LESSON 7- MAINTENANCE

Objective

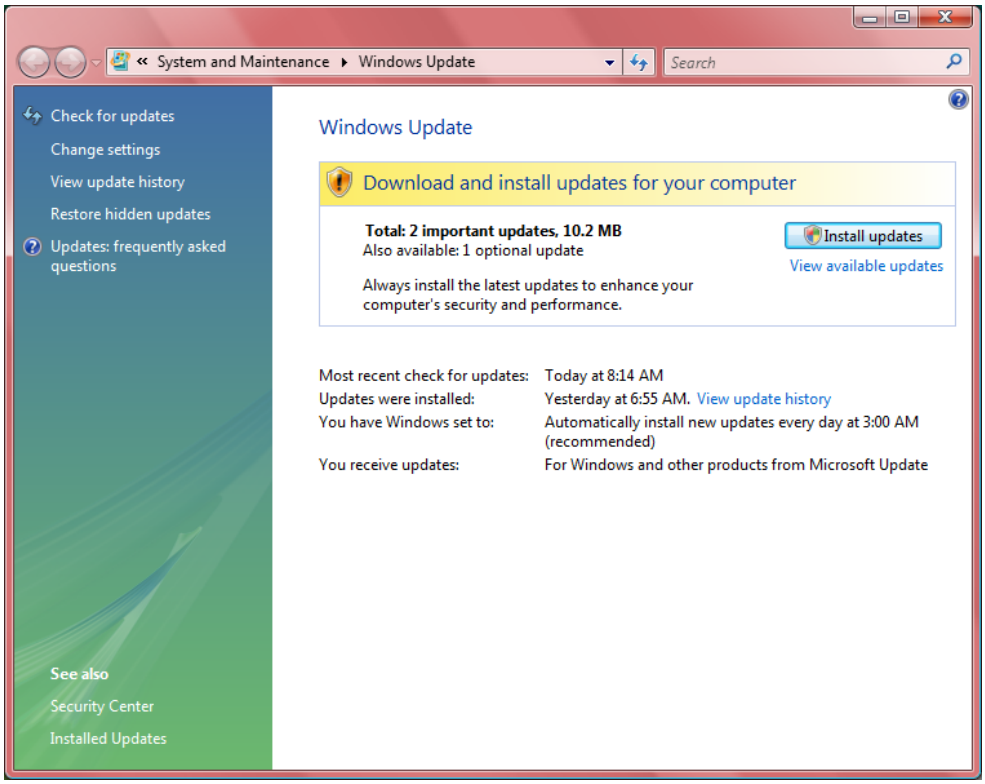
- Windows Update
- Learn how to maintain your hard drive
- Schedule Backup and restore
- Maintain user account
- Public folders, shared folders and network

Table of Contents

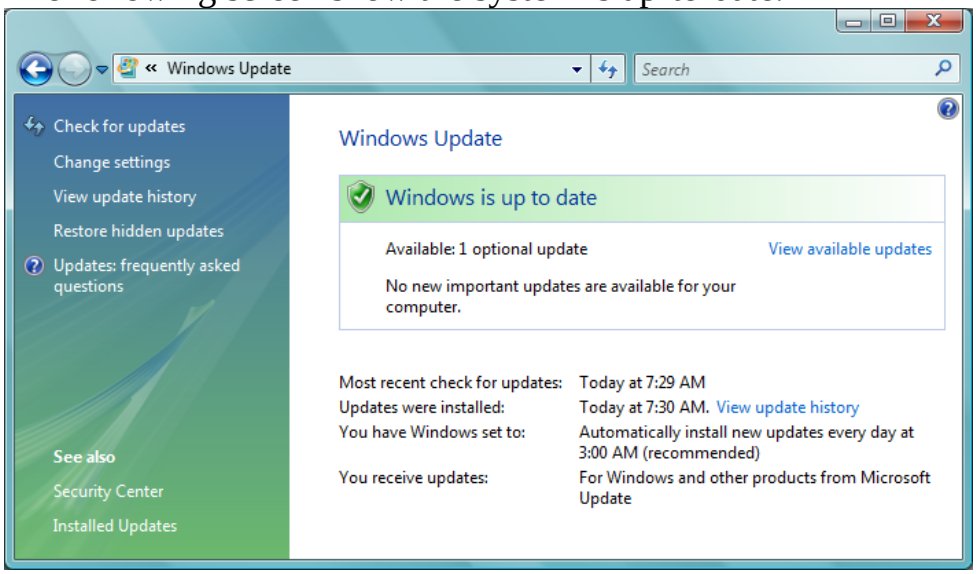
Windows Update

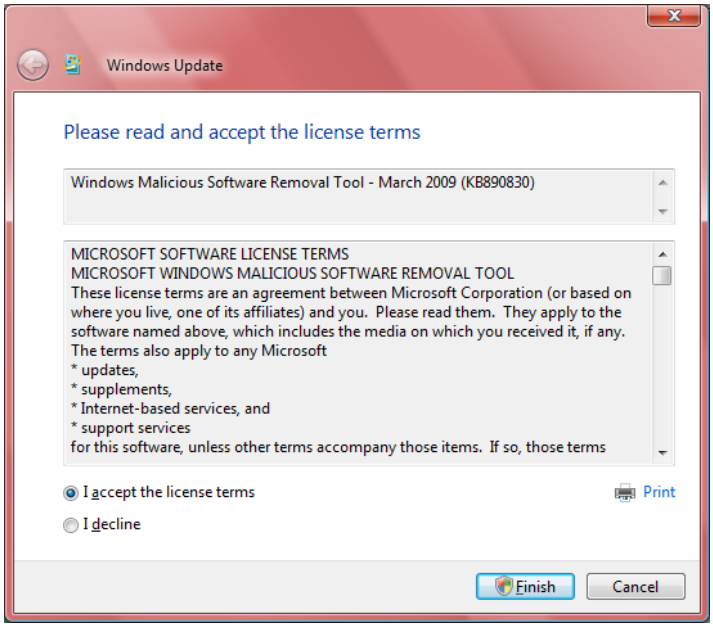
Control Panel ▶ System and Maintenance

The follow screen indication you need to install updates. Just click on the **Install Update** button.

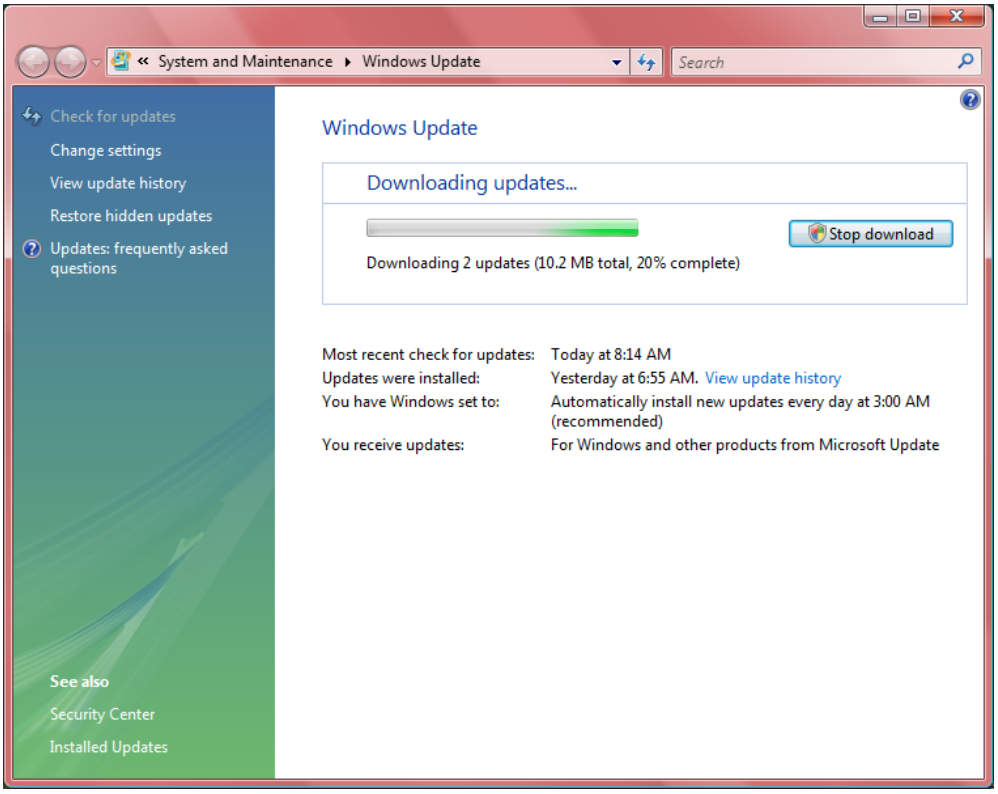


The following screen show the system is up-to-date.





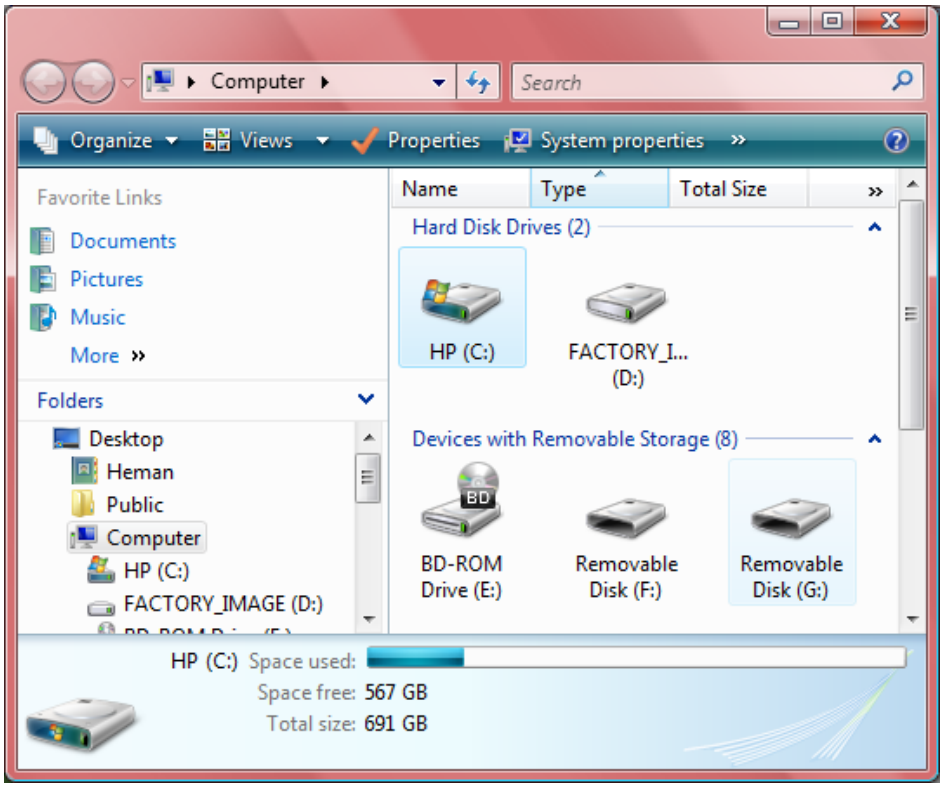
Read the licensing agreement and click the "I accept the license terms" radio button. If you decline, updates will not install.



Notice the progress bar during the download process. Dependin g on the speed of your internet connection, this may take several minutes.

Hard Drive Maintenance

Open the Computer windows. Right-click on the hard drive icon. On most system the first had drive is (C:)



To keep your computer running smoothly it needs a bit of care. It does not need daily care, but you should have a schedule to maintain your computer every so often. You might want to run Disk Defragmenter a few time a year, Disk Cleanup weekly and ScanDisk more often. It is all a matter of how much the computer is used.

TASK	DESCRIPTION
ScanDisk	Detects and, where possible, repairs problem on the hard disk.
Disk Defragmenter	Rearranges files and unused space on your hard disk so that programs run faster.
Disk Cleanup	Frees space on your hard disk by locating and removing temporary files.

SCANDISK

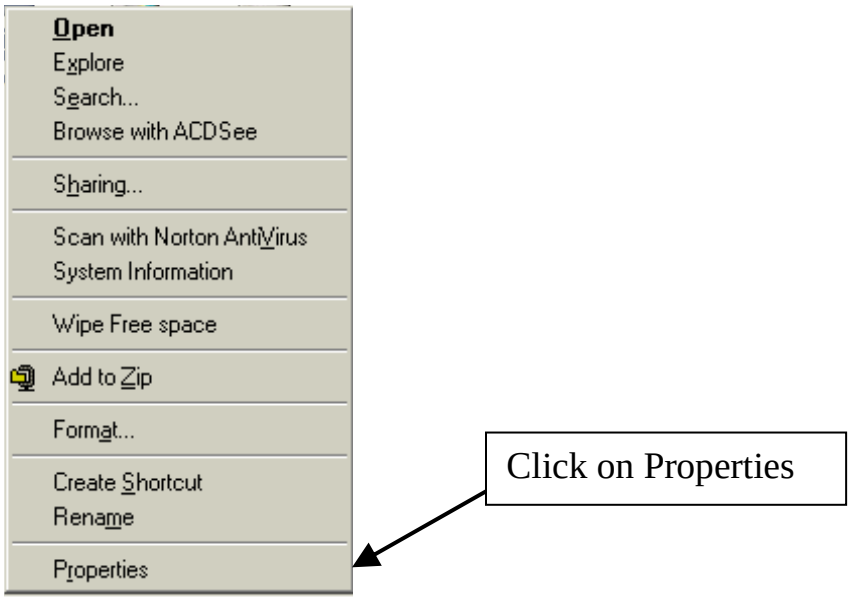
-Over time, errors begin to appear on the computer's hard drive, affecting its performance. Fortunately most of the hard drive damage caused by normal wear and tear is not serious and can easily be diagnosed and fixed by a hard drive repair program. This **hard drive repair program** is called "**ScanDisk**." Do this first before using the "Disk Defragmenter."

Close all programs before beginning the scan.

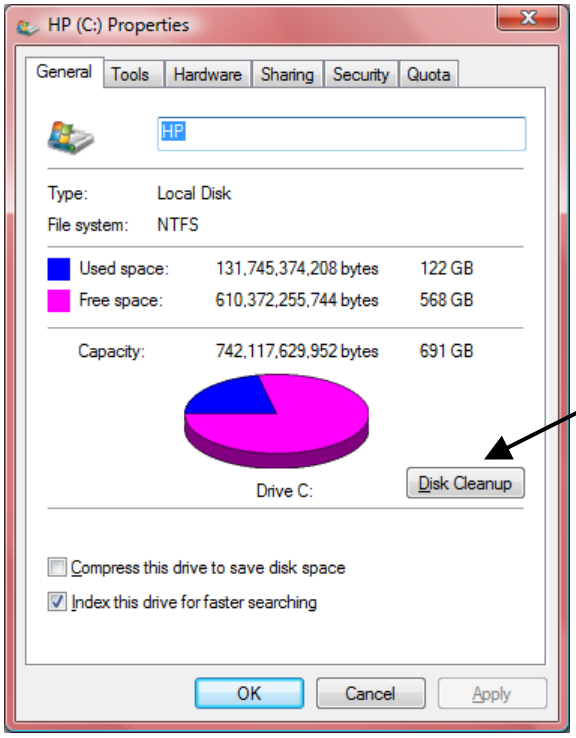
1. Open My Computer

2. Right click the C-drive icon and select Properties from the shortcut menu. The Properties for the selected drive appear in the General Properties dialog box.

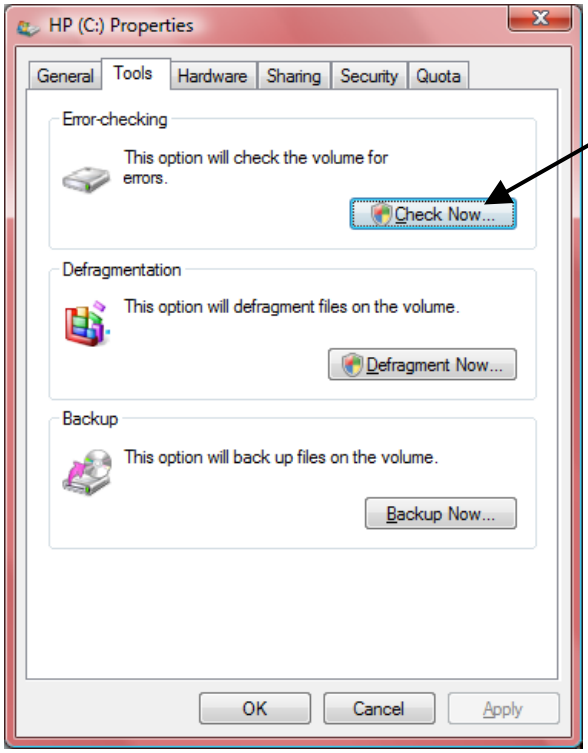
When you open **Computer** or My Computer and right click on the C drive, you will see a drop down menu that is similar to the illustration below.



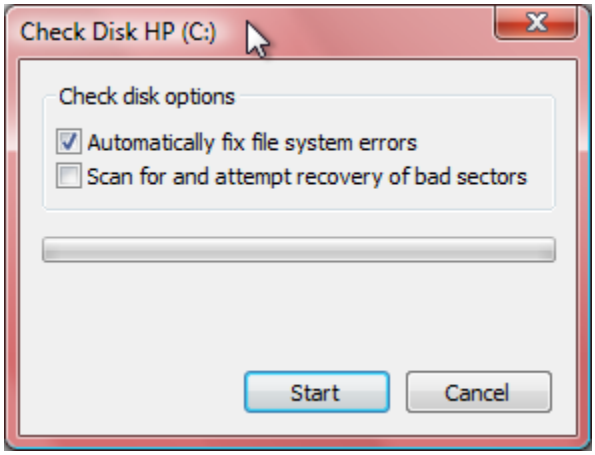
ScanDisk and other maintenance tools are located on the Tools tab.



Disk Cleanup – can give you extra hard drive space by deleting temporary files.

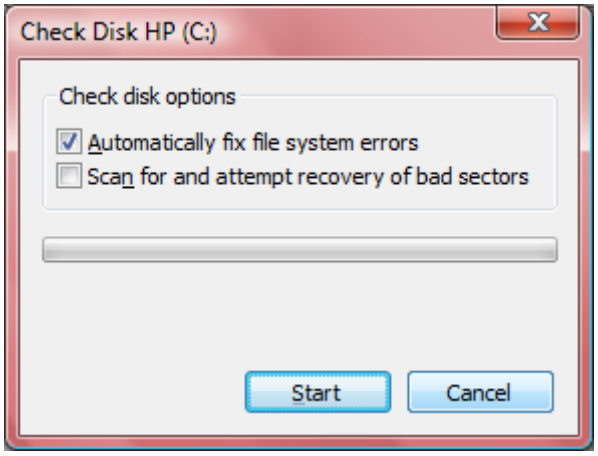


Click the Check Now to the Scan Disk process

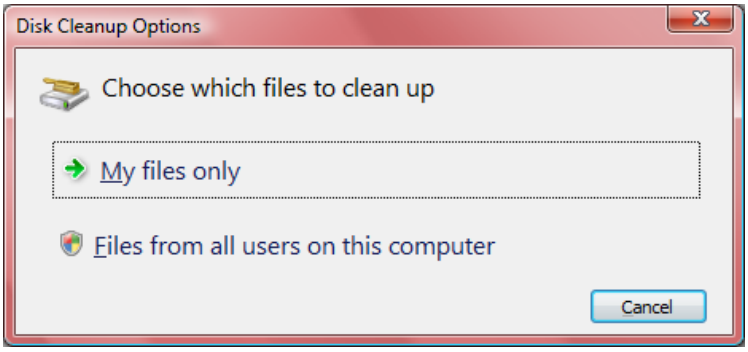


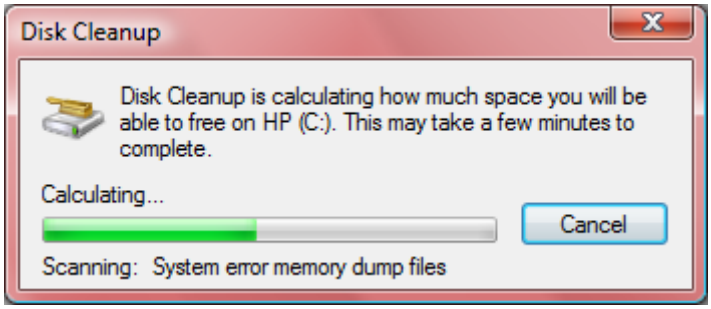
1. Click the Tools tab.

2. Click the **Check Now** button to start the ScanDisk Program. See the above illustration. It will check the C-drive, since that is what was selected above in step 2. It may take several hours if you have a large hard drive. This test is equivalent to an annual car inspection.



3. Click the "**Automatically fix errors**" box. If this is not checked, ScanDisk will prompt you **each time** an error is found. Also check "**Scan for and attempt recovery of bad sectors**" box.
4. Click **Start**.





5. Click **Close** to close the Results window, click **Close** again to close ScanDisk program and click **OK** to close the Properties window.

ScanDisk should be used often for the floppies. They are notorious for developing disk errors.

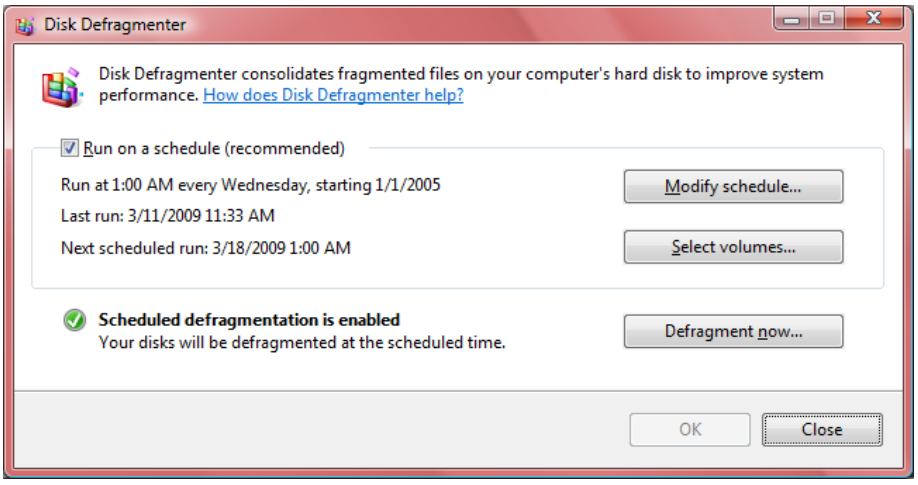
DISK DEFRAGMENTER

A **fragmented** disk is a case of files being stored in **nonadjacent** units and the computer having difficulty locating the files that you are commanding it to find.

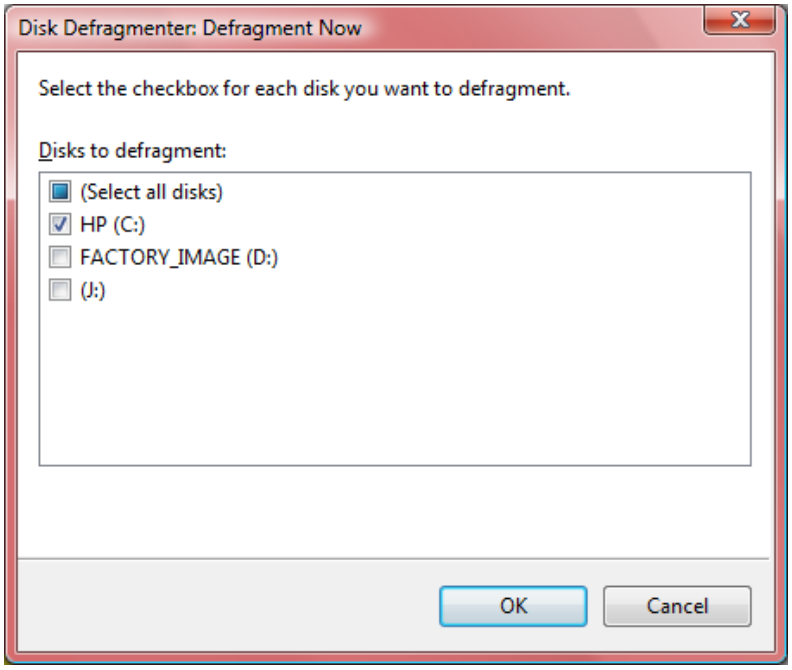
A simple explanation: A department store is going to have an after Christmas sale. All the item are stacked neatly - all the shirts are stacked by size, style and company, all the sweaters are on another table stacked neatly, the ties are display orderly by color, etc., etc. The "bargain hunters" are crowded outside waiting for the doors to open. The time has arrived. The doors are open. Imagine the chaos. Everything is everywhere!

This happens to your computer after you have worked on it. Fortunately, the **Disk Defragmenter** can come to your rescue. The following is a simplified version for directing the computer to put the files in adjacent units for easy retrieval. Close all programs, including anti-virus and screen savers before defragmenting.

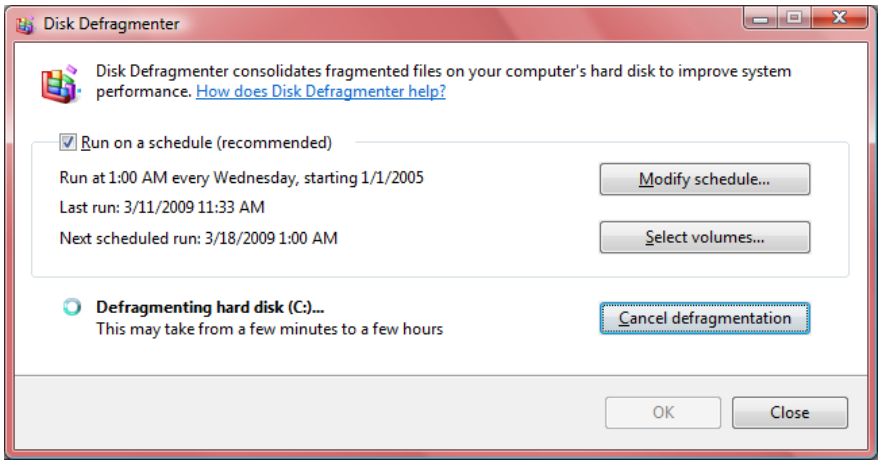
1. Open **Computer**
2. Right click the drive that you want to defragment usually the C Drive
3. Select **"Properties"**
4. Click the **"Tools"** tab
5. Click the "**Defragment Now"** button .



6. Click all of the drive check box. You
7. Click the check box for all hard drives you wish the defragment. You can choose as many as you like.



If you decide not to run the process immediately, you can click on the "Modify schedule". This will start Windows Scheduler program where you can automatically schedule the Deframent process.



Defragmentation can take several hour, may be even over night. If you wish the cancel, the Cancel defragmentation button.

8. Close the "Disk Defragmenter" window when done.

Note: Do not power down Windows while the hard drive is being defragmented. This could cause damage to your hard drive.

Defragmenting can take a long time - could be several hours.

Optional Method

Disk Defragmenter can **also** be accessed by going to Start > All Programs > Accessories > System Tools.

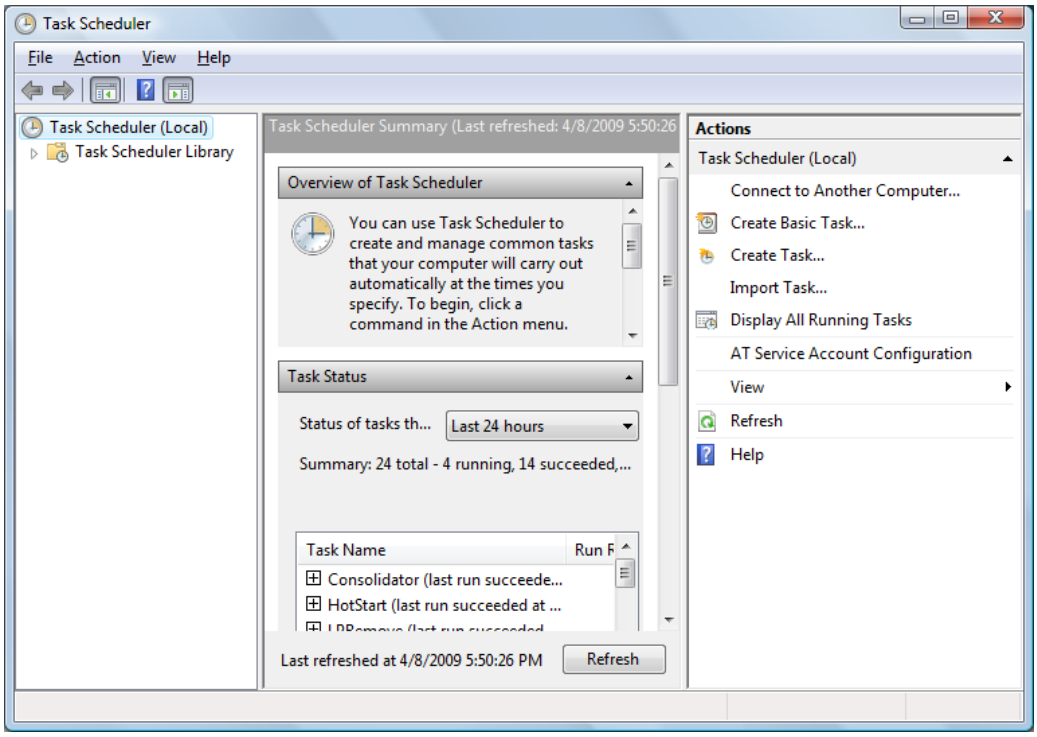
HOMEWORK

Using Window Task Scheduler

This tool can be use the schedule update, backup and disk maintenance on the regular schedule you set.

1. Click the Start button.
2. Choose **All Programs: >Accessories > System Tools > Task Scheduler.**
3. Click **Action** on the menu bar.
4. Click on "Create Basic Task " to start the Schedule Task Scheduler and follow the instructions.
5. Program: **Defrag.exe**

   When you set a time for the computer to perform certain tasks, your computer must be on during the time that it is set to do the task.
6. Select the hard drive you wish the defrag.



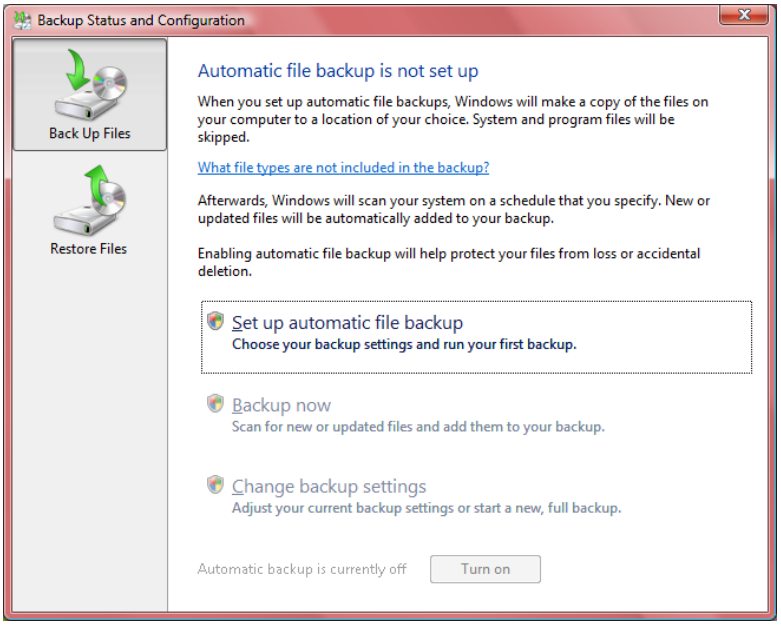
Windows Backup

The file backup and restore features in Windows Vista make it easier for you to keep your data safe from user error, hardware failure, and other problems. The Windows Backup and Restore Center gives you one place to manage all backup and restore features.

Depending on the version of Windows Vista/7 you have, there are two approaches you can take to backing up files: Automatic Backup, which backs up just your files and data; or Complete PC Backup, which backs up everything on your PC, including the operating system and applications.

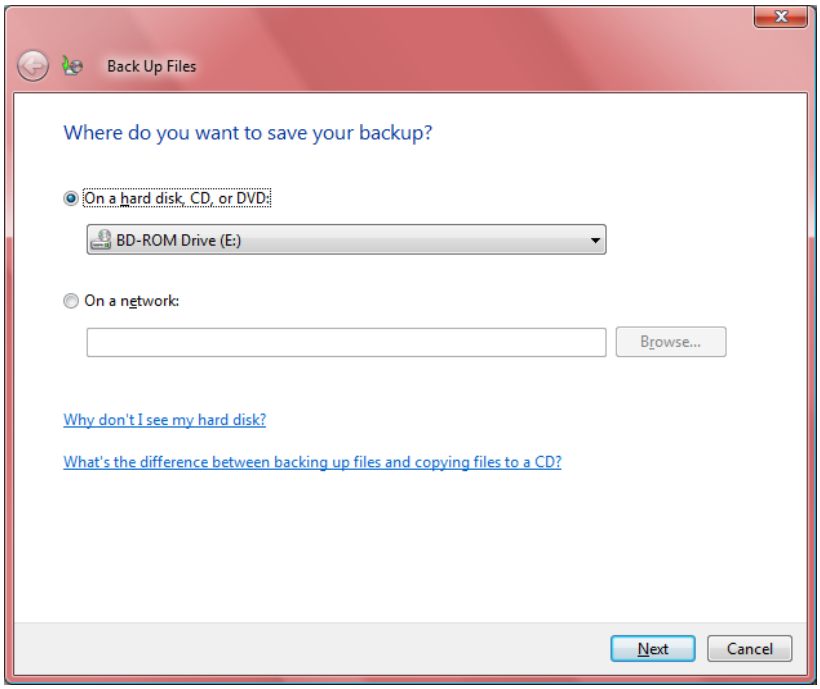
As this is my first time using the backup features on my new laptop, a full backup—which is a complete backup of all the files from the selected categories—is performed right away. Thereafter, only incremental backups are performed. The term incremental in the context of File Backup refers to keeping track of new or updated files only. For example, if you have an old Word document and then make some changes to it, the File Backup tool would keep complete copies of both the old and updated document. (The collection of a single full backup and the sequence of incremental backups created thereafter are referred to as a backup set.)

Setup Automatic Backup

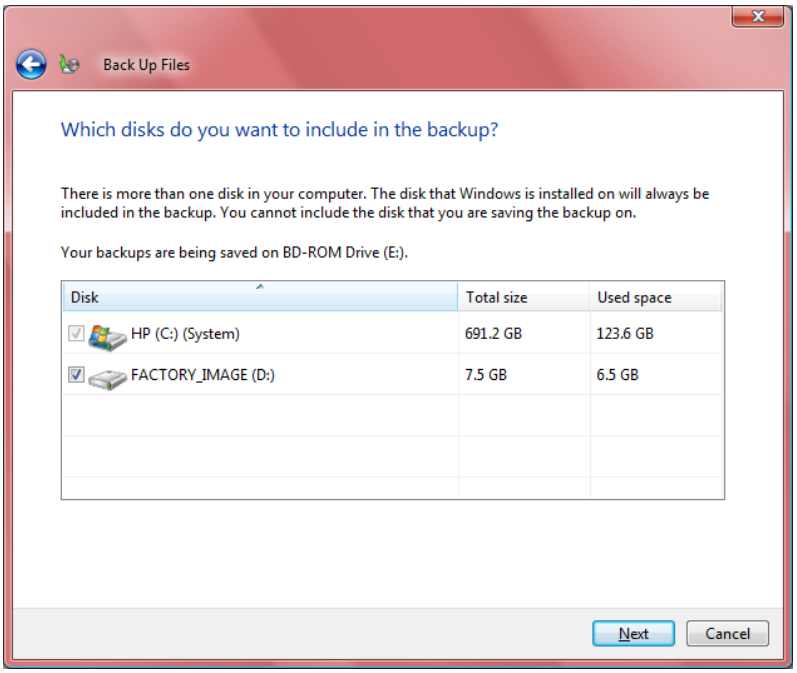


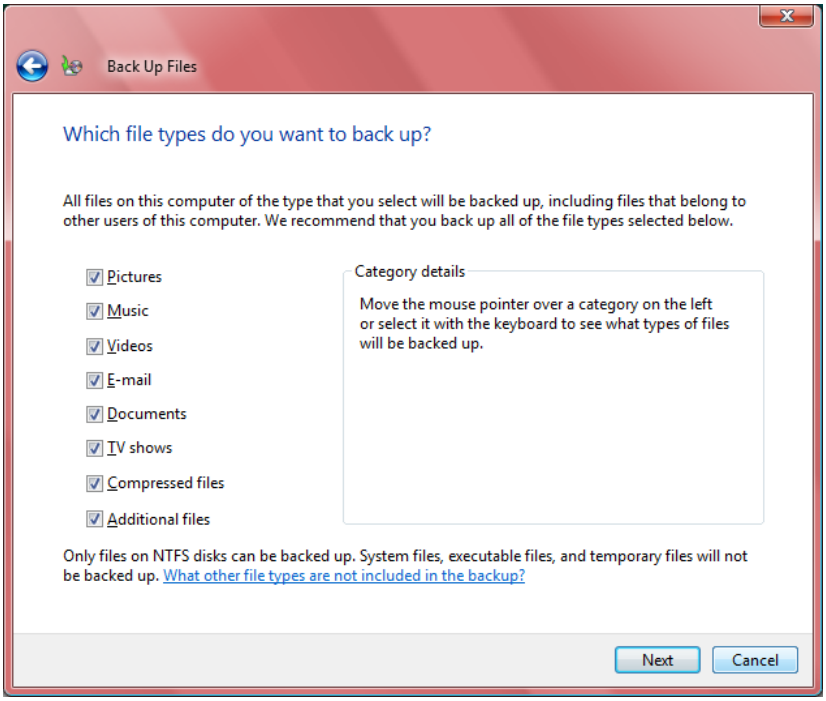
Backup Destination

To help make protecting your files as convenient as possible, with Automatic Backup, you can back up your files to an external hard drive, secondary hard drive, writable CD or DVD, or to a network location. Best of all, Windows Vista will automatically make backups of your data on the schedule that you set, so you never have to worry about forgetting to back up your work.

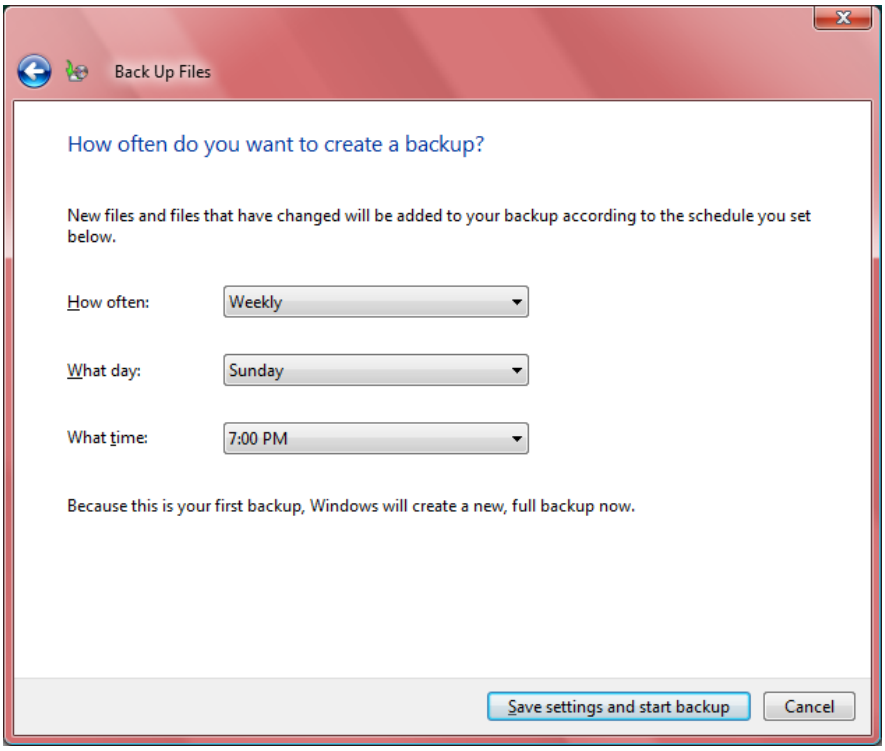


Backup Source





Schedule backup



Complete PC Backup

With my new laptop all set up and configured, I want to do a complete backup, protecting everything including the OS, the apps I've installed, configuration settings, and updates. I use the Complete PC Backup feature, which can then be used to recover my machine in case of a hard drive failure or other disaster. I wouldn't have to reinstall all the apps individually and redo all of my configuration settings. On first run, this feature performs a full backup of all blocks across the volumes I've selected, minus any blocks that do not have information stored. Subsequent backups are differential at the block level (more details about this in a moment).

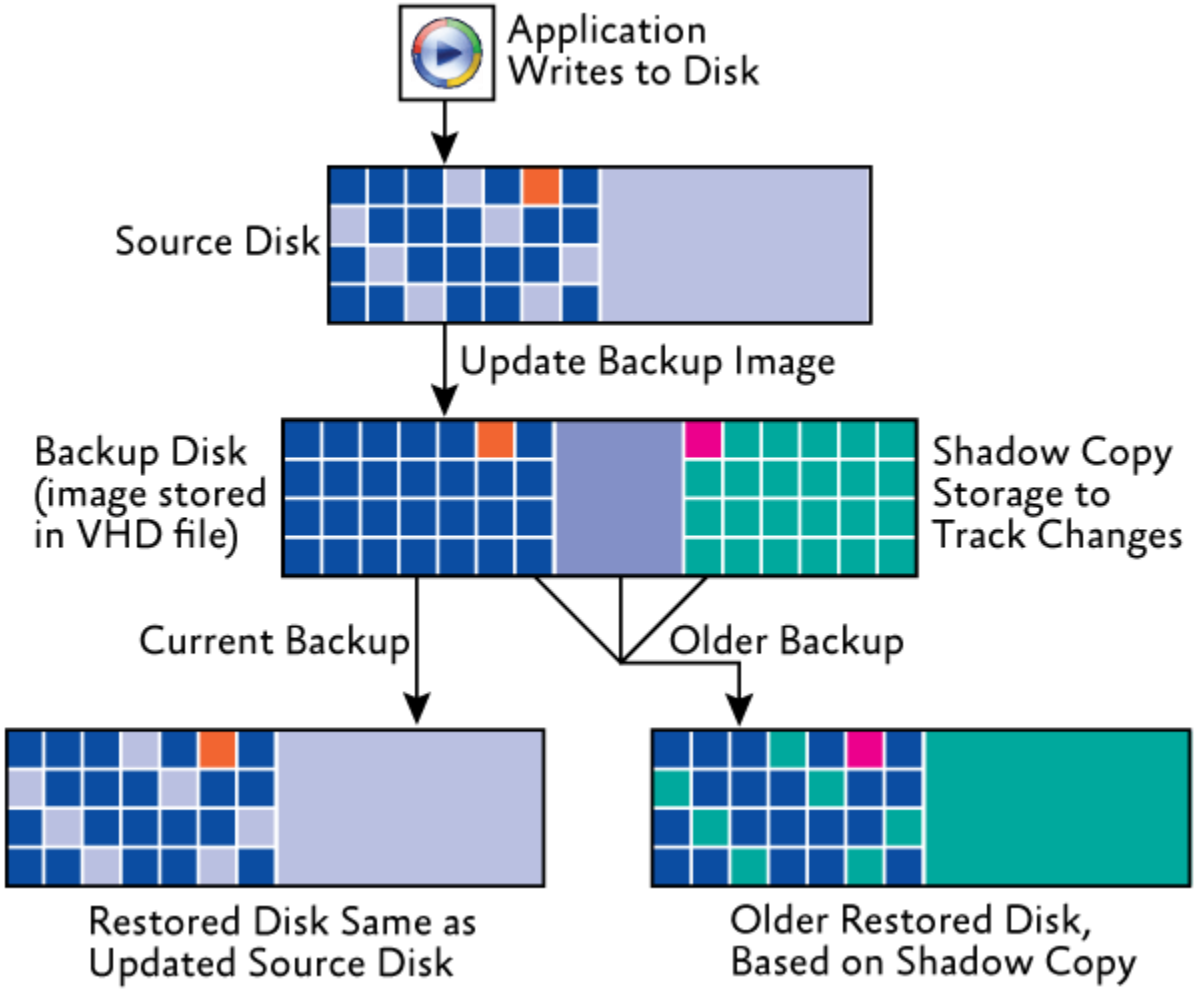


Figure 3 How data moves in a Complete PC Backup and Restore (Click the image for a larger view)

While both perform backups, Complete PC Backup works totally differently from File Backup. Complete PC Backup creates a block level image backup of the entire computer in a virtual hard drive (.vhd) format. During the first full backup, the engine scans the source disk and copies blocks that contain data into a .vhd file stored on the destination disk. Although the backed-up data is not compressed, it is compact.

The next time a Complete PC Backup is performed, only new and changed data is written to the .vhd file, and old data on the same block is moved to the shadow copy storage area. Volume Shadow Copy Service is used to compute the differences between snapshots taken as well as to handle the process of moving the old data out to the shadow copy area on the destination disk (see Figure 3). This approach makes the backup fast (since only changed blocks are backed up) and efficient (since data is stored in a compact manner). Note that the backup application defines the maximum amount of shadow copy storage space available on the destination disk. For a step-by-step procedure on using the Complete PC Backup system regularly or automatically, see the sidebar "Scheduling Complete PC Backup

When restoring data, blocks are restored to their original location. If you want to restore from an older backup, the engine reads from the shadow copy area and restores the appropriate blocks.
Note that Complete PC Backup can only back up NTFS-formatted disks. If the backup destination is a hard drive, it too needs to be NTFS-formatted.

System Restore

System Restore is enabled by default. I access the System Restore wizard by choosing Repair Windows using System Restore, available on the upper-left part of the Backup and Restore Center (it can also be accessed in the Accessories\System Tools folder in the All Programs portion of your Start menu). If I select "choose a different restore point" and click Next, I can see that restore points have already been created at various points while I was setting up my laptop, installing applications, and performing backups. Restore points are turned on by default only on the boot volume, even on a system where the hard disk has multiple volumes. Restore points are automatically created during application and driver installations and daily across the selected volumes (if a restore point has not already been taken on that day). Restore points can also be created manually by choosing the System Protection option in the System control panel applet. Shadow copies created during File Backup and Complete PC Backup can also be used as restore points.

In Windows XP, System Restore uses a file system filter to keep track of system file changes. In Windows Vista, System Restore uses Volume Shadow Copy Service to keep track of block-level changes over the selected volumes. This makes System Restore more robust and allows it to support a broader range of repair scenarios.

Also new, System Restore can now run while your regular Windows installation is offline. This is done using Windows Recovery Environment, allowing you to repair your system even if Windows is unbootable.

Shadow Copy

Shadow Copy is nearly invisible. It is enabled by default and requires no input on the user's part. If a user ever needs to restore a file, that's when she is likely to first take notice of this feature. It essentially exposes the point-in-time copies of files that are created by Volume Shadow Copy Service.

Restore a File with Shadow Copy

Now, imagine I've had my laptop for a while and I've been using it to create some presentations. I've finished the presentations and passed them along to my clients. A month has passed, I'm onto new projects, and I've since deleted these files. Then my manager asks me for a copy of the old presentations. This is where Shadow Copy really comes in handy.
There are two ways to look for copies of deleted files. First, if I know where the file had been stored, I can simply right-click the folder that contained the deleted file and select "Restore previous versions." From there, I choose a date that contains the desired version of the deleted file (see Figure 4), click open, and then copy the target file to another location on the live volume. This copy operation is as fast as a regular file copy.

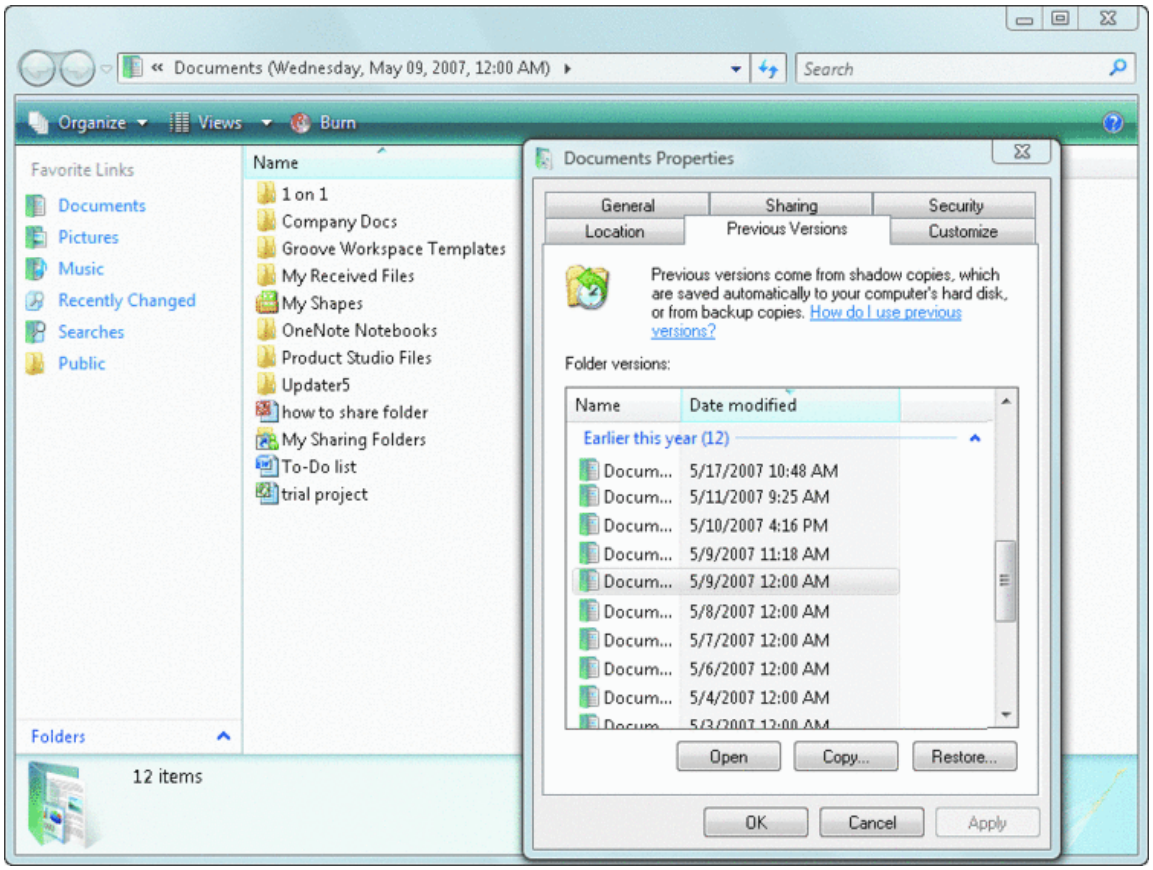


Figure 4 Restoring a file that was deleted (Click the image for a larger view)

If I have forgotten where the file was stored, I can open up the previous version of the closest parent folder in the file tree and do a search from there. For example, if I have forgotten the specific folder but do know it was in some subfolder located within Documents, I can search the previous version of Documents by typing the file name (full or partial) in the search box located at the top right-hand corner of the Windows Explorer window, as shown in Figure 5. Note that the search functionality for shadow copies does

not work at the root folder. And since shadow copies are not indexed, the search time can be longer than searching on a live volume.

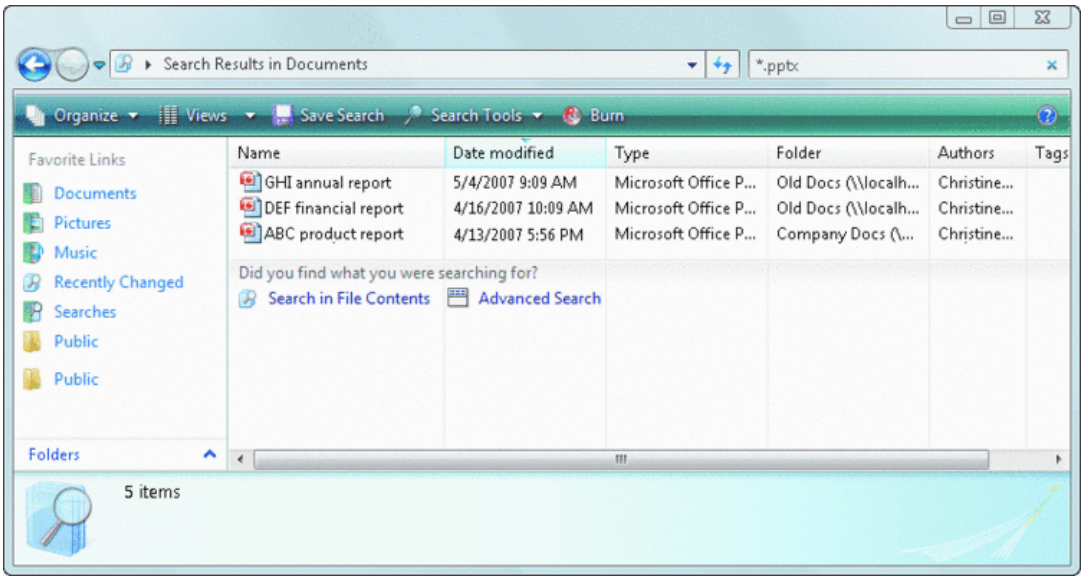


Figure 5 Searching for the previous version of a document by typing a partial file name (Click the image for a larger view)

Restore a File from a File Backup

Shadow copies are not available forever since they get pruned from time to time to manage the available space. If I need a file that is no longer available using this method, I can resort to my scheduled file backups. I simply select Restore files from the Backup and Restore Center, and choose a backup date that contains the deleted presentation. When I click the Add files button, I get an open file dialog that lets me navigate through the backup. After I select the file I'm looking for, I am given the option to restore the file to the same or a different location.

It's worth noting that the Restore files option only shows backups contained in the latest backup set. To view backups from an older backup set, select Advanced restore and then the Files from an older backup made on this computer option. On the rare occasion that you can't find an old backup set using that option, select Advanced restore and then the Restore files from a backup made on a different computer option. This can happen because the computer backup catalog is trimmed when it gets too big.

Complete PC Restore

Now imagine that one sunny afternoon, I decide to use my laptop while sitting by the pool. I slip on some wet tiles and my laptop dives into the pool. It's beyond repair and I have no choice but to buy a new one. Since I

used the Complete PC Backup tool, I can restore my system to the new laptop—I don't have to spend a lot of time manually reinstalling each application and reconfiguring them with my personal settings. Performing a Complete PC Restore is straightforward. At startup, I use the Windows Vista installation disk to boot into the Windows Recovery Environment. Here, I am prompted to attach the device that contains the system image. I choose the appropriate image, and then the restore process begins.
After the restore is finished, I perform a file restore from my latest file backup. This is because I do file backups more frequently so the data contained in my file backup is more current. Since the computer is reverted to a time prior to the chosen file backup, it does not contain a record of this backup in the catalog. Therefore, I select Advanced restore | Restore files from a backup made on a different computer | Restore everything from this backup. I also start a new full backup to protect my newly restored data.
Windows Recovery Environment is often installed by the OEM on the hard drive as a hidden partition. This can be used for restoring a Complete PC Backup image to the same hardware. But if you need to restore an image created from one computer to another, you need to run Windows Recovery Environment from external media, such as your Windows installation disk.

SUGGESTIONS ON WHAT TO BACK UP

You do not have to use the Backup/Restore feature to safeguard your precious files. You can do smaller periodic backup use standard file management commands (Copy, Move, Cut, Paste, Drag & Drop). If you personal folder is organized into sub-folders, you can simply copy the folders you wish to backup onto any removable device, such as Flash Drive, CDs or DVD disc. For CDs and DVD, simple format them using the “Live” format (UDF 2.5).

Each individual person has different needs. Some things that you might want to back up are:

- Favorites on the Internet
- Downloads that are not stored in a disk such as "updates" and certain programs.
- Favorite pictures, recipes, gardening hints, financial information, hobby information
- Medical records, etc.
- Your Music collection
- Vacation photos or videos

It is not necessary to back up anything that is already on a disk - such as programs that are on diskette, tape or CD.

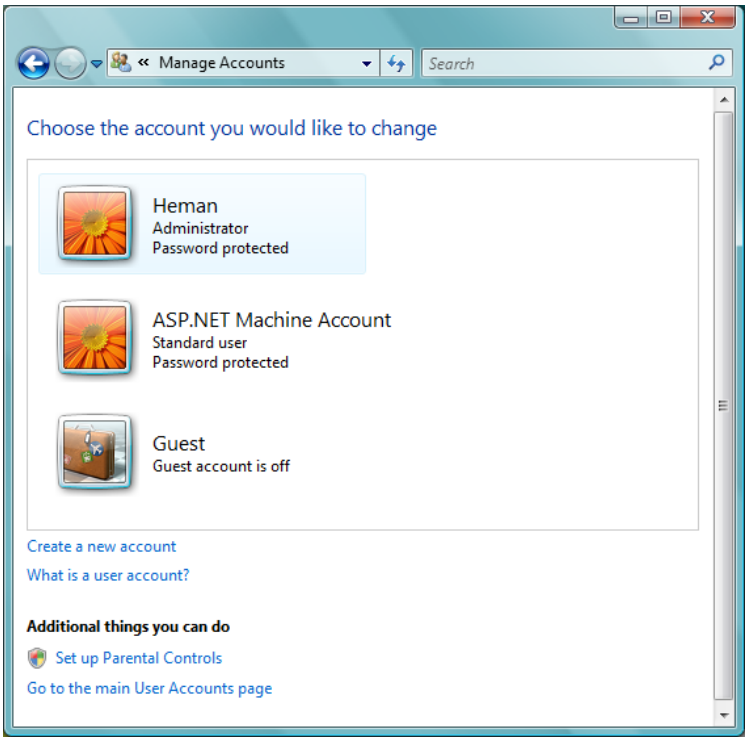
Maintaining User Account

Before we start, you should keep in mind that most of the important changes can be done only using an administrator account. If your account is a standard user you can only modify the password and the picture of your account.

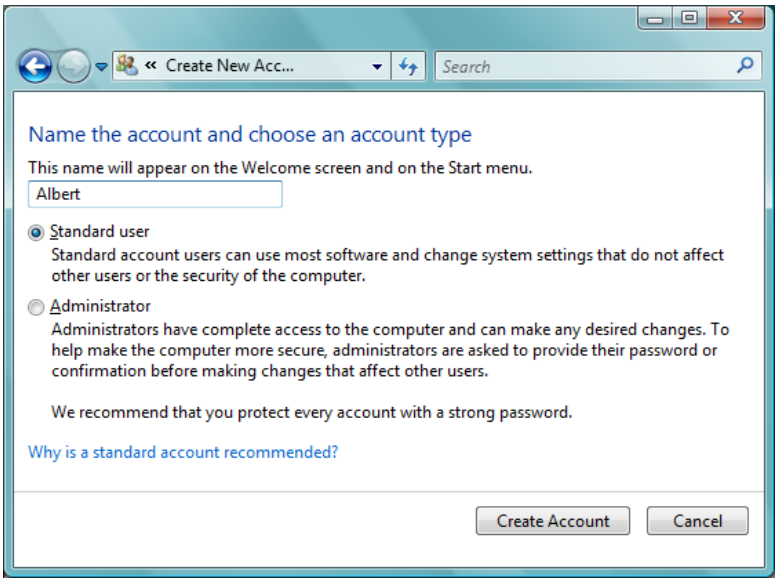
Everything is done from the User Accounts control panel so first we will show you where to find it.

Create a New User Accounts

Open Control Panel.



Click **Create a new account.**



There are only 2 type of user security, Standard user and Administrator.

Public Folder

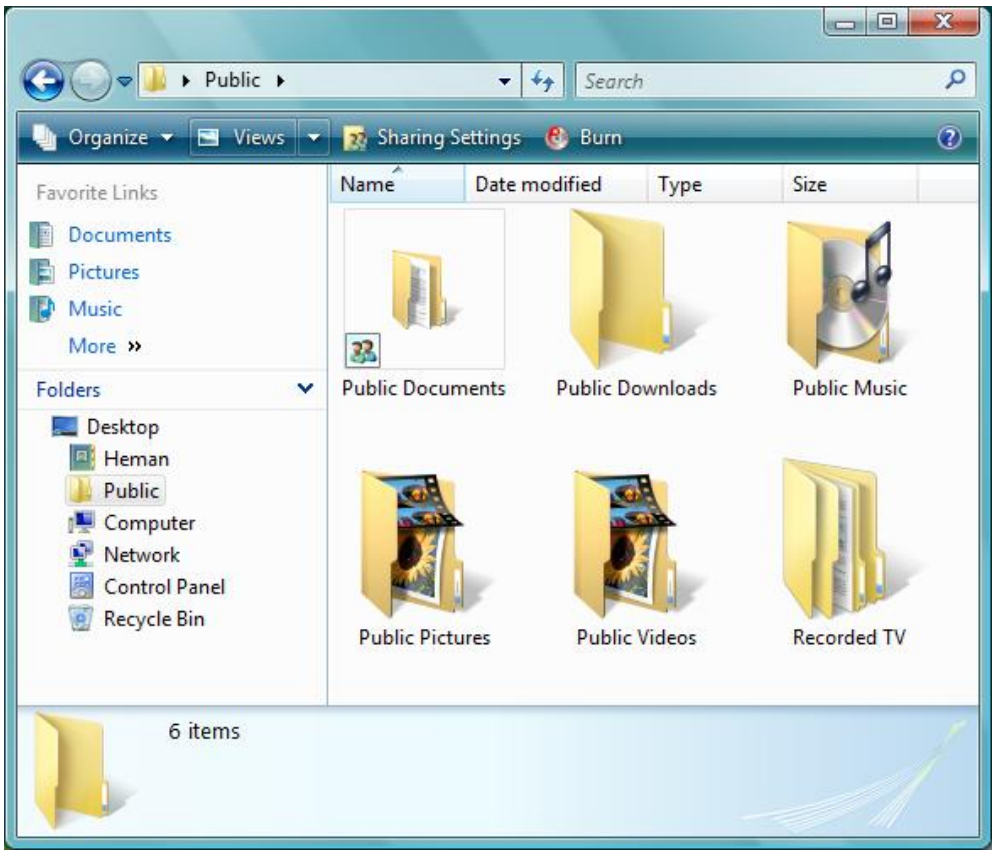
Everyone with a user account and password on your computer can access the Public folder, but you decide whether anyone on the network can access the Public folder. You cannot choose which individuals can access the Public folder from the network. You must either grant access to everyone on the network, or to no one. You can, however, set the permission level by choosing whether those who have access to the Public folder from the network can just open files, or also change and create them.

By default, network access to the Public folder is turned off unless you enable it.

Where is the Public Folder?

The Public folder is automatically provided by Windows, complete with ready-to-use folders for documents, pictures, and other types of files. The public folder is a sibling folder below your personal folder. Files in the public folder are available on everyone that logon to the computer. If you are on a network, the public folder can be access by anyone that can connect to your PC.

If you want build a music library, the music can be available from any computer if it is copied to the Public Music folder. Anything you copy to the Public folder is available to anyone who logon to your computer. To share the pictures from your vacation, simply drag them from your personal folder or camera to your Public Pictures folder. Now anyone else with an account on your computer can view the pictures.

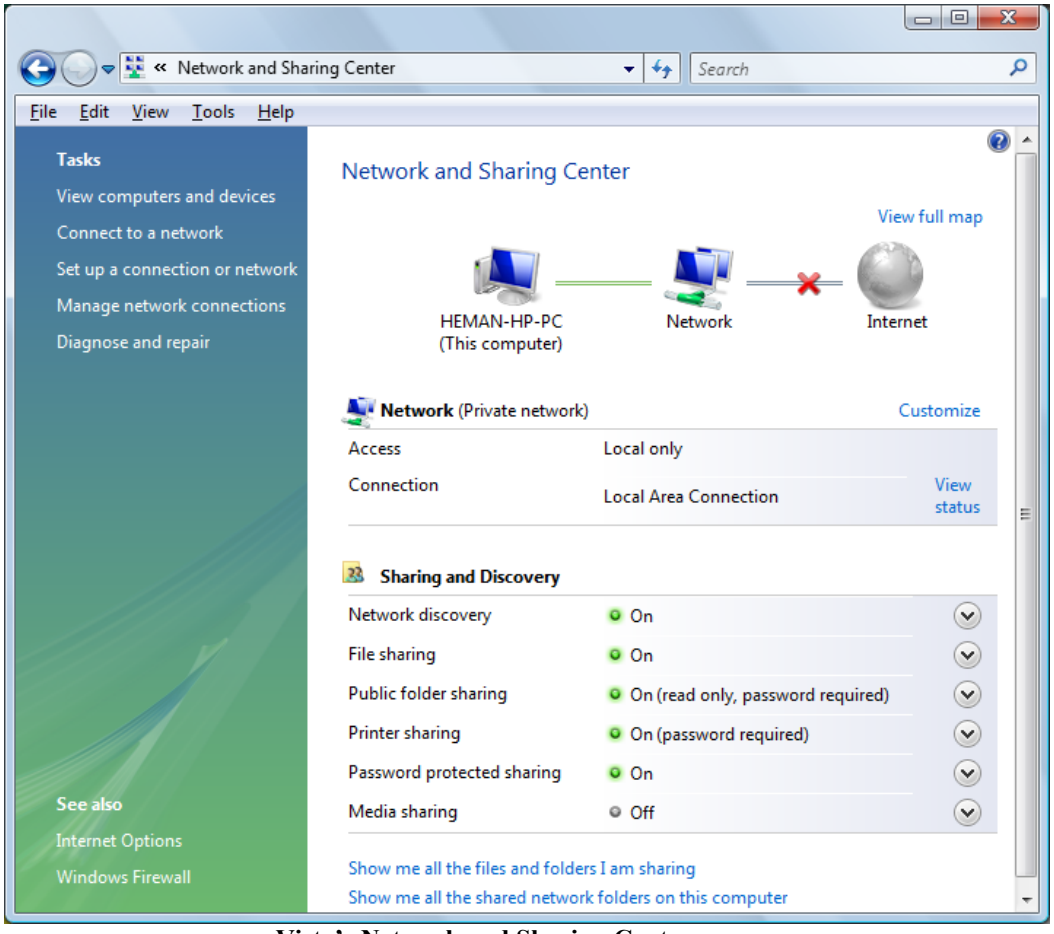


Vista's Public Folders

Who can access the Public Folder?

You can limit network access to the Public folder to only those people with a user account and password on your computer. To do this, turn on password-protected sharing.

1. Open **Network and Sharing Center** by clicking the **Start** button, clicking **Control Panel**, clicking **Network and Internet**, and then clicking **Network and Sharing Center.**



Vista's Network and Sharing Center

2. Click the arrow button Picture of the arrow button next to Password protected sharing, and then click one of the following options:

   - Turn on password protected sharing
   - Turn off password protected sharing

3. Click Apply. Administrator permission required If you are prompted for an administrator password or confirmation, type the password or provide confirmation.

4. To control the level of access to the Public folder

Other Methods of Sharing Files

There are several other ways to share files that do not require that you share files from specific folders. You can also share files using:

A computer-to-computer (ad hoc) network. If you want to share files between two computers that aren't already on the same network but are in the same room, you can create a computer-to-computer network, also known as an ad hoc network. An ad hoc network is a temporary connection between computers and devices used for a specific purpose, such as sharing documents during a meeting. For more information, see Set up a computer-to-computer (ad hoc) network.

Removable media. You can copy files to any sort of removable media, including portable hard disks, CDs, DVDs, and flash memory cards. Then you can insert or plug that media into another computer and copy the files to that computer or give the removable media to the people you want to share the files with and let them copy the files themselves. For more information, see Copy files to another computer.

E-mail. If you only have one or two files to share and they are not very large, you might find it simplest to share them by attaching them to an e-mail message. For information on how to send attachments with Windows Mail, see Send an attachment in a Windows Mail message.

Windows Meeting Space. This feature of Windows allows you to set up a session where you can share documents, programs, or your desktop with other session participants. For more information, see Windows Meeting Space: frequently asked questions

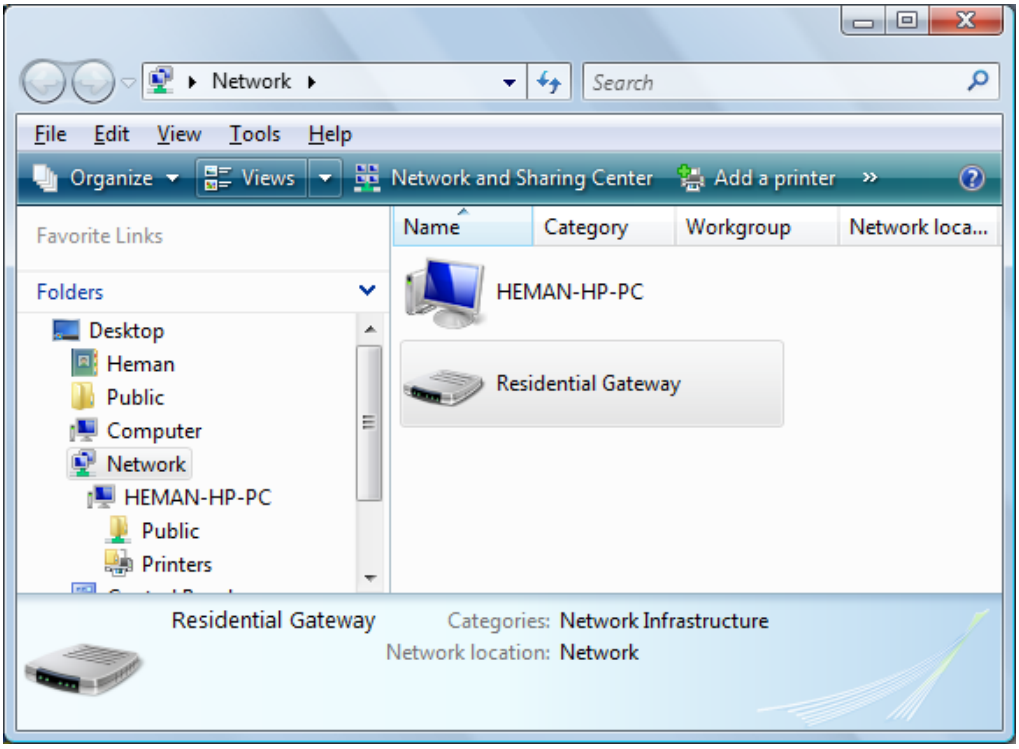
A Windows-compatible file-sharing program. There are many programs available designed to help people share files.

The web. There are many websites devoted to sharing photos and other types of files.

Instant messaging. Most instant messaging programs allow you to share files with people while you are chatting online with them.

Network

If have a network connection, you can access the public folder from Network icon on your desktop. This was formerly known as Network Neighborhood in Windows XP. Click on the computer name. In the example below, we are accessing computer "HEMAN-HP-PC" After you click on the computer name, click on the folder "Public".



Network Connection

What you need to setup a home network?

Ethernet Interface with Ethernet Cable Reversed (Gaming Cable)
or
Ethernet Hub
or
Internet Router
or
Wireless Internet Router

Notes