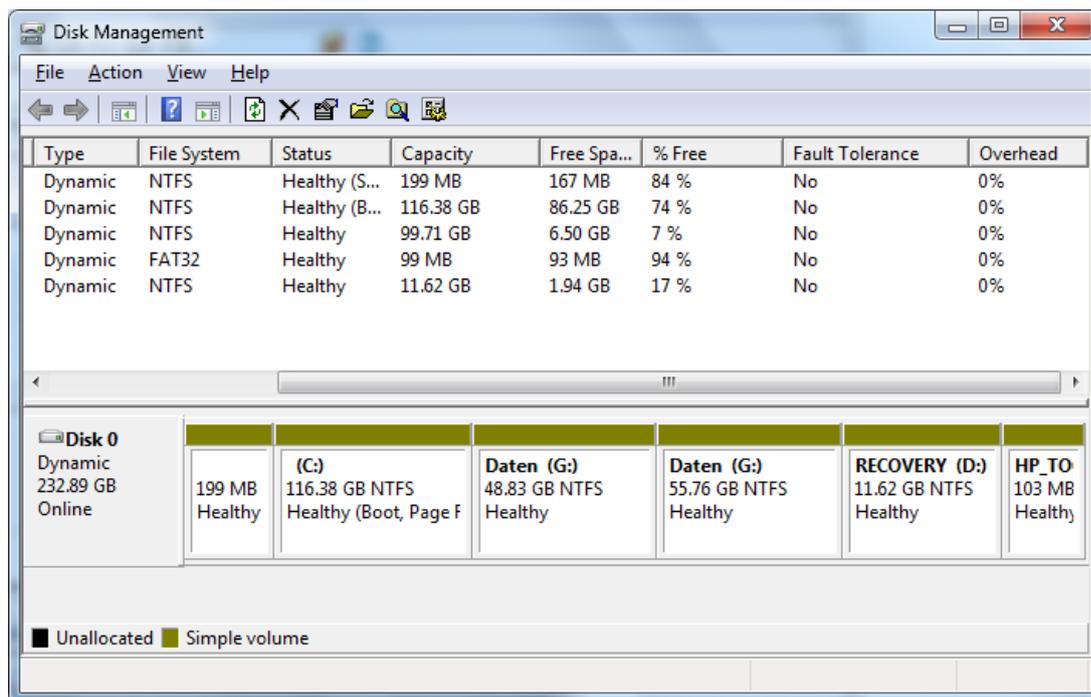
### Create a Data Partition

While it's generally safe to move data around or re-partition a hard drive, things can go wrong and you should rather be safe than sorry. Thus, if you haven't yet prepared a raw backup, please return to the beginning of this chapter and do so now.

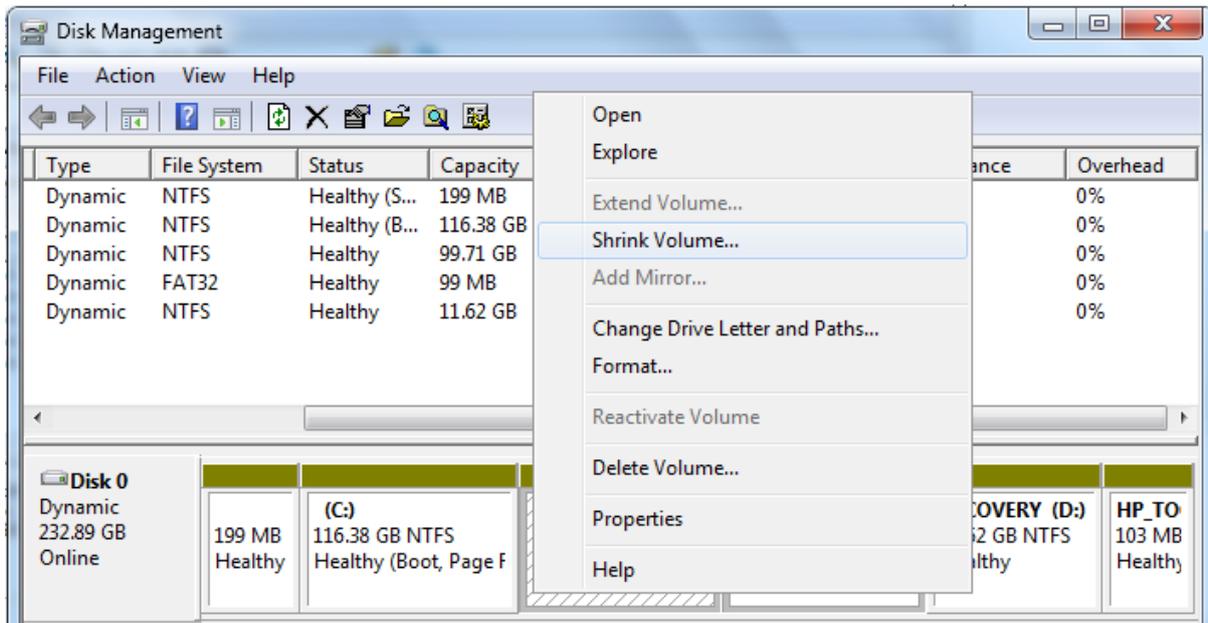
For the system partition, i.e. your C: drive, you have to calculate at least 20 GB (20,480 MB), more if you tend to install a lot of software. A minimum of 5 GB (5,120 MB) extra should always be available on the C: drive, otherwise Windows will become slow and unresponsive.

Any additional space can be dedicated to the new data partition. To manage your Windows 7 partitions, go to > *Start*, type > *partition* in the search field, select the option > *Create and format hard disk partitions* and hit > *Enter*.

The Disk Management tool shows all your partitions, their size and how much free space is left. To create a new partition, you first need to shrink the system partition by the respective size. This creates unallocated space that you can subsequently allocate to your data partition.



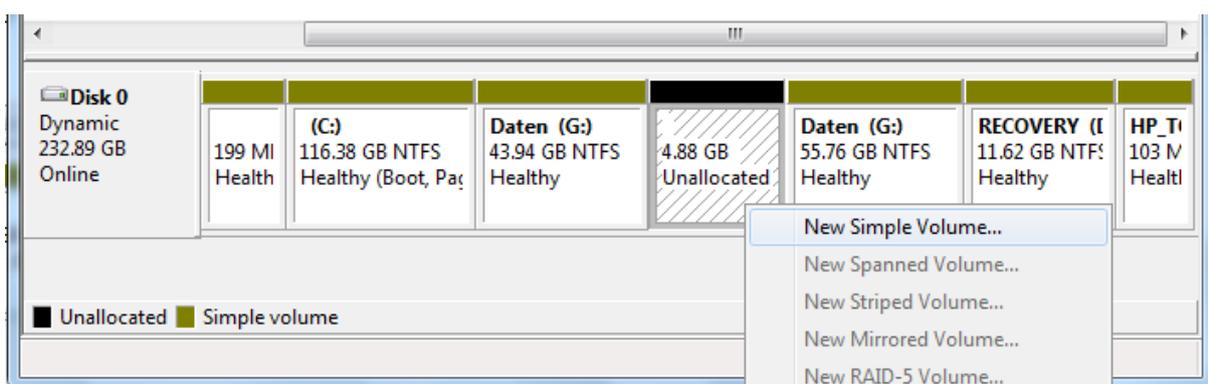
Right-click the partition you wish to shrink and select > *Shrink Volume...* The tool will query the volume for available shrink space and then let you specify the amount by which you wish to shrink the volume in MB. Make your entry and click > *Shrink* to start the process.



Once you have freed up space, it will appear as > *Unallocated* in your Disk Management tool. You can assign the unallocated space to an existing partition or create a new partition.

To add the space to another partition, right-click the respective partition, select > *Extend Volume...* and assign all available space to that volume.

To create a new partition from the unallocated disk space, right-click it and select > *New Simple Volume...* The New Simple Volume Wizard will guide you through the steps of creating a new volume. You can pick the amount of unallocated space you want to assign to the new partition, a drive letter, and the file system in case you want to format the free space.



### Permanently Move User Profile

Windows 7 handles user profiles much better than previous versions. All your files and settings are stored in your user profile under C:\Users\

show you is safe and easy, but it does require the use of some geeky shortcuts, such as the command prompt.

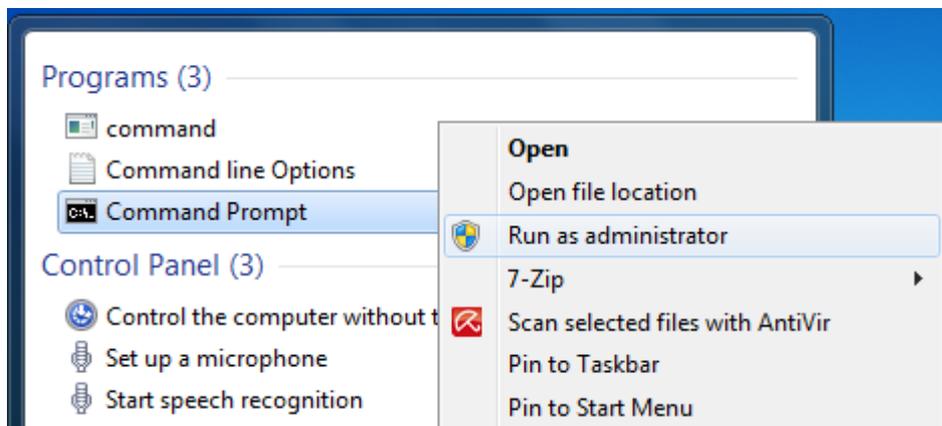
### ATTENTION: CREATE A RESTORE POINT

Before you proceed to make changes to system files, you should create a restore point. The procedure is quick and simple and is explained in the following chapter: [How can I back up and restore my operating system?](#)

In order to permanently move your current user profile, you will need to access your Administrator account. If you are actually using the Administrator account as your personal account (not advised), you need to create a second account with Administrator privileges.

#### Activate Administrator account

Go to > *Start* and type > *Command* into the search field. Under > *Programs* the entry > *Command Prompt* should come up. Right-click > *Command Prompt* and select > *Run as administrator* from the menu.



Log in with the Administrator account credentials. You may find that you don't need a password (not advised). Note that you cannot copy and paste text into the command prompt. You need to type the commands as outlined below.

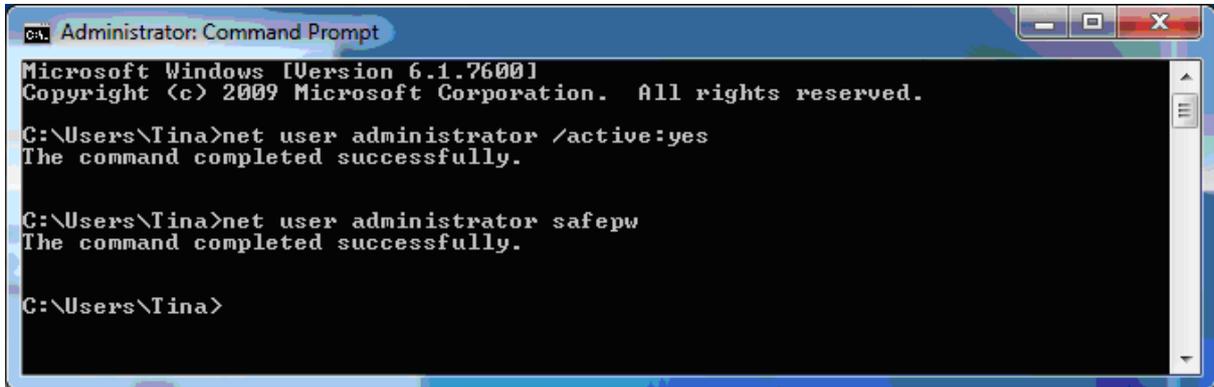
Use the following command to activate the Administrator account:

```
net user administrator /active:yes
```

To deactivate the Administrator account, just run the same command again, replacing the word *yes* with *no*.

While you are at it, you can also create a password for your Administrator account:  
`net user administrator <password>`

Replace the term `<password>` with your desired password.



Proceed to Copy and Move Your User Profile below.

### Create Account with Administrator Privileges

Go to `> Start` and type `> create` into the search field. Under `> Control Panel` open the entry `> Create standard user account`. Enter your desired `> account name` into the respective field, select `> Administrator` and click `> Create Account`. Since this is an account with administrator privileges, you should protect the account with a password.

### Copy and Move Your User Profile

Log out of your user account and log in with another account that has administrator privileges (see above). If you activated the Administrator account, it should now appear as a user on your Windows logon screen.

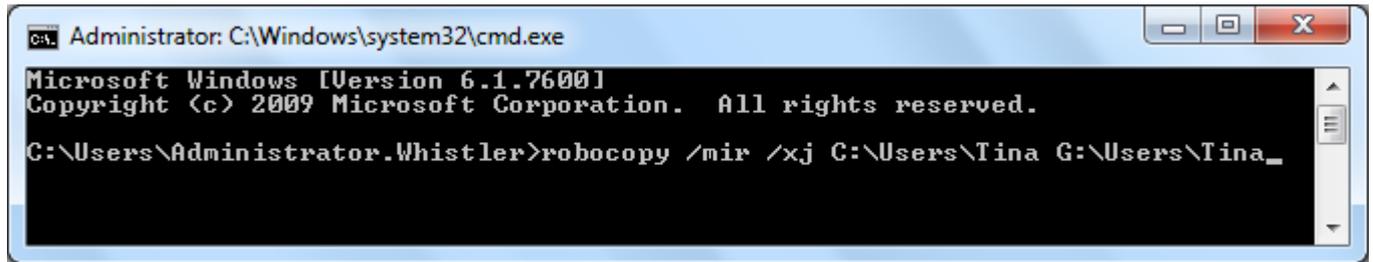
#### INFO: TIME INTENSIVE STEP

Note that if you have a lot of files stored in your user profile already, this step can take some time. I recommend running the process when you do not need your computer, e.g. overnight.

Click the key combination `> [Windows] + [R]`, then type `> cmd` into the text field and click `> Enter` to open the command prompt.

Enter the following command to copy your user profile to its new destination:

```
robocopy /mir /xj "C:\Users\<user name>" "D:\<new location>"
```



```

Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator.Whistler>robocopy /mir /xj C:\Users\Tina G:\Users\Tina_
  
```

I assume that C: is your system drive. Replace *<user name>* with the name of the account you want to copy and move. I assume D: is the drive letter for the partition or hard drive you will copy and permanently move your personal files to. Replace *<new location>* with the path you want to copy and permanently move your user profile to. If your user name has no spaces, you don't have to use the quotes, for example no quotes were used in the screenshot above.

Note that robocopy copies the contents from one path to another. This means that in the example above, only the files and folders inside the *<user name>* folder will be copied. Hence, you need to create a path that includes the desired parent folder, e.g. *D:\<user name>* if you want everything to be located inside the *<user name>* folder.

### Link to New Profile Location

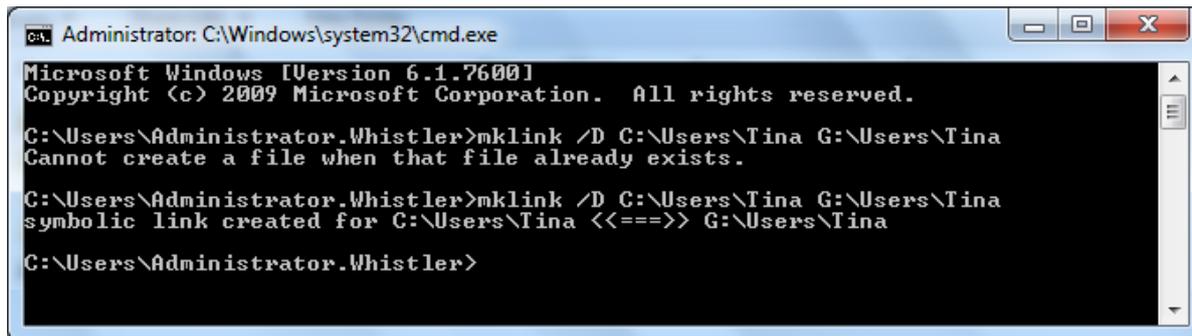
In this step we will create a symbolic link that points to the new location of your user profile. It requires that you successfully copied your user profile to its new location. For this entire procedure, you need to be logged in with an Administrator account that is not your main user account.

First, you need to rename your current user profile. Go to `> C:\Users\` and rename your profile folder, for example from *<user name>* to *<user name>\_old*.

Now click the key combination `> [Windows] + [R]`, then type `> cmd` into the text field and click `> Enter` to open the command prompt.

Enter the following command to create the symbolic link:

```
mklink /D "C:\Users\<user name>" "D:\<i>new location</i>"
```



```

Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator.Whistler>mklink /D C:\Users\Tina G:\Users\Tina
Cannot create a file when that file already exists.

C:\Users\Administrator.Whistler>mklink /D C:\Users\Tina G:\Users\Tina
symbolic link created for C:\Users\Tina <=> G:\Users\Tina

C:\Users\Administrator.Whistler>
    
```

Same assumptions made as in the previous step.

### POTENTIAL ERROR: CANNOT CREATE A FILE

If you get the error message > Cannot create a file when that file already exists, you probably forgot to rename the original profile folder.

Solution: Return to C:\Users and rename the <user name> folder.

To test your settings, log into your personal user account and if everything appears to work fine, you can delete the renamed user profile under C:\Users. However, I would advise you to first give the new setup a thorough one week test run and prepare a proper backup with your new settings.

### POTENTIAL ERROR: TEMPORARY PROFILE

If you see a warning that Windows created a temporary profile, you probably didn't point the symbolic link to the right location or you didn't copy your profile to that location, yet.

Solution 1: Log in as a different user and proceed to Copy and Move Your User Profile above.

Solution 2: Go to > C:\Users, delete the symbolic link and try the mklink command again.

Solution 3: If you cannot figure it out, remove the symbolic link, rename your user profile back to its original name, reboot, and everything should be back to normal. You can also use the Restore Point you hopefully made earlier.

To receive help in troubleshooting any issues with the above methods, submit a question to [MakeUseOf Answers](#). Please describe exactly what you were trying to do and which commands you used.

### INFO: REINSTALLING WINDOWS

Remember that if you ever reinstall Windows after moving your user profile, you have to set up the symbolic link again, in order to use the user profile located on your secondary hard drive or partition. This procedure is much easier than restoring your user data.

### Suggested Folder Structure

Since your Windows user profile is now located on a separate hard drive or partition, you might as well use it. My suggestion is to keep the default Windows folder structure and only personalize or append it with additional folders.

The easiest thing you can do is keep all your folders inside your user folder, i.e. the path to which the symbolic link points. In fact, you could point the symbolic link to the data drive without a parent, i.e. <user name> folder. In other words, I don't recommend you set up a complicated folder structure.

# How often should I run a backup?

---

In one word: **OFTEN!**

Well, the truth is there are files you don't need to back up every day or even every week. For example, large data collections that barely change only need to be backed up every other week or month, depending on how often you add to them. Files you change daily or weekly, for example emails or work documents on the other hand, should be backed up at least once a week or every other day.

Important files that you access and edit daily, maybe even from different computers, can be stored in one folder and synced with online storage space. This process can be automated, so that you don't even have to think about making the backup.

Let me repeat that you need to run backups regularly. The frequency depends on how often the files change and on how important the changes are. Rule of thumb: the more often you change files in a specific folder and the more important these files are, the more often you need to back up the respective folder.



liseykina via [Shutterstock](#)

## What are the best backup and restore tools and strategies?

Up to this point you have organized your data to perfection or rather perfect simplicity, you understand how important a backup is, and you know which backup media you can use and where to store them. The question is, how do you make this entire process as painless and convenient as possible? In this chapter I will show you how to make smart backups and automate the backup process.

### Types of Backups

To choose the right backup strategy, it's important to understand that there are different types of backups and how they work.

#### Full Backup

A full backup is a 100% copy of the original files. It is typically saved to a fresh folder that carries a timestamp. This is the traditional way to back up files. Since every single file is copied, the full backup is the **slowest** of all backup types.

#### Differential Backup

A differential backup backs up all files that have changed since the last **full backup**. This means it adds all new and updated files to an existing full backup. If other backups were made in the meantime, i.e. another differential or an incremental backup, files that were backed up during these sessions will be backed up again, since differential and incremental backups are not full backups. This is the **safest** way to update an existing backup because you will be able to return to a previous version of a file or in case one of the differential backups was corrupted, you may have another copy that works.

#### Incremental Backup

Like a differential backup, an incremental backup backs up only changed files. The difference between the two is that the incremental backup simply backs up files that were changed since the previous backup, no matter whether this was a full, differential, or incremental backup. This is the **fastest** way to update an existing backup.

#### Sync

Technically, syncing is a form of backup. The difference is that it works in multiple directions. For example you can sync files between two computers; when the file is edited on one computer, the latest copy is synced to the second computer and vice versa. As you may have guessed, this method is interesting if you access and edit files from different locations, e.g. your home and your work computer.

## Backup Strategies

You can either back up everything as we did with the raw backup at the beginning of this manual, or you can revert to smart backups using the backup types above. A smart backup saves time, hard drive space, and preserves energy. The smart backup strategy is to create different types of backups, depending on what you are backing up, and creating automatic schedules that will help you not to forget or skip a backup.

## Online Backup or Sync

Backing up files online has the advantage that you can access them from anywhere, provided you have an internet connection. Since the servers that store your data are generally backed up themselves, this is also the safest way to back up your files. Since server space is expensive, you should only back up your most heavily accessed files online.

What keeps many people from storing data online or 'in the cloud' is the notion that it's easy to access, copy, and abuse data stored online. However, the risk of being hacked is the same for any device that is connected to the internet. Besides, servers are typically secured better than the average home computer.

## Documents

For documents I recommend a differential backup. This way you can return to previous versions of a document in case something went wrong. Depending on how often your documents change, a daily or weekly backup should be set up.

## Application Profiles and Files

In Windows 7 it's your best bet to back up the entire AppData folder in your user profile. Due to the complexity of this folder, I would recommend to make a full backup once a week. If you don't want to back up anything and everything in the AppData folder, you can also use tools to back up and restore profiles of specific applications, e.g. Outlook or Firefox. However, I find it easier to use only a single program for all my backup purposes, thus I back up the entire folder.

## Collections

For large file collections, i.e. music and movies, you only need to keep one full backup that you update regularly. For this purpose I would recommend to set up a weekly or monthly incremental backup that runs on a set schedule. Remember that if you edit the original collection, files deleted will still be present in your backup. Hence you should make a full backup after removing files or folders from the original copy.

## Seasonal

A seasonal backup is what I recommend to set up for files and folders you don't change often. For example when you return from a vacation you probably upload photos from your digital camera to your computer and sort them into respective

folders. This is when you should run an incremental backup to add these files to your backup. You can do the same for music or movie downloads and run those backups whenever you feel it's necessary.

# Backup Tools

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In the beginning of this manual I showed you how to use Windows' internal backup tool. It's sufficient for basic backup and restore operations. Notable features include saving backups on a network drive, creating a system image, and setting up a schedule for the backup. However, Windows' Backup and Restore feature only supports one single backup job and if you wish to setup several different backups, that is not sufficient.

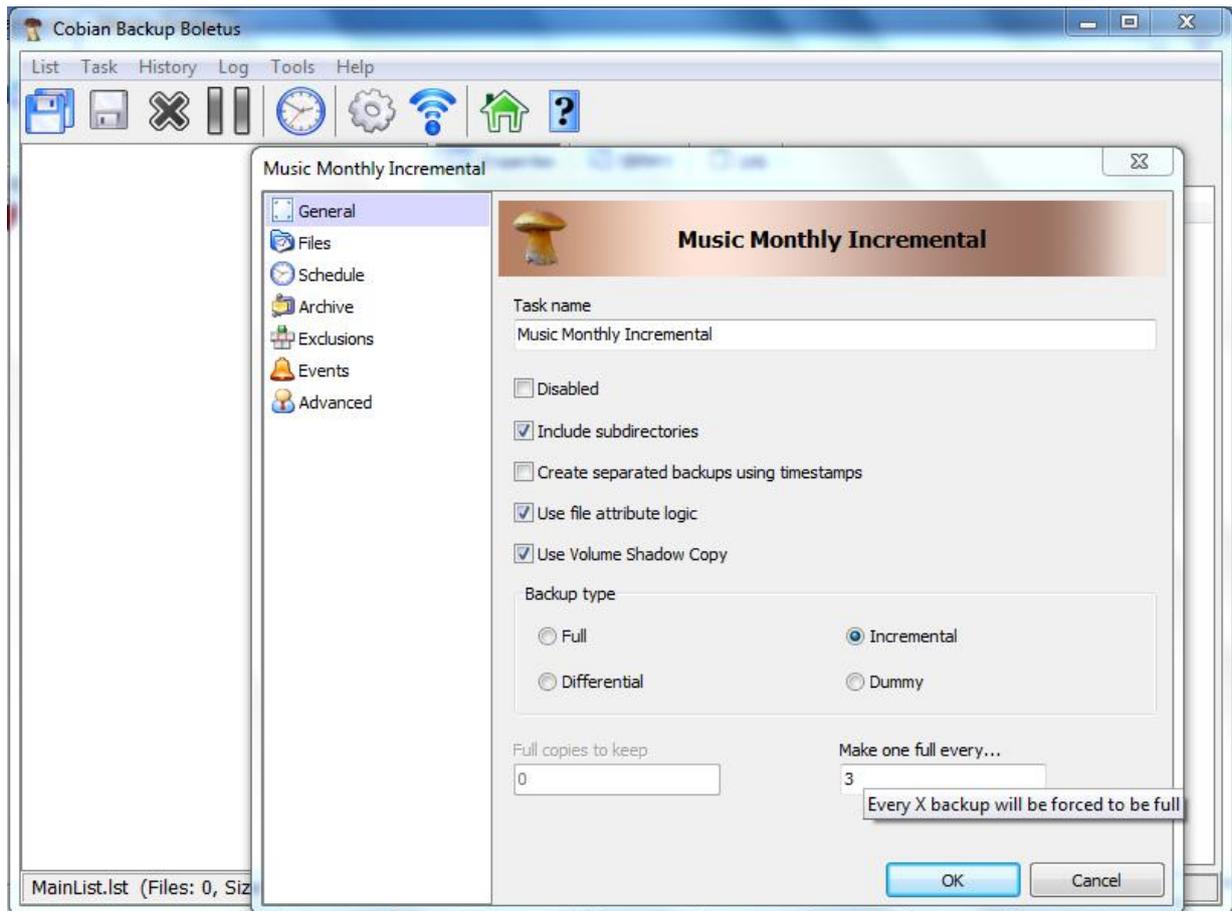
## Local and FTP Backup: [Cobian Backup](#)

My personal tool of choice for many years has been Cobian Backup. It offers several advanced options, while still being easy to use for average backup purposes. Cobian Backup comes with a great Tutorial found under > *Help* in the toolbar. The Tutorial explains the installation process and explains, why the program should be installed as a service, rather than as application. Let's have a look how you can use Cobian Backup for your backup strategies.

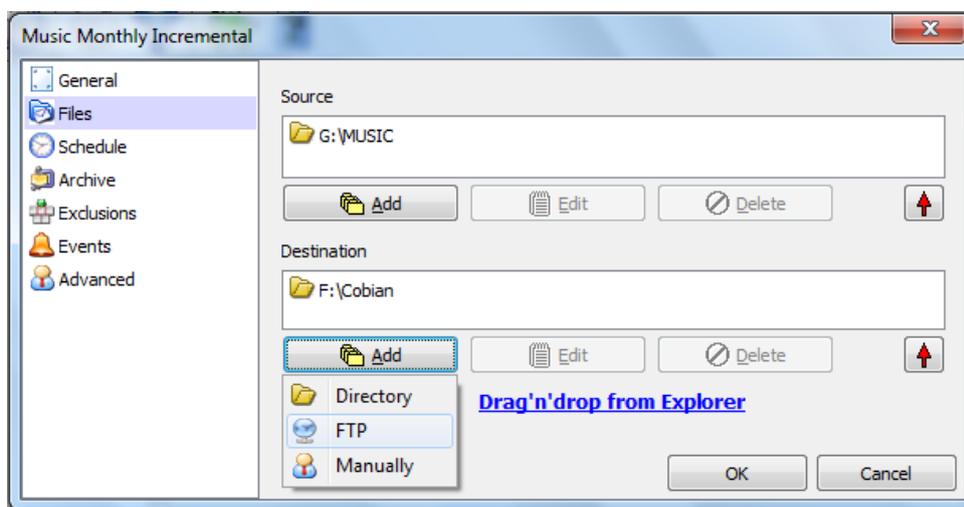
In my example I will set up an incremental monthly backup for my music collection. However, along the way I will also point out and explain other options. If you are ever unsure what an option does, hover over it with the mouse cursor and read the tooltip for an explanation or open the Tutorial.

Backup jobs in Cobian Backup are called tasks. Click on the > *clock symbol* or go through the toolbar > *Task* > *New task* to create the first backup job.

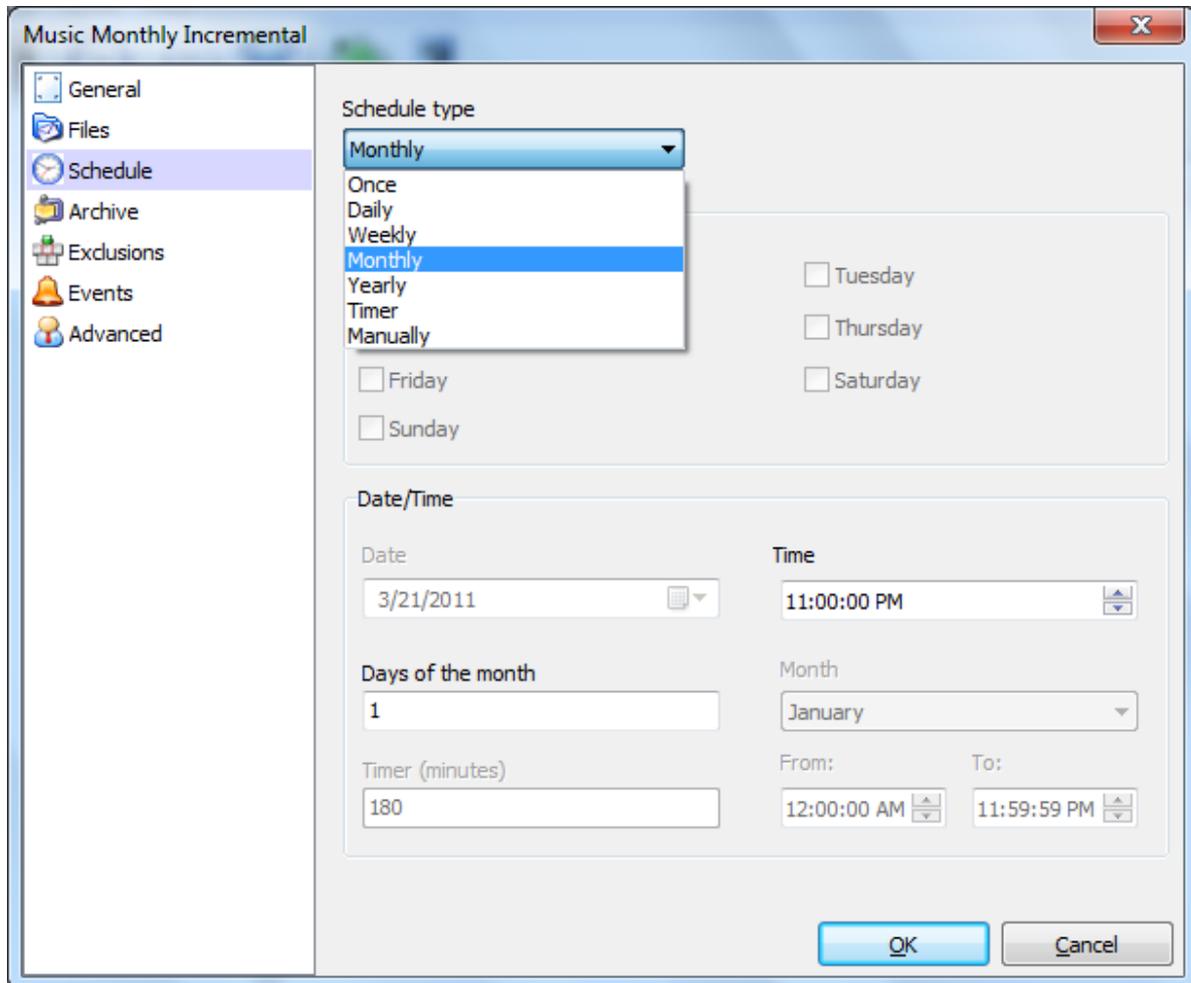
The new task window launches with the > *General* tab open. If you create separate backups with a timestamp, you can select how many copies to keep (bottom left). If you set up a differential or incremental backup, you can choose how often a full backup should be prepared (bottom right). The > *Dummy* option opens the respective task on schedule, but doesn't run it. This is handy if you simply need a reminder, for example to run a backup once you no longer need the computer. If you don't want a task to run for a while, you can check the > *Disabled* box.



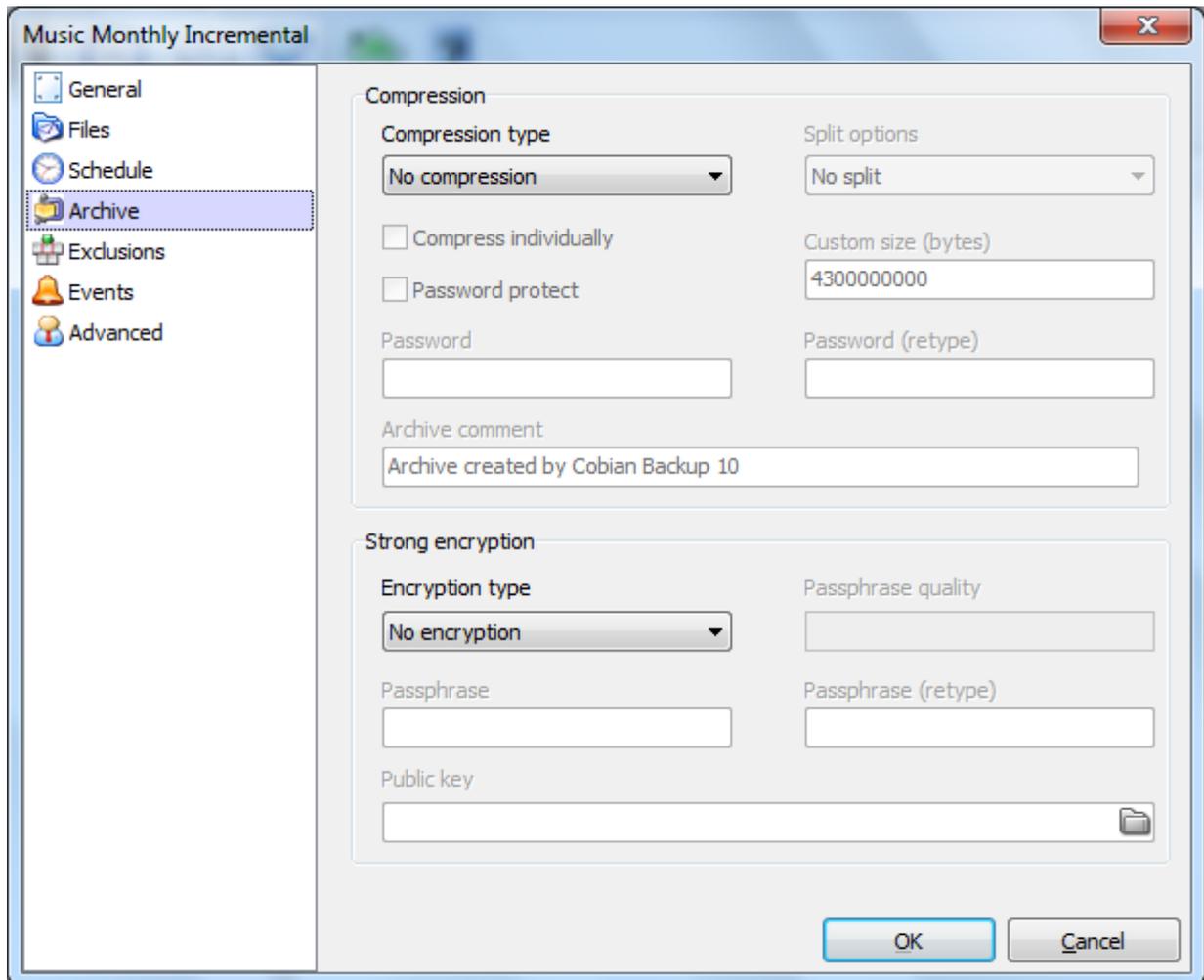
In the > *Files* tab, specify both the files and folders you want to back up (*Source*), as well as where you want to back them up to (*Destination*). Backups can be performed both from and to FTP servers. Setting up multiple destinations is practical if network letters for your external hard drive sometimes change. Or you can make a backup to multiple locations. Cobian Backup lets you drag and drop files and folders, which I find very convenient.



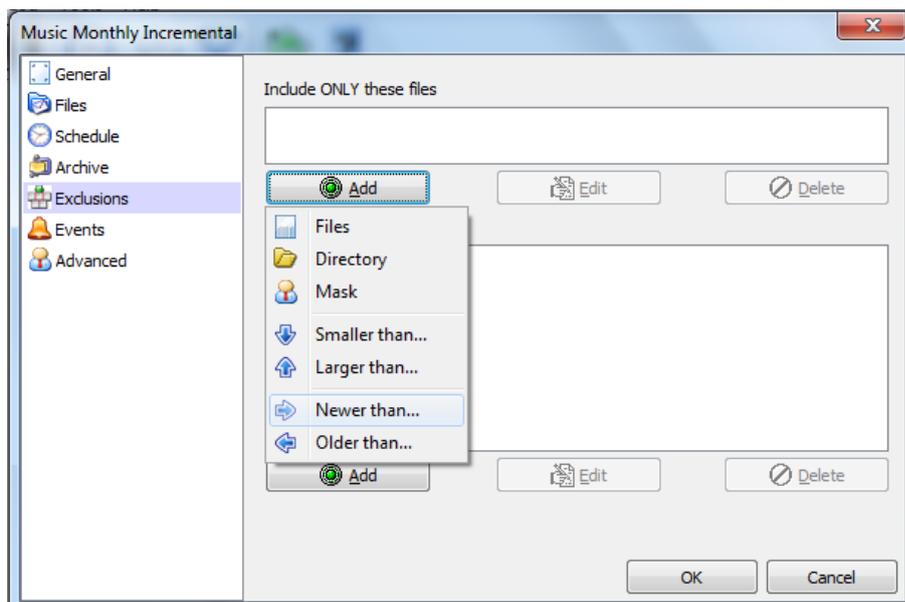
The > *Schedule* tab is straightforward with no surprising or complicated features. This tab also completes the basics that are required for a proper backup. The following tabs offer advanced features.



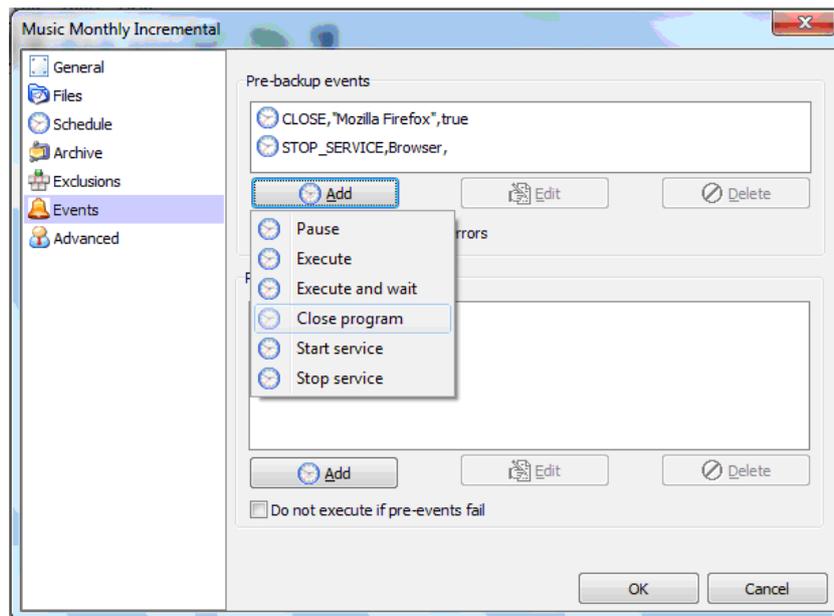
Under > *Archive* you can set up file compression and encryption and password protect your backups. I prefer to run my backups with neither.



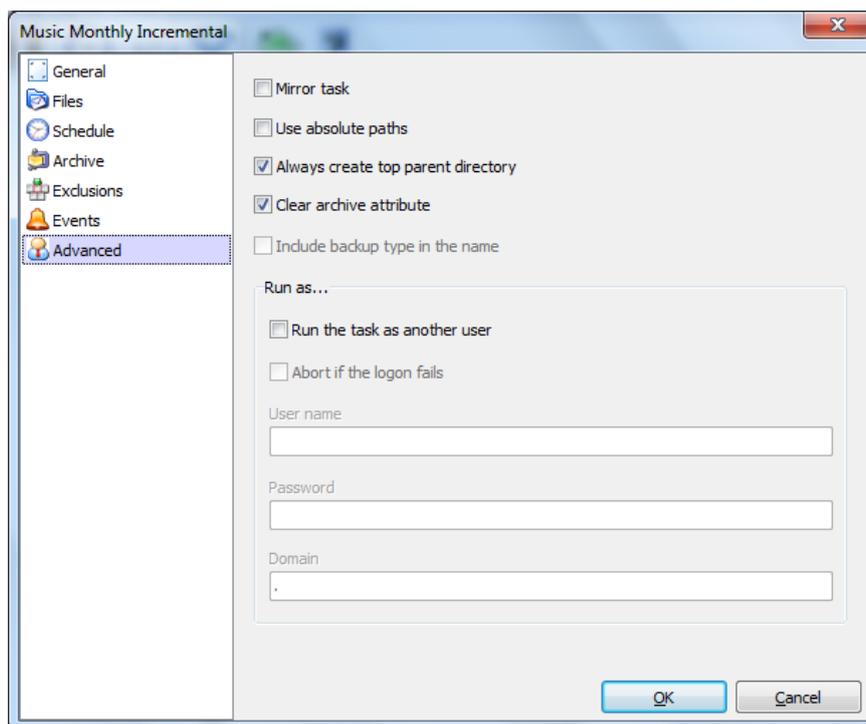
Likewise, I don't use > Exclusions or inclusions, however, it's an interesting feature if you have an older backup made with another tool and would like to back up only newer files. You can also discriminate by size, file or directory.



If you want to back up program profiles, you may want to look into the > Events tab. Here you can let Cobian Backup run events before and after the backup, for example close and open programs or shut down the computer after the backup concludes. If you run Cobian Backup as an application, you should always close programs if you intend to back up their profiles. However, you can also install Cobian Backup as a service and simply log off your user account before the backup starts.



Under > Advanced you can run the task as another user and set other preferences.



Cobian Backup does not offer a restore feature. However, copying files back to its source can either be done using a reverse backup task or by using a command line option like robocopy.

### Local Backup and Sync: Alternative Programs

Many free alternatives have limited features compared to Cobian Backup. MakeUseOf recommends [these tools](#) for your backup and sync projects. One of the programs in the list is [SyncBack Freeware](#) from 2BrightSparks. It supports FTP and network backups, multiple advanced overwrite options, filters, and more. It's an advanced alternative to Cobian Backup.

Further reading:

[Backup your Hard-Drive with SyncBack](#)

### Outlook Backup: [Outlook Personal Folders Backup](#)

Microsoft provides an add-in for Outlook 2007, 2003, and 2002 that helps backing up personal Outlook folders, i.e. .pst files.

Further reading:

[5 Easy Ways To Back Up Your Microsoft Outlook Data](#)

### Mozilla Backup: [MozBackup](#)

MozBackup is a backup and restore tool for many Mozilla program profiles, including Firefox, Thunderbird, Sunbird, and Songbird.

Further reading:

[Back up your Firefox profile with MozBackup](#)

[Quick Tip: Backup Firefox Preferences](#)

### Online Sync: [Dropbox](#)

Dropbox is the most convenient solution for backing up and syncing your files. You can install Dropbox on several devices and sync files or folders by adding them to the Dropbox folder. If you're at a computer that isn't yours, you can access your personal Dropbox folder via the web interface. The basic free plan is limited to 2GB storage.

Further reading:

[Using the Magic Pocket: A Dropbox Guide](#)

[How To Easily Synchronize Folders Outside Dropbox Using Symlinks](#)

[5 Cool Apps That Make Dropbox Even More Useful](#)

More articles on: [Dropbox](#)

### Online Backup: [Mozy](#)

Mozy provides 2GB of free online backup.

Further reading:



[Back Up Files To Email With Just One Click](#)

**Backing Up Other Devices**

You likely have data not only on your computer, but also on your mobile phone or even stored in online accounts like Facebook or Google Mail. Did you ever consider backing up this data? Below is a list of articles that will shed some light.

Further reading:

[How To Backup & Archive Your Facebook Data](#)

[4 Tools to Backup your Mobile Phone](#)

[How To Backup Your Gmail Account To YOUR Hard Drive](#)

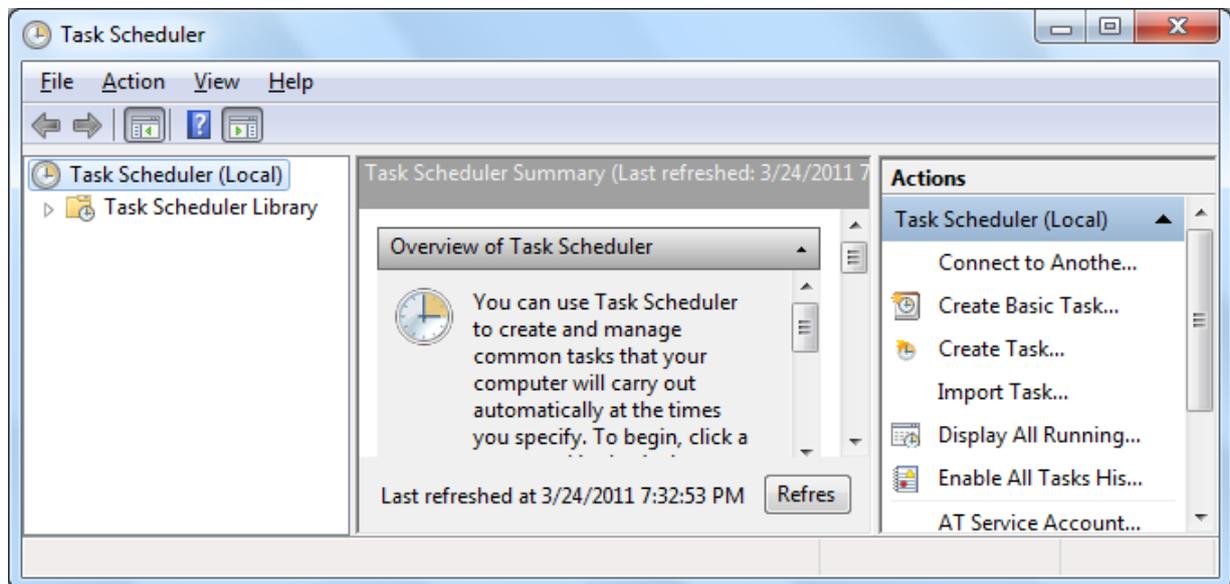
[The 2 Best Non-Techie Ways To Backup Your WordPress Blog](#)

More articles on: [Backup](#)

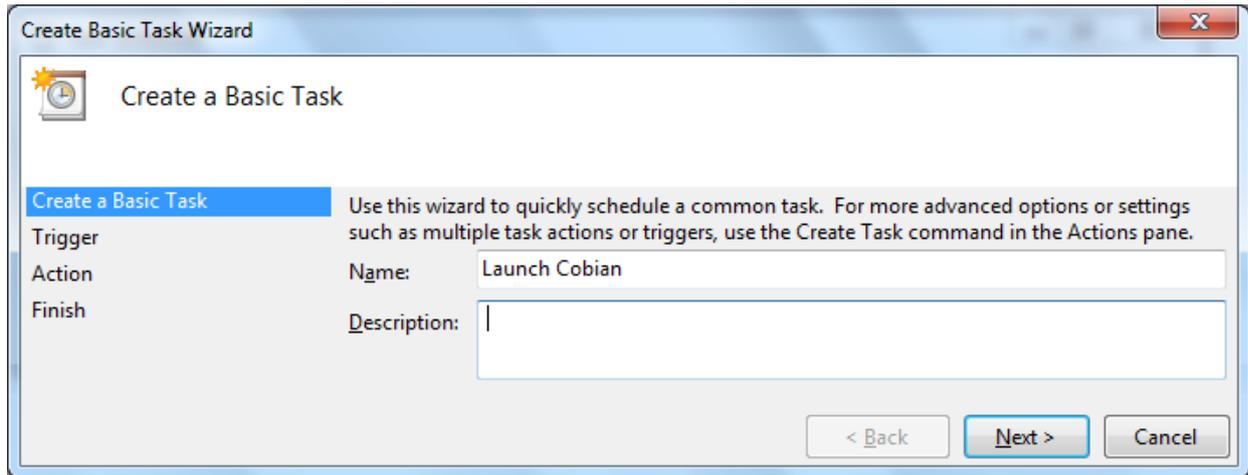
**Scheduling**

Some of the tools above do not provide a scheduling option. Or you may not want to run the tools in the background all the time. In either case, an easy way to automate the backup or at least remind yourself is to create a scheduled task in Windows.

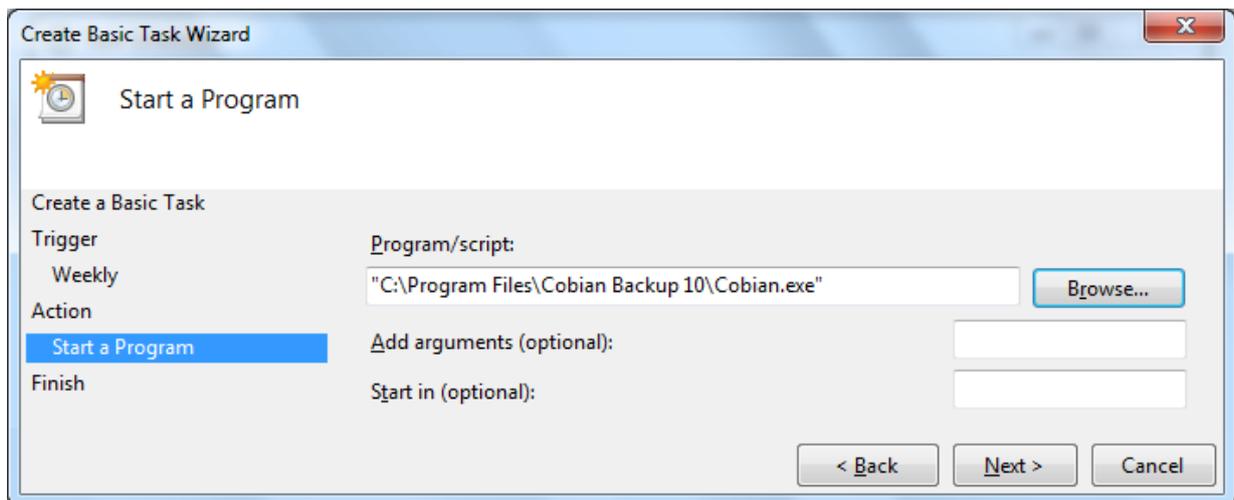
Go to > *Start* and type > *schedule* into the search field. Under > *Programs* open the result > *Task Scheduler*.



Click > *Action* and > *Create Basic Task*.



Enter a > *Name* and > *Description* if you want, then click > *Next* to switch to the > *Trigger* tab. Pick your schedule preference and enter the details. In the > *Action* tab select > *Start a program*, click > *Next* and > *Browse* for the program's .exe file.



In the next tab review your changes and click > *Finish*.

Further reading:

[Schedule a task](#)

[Configure a Scheduled Task Item](#)

More articles on: [Scheduled Tasks](#)

# Where should I back up to?

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You can back up your files in many different ways. The most common backup media include CDs, DVDs, Blu-ray discs, hard drives, flash drives, and online server space. They all have advantages and disadvantages, which I will review below. I recommend that you maximize the advantages and thus pick different storage methods for different purposes.

## Comparison of Different Backup Media

	<b>Advantages</b>	<b>Disadvantages</b>
<b>Local Hard Drive</b>	cheap large storage space medium transfer speed	not portable not safe from local events medium lifetime (3-5 years)
<b>External Hard Drive</b>	cheap portable large storage space medium transfer speed safe if stored separately	easily damaged short lifetime (2-5 years)
<b>CD or DVD</b>	super cheap ultra portable very robust good lifetime (10-50 years) safe if stored separately	very limited storage space typically not rewritable easily lost or forgotten slow burning process
<b>Blu-ray</b>	ultra portable reasonable storage space very robust long lifetime (50+ years) safe if stored separately	expensive typically not rewritable easily lost or forgotten slow burning process
<b>Flash Drive</b>	super portable reasonable storage space robust fast transfer speed safe if stored separately	limited read/write cycles lifetime based on above easily lost or forgotten
<b>Online Server Space</b>	unlimited storage space available everywhere off-site, cannot be damaged typically backed up indefinite lifetime almost 100% safe	expensive requires internet connection slow upload potential security risks

Please consider the backup chapter in the [Hacker Proof: Your Guide To PC Security](#) manual written by Matt. It discusses different backup media in the light of malware and hacker attacks. Matt also explains how you can [secure your files with encryption](#).

### Which Backup Medium to Choose

First of all, it's important to realize that it's a good idea to use different backup media for different purposes. The more important your files are, the more conservative and secure the backup medium should be (CD, DVD, Blu-ray). Files that are changed frequently should be backed up often to a location that allows frequent re-writes (hard drive). If you want to access files from more than one location, you should consider backing them up to portable media (external hard drive, flash drive) or online.

### Where to Store Backup Media

The physical storage location is often a neglected point. While you may choose to back your files up to an external drive, what good is that backup if the external drive is stored right next to your computer and the house burns down? There is no easy solution to this problem, but below are some suggestions.

### Documents Your Life or Business Depends On

Since you are going to save very important files on an ultra portable backup medium like a DVD, Blu-ray disc, or a USB flash drive, you can easily store them away from your computer. Keep them in a fire proof safe, give them to someone you trust, put them into your drawer or locker at work or school, or hide them in your car. If these documents contain sensitive information, be sure to encrypt the backup!

### Personal Files

Photos, scanned documents (i.e. digital backups), emails, address books and other personal files that you cannot retrieve once lost should be stored as safely as possible. Consider storing them online or back them up to an external drive that you store away from home.

### Large Collections

Most of us hoard data. Whether it is music, YouTube videos, or movies, we have hundreds of gigabytes of data that we spent days and weeks to collect. These files should be stored on a portable hard drive and if you have the chance, store that drive in a different room. If your entire house burns down, those files will be the least of your worries, but if only your computer blows up, you wish you would have been smart enough to keep the external drive elsewhere.



iznogood via [Shutterstock](#)

# How can I back up and restore my operating system?

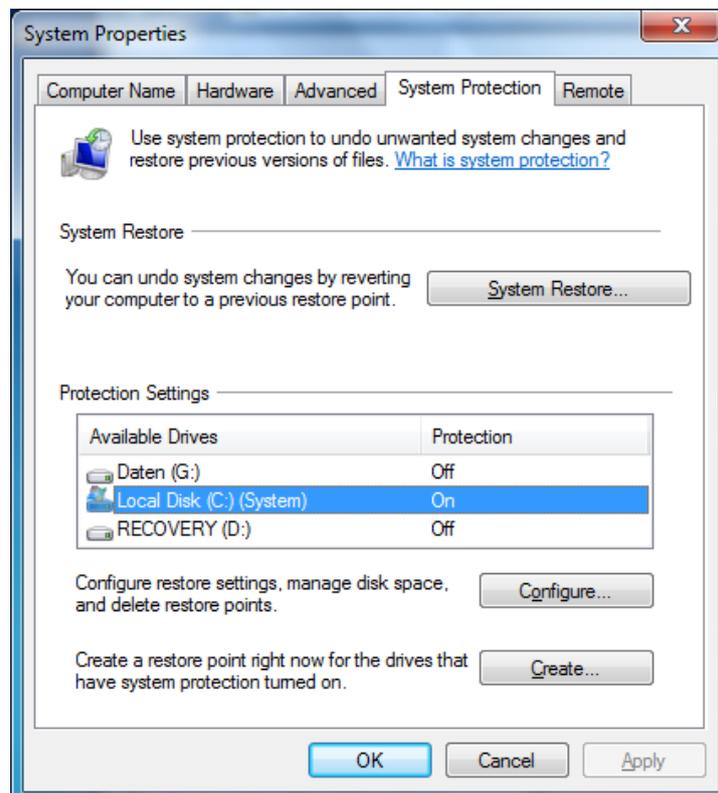
At this point your data should be safely backed up. However, you can go one step further and back up your entire operating system. While installing an operating system nowadays is pretty simple, it still takes a lot of time. Below I propose two strategies that can save you the hassle of setting up your entire operating system.

## System Restore Points

With system restore points, Windows provides an easy solution for undoing changes made to the operating system. You should create a restore point before every major Windows update, updating drivers, or changing system settings. When things go wrong, you can easily return to a working version of Windows without having to waste hours on troubleshooting or even reinstalling the system.

### Create a Restore Point

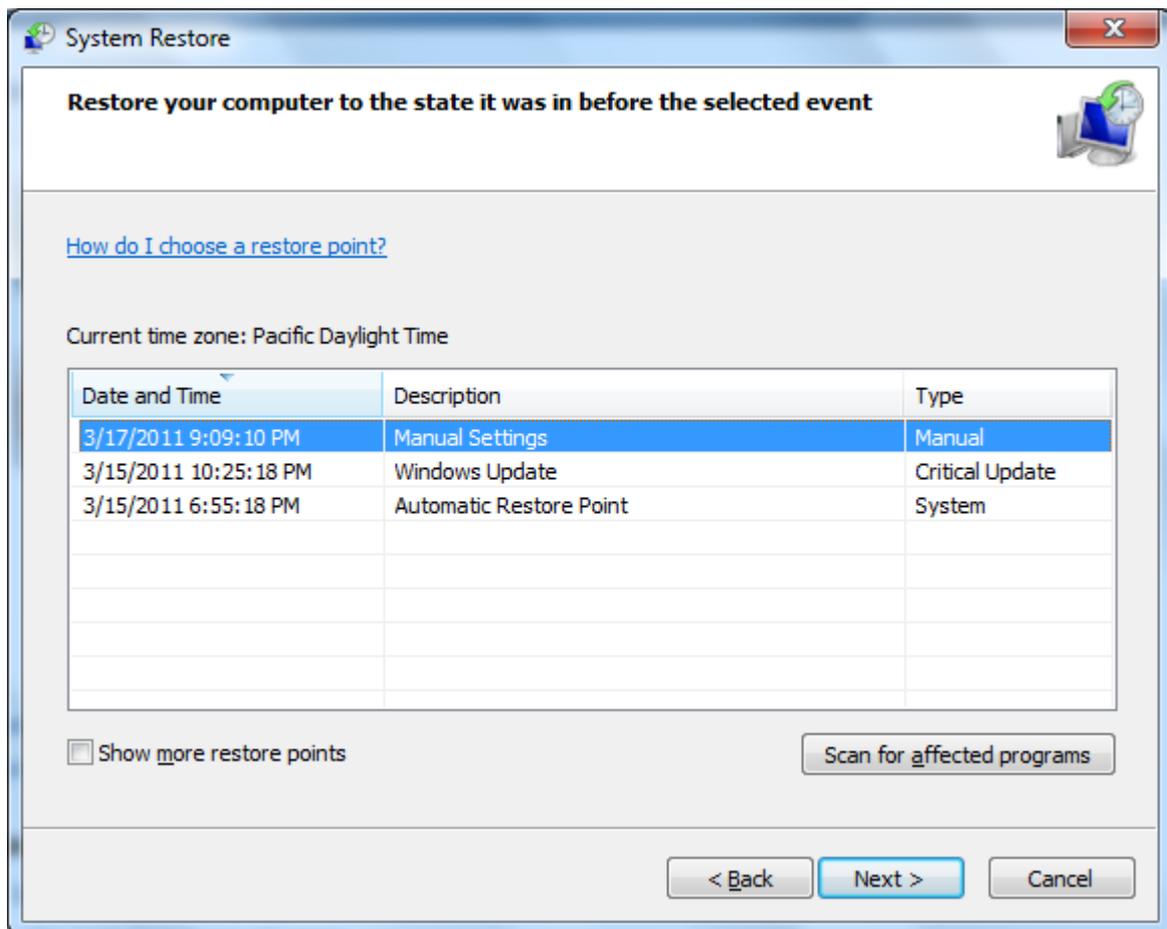
Go to > *Start* and type > *restore point* into the search field. Under > *Control Panel* open the entry > *Create a restore point*. A window called > *System Properties* will open and show the tab > *System Protection*. Under > *Protection Settings* make sure that > *Local Disk (C:) (System)* is > *On*. Otherwise select > *Local Disk* and click > *Configure* to change the settings accordingly.



For a new Restore Point click > *Create...*, add a description and click the > *Create* button.

### Use a Restore Point

In the event that you need to restore settings, go to > *Start* and type > *restore* into the search field. Under > *Programs* click > *System Restore*. In the window that comes up click > *Next*, select your previously created restore point, click > *Next* again, and if you are sure you want to proceed click > *Finish*.



### Drive or System Image

With a drive image you can create a copy of an entire hard drive, including your operating system. The system image allows you to quickly restore an operating system, for example after a hard drive failure. You could also copy the perfect setup from one computer to another. If you have a good drive image, you will never have to install Windows again, as you can use your backup to restore the entire system.

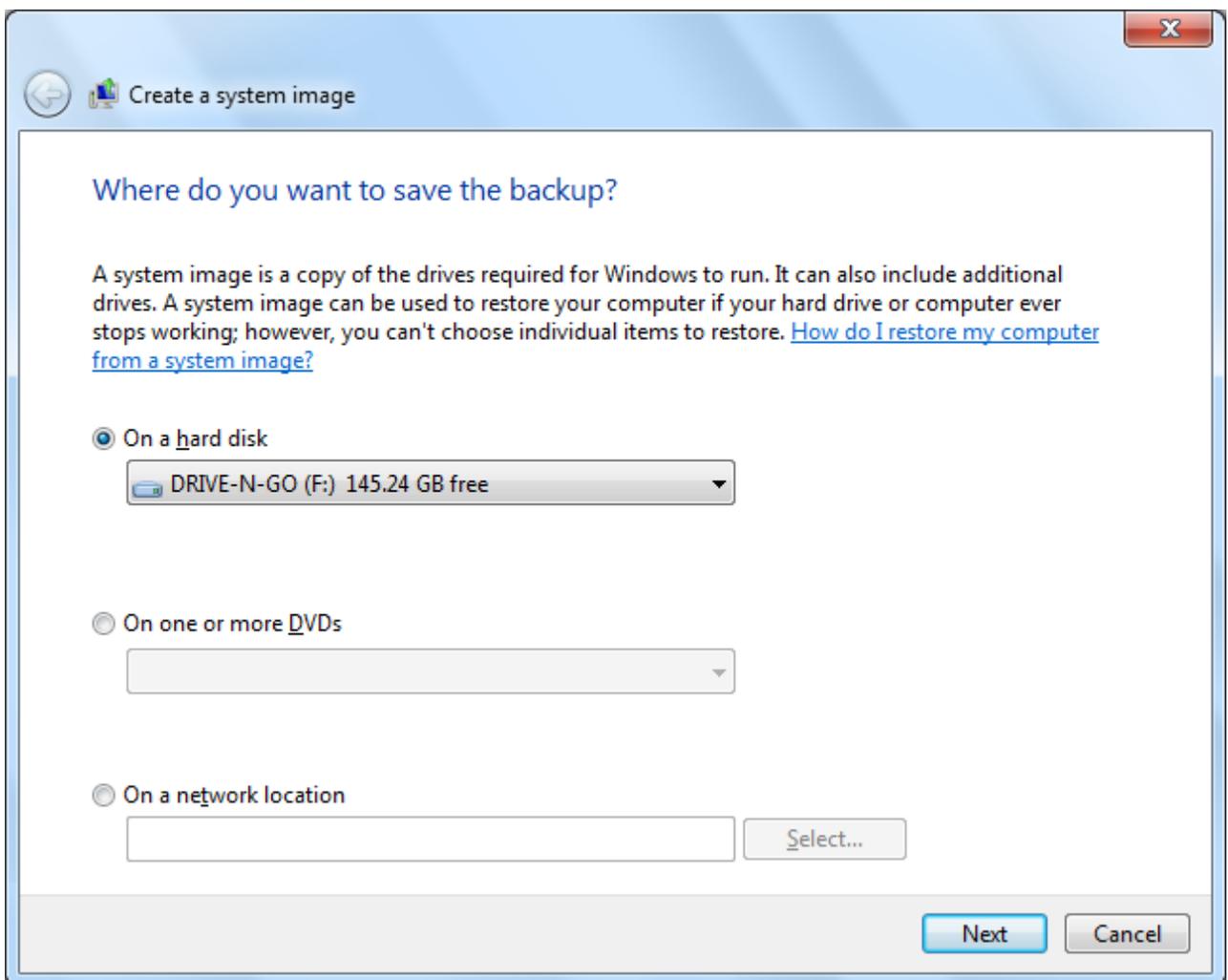
A drive image can be prepared anytime, but should preferably be taken from a stable system. Ideally, a drive image contains a complete setup including all the

programs you use routinely and your personal settings, e.g. internet connection, theme, wallpaper etc. A drive image should not contain any personal data as they take up a lot of space and might be outdated by the time you use the image.

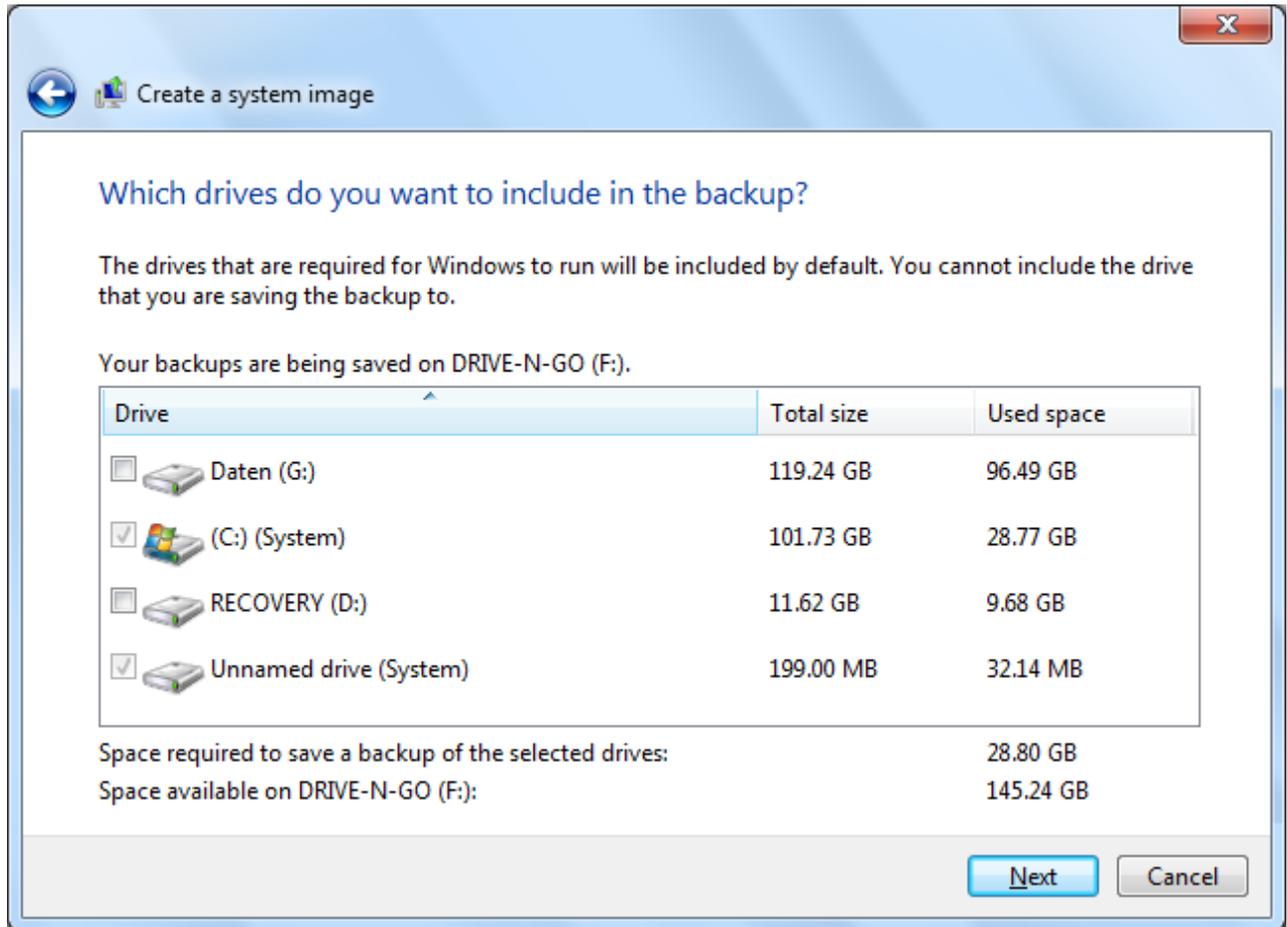
### Create a System Image

Go to > *Start* and type > *backup* into the search field. Under > *Programs* click > *Backup and Restore*. In the window that opens click > *Create a system image* in the top left.

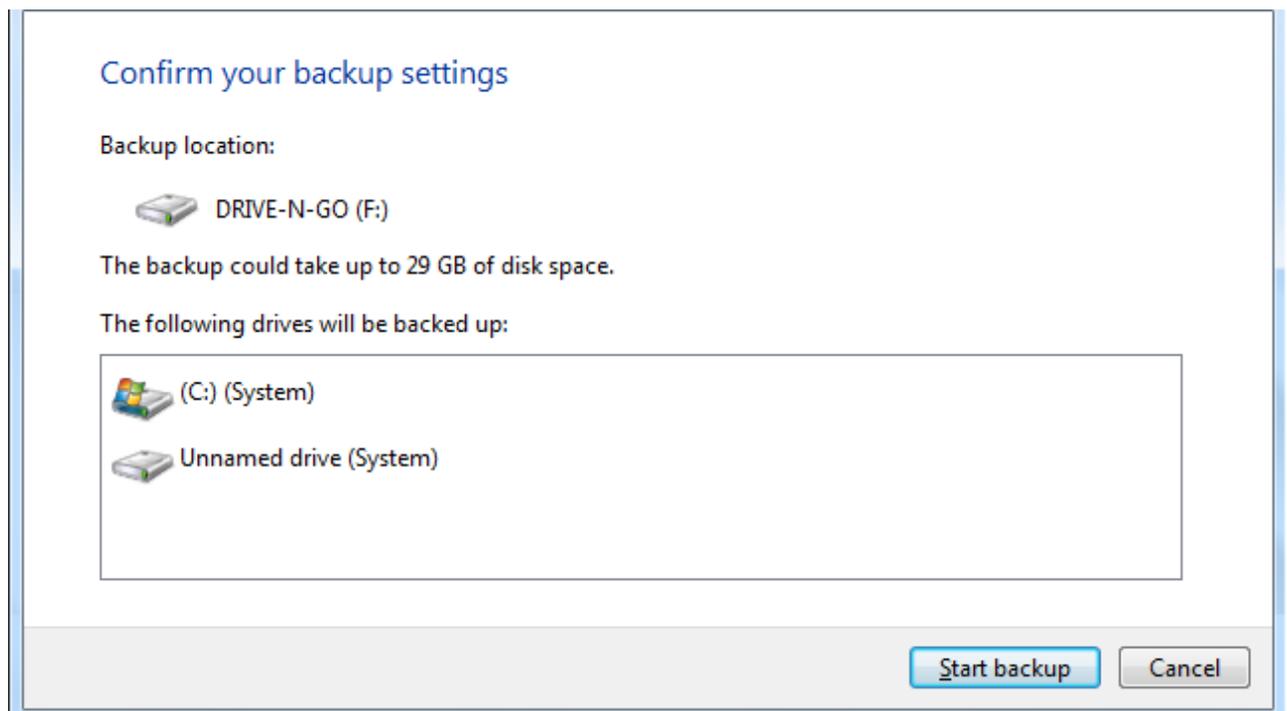
A new window will come up. Note that the destination for the system image has to be the same size or bigger than the drive you want to back up. Select where you want to save the system image and click > *Next*.



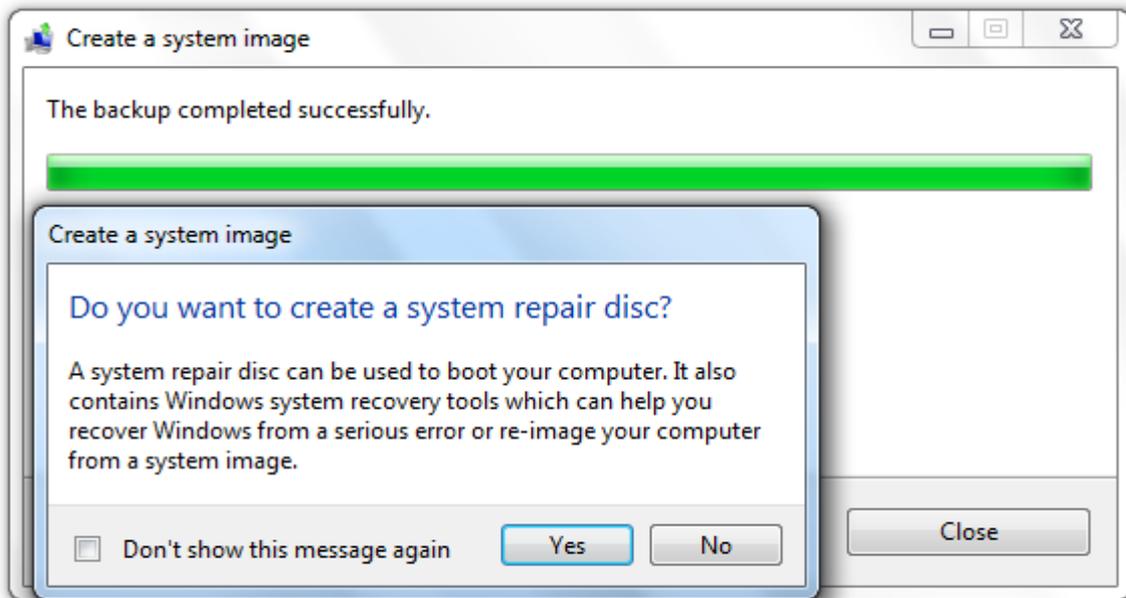
Pick the drives you want to include in the backup. System drives are selected automatically. Click > *Next* to proceed.



The last step provides an overview of your settings. Click > *Start backup* if everything is ok. Otherwise click the blue arrow in the top left to go back and make changes.



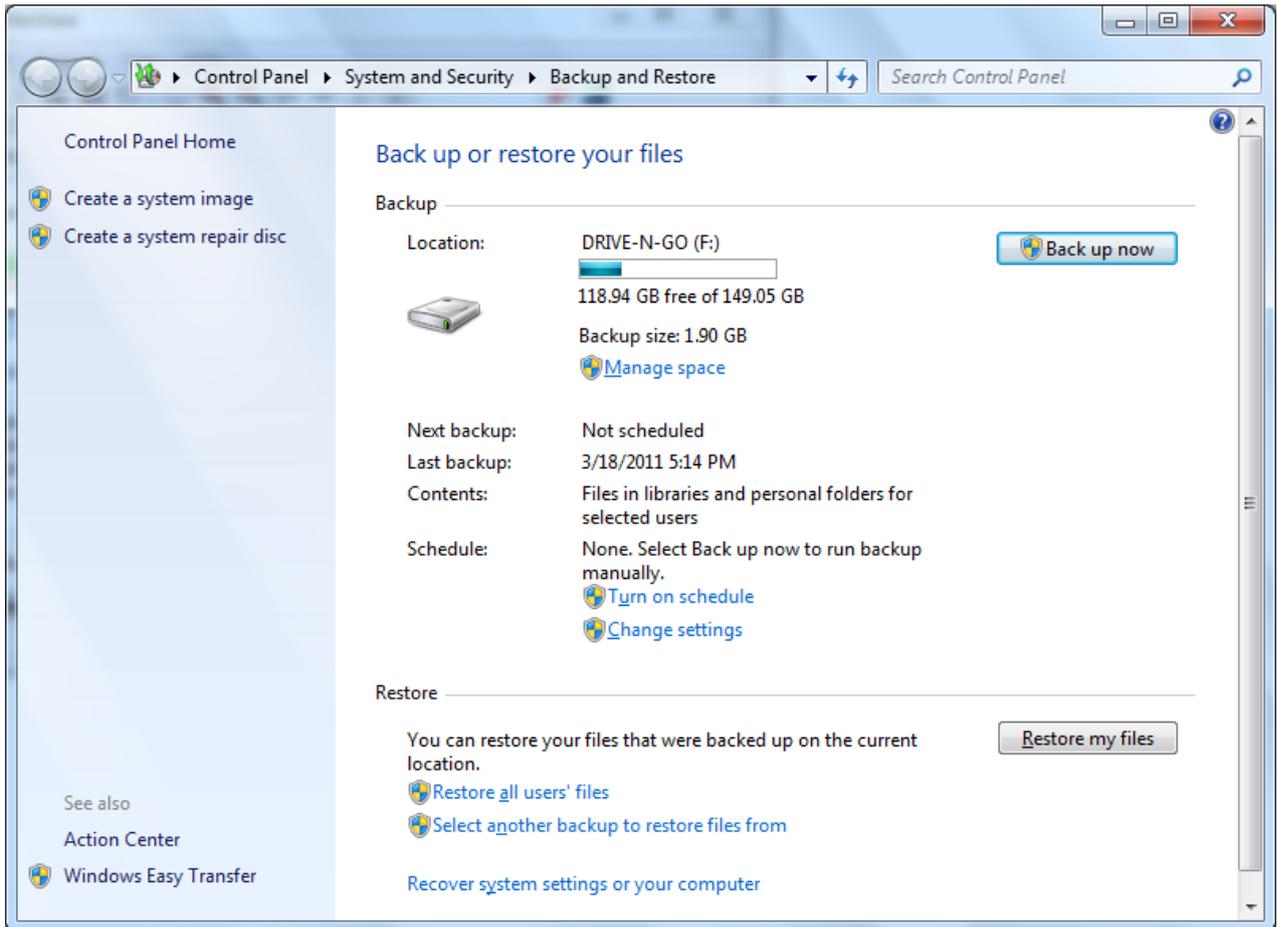
After the system image is completed, you can create a system repair disc. The disc will help you to repair the operating system in case you can no longer boot into Windows.



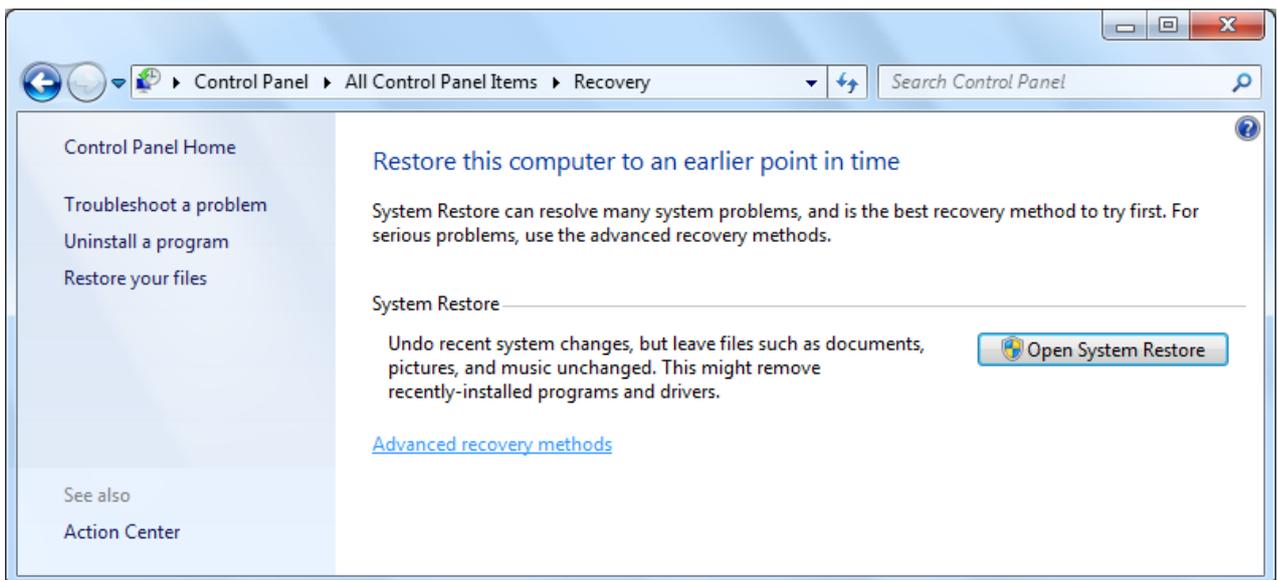
### Use a System Image

Windows 7 is a very stable and reliable operating system. While there are scenarios in which it fails completely and won't boot at all, you will typically be able to at least log into Safe Mode.

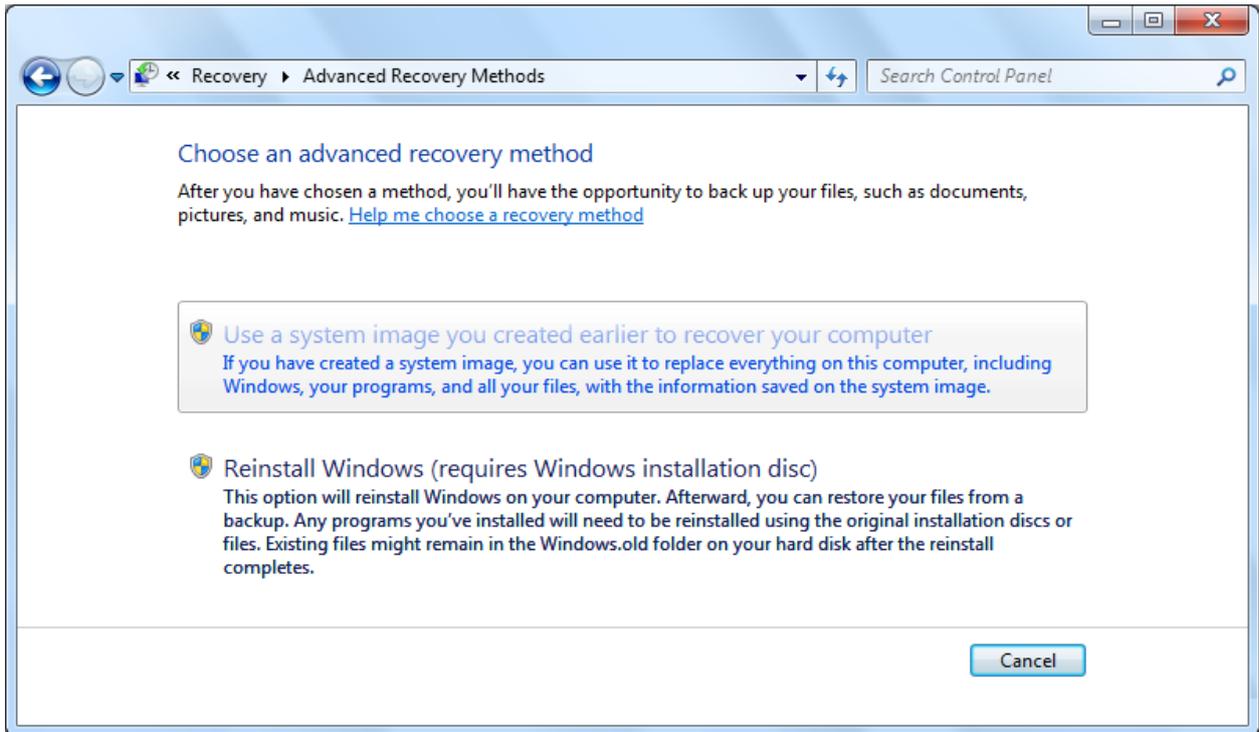
In order to restore a buggy or unstable system from a system image, go to > *Start* and type > *backup* into the search field. Under > *Programs* click > *Backup and Restore*. In the window that opens click > *Recover settings or your computer* at the very bottom.



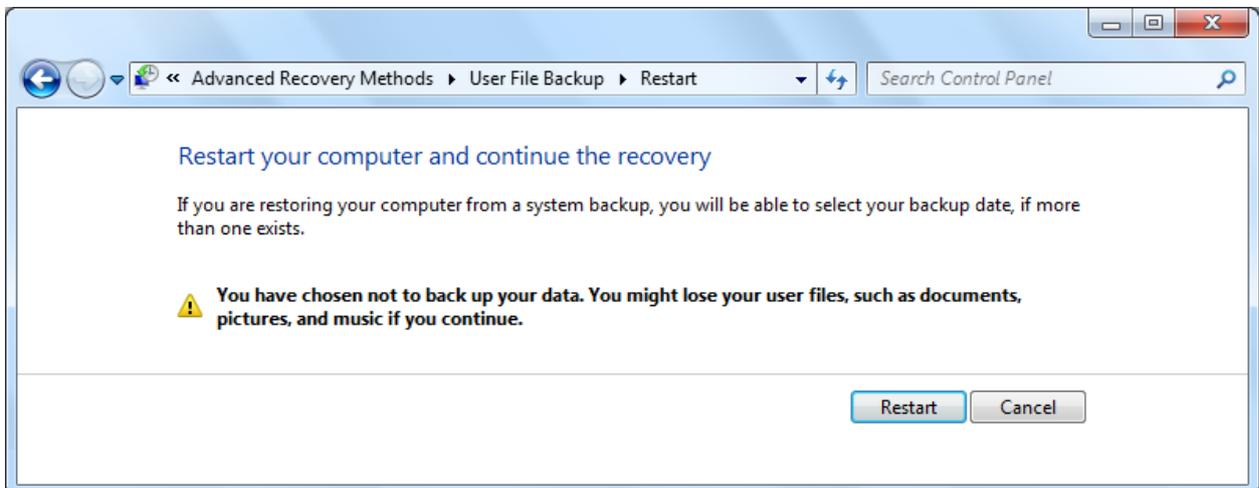
In the window that opens select > *Advanced recovery methods* at the bottom.



Next click > Use a system image your created earlier to recover your computer.



You will be asked to back up your personal files before preparing a system restore. If you have a current backup of your data, > Skip this step. In the following window you will be asked to > *Restart* the computer for the system recovery to advance.



All following steps and other recovery scenarios are explained in detail and with excellent screenshots in the [Windows 7 – System Image Recovery](#) article on SevenForums.

Further reading:

[How To Create Disk Images & Mount Them On A Virtual Drive](#)

[5 Ways To Clone & Copy Your Hard Drive](#)

[How to Prepare Yourself for System Restore From Scratch](#)

# Summary

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Bad things do happen. Operating systems stop working, hard drives fail beyond repair, files get damaged or deleted accidentally, and data get destroyed in disasters. The best you can do is to be prepared. Backups are an easy way to secure your work, but they can only help you if done regularly and stored safely.

In this guide I outlined all the essential steps required to keep your data safe from system failure and back it up to prevent a loss during other threatening events. After reading this manual, you should have a very good understanding of the options you have to secure your data. While some of the procedures may seem complicated and tedious, once set up they don't require a lot of maintenance.

In the beginning of this manual I promised to propose strategies that are as simple and straightforward as possible. I should now add that those are the most simple and straightforward strategies possible if you run Windows and don't want to spend money. If you desire a completely hassle-free solution, I recommend buying a Mac with Time Machine or looking into commercial software for Windows.

In the meantime, be sure to make a backup! It will be worth your time.



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