

The 3 C's seminar

(or Cleaning your Computer of Crud)

Why should you clean your system?

Do you remember how fast your computer was when you first got it? This is because you hadn't yet installed all those programs and utilities that you no longer use. Most of these programs leave behind temporary files and registry entries, even when uninstalled! Just like your car, your computer needs regular maintenance.

Plus your operating system records every visit to every website; every time you open a document, and a lot more. Do you want people to be able to find out this information?

Even if you don't mind other people knowing what websites you visit, your internet browser can save personal information about you, such as your name, address, date of birth, passwords and credit cards numbers.

In today's seminar, we will cover the basic techniques that will clean out the unnecessary files that accumulate in a Windows-based computer. Not only will your computer disk recover valuable space, but its speed and performance will be improved.

Those items that have an asterisk (★) by their side are items that are recommended to be performed at least monthly, or weekly if you are an intensive user of your computer. The other items need only be performed every three to six months.

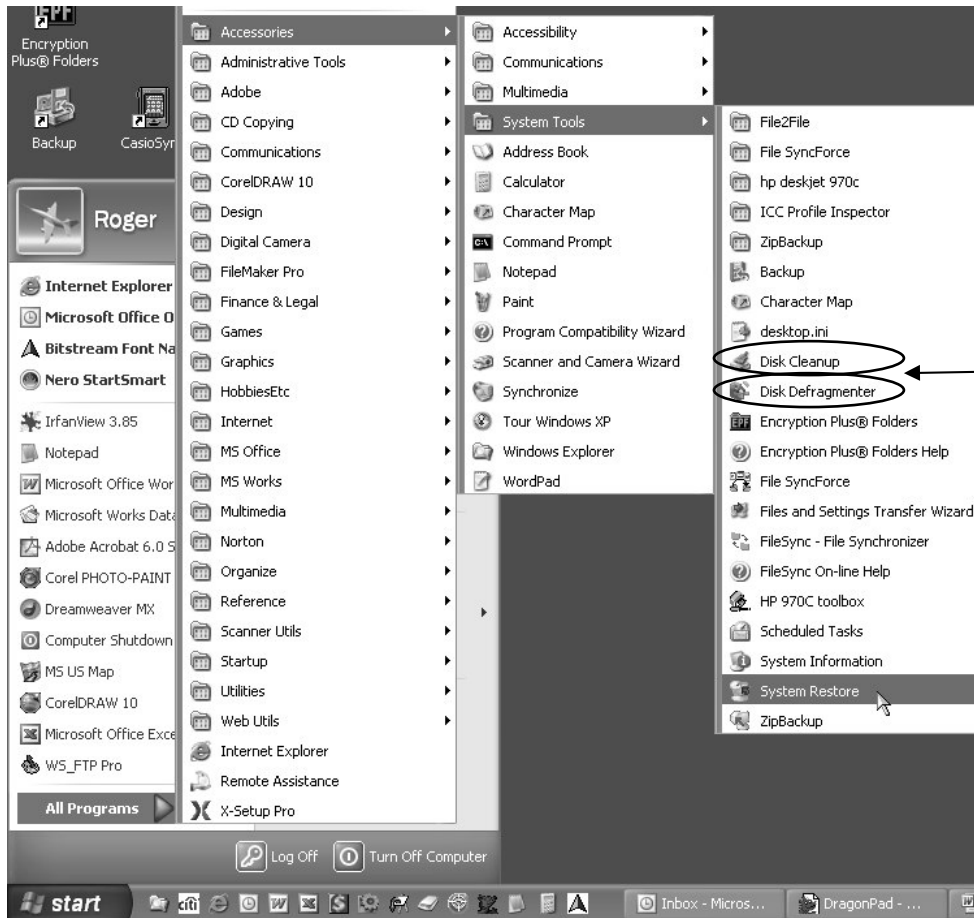
They are in the order in which I will go through them. The following pages contain more detailed instructions on how to perform each of these items to help complete these tasks on your own computer when you get home. I recommend that you follow these notes as I demonstrate each point.

1. Create a **Restore** point.
2. Remove **Unused/Un-needed** programs
3. Perform a **Disk Check** (Windows utility)
- ★ 4. Remove **temporary files** using Disk Cleanup (Windows utility)
- ★ 5. Cleaning **cookies**
- ★ 6. Remove **temporary files, cookies** and **MRU's** using CCleaner (freeware)
7. Clean **registry** using CCleaner
- ★ 8. Check for **Spyware** using Ad-Aware and SpyBot (freeware)
9. Remove unneeded **Autostart** programs
- ★ 10. **Defragment** hard drives
- ★ 11. **Backup** your Data Files using SyncBack (freeware)

Step 1 is just a precaution before performing the other steps. I guarantee that if you perform steps 2-10, your computer will run significantly faster.

1. Create a Restore Point

1. Access the System Restore Wizard through **System Tools**. (To access the System Restore Wizard, **click Start**, and then **click All Programs, then Accessories, System Tools & System Restore.**)
2. Click **System Restore**



Note: We will use this same folder (System Tools) to access the Disk Cleanup & disk Defragmenter tools

3. Click **Create a restore point**, and then **click Next**.
4. In the Restore point description box, **type a name** to identify this restore point. System Restore automatically adds to this name the date and time that this Restore Point is created.
 - a. To finish creating this restore point, **click Create**.
 - b. To cancel restore point creation and return to the Welcome to System Restore screen, click **Back**.
 - c. To cancel restore point creation and exit the System Restore Wizard, click **Cancel**.

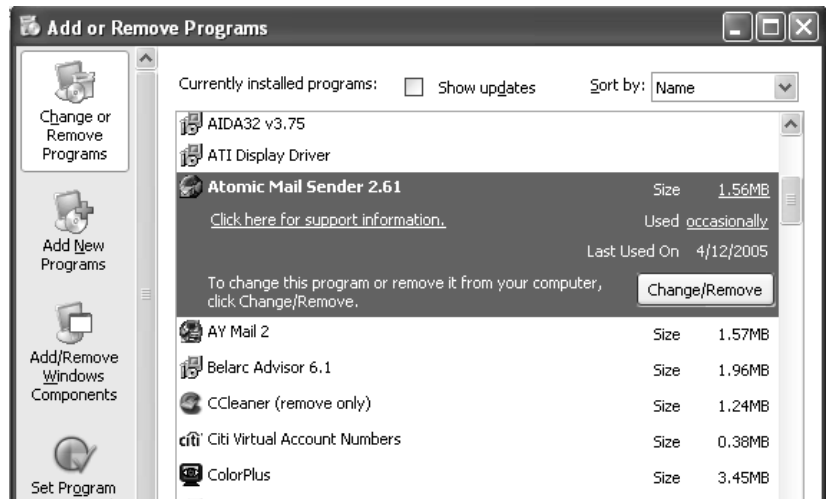
2. Remove Unused and Un-needed programs.

Clear Out Forgotten Programs

The first step in tuning up your computer's performance is to remove any unnecessary programs. I install new programs all the time. Sometimes I'm thrilled with the new program and I continue to use it. Other times, it doesn't do what I hoped, and the program sits on my computer consuming resources.

Follow these steps to remove unneeded programs:

1. Click Start, and then click Control Panel
2. Click Add or Remove Programs
3. Scroll through the list and examine each program. Windows XP lists how often you use a program and what day you last used it. As shown in Figure, Atomic Mail Sender is a good candidate for removal from my computer. You shouldn't remove anything labeled as an Update or Hotfix, however, because they improve the security of your computer
4. Click each program you no longer need, click the Remove button, and then follow the prompts to uninstall it



You may have to restart your computer after removing a program. After your computer restarts, repeat the steps above to remove more programs.

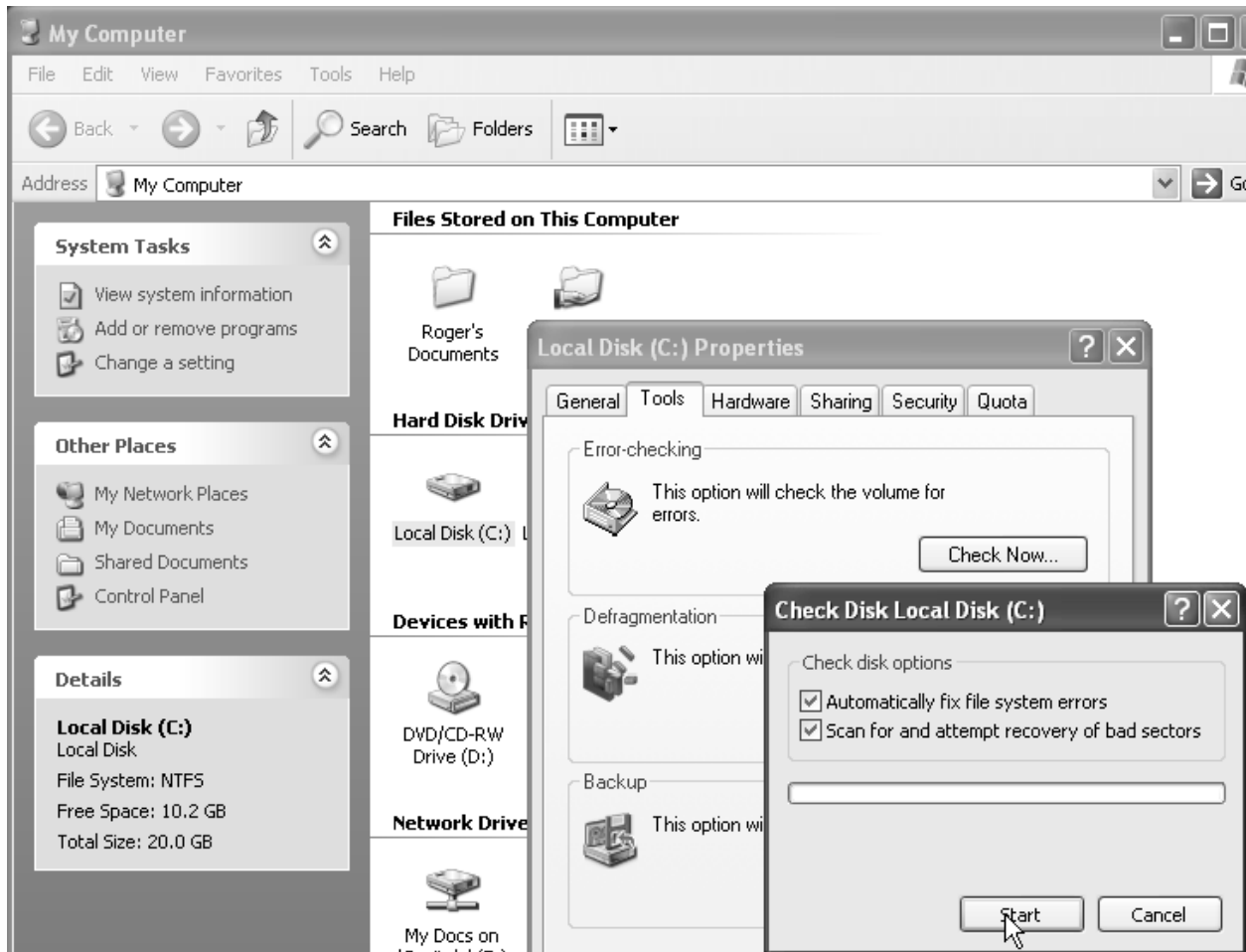
3. Perform a Disk Error Check

You can use the Error-checking tool to check for file system errors and bad sectors on your hard disk.

1. Open My Computer, and then select the local disk you want to check.
2. On the **File** menu, click **Properties**.
3. On the **Tools** tab, under **Error-checking**, click **Check Now**.
4. Under **Check disk options**, select the **Scan for and attempt recovery of bad sectors** and **Automatically fix ...errors** check boxes.

To open My Computer, click **Start**, and then click **My Computer**.

All files & programs must be closed for this process to run. If the disk is currently in use, a message box will appear prompting you to indicate whether or not you want to reschedule the disk checking for the next time you restart your system. Then, the next time you restart your system, disk checking will run. Your disk will not be available to perform other tasks while this process is running.



Repeat for other hard disks drives – if your computer has them.

Note: Disk checking can take up to an hour – so make sure you don't need to use the computer when you run this check!

4. Remove Temporary Files Using Disk Clean Up Utility

Many applications use temporary files when working to save information. These are normally deleted upon exit, but occasionally they can be left behind. Sometimes Windows uses files for a specific purpose and then retains them in a folder designated for temporary files. These files are located in a specific folder, and can safely be removed.

Temporary Internet files are mainly web pages and pictures saved from the sites you're visiting to your hard disk. These can build up over time to consume a large amount of disk space and may potentially contain personal information.

Use the Windows **Disk Cleanup Wizard** (note, that if you want to use CCleaner, a freeware program described in **Step 6**, you can skip this step) to perform all of the following tasks to safely delete temporary files and create space on your hard disk:

- Remove temporary Internet files.
- Remove any downloaded program files (ActiveX controls and Java applets downloaded from the Internet).

- Empty the Recycle Bin.
- Remove Windows temporary files.

Using Disk Cleanup

Disk Cleanup helps free up space on your hard drive. Disk Cleanup searches your drive, and then shows you temporary files, Internet cache files, and unnecessary program files that you can safely delete. You can direct Disk Cleanup to delete some or all of those files.

To open Disk Cleanup, click **Start**, point to **All Programs**, point to **Accessories**, point to **System Tools**, and then click **Disk Cleanup**.

I recommend checking **ALL** boxes, except **Compress old files** and **Office Setup Files** (if shown).

If you have more than one hard drive, repeat for the other drives.

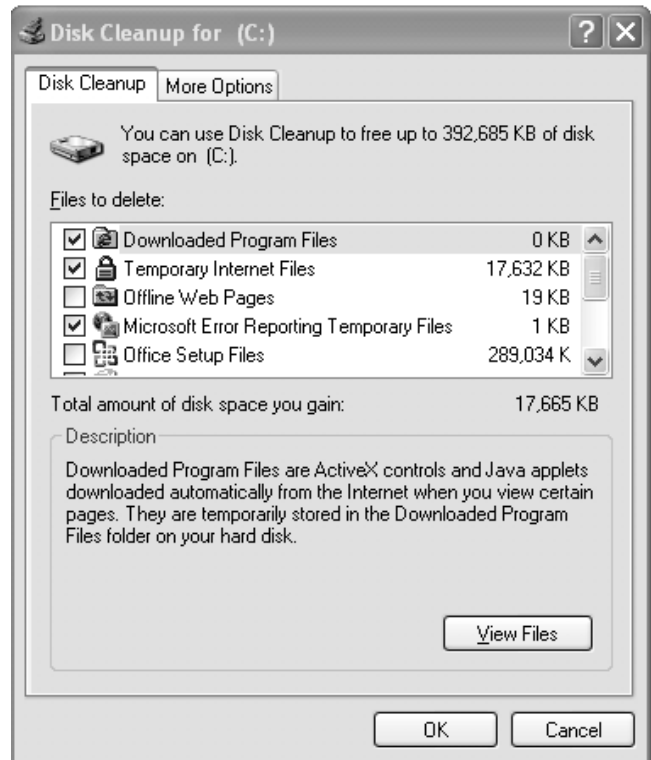
About cookies

Some Web sites store information in a small text file on your computer. This file is called a **cookie**. It stores information on your computer, such as your preferences when visiting that site. For example, when you revisit a site like Amazon.com, recommendations based on previous purchases may appear. Or you might want a personalized page at Yahoo.

Cookies can also store personally identifiable information. Personally identifiable information is information that can be used to identify or contact you, such as your name, e-mail address, home or work address, or telephone number. However, a Web site only has access to the information that you provide. A Web site cannot determine your e-mail name unless you provide it. Also, a Web site cannot gain access to other information on your computer.

Internet Explorer allows the use of cookies; however, you can change your privacy settings to specify that Internet Explorer prompt you before placing a cookie on your computer, which enables you to allow or block the cookie. You can also prevent Internet Explorer from accepting cookies from the privacy settings which allow you to specify how you want Internet Explorer to handle cookies from individual Web sites or all Web sites. However, some websites might not work properly (on-line purchasing), if you block all cookies.

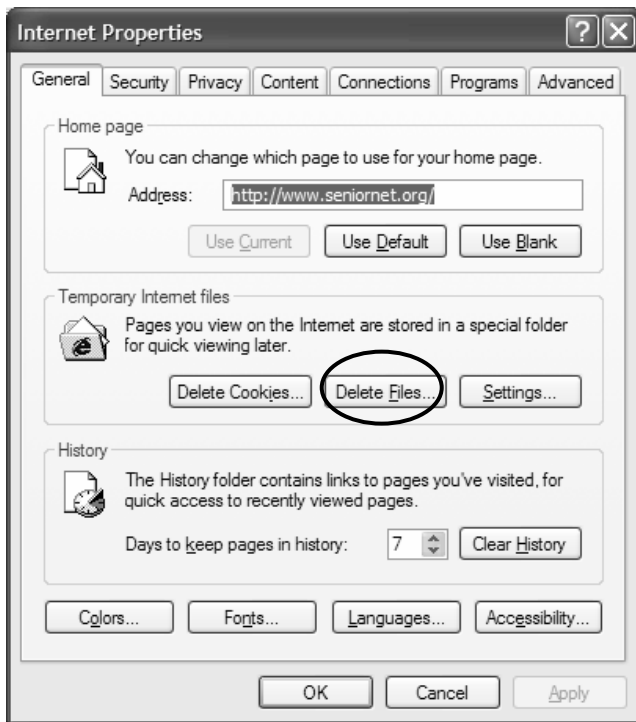
You can find out more about Privacy settings and security zones, by clicking **Help** on the Internet Explorer tool bar and clicking **Contents and Index**. Click the **Search** tab. In the "Type in keyword to find" box, type **Privacy Settings** or **Security Zones**. Click the **List Topics** button. Select a topic in the left window pane. Click the **Display** button and read about the topic in the right window pane.



5. Remove unneeded cookies using IE Explorer.

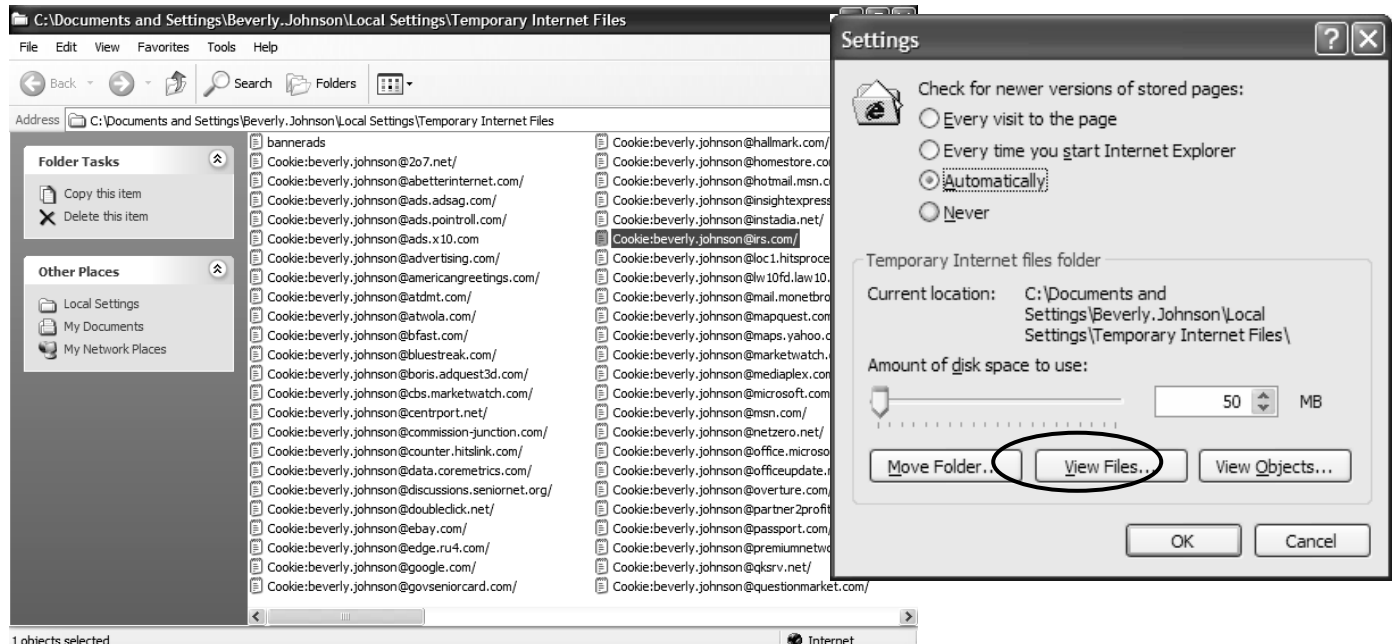
Note: If you plan to use CCleaner, a freeware program described in **Step 6**, you can skip **Step 5**.

Some Web sites such as Hotmail or Yahoo! Email store your member name and password or other personally identifiable information about you in a cookie; therefore, if you delete that cookie, you may need to re-enter this information the next time you visit the site.



1. To delete a particular cookie, click **Start** and then click **Control Panel**.
2. Click **Network and Internet Connections**, (you will only see this if in category view)
3. Click **Internet Options** to open the Internet Properties window.
Note: You can also get to the Internet Properties window by starting **Internet Explorer**, clicking **Tools** on the menu bar and then clicking **Internet Options**.
4. On the **General** tab, click **Settings**
5. Click the **View files** button
A window opens displaying all the cookie files.
6. Click on a cookie you want to delete and press the **Delete** key on the keyboard .

(Hint - Use the Ctrl Key to select multiple cookies, before pressing the delete key)



To Delete all cookies

On the **General** tab of the Internet Properties window, click the **Delete Cookies** button.

6. Remove temporary files, cookies & MRU's using CCleaner (freeware)

What is CCleaner? It's an excellent freeware tool that removes unnecessary files and cleans the registry. (see p.13 for download site)

Open CCleaner and you will see the main cleaner page. All the items that can be removed are shown in various groups, together with a check mark to indicate if you want that item cleaned. There are two tabs, "Windows" and "Applications". In the Windows tab, I normally check all items as shown. Similarly for the Application tab. There is a description of each of these file types, on the last page.

The next step is to set up the options – particularly for cookies. This is a great feature of this utility – that you can select cookies you do not want to remove. Click Options and Cookies and then use the arrow buttons to move the cookies between the two columns.

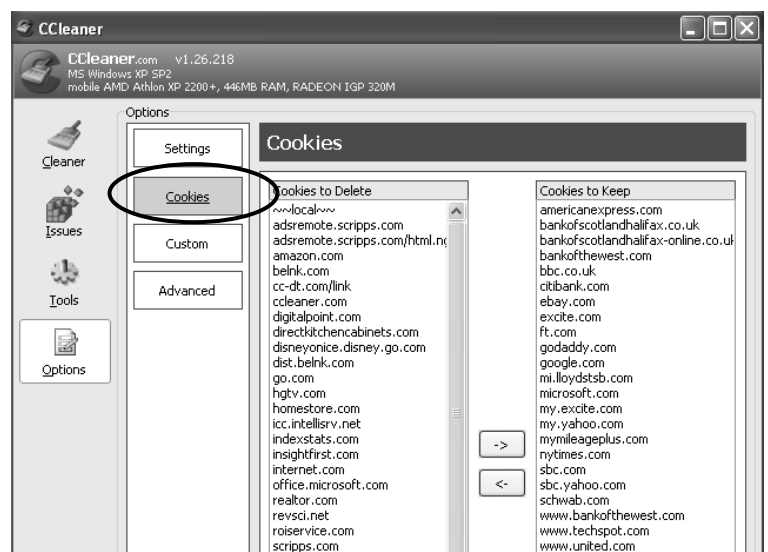
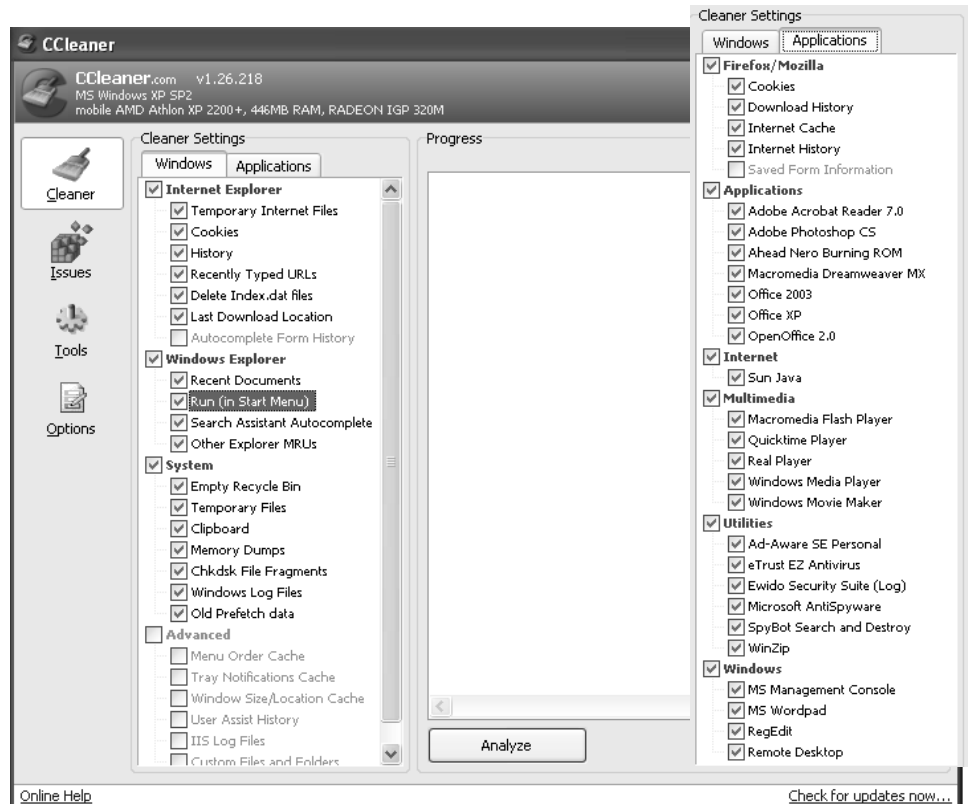
Having made the selections, return to Cleaner and click the analyze button. This runs a simulation, allowing a check of all the files that will be deleted. If all is ok, click the "Run Cleaner" button to remove much of the junk from your computer.

From now on, all that's needed on a weekly basis, is to open CCleaner, click the "Run Cleaner" button and the junk will be removed as per the options selected.

Using CCleaner, is an alternative to Steps 4 and 5 previously described.

7. Cleaning the registry.

The registry is a large file where programs keep information they need about where you keep your documents, or where a program keeps it's data file.



Often, when programs are removed from your computer, they don't "clean up" all their entries from the registry. CCleaner has a very safe registry cleanup function.

Open CCleaner and click the issues button. Leave all the check marks checked, and click "Scan for Issues". When complete, click "Fix Selected Items". I recommend you click "Yes" to make a backup of the deleted items. Then click "Fix all Selected Issues" and OK and then Close.

8. Check for Spyware

Spyware is either a program or cookie that is put on your computer from a Website you've visited or loaded with another application. Spyware can range from non-harmful (tracking your preferences for targeted marketing) to malicious (key loggers and redirectors). To detect and remove spyware, you need additional programs. There are quite a lot of freeware spyware removal programs. One that's very popular can be downloaded free from www.lavasoftusa.com then click on Ad-Aware Personal and follow the links to download a free personal copy. Another highly recommended spyware program is SpyBot. This can be obtained from www.safer-networking.org/en/download/ and click on Download Here.

Ad-Aware

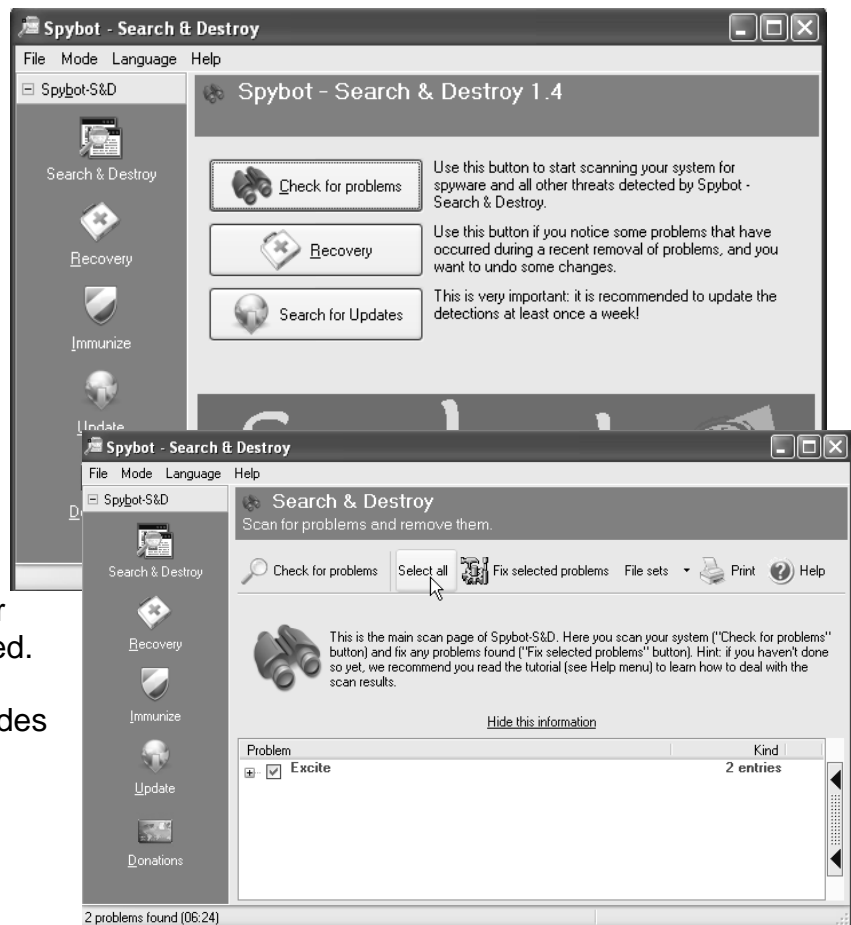
Start Ad-Aware and click OK to check for updates (must be connected to the internet for this to work). Then click "connect" and after download is complete, click "Finish". In main window, click "Start" to start the scan. When the scan is complete, you will see a list of all the items found. I recommend you click the check marks to delete everything that Ad-Aware finds. Then click quarantine. This allows you to "undo" the removal if needed.

SpyBot

Start SpyBot. As always, click the "Search for Updates", put a check mark in all those available, and click "Download Updates".

After the downloads are complete, click the "Check for problems" button. When scan is complete, click "Select all" and then "Fix selected problems".

Finally, click the "Immunize" icon. At the screen that appears, click the "+ Immunize" icon to block over 8,000 websites from being accessed. The Immunize icon needs to be re clicked, every time an update includes "updates to the immunization database".



9. Remove Autostart Programs

This next step in restoring your computer's performance can often be the most significant. We need to identify any unnecessary programs that start automatically. Often, programs configure themselves to run in the background so that they appear to start quickly when needed. Some of these programs show an icon on your taskbar to let you know that they're running, while others are completely hidden. These autostart programs can often slow down your computer as it starts up, and will steal away memory and processing time as your computer runs.

Some **autostart** entries are important programs (e.g. an Anti Virus program) or drivers required for some of the computers hardware. So you should **not** simply delete everything that you don't recognize.

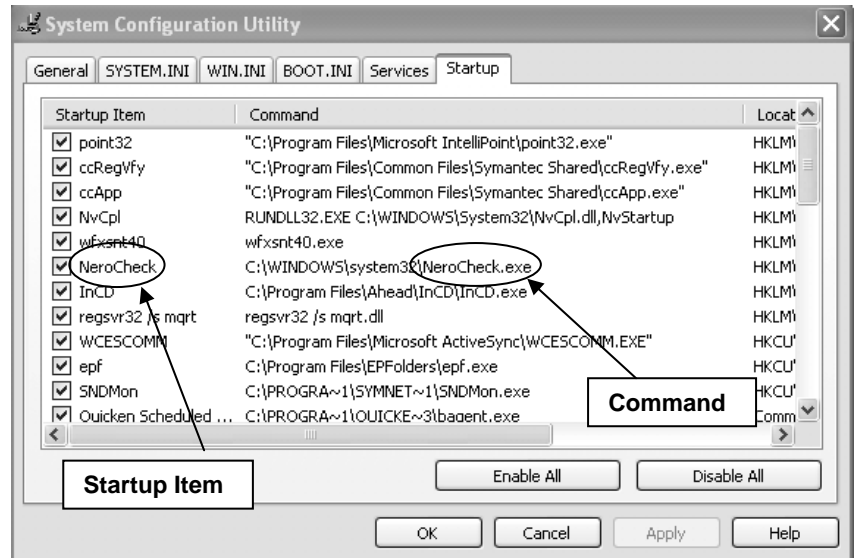
Windows XP comes with the **System Configuration tool** (msconfig.exe), an excellent way to manage the startup process. To open this utility:

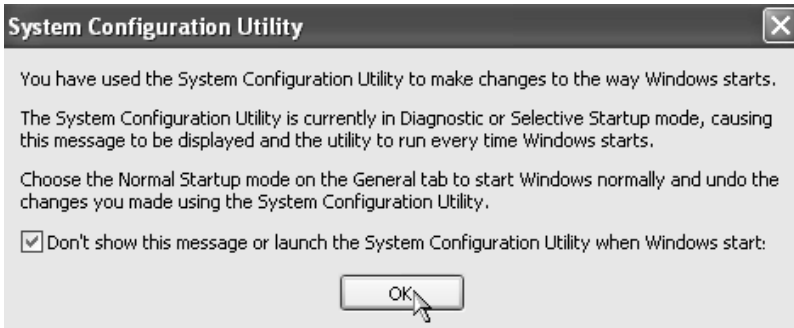
1. Click **Start**, click **Run**, type **msconfig**, and then press Enter
2. On the **Startup** tab, you'll see a list of all the programs and processes that are set to run when Windows XP loads.
3. Speed up your overall start time by clearing the check box next to unneeded startup programs. (**see below**)
4. Click **Apply**, and then restart your computer for the changes to take effect.

NOTE: When an item is unchecked, it is NOT deleted, but just disabled from loading. If you find later that this file is required at start up, then it can be enabled by rechecking that file.

Checking for Startup Items. You should look up each entry at www.sysinfo.org At this website, click "Full Startup List" and then type in the "Startup Item" to the search box and click the Search button. When an entry is found, check that both it's Startup Item name and the last name in the Command are the same as on your computer. By the side of the entry will be a description of the startup item and a code as to whether this is required to start automatically. Another site that provides similar info is www.answersthatwork.com Click on **Task List** and then click the letter of the first letter of the file you're trying to identify

For example, the figure shows "msconfig" revealing a file called **ccApp.exe** that is set to start automatically. I visited The Startup Applications List, typed in **ccApp** and discovered that "App.exe is Part of Norton AntiVirus 2003. Auto-protect and E-mail will not function without this." This is obviously a necessary file, so it will stay!.





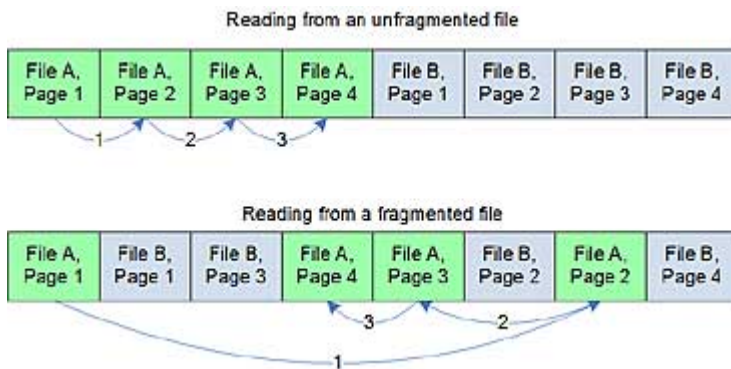
Again, when checking an entry in the Sysinfo.org database, it's very important to check that both the "Start Up" and "Command" are the same as in the configuration utility.

Important. After rebooting the computer, a window will appear notifying you that the System configuration Utility has been used.

Make sure you place a check mark as shown, and then click OK.

10. Defragment Hard Drives

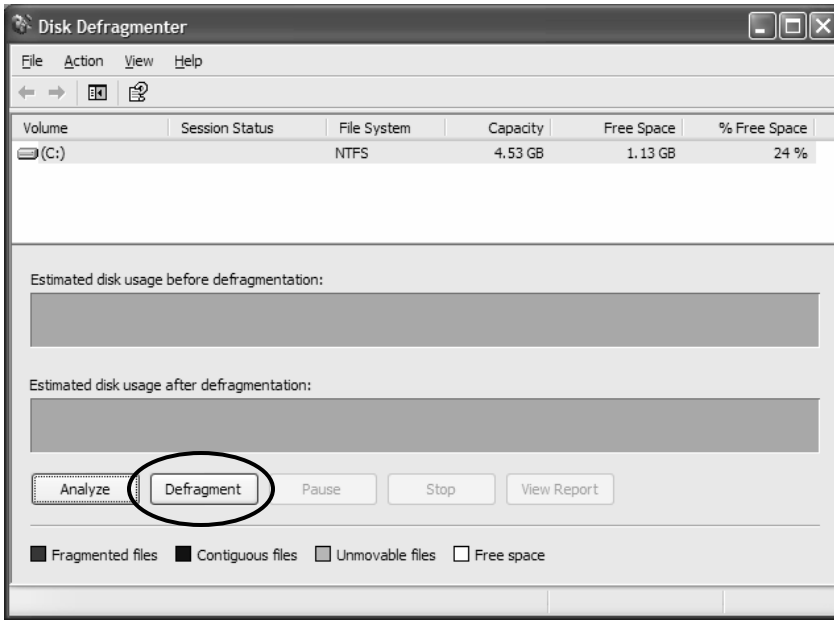
I hate newspaper articles that start on the front page but continue somewhere in the middle of the newspaper. I could get through the article much faster if it was printed on consecutive pages like a magazine article. Files on your computer can either be **fragmented** like a newspaper, or **unfragmented** like a magazine. Over time, more and more files become fragmented. When a file is fragmented, it takes longer for the computer to read it because it has to skip to different sections of the hard disk—just like it takes me a few seconds to find a page in the middle of a newspaper. The figure compares how a computer reads unfragmented and fragmented files.



You cannot work on your computer and defrag your computer at the same time. It is common for disk defragmenter to take a long time. The time can vary from 10 minutes to many hours, so run the Disk Defragmenter when you don't need to use the computer! If you defragment regularly, the time taken to complete will be quite short.

To run the Disk Defrag utility do the following.

- Make sure ALL programs are closed
- If necessary, turn off your screensaver.
- Click on **Start** on the task bar.
- Point to **All Programs**.
- Point to **Accessories**. Point to **System Tools**.
- Click **Disk Defragmenter**. The Disk Defragmenter window appears.



Note: You can also get to this screen as follows. Double-click **My Computer**. Right-click the drive (volume) you want to analyze or defragment. Click **Properties**. Click the **Tools** tab. Click the **Defragment Now** button.

Click the **Defragment** button.

The Disk Defragmenter window consists of two main areas. The upper portion lists the disk (volume) on your computer. The lower portion displays graphical representations of the amount

of fragmentation on the disk before and after running defrag. The colors of the display indicate an approximation of the volume's condition:

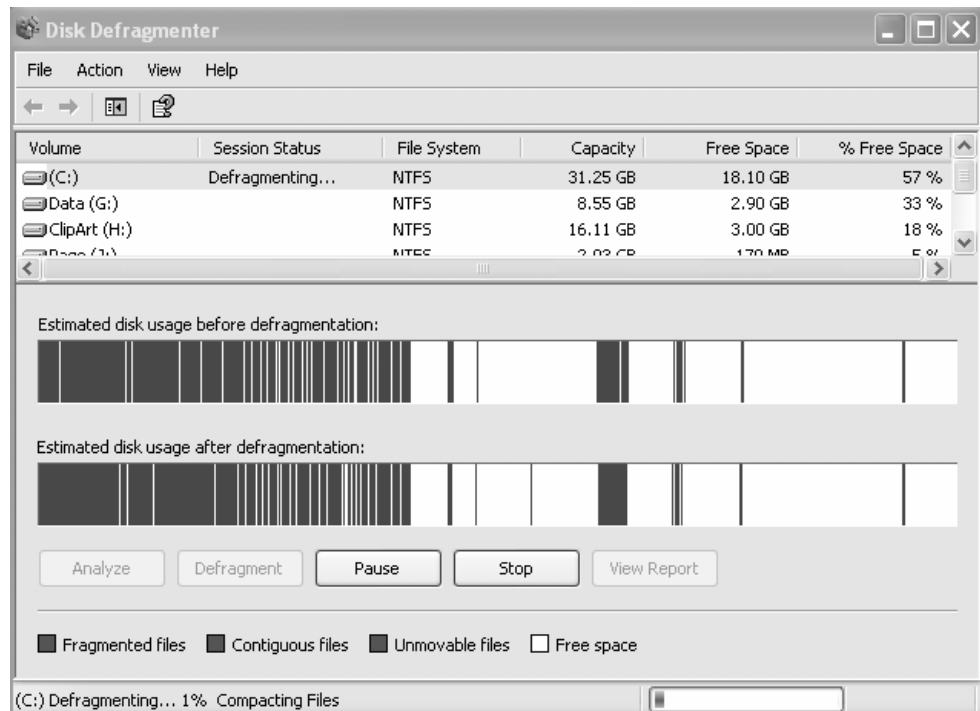
Red areas represent fragmented files.

Blue areas represent contiguous (non-fragmented) files.

White areas represent free space on the volume.

Green areas represent unmovable files, which cannot be relocated by Disk Defragmenter.

Note: On file allocation table (FAT)/FAT32 volumes, the green areas typically represent paging files, which are also called swap files.



When the defragmentation process is complete, the computer will display a window with a close button that you should click.

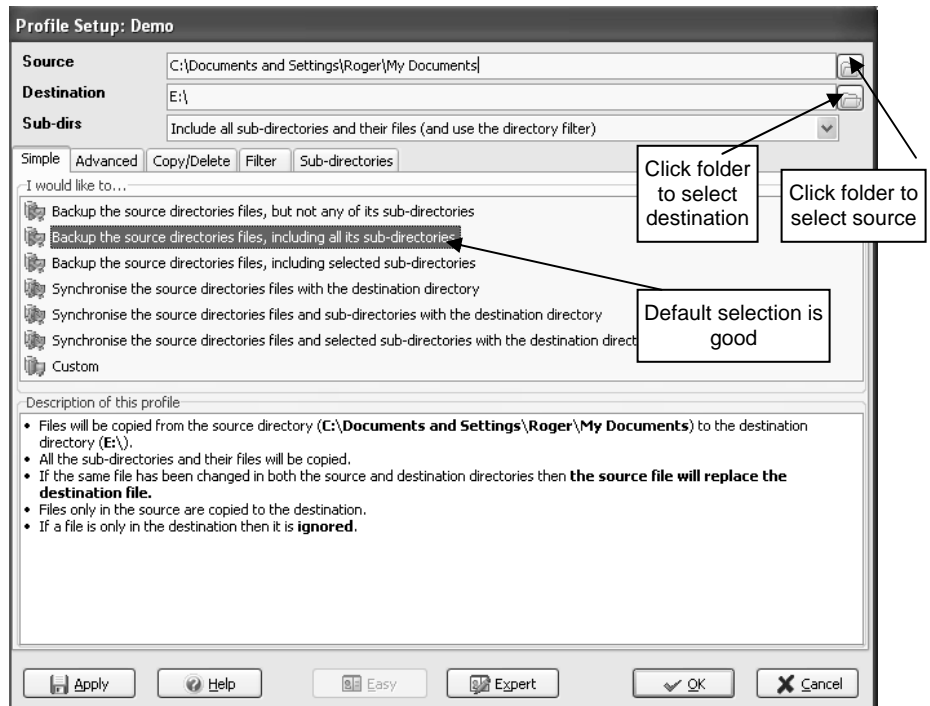
If you have more than one hard drive, repeat the process for the other drives

11. Backup your Data!

It's very, very important to regularly back up your data. Every hard drive made, will one day fail, and all your data will be lost.

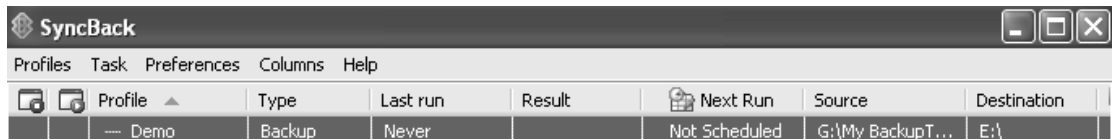
Fortunately it's very easy to do. I recommend backing up to a second hard drive (internal or external), a USB flash/pen drive or CD/DVD. Depends on how much data you have. To cover the subject properly – requires another seminar. This is just a straightforward example of backing up files to a USB pen drive. For many people, this will be the best way.

After downloading and installing SyncBack (freeware), open the program. The first time the program is started, it asks to create a new "Profile" (a backup job). Select "Backup" – (synchronizing is generally used to get the files the same on 2 computers) and give it a name. Leave the default setting (backing up source directory, including all sub-directories) and select the source and destination directories. The source is the folder you want to backup, and for most people this would be "My Documents". The destination folder is the drive of the backup media – in this case the USB drive (E:\)



For most people this is all that needs to be done, although there are many options for the more experienced user.

Now click "OK" to save this profile. If you want to make simulated run, click "yes", otherwise click "no". Back at the main screen more profiles can be created – if you wanted to backup different folders and/or to different media. Select the profile you want to run and click "Run"



The first backup can take a while to complete, but subsequent backups go much faster as only new files or files that have been changed need to be copied to the backup drive.

SyncBack can also run any profile on a scheduled basis – which is great if your computer is normally switched on at the same time each day/week.

So that's it. You should now have a clean, high performance computer back on, or under your desk. All your valuable data should be safely backed up so that you'll be able to keep smiling, when one day the disk decides to leave this mortal planet!

Just remember, running disk check, disk cleanup, checking for spyware, keeping your cookies clean and defragmenting your hard drives regularly, will keep your computer running at peak performance. I guarantee it!

Useful freeware sites:

CCleaner: www.ccleaner.com

Adaware: www.lavasoft.com and click "AdAware Personal" in the products section

Spybot: www.safer-networking.org/en/download/ and click the first "Download here" button

SyncBack: www.2brightsparks.com/downloads.html and click the English flag to download

Check information about "Start Up" programs: www.sysinfo.org and www.answersthatwork.com/Tasklist_pages/tasklist.htm

A source for many good Spyware, Antivirus and Firewall products: www.thefreecountry.com/security/

List of files types cleaned by CCleaner

Windows Tab

Internet Explorer

Temporary Internet Files

This is the Internet Cache for IE. It saves the web pages and pictures from the sites you're visiting to your hard disk. These can build up over time to consume a large amount of disk space and may potentially contain personal information. Selecting this option will safely remove the files.

Cookies

Cookies are small text files that Web sites save on your computer to help your browsers remember specific information. For example, they might store your username and password. They are also used to store your preferences for personalized pages or to build a profile of which sites you visit and which banner ads you click on. Advertisers use this information to deliver targeted ads directly to your computer. Selecting this option will safely remove the files. You may wish to keep certain cookies, these may be selected on the Options window.

History

Much like the Internet Cache, IE also records and stores the addresses of all the websites you have visited. Selecting this option will safely remove the record of websites you have visited.

Recently Typed URLs

Any website addresses you manually type into the address bar are stored and displayed in the address drop-down box. Selecting this option will safely remove the record of typed in addresses.

Delete Index.dat files

Although essentially undocumented by Microsoft there are several hidden files, all with the filename index.dat that reside in directories on your system. These permanently cache website addresses and cookies from sites you have visited. This list is never deleted and gradually increases in size, resulting in IE slowing down. Selecting this option will mark these files for deletion the next time your computer is rebooted. (Unfortunately these files cannot be deleted immediately as they are permanently in use by the operating system.)

Last Download Location

When you download a file from the internet, IE remembers the directory location you chose. Selecting this option will clear the last directory, and reset to the default folder. Which on most systems is the desktop.

Autocomplete Form History

When you type in a username and password on a webpage, IE frequently prompts you to select whether you'd like it to remember these details for next time. Whilst this is very useful and may save you time logging in. It can be a security risk as other people will be able to log in from your computer. Selecting this option will remove any stored usernames and passwords.

Windows Explorer**Recent Documents**

When you open a document or file in Windows, a record of this is stored under the Recent Documents list on the Start menu. Selecting this option will clear this list. (Note: The documents themselves are left untouched.)

Run (in Start Menu)

An alternative to running programs from a shortcut icon, is to type in the application name into the Run form on the start menu. Every time you do this, the program you typed in is added to the drop-down list of previously run programs. Selecting this option will clear this list.

Search Assistant Autocomplete

When you search for a file in Windows Explorer, the file is added to a list of previously searched for files. Selecting this option will clear this list.

Other Explorer MRUs

MRUs (Most Recently Used) are lists within windows and in applications that maintain a list of the last few (normally 4 to 8) opened documents. It is normally located on the File menu of

the application. This option clears a range of minor lists within Windows, including common dialogs, network drives and DirectX applications.

System

Empty Recycle Bin

This option will empty the Recycle Bin.

Temporary Files

Many applications use temporary files when working to save information. These are normally deleted upon exit, but occasionally they can be left behind. Normally when the program is not shut down properly. This option will safely delete these files. (By default it only removes files that haven't been used in the last 10 days, this prevents current temp files from being removed. There is an option to turn off this feature on the Options window.)

Clipboard

The windows clipboard can contain personal information you've copied from documents and also if it contains a large amount of data, it can use up a lot of memory. This option clears the clipboard and frees up the memory being used.

Memory Dumps

When windows crashes or blue screens the system saves a memory dump, potentially containing information about how the crash happened. This data is generally never needed, even by advanced computer professionals and may be safely deleted. This option will remove these memory dumps.

Chkdsk File Fragments

Chkdsk (CheckDisk) is the utility windows uses to scan the hard disk for files errors. Sometimes it finds fragments of files left on your system. These are saved as .CHK files on your system drive. In most cases these files are never needed and may be safely deleted. Selecting this option will remove these files.

Windows Log Files

When you install a new program or piece of hardware Windows logs the changes to .LOG files in the Windows directory. In most cases these files will never be needed, even for advanced users. This option will safely delete these files.

Old Prefetch Data

In Windows XP a Prefetch file is generated each time an application is run. This helps Windows optimise the application the next time it is executed. Unfortunately these files are not deleted when the applications are removed. This option removes these files for programs that haven't been accessed in 14 days. (This process is very safe and Windows will recreate the files as necessary.)

IIS Log Files

IIS (Internet Information Server) is the service Windows uses to display web pages. This comes with most XP Pro and Windows 2000 installations and is generally only used by web developers or designers. Every time someone requests a page it gets logged to a text file. Unless the computer is a web server, these are generally not needed, and may be safely deleted. This option will safely delete these files.

Advanced

Menu Order Cache

The Start menu allows you to set a custom order to the programs listed, although there's no option to sort all folders by name. Selecting this option removes any custom ordering from the Start menu.

Tray Notifications Cache

In Windows XP the System Tray (the set of icons next to the clock in the bottom-right corner) orders and hides items automatically for you. Whilst this is useful, it records a list of every program that has been run from the tray. This option clears the list of previous programs and removes any custom display/hide options. (Warning: This won't have any affect until you manually restart the explorer process from the Task Manager.)

Window Size/Location Cache

Windows Explorer stores the view formatting and ordering settings for each folder on your system. After some time, this can contain a large amount of redundant data and may even slow down browsing for files on your system. Selecting this option will clear this data and reset the Windows Explorer display settings to their default option.

User Assist History

The start menu on Windows XP displays a list of the most recently run programs. Selecting this option will clear this list.