

Windows XP – Performance Tuning Guide



How to Increase the performance of your windows XP computer without spending a cent on new hardware or software.

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Introduction

Windows XP the latest incarnation of the dominant Microsoft Windows operating system stable is set to take its place as the most popular desktop operating system for home and business users.

Windows 98 will inevitably be withdrawn at some point, leaving XP the operating system of choice (by default)

With its roots based in the server operating system world, XP utilises an NT kernel and services like its big brothers Windows NT and Windows 2000. This provides a much more flexible and stable computing platform than previous Win9x desktop operating system offerings.

Windows has such a huge installed base, that windows operating systems have to ship with default settings that strike a balance between ease of use and performance. The good news is that with windows XP, there are plenty of “out of the box” settings that can be manipulated to streamline your system and improve performance. Some components that have been included are rarely if ever used. All the visual bells and whistles provide a nice warm & fuzzy interface, but can be dramatically “pruned” to deliver the performance you would expect of a modern operating system.

A lot of background niceties such as “file indexing” and “system restore” consume vast amounts of resources, yet unless you have the specific need to use them (or even know about them) the chances are, you are better off disabling them and enjoying the day to day increased performance.

This guide will take you step by step through the majority of performance enhancements that can be achieved by anyone from beginners to advanced users.

A word of caution however. While all the procedures in this guide have been performed and tested by our technicians, it does not guarantee that results may not vary from PC to PC. Some of the enhancements take place in areas such as the registry, which when corrupted can cause your computer to crash or fail to reboot.

All changes contained within this guide are performed at your own risk . Always make back ups of any data you cannot afford to lose prior to making radical changes to your system. Even though the changes contained within this guide have been fully tested, we do not accept liability for any loss or damage caused by following the steps contained within. So without further delay, let's get into it.

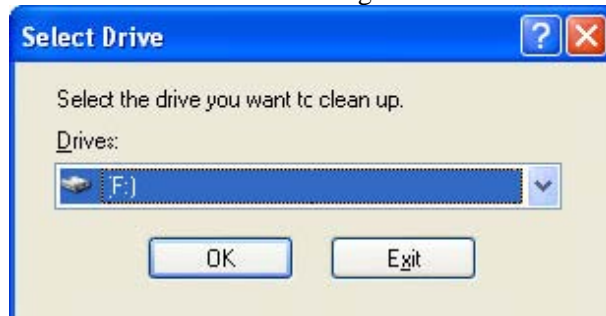
Chapter 1 -General Housekeeping

1.0 Disk clean up

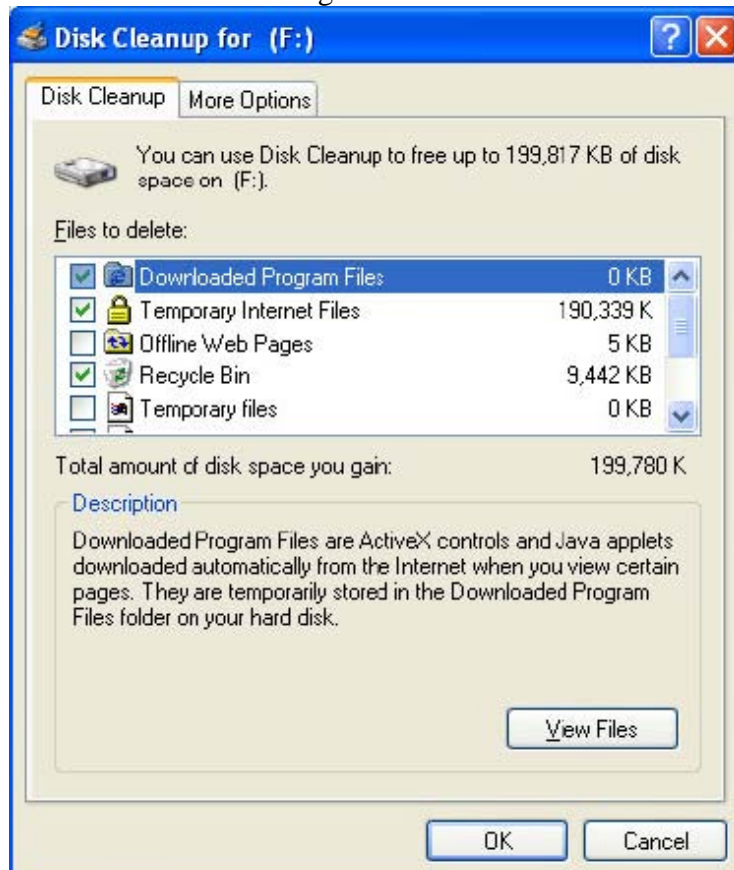
All versions of windows place data into temporary folders during program installation or operation. Often these files are not deleted and take up valuable disk space unnecessarily. An excessive number of files in the temporary directories will slow down day to day applications that use this location. Also files and pages viewed on the internet are also stored on your local hard disk drives for faster access should you want to view them a second time. All these files should be deleted on a regular basis.

- 1) click the START button
- 2) click - All programs
- 3) click - Accessories
- 4) click - System tools
- 5) click - Disk Cleanup

Select each hard disk – starting with the drive where windows was installed (Typically C:)



The system will then scan the selected drive and display a list of files that can be deleted. If for any reason you wish to retain any of the files selected, simply click on the checkbox to remove the tick. Clicking the OK button will clear all the files.



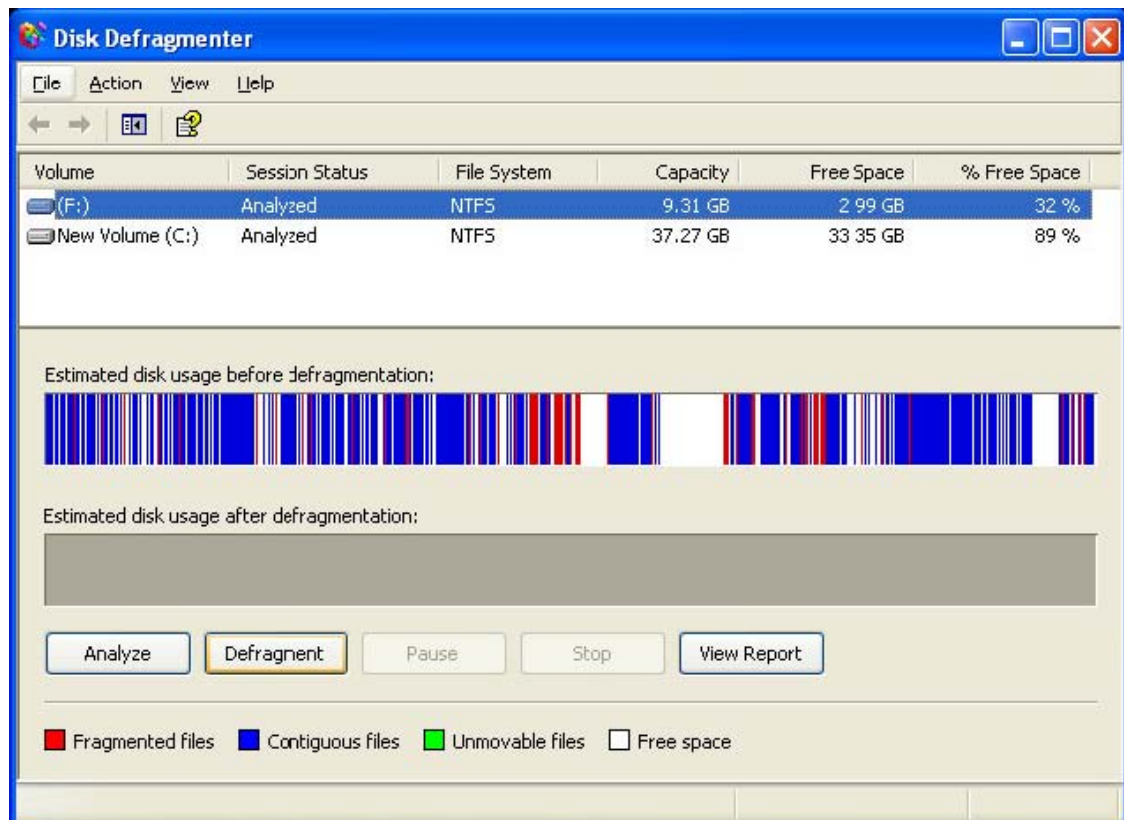
1.1 Disk defragmentation

The slowest component of all computers is usually the hard disk drive. The time it takes to access data generally determines the overall performance of most programs on your PC. When data gets written to your hard disk, windows finds an available chunk of free space for the data to reside.

This can cause data in one file to become scattered over several locations on the hard drive. The program will still operate correctly, but it takes much longer to retrieve the data needed. Windows has the ability to defragment the files, in other words, gather up all the data for each file and place it into a single location on the hard drive. This greatly improves the performance of the programs needing the data.

- 1) click - START button
- 2) click - All programs
- 3) click – Accessories
- 4) click - System tools
- 5) click - Disk Defragmenter

Select the disk drive to defragment & click the analyse button.



Windows XP will then perform an analysis and indicate if defragmentation is required.

You can select the defragment button at anytime.

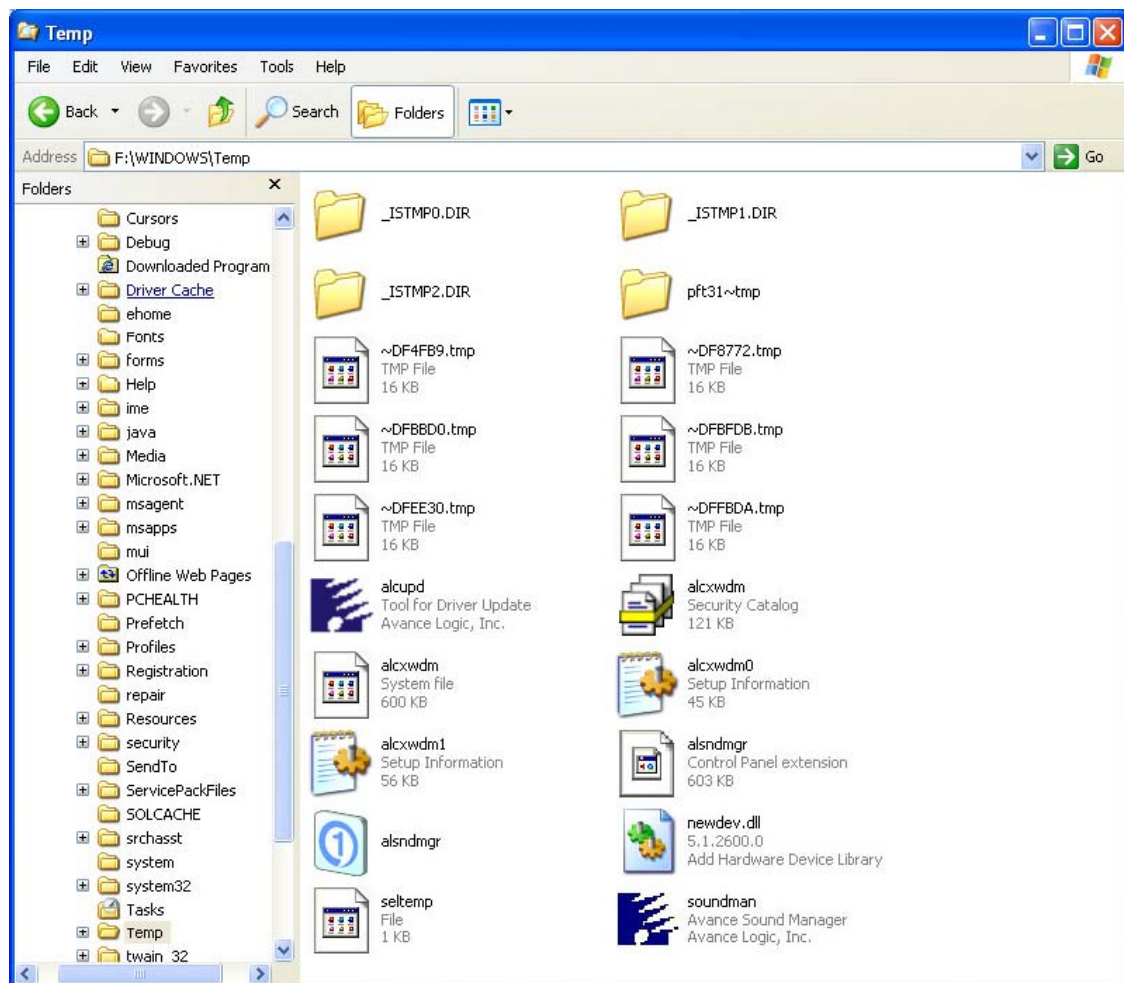
If your files are badly fragmented or you have a lot of data, this procedure could take some time.

Defragmenting your hard disks is recommend once every 2 months

1.2 Manually clearing the Windows\Temp directory

The disk clean up utility will clean up most files, but sometimes there are directories and files that are left behind. By definition, there should be nothing that is loaded into the Windows\Temp directory that cannot be deleted. Ensure that you have no programs running, close any programs running on your task bar eg; anti-virus, messenger, ICQ etc.

- 1) Right click the start button
- 2) Click explore
- 3) Navigate to your windows directory (Typically C:\windows) & open the TEMP directory



4) click – Edit, then – Select All Press the delete key on your keyboard & XP will ask you if you are sure.

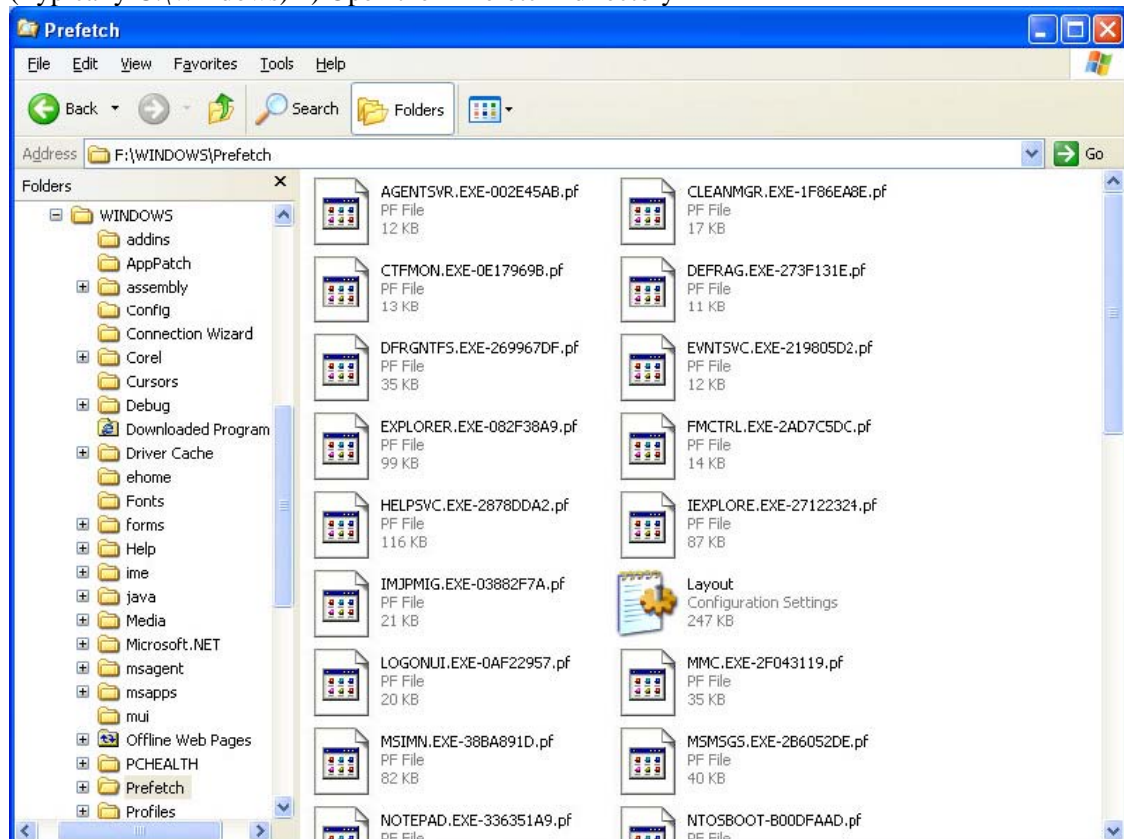


5) click YES. (Any files that are still in use will not delete.) Clearing the temp directory is recommended every month.

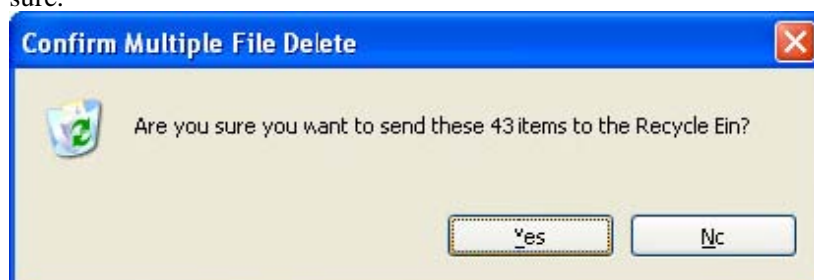
1.3 Clearing the windows Prefetch directory

Prefetch is a technique whereby information needed for XP boot up programs is stored on hard disk in the Windows\Prefetch directory. This data can build up over time & actually slow down the boot process. Clearing the prefetch directory manually, ensures XP only stores up to date information & that any data pertaining to programs you no longer use is not wasting disk space & slowing down your boot up.

1) Right click the START button 2) click - explore 3) Navigate to the windows directory (Typically C:\Windows) 4) Open the “Prefetch” directory



5) click – Edit , then “Select All” & press the “Delete” key 6) click YES when asked if you are sure.

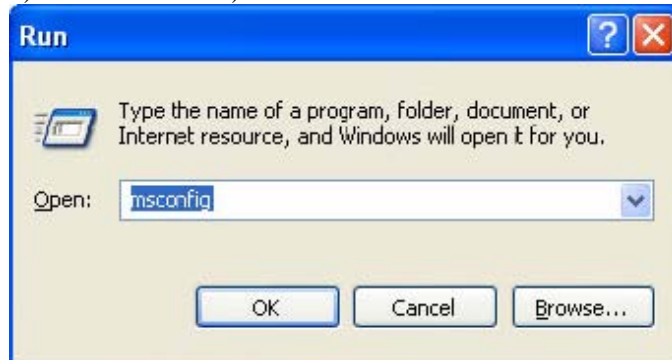


Reboot your system. Have another look at the Prefetch directory to see how much space you have recovered. If your prefetch directory contained a lot of large files, you should also notice a faster reboot.

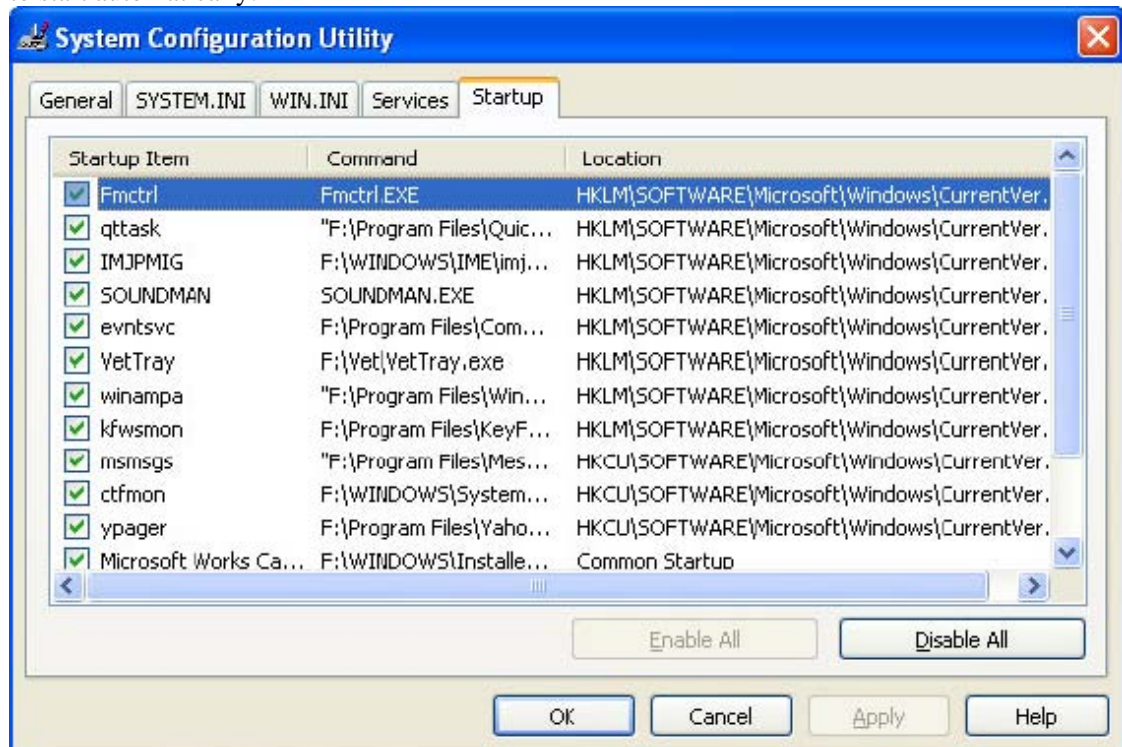
1.4 Review & stop unwanted programs from starting at boot up

Every time you install software, even for temporary evaluation, the installation has the potential to include the program for automatic start up the next time the computer is rebooted. It is recommended that you periodically review what is starting up & limit to only the programs you want. For instance, you may have loaded a program such as yahoo pager, but you only want to invoke it periodically not every time the computer boots.

1) click - START 2) click - RUN



3) type " msconfig" 4) select the "startup" tab Uncheck (untick) the applications you do not want to start automatically.



Don't worry, you are not deleting anything. If you change your mind, you can return to this screen and re-check (tick) the box.

1.5 Convert to NTFS file system

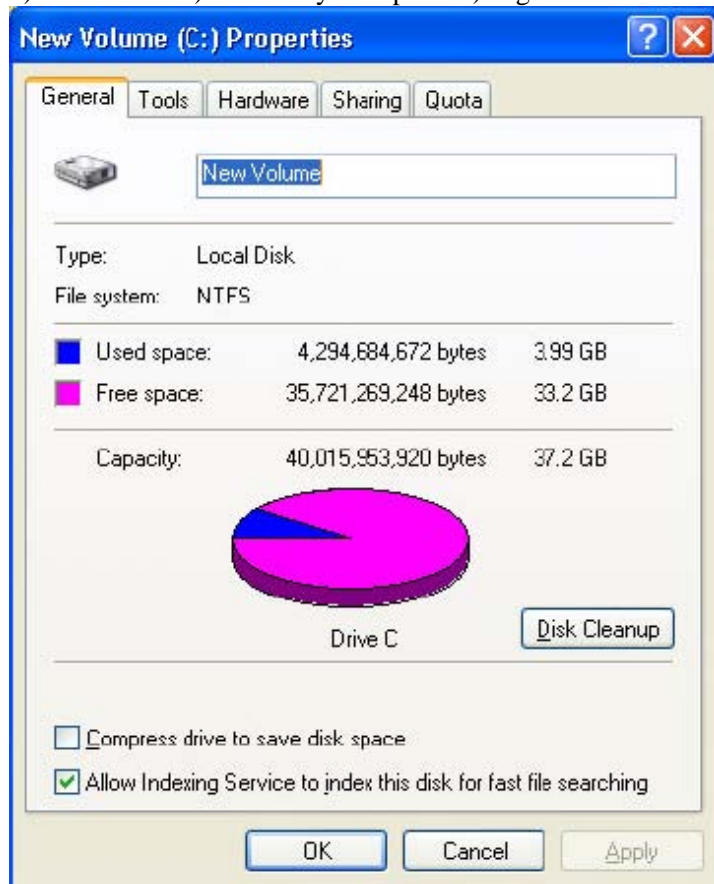
XP has a choice of FAT32 or NTFS file systems. FAT32 caters for access by older DOS style computers and places limitations on security regimes and file names. If you installed an upgrade version of XP, or chose FAT32 during installation, you may want to consider converting to NTFS.

This is a fairly radical step, but does provide better performance and more security to the XP file system. **** warning – make sure you back up your data – just in case ****

While choosing NTFS is best done during the installation of XP, converting from the FAT32 system to NTFS is possible after the fact.

To establish what file system you have now,

1) click - Start 2) click - My Computer 3) Right Click each hard drive (Eg: in this example C:)

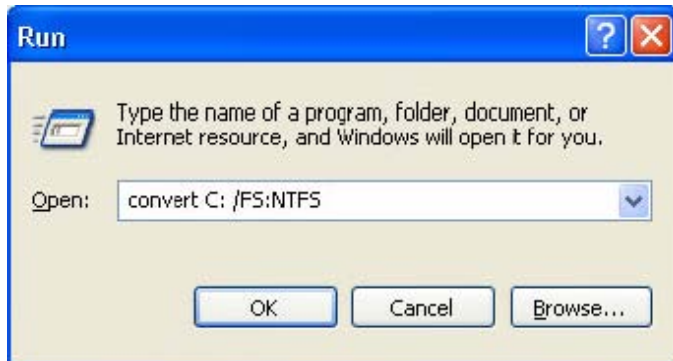


This will reveal what type of file system you have. In this example, the drive is NTFS.

Should the "File system" indicate FAT32 , consider doing the following

a) Close the drive properties

b) click - start c) Click - Run



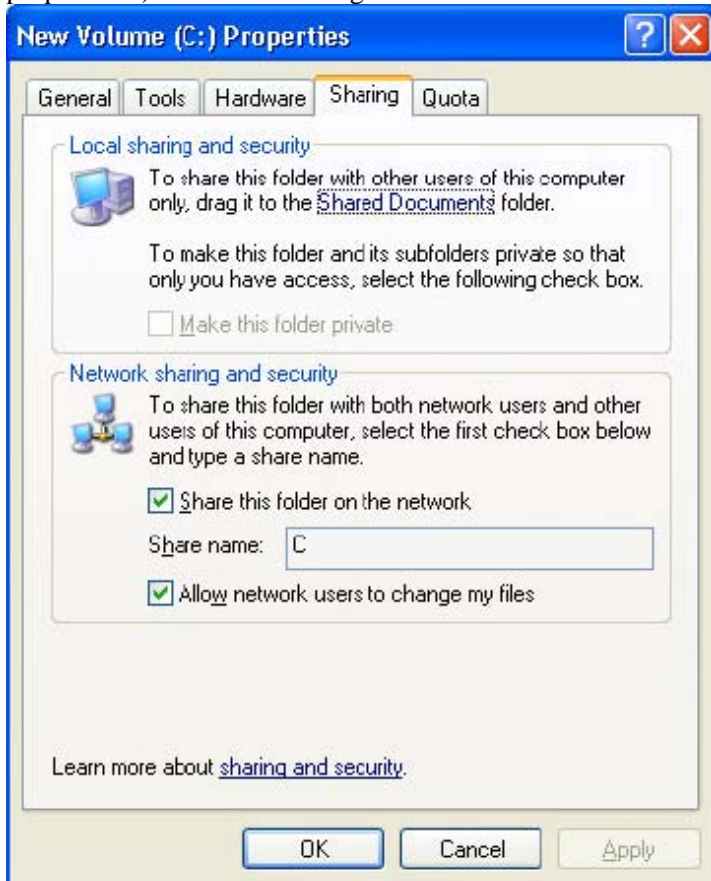
d) In the Open: box – Type `convert C: /FS:NTFS` and click the OK button (change C: for the drive letter you are converting)

This will take some time. While not providing as much speed as a disk originally formatted to NTFS (because of smaller file blocks), it will provide much better performance than FAT32

1.6 Disable file sharing if not required

If you do not participate in a network where other users require access to your hard drive, switch off file sharing.

1) click - start 2) click - My computer 3) Right click the required hard disk drive. 4) click - properties 5) click the “Sharing” tab



6) Un-check (untick) the 'Share this folder on the network'

1.7 Switch off automatic updates – (but check manually)

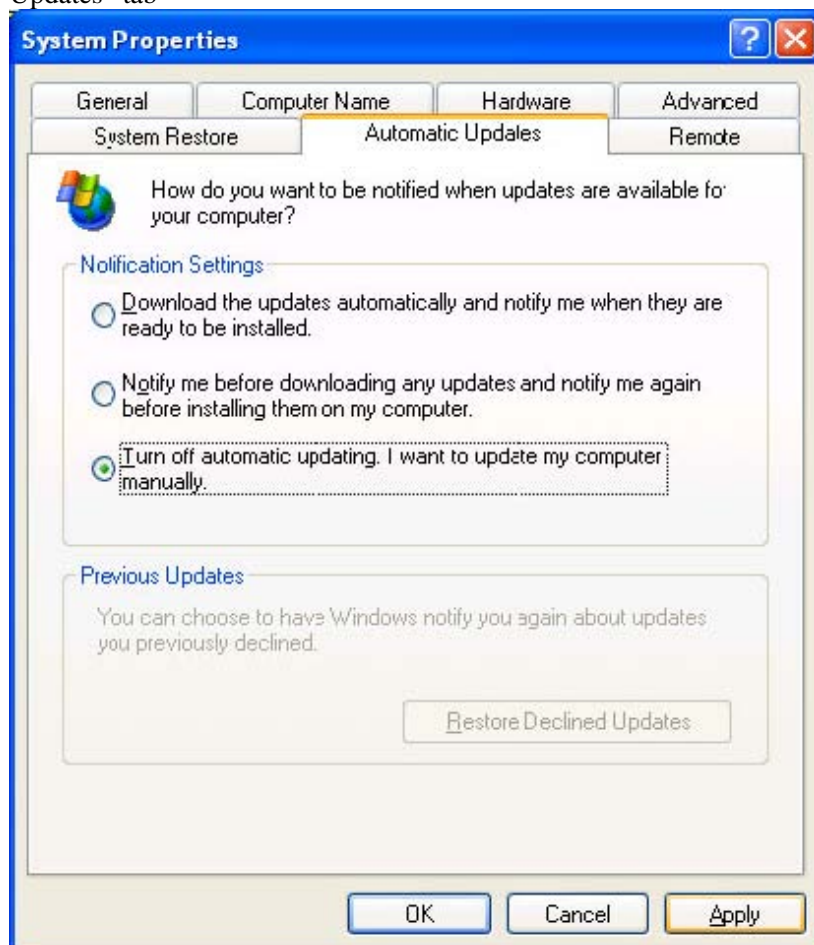
Checking for XP software updates automatically is a background task that periodically checks the Microsoft internet site for updated versions of drivers currently loaded on your PC.

It is a good idea to keep your system updated because newer versions of drivers usually have bug fixes and performance tuning benefits. However, letting the system do this automatically places a load on your resources and can slow down boot & internet connection times.

The best mix, is to disable the auto update, but do this manually every month or so.

To disable the auto update

1) click - Start 2) right click - My Computer 3) click - Properties 4) click the “Automatic Updates” tab



To manually perform the update: 1) Connect to the internet 2) Click Start > Help & Support Centre 3) Select the “Keep your computer up to date with Windows Update”

1.8 Stop Media Player checking for updates

If you are connected to the internet & launch Media Player, the program will take some time to communicate with Microsoft to check for updates.

It will also update & identify you to other internet sites (security/privacy issues ?)

To prevent this

- 1) Launch Media Player
- 2) Select Tools (at the top of the media player screen)
- 3) Select Options

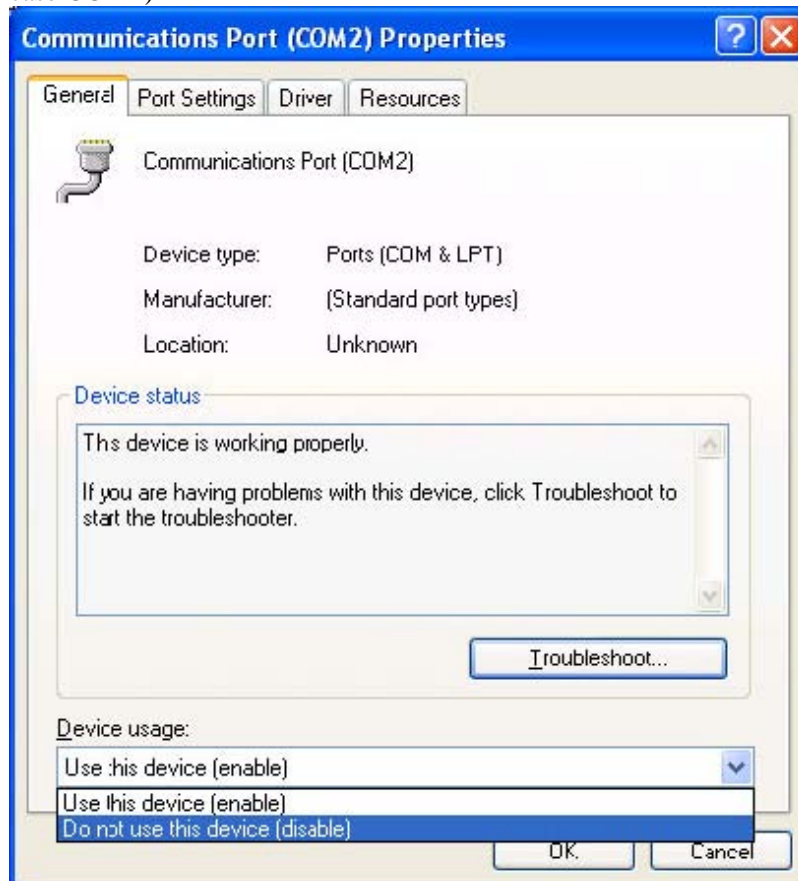


- 4) Un-check (untick) Download codecs automatically 5) Un-check (untick) Allow internet sites to uniquely identify your player 6) Un-check (untick) Acquire licences automatically

1.9 Disable un-used devices for faster boot

This is a performance enhancement that can cause a little confusion if you don't remember you have done it, but worth testing out anyway. Any devices that you are not likely to use, such as a spare serial port or internal 56k modem (if you use broadband) etc can be disabled to prevent XP from checking them at boot time & thus speeding up the process.

1) click - Start 2) right click - my computer 3) click - properties 4) click the "Hardware" tab 5) click the "Device Manager" button 6) double click the component you want to disable (in this case COM2)



7) In the Device Usage box, change to "Do not use this device (disable)"

You will need to remember you have done this, when in six months time you are trying to work out why the serial device you have just plugged in doesn't work.

1.10 Speed up web site connection

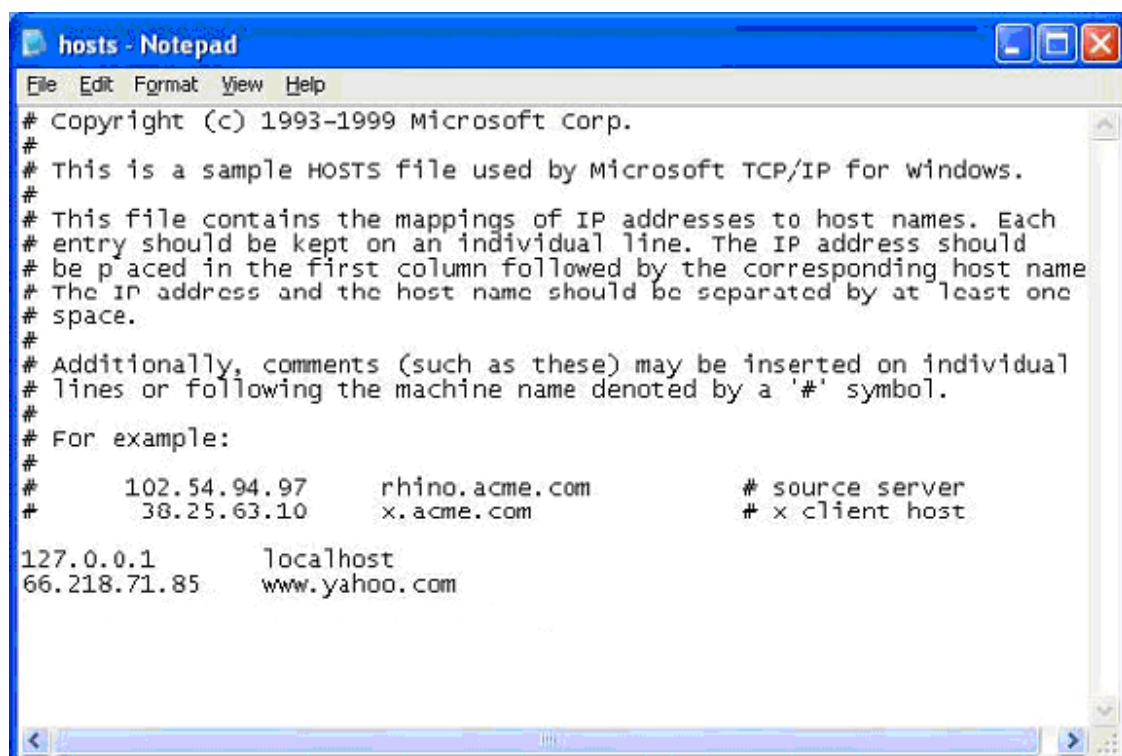
This is a really neat shortcut that can speed up connection to your favourite web sites.

When you type in the name of a web site such as www.yahoo.com your PC sends a request to your ISP's DNS (Domain name server) which returns the IP address of the web site you are looking for. The DNS server returns something like 66.218.71.85

You can cut out this DNS request & connect directly to the site of your choice by adding the ip address to your HOSTS file.

This is located in C:\Windows\System32\drivers\etc (C: being the disk XP is installed on)

Open this HOSTS file with notepad

A screenshot of a Notepad window titled 'hosts - Notepad'. The window shows the contents of the hosts file, which includes copyright information, instructions on how to use the file, and a list of IP addresses mapped to host names. The mappings include 127.0.0.1 to localhost and 66.218.71.85 to www.yahoo.com. There are also example mappings for rhino.acme.com and x.acme.com.

```
# Copyright (c) 1993-1999 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com           # source server
#       38.25.63.10       x.acme.com               # x client host
127.0.0.1       localhost
66.218.71.85    www.yahoo.com
```

In the lower half of the file, add in the IP address of the site you want to speed up connection to, followed by the URL name. Save the file.

If you don't know the IP address of the site you wish to connect to :

a) While connected to the internet, b) click start c) click run d) type - cmd which will give you a DOS style command line window e) type ping www.yahoo.com (or whatever site you want)

You should then get a message saying "reply from" revealing the site's IP address

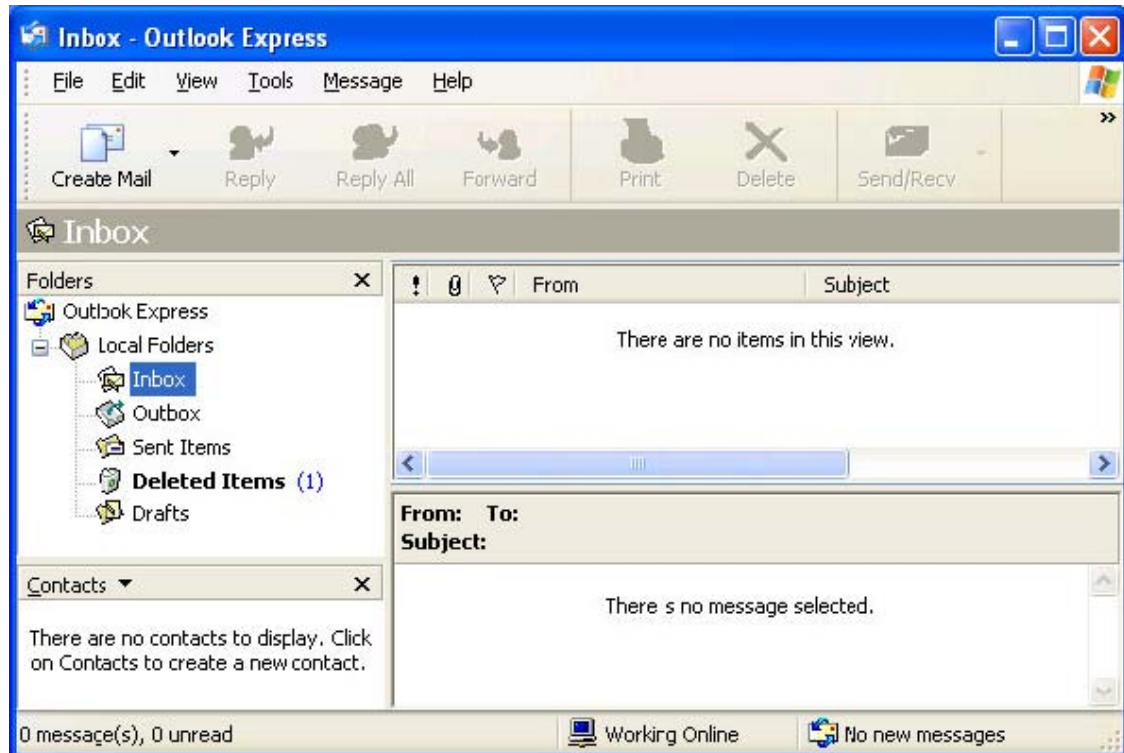
1.11 Compress Outlook Express Folders

When is a delete not a delete ? When its an outlook express email.

Now not specifically an XP issue, but given outlook express is shipped with XP, there is a fair chance you may be using it.

When you delete an email from outlook express, only the pointer to the email is deleted.

To actually delete it, you need to run the “compress folders” utility within outlook express.



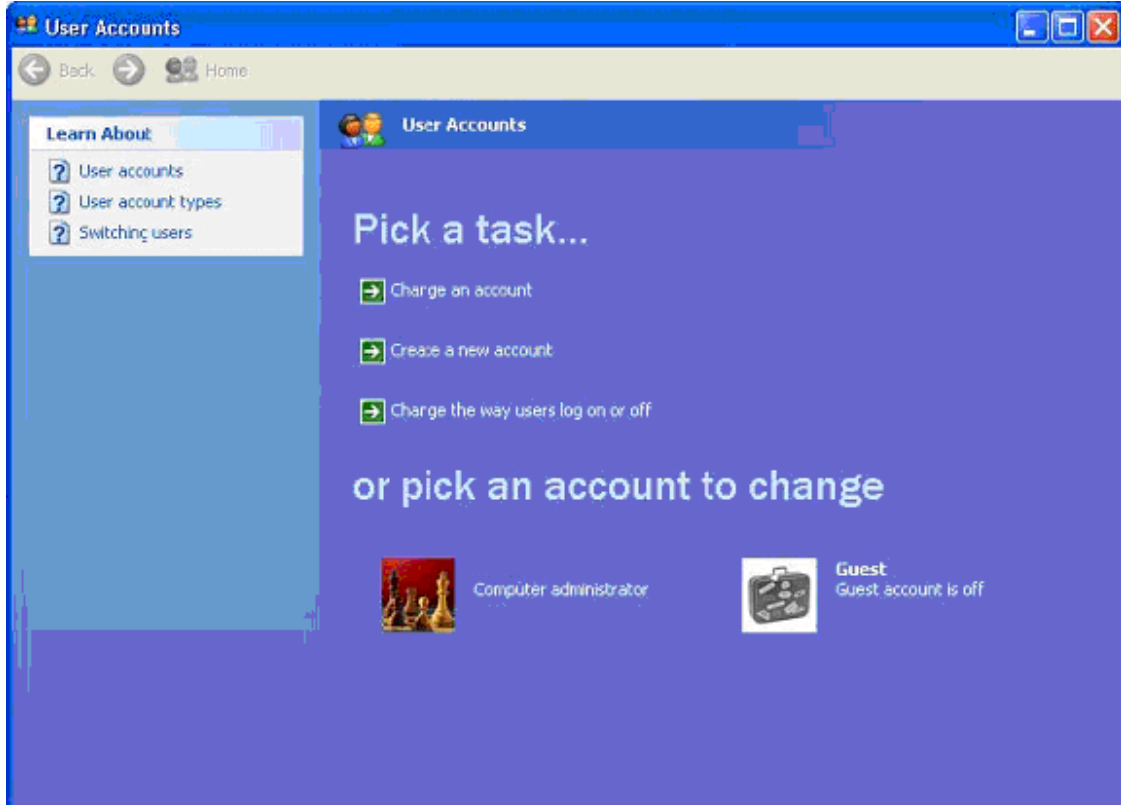
1) Click on the “File” option on the toolbar 2) Click on the “Folder” option 3) Click on “Compact All Folders” option

Chapter 2 -Settings

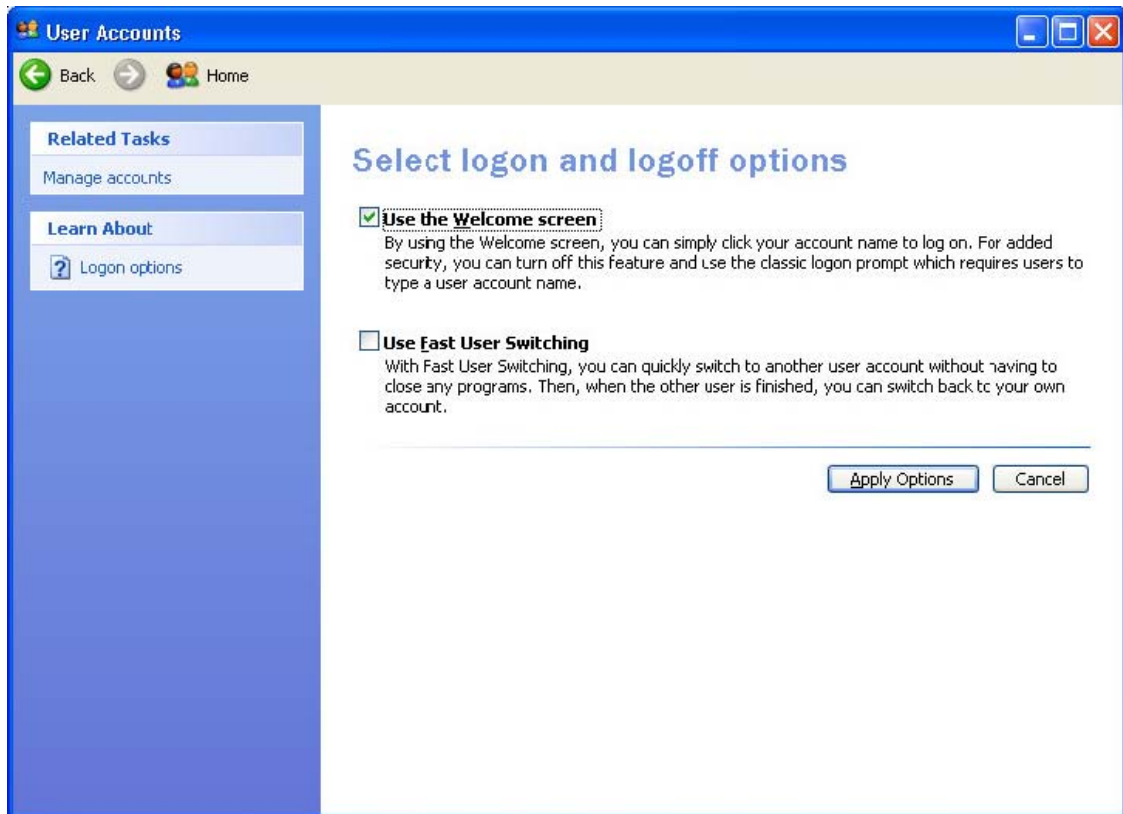
2.1 user accounts

This setting change makes logging & application performance a lot quicker for computers where you only need one user log on account. We recommend having only one account (the administrator). This removes the need for XP to track what each user is doing & storing the information in case you decide to switch users.

1) click START 2) click - Control Panel 3) click - User Accounts



4) click – change the way users log on or off 5) check (tick) Use the welcome screen 6) Uncheck (untick) Fast user switching If you do not have a password on your log on, you will automatically get logged into XP on the next reboot.



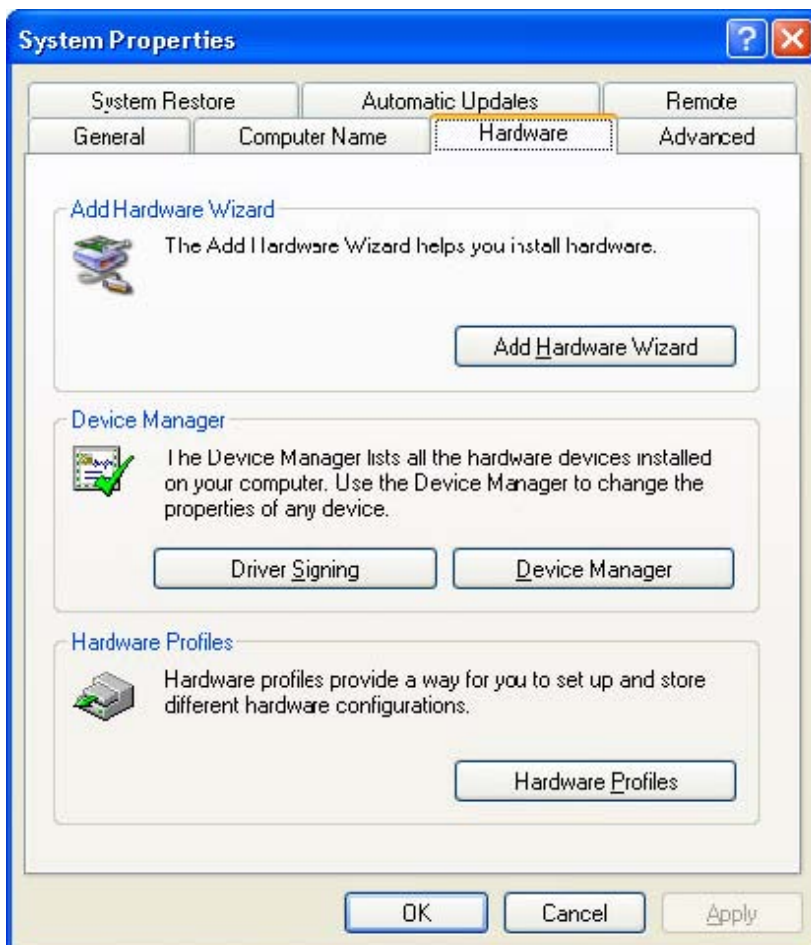
2.2 set IDE devices to dma mode

** applies to pc's using IDE devices (most non server class business PC's and home PC's)

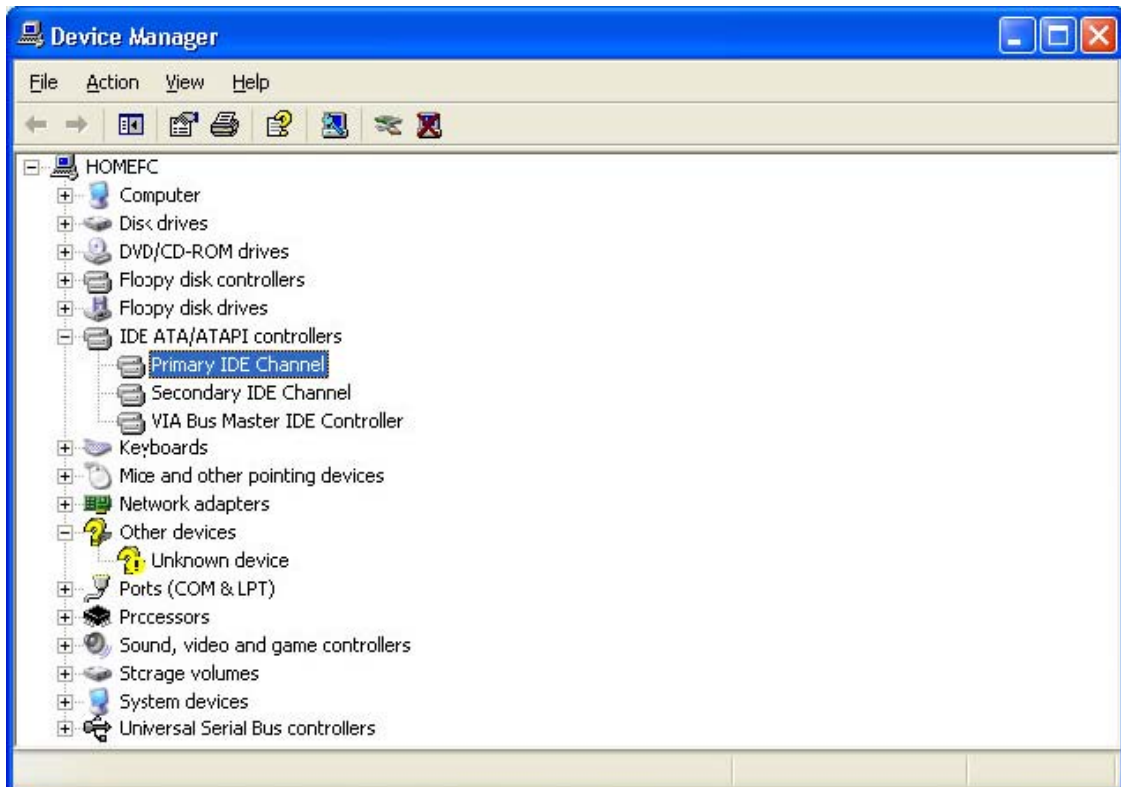
As default, slave hard drives & cd roms are set to PIO operating mode. The much faster DMA access mode may be supported by your hard drives & CD ROMs. This could provide a very large performance increase, especially if your hardware is reasonably new.

Selecting DMA access mode on drives that do not support it, should not cause any problems.

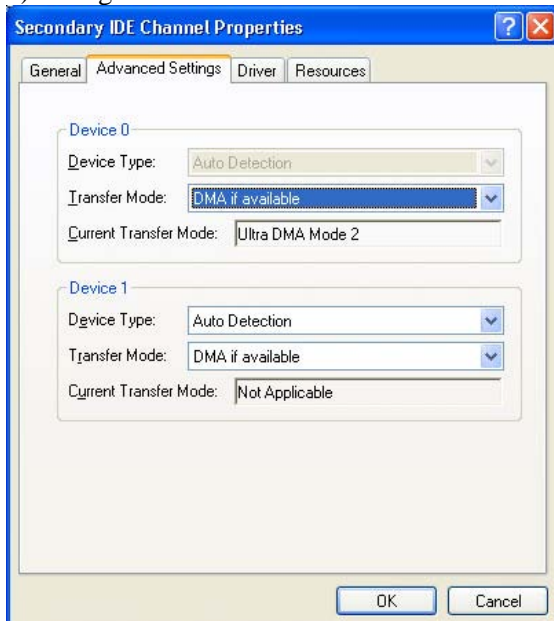
- 1) click START
- 2) right click "My Computer"
- 3) click "Properties"
- 4) click on the "Hardware" tab



- 5) click on the device manager button
- 6) under the IDE/ATAPI controllers, right click each primary and secondary IDE controllers and select the "properties" option.
- 7) Select the "advanced" tab of the properties dialog window



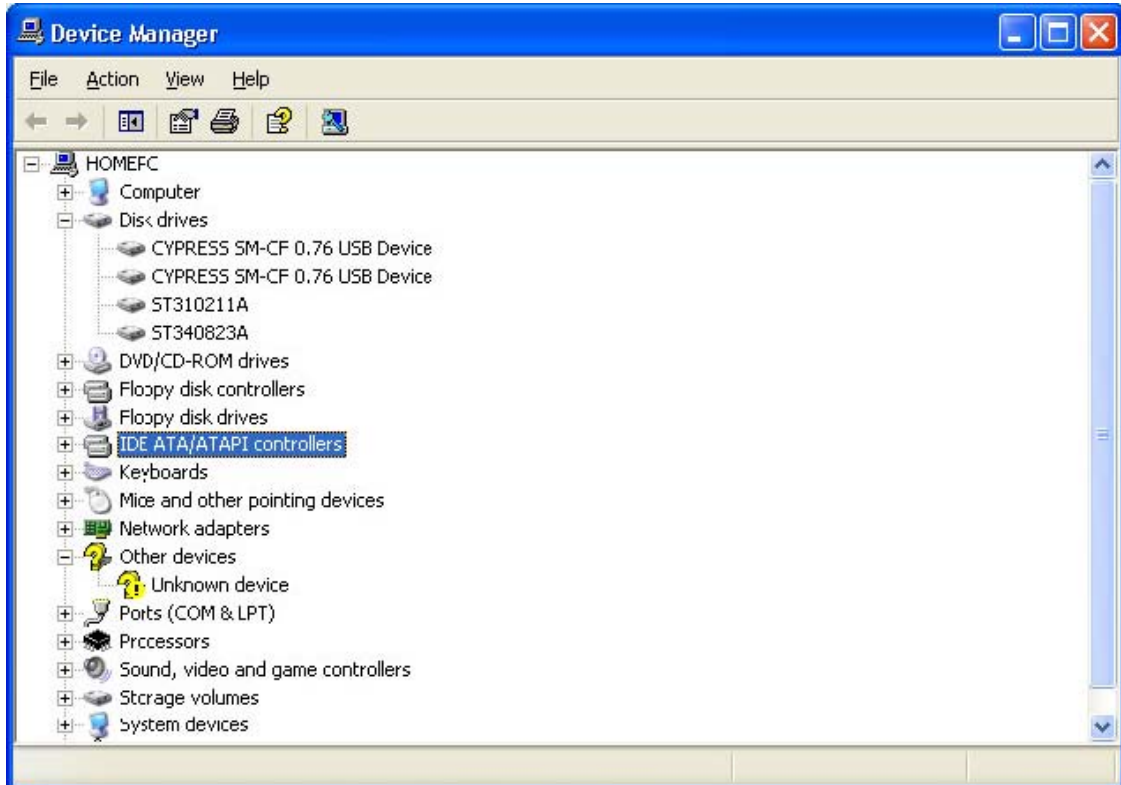
8) change the transfer mode to “DMA if available”



2.3 Optimise hard drive access

Check the disk access settings to ensure any disk caching capabilities are utilised.

- 1) click START
- 2) right click "My Computer"
- 3) click "Properties"
- 4) click on the "Hardware" tab
- 5) click on device manager, then open the "disk drives" section

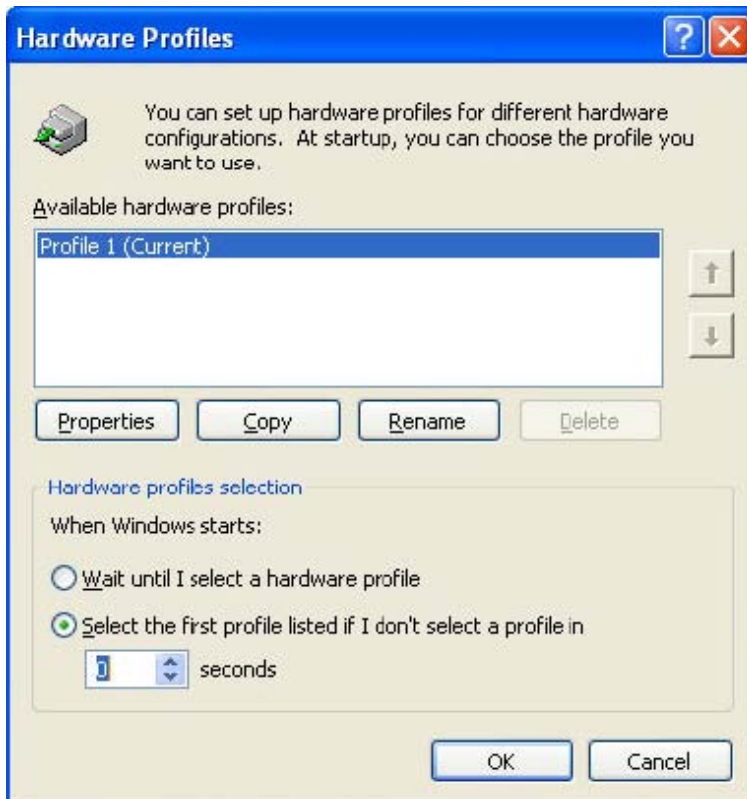


right click each hard disk, select "properties" and select the "policies" tab.

2.4 Hardware Profile selection at boot up

Typically most PC's only have one hardware profile. During boot up, windows will wait & give you the opportunity to make a selection. Changing the wait period from 30 seconds to 0, will gain you this time every time you reboot your PC.

- 1) click START
- 2) right click "My Computer"
- 3) click "Properties"
- 4) click on the "Hardware" tab
- 5) click "hardware profiles"



Select the radio button option to "Select the first profile listed if I don't select a profile in" and change the number of seconds to 0

2.5 Optimising folder options

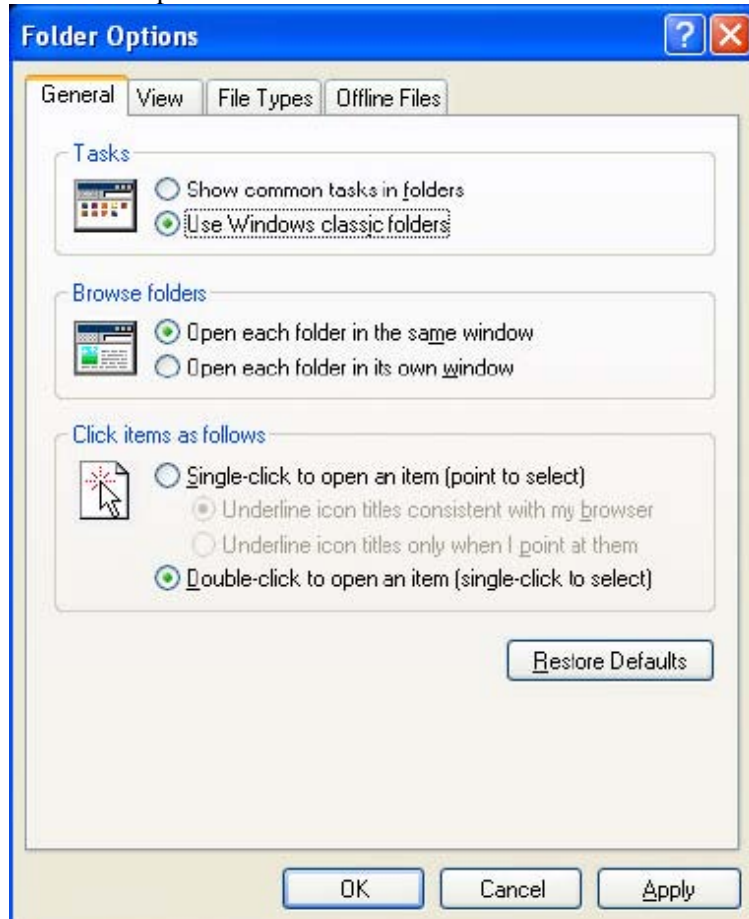
XP has a lot of display options relating to folders that make for a good looks, but are unnecessary. By making a few changes to the display option, you can increase screen handling performance.

You can set up your XP folder display to your own taste, but the following is recommended.

click START click CONTROL PANEL click "Folder Options" ... click "General" tab

Under the tasks – select the "use Windows classic folders" radio button Under Browse folders –

select the "Open each folder in the same window" View tab

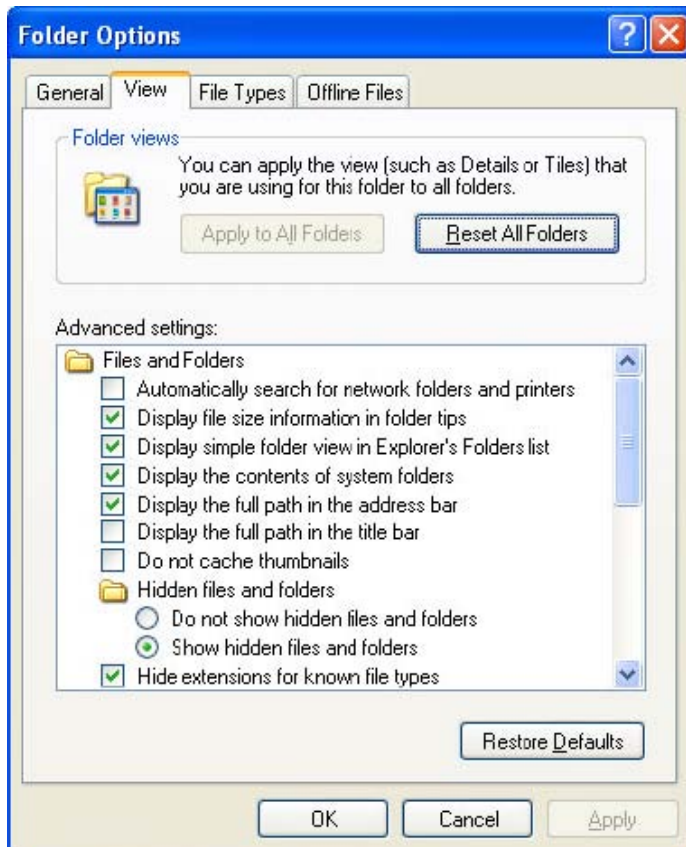


Description

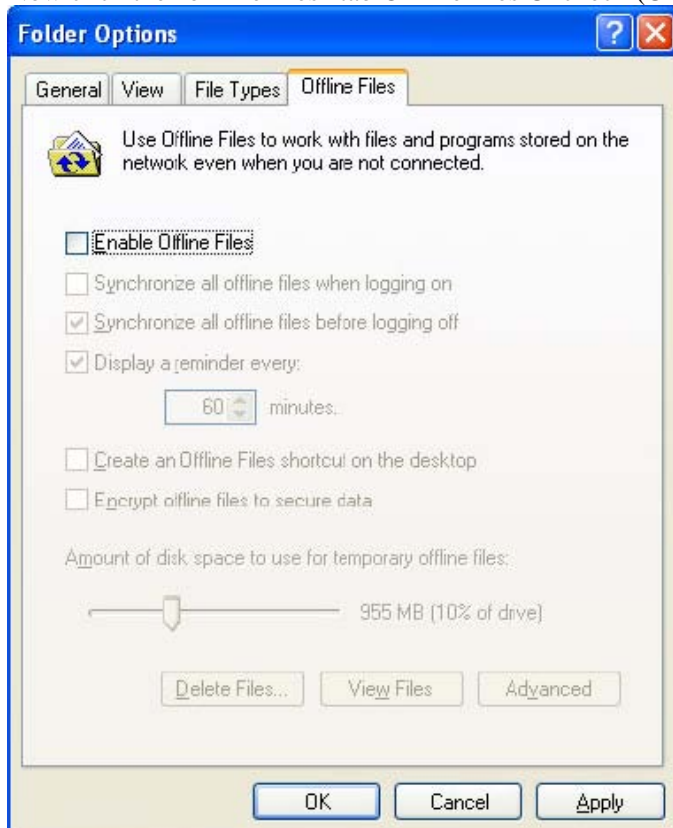
Automatically search for network folders and printers
Display file size information in folder tips
Display simple folder view in explorers folders list
Display the contents of system folders
Display the full path in the address bar
Display the full path in the title bar
Do not cache thumbnails
Hide extensions for known file types
Hide protected operating system files
Launch folder window in a separate process
Remember each folders view settings
Restore previous folder view at logon
Show control panel in my computer
Show encrypted or compressed ntfs files in colour
Show pop up description for folder and desktop items
Use simple file sharing

Check/tick

no
yes
yes
yes
yes
no
no
yes
yes
no
yes
no
no
yes
no
yes



Now click the “offline files” tab Offline files Uncheck (Untick) enable offline files.



2.6 File indexing and compression

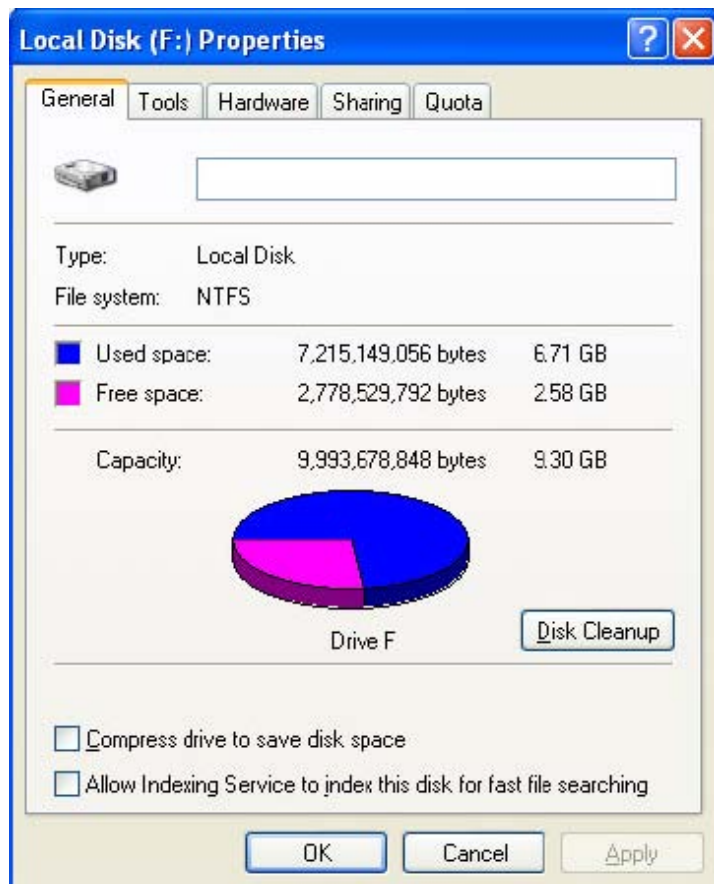
XP has built in file indexing, which records file information for use with the “search for files” program. This is designed to speed up searches.

With today’s hardware, the advantage of indexing is minimal, especially if you do not search for files very often. The overhead of indexing is however quite significant.

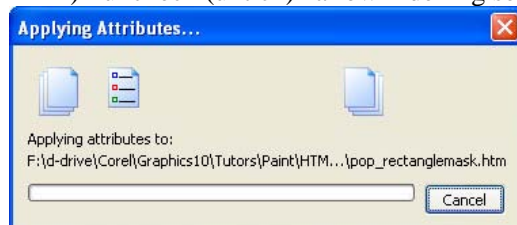
A good performance gain over the whole system can be gained by switching off indexing.

Compression will give you more space, but slows down file access and is rarely used given the low price of large capacity drives these days.

- 1) click START
- 2) click “my computer”
- 3) for each hard disk drive, right click the drive and select “properties”



- 2) uncheck (untick) “allow indexing service to index this disk for fast file searching”



- 5) Click “apply”, which will apply the new attributes to every file on the selected drive. This could take a little while depending on the number of files on the drive.

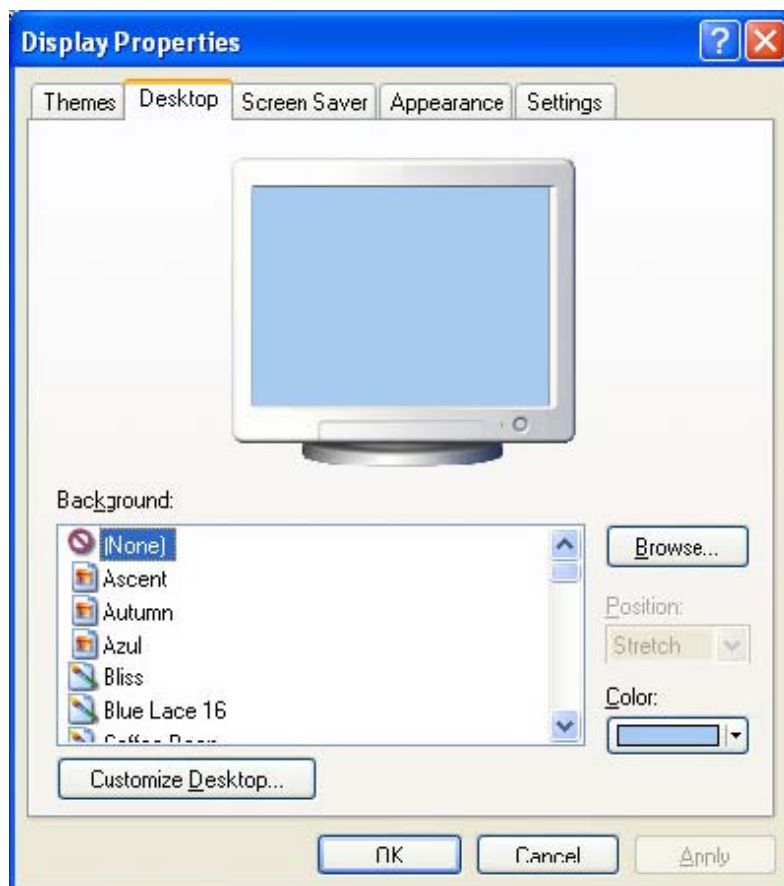
2.7 Display and appearance

There are several settings that can be changed to increase the overall speed of display and the amount of memory consumed by the display settings. This may not make for the best looking desktop, but the more bells and whistles you have, the slower your system will be.

Wall Paper. All background wallpapers consume memory and slow down display. The best option is to not have a wallpaper, just select the colour you wish to display. If you **MUST** have a wallpaper, then choose the smallest graphics file you can find.

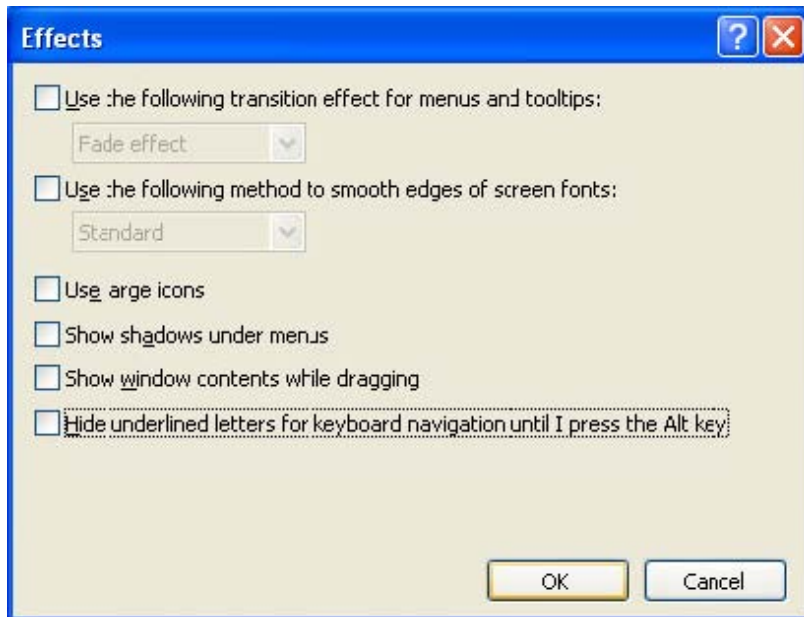
To access the display properties :

- 1) click – START
- 2) click - control panel
- 3) click - “display”
- 4) On the “Desktop” tab, change the background to “none” You can select a colour that best highlights your desktop icons.



The appearance effects, such as shadowing mouse pointers and fading menus also look pretty, but serve no practical purpose & consume resources.

- 5) On the effects “appearance” tab of the display properties, click the “Effects” button.
- 6) Uncheck (untick) every option on this menu.

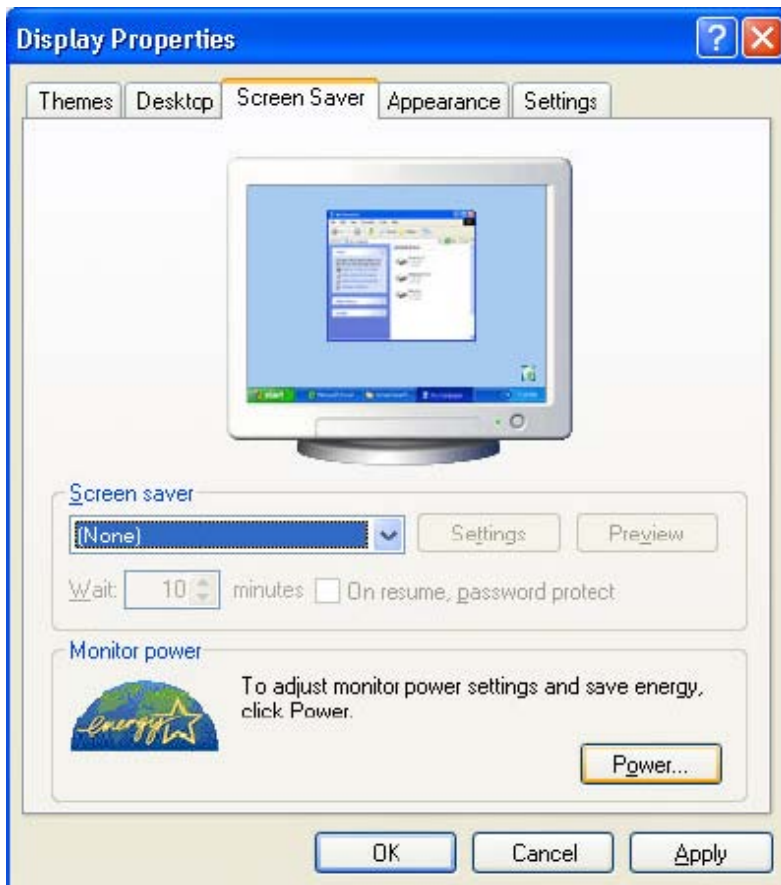


2.8 Disable screen saver

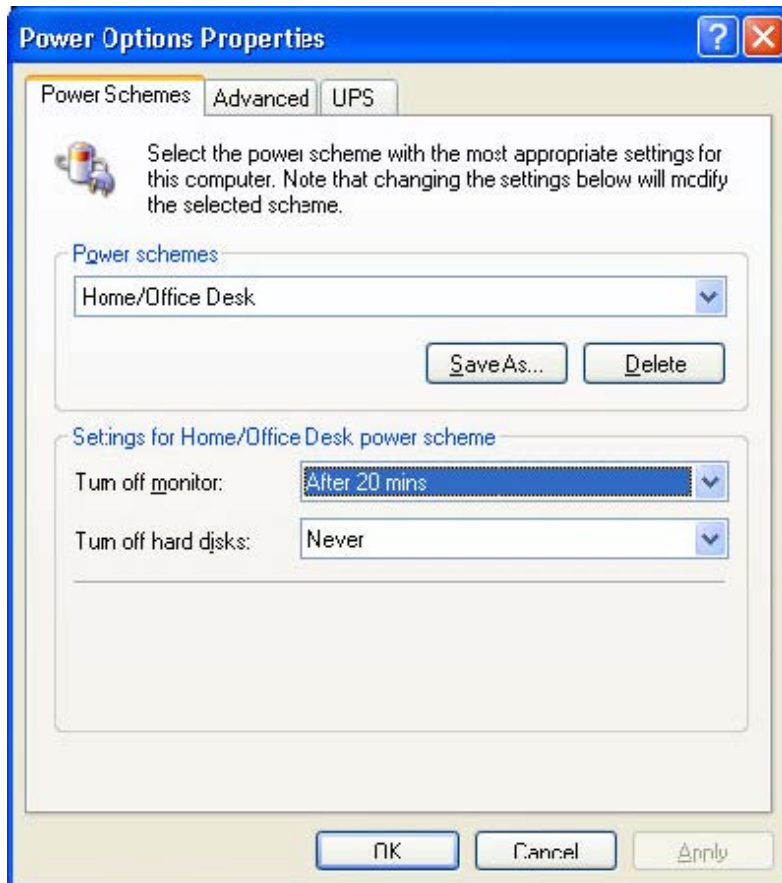
Most modern monitors have power saving features that switches off the monitor after prolonged periods of inactivity. This makes the need for a screen saver obsolete. Screensavers consume resources. There is always a process counting away in the background etc etc.

If your monitor supports power saving, and you can live without the latest “superstar” pictures rolling on & off your screen,

- 1) click - start
- 2) click - “control panel”
- 3) click - “Display”
- 4) click the “Screen saver” tab



- 5) change the screen saver to (None)
- 6) click the “Power” button



7) set the "Turn monitor off" to your required delay period.

2.9 Disable system sounds

Sounds associated with system operations or events (such as shutting down) are loaded into memory. The more associated sounds you have, the less memory you will have available subsequently affecting performance.

Disable as many sounds as you can live with

- 1) click - START
- 2) click - "control panel"
- 3) click - "sounds and audio devices"
- 4) click - "sounds"



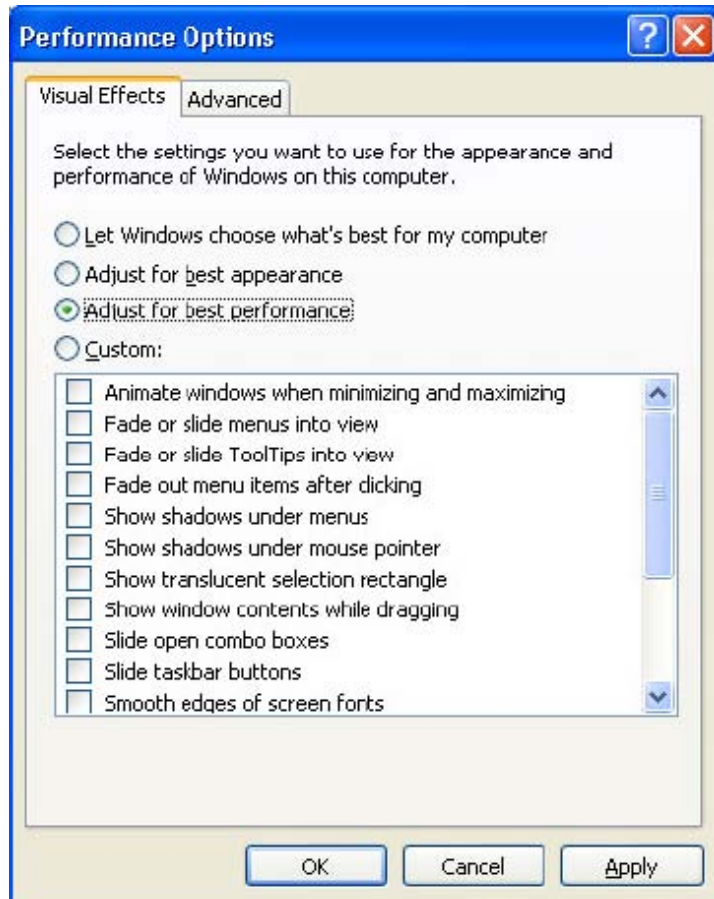
5) For each item in the program events box that you can live without a sound, change the value in the sounds box to "None"

6) Once finished click the 'save as' button and type a filename to save your new sound scheme, eg mysounds

2.10 Adjust display settings for best performance

You can balance the resources used for display in favour of performance by :

- 1) click - START
- 2) click - “control panel”
- 3) double click - “System”
- 4) click - the “advanced” tab
- 5) click - the “performance” button



6) click the “adjust for best performance” radio button, which will uncheck (untick) everything.

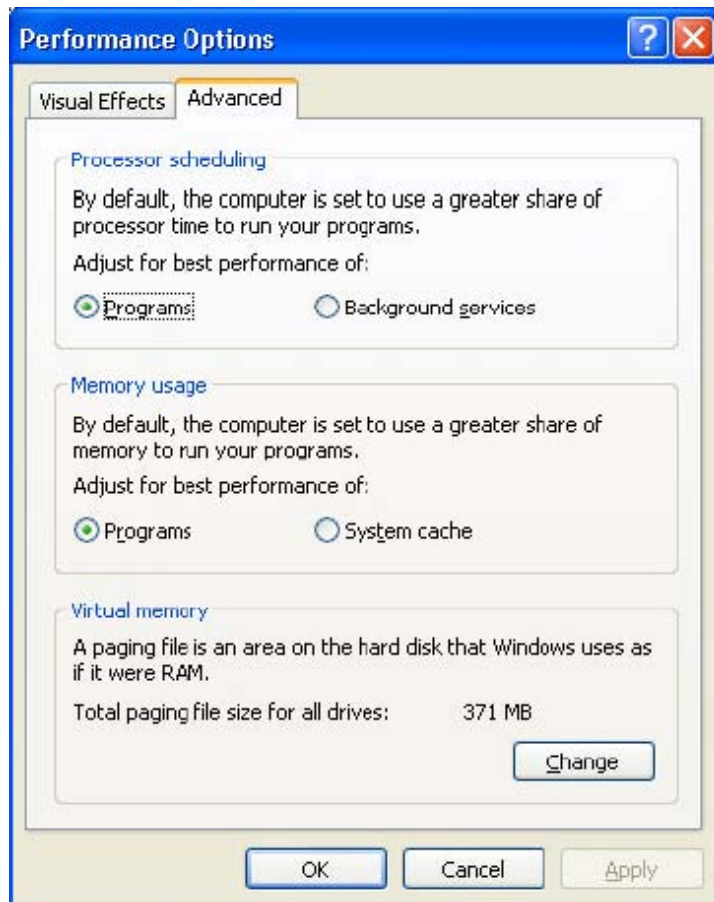
7) scroll down to the “Use visual styles on windows and buttons” and re-check (retick) this option which will change the radio button to “custom”, then click “apply”

2.11 Virtual memory settings

As a default, windows XP dynamically handles the virtual memory (or hard disk swap space) that is used to temporarily store information not currently being used by the RAM .

There are overheads and performance issues related to letting windows XP manage the swap space.

- 1) Click - START
- 2) Click - “control panel”
- 3) Double Click - “system”
- 4) Click - the “advanced” tab
- 5) Click - the performance button



- 6) Click change, select the hard drive where windows is installed and set the virtual memory size between 1.5 and 2.5 times your physical ram size.

Virtual Memory [?] [X]

Drive [Volume Label]	Paging File Size (MB)
C: [New Volume]	
E:	
F:	496 - 620
H:	

Paging file size for selected drive

Drive: F:
Space available: 3034 MB

☒ Custom size:
Initial size (MB):
Maximum size (MB):

☐ System managed size
☐ No paging file

Total paging file size for all drives

Minimum allowed: 2 MB
Recommended: 370 MB
Currently allocated: 867 MB

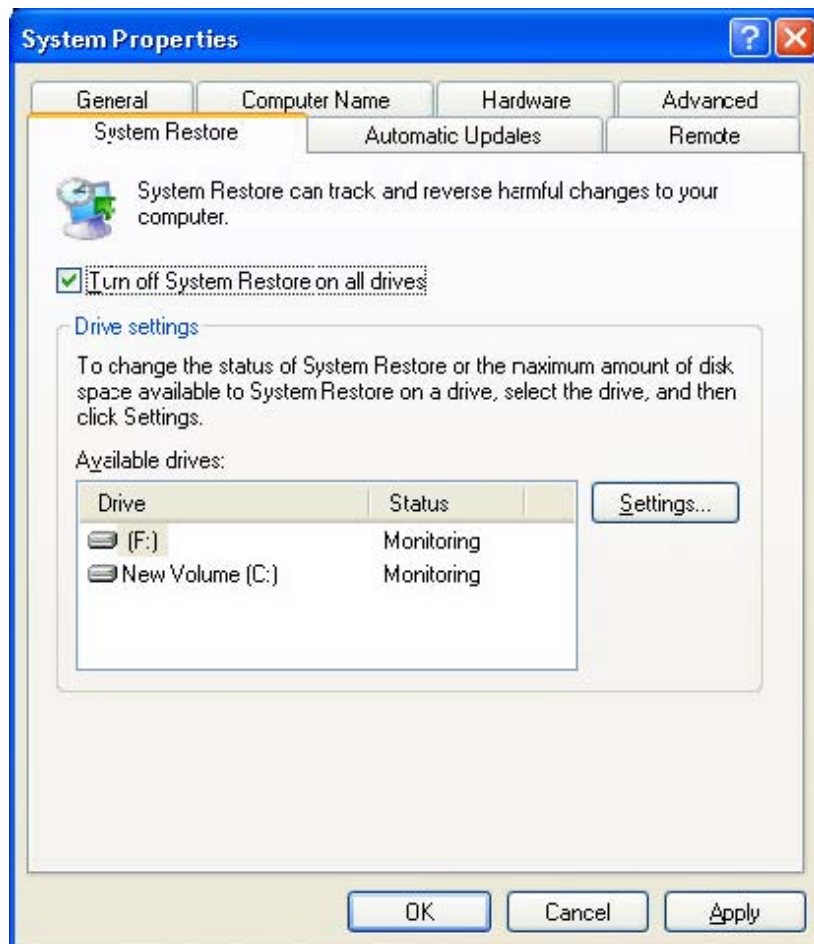
2.12 System restore option

XP has the ability to restore back to a nominated point. This function is generally way beyond the requirements of the average home user and takes up a lot of space keeping track of installed software and configuration changes. Unless you really need this function, it is best to disable it.

Restore points are established when you do dramatic things like installing windows updates, new drivers, new equipment etc. These functions are slowed down as XP writes away copies of your registry files, user profiles & other important files to recover should the installation crash.

If you are working with potentially unstable software (developing or beta testing) system restore is a good idea, but for 99% of typical computer users it is best to switch it off.

- 1) click - START
- 2) click - "control panel"
- 3) double click - "system"
- 4) click - the "system restore" tab



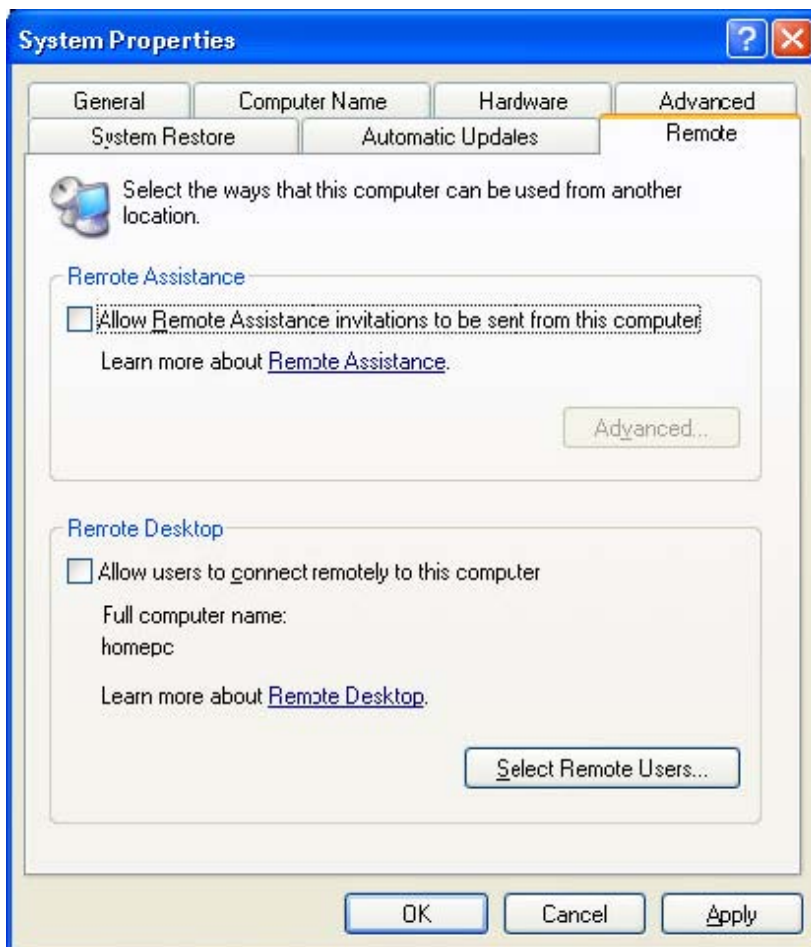
check (tick) the "turn off system restore on all drives" then click "apply"

2.13 Remote access options

XP will monitor and gather information for transmission to third party support organisations. If you have a driver or program crash, xp will gather information from your system to potentially assisting diagnosing the problem (ie transmit the details of software & equipment installed on your PC to Microsoft).

There are overheads and potential security & privacy issues that make this feature worth switching off. If you are experiencing a problem and wish to source external support, you can always switch it back on.

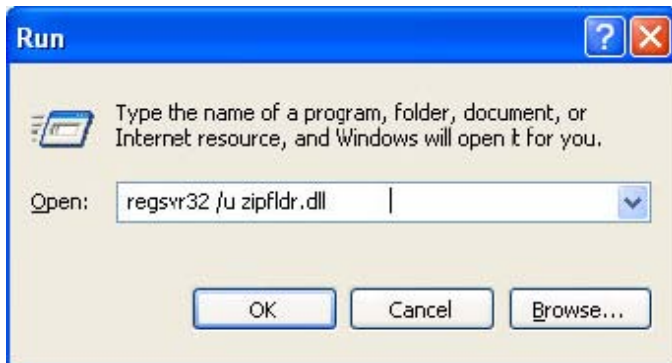
- 1) click - START
- 2) click - "control panel"
- 3) double click - "system"
- 4) click - the "remote" tab



2.14 Stop Zip files being viewed as folders

XP has a feature whereby ZIP files by default are viewed as folders. This takes up valuable processor & memory, as every folder list displayed is interrogated to see if it is a zip archive. The easiest way to prevent this is to unregister the zip folder dynamic link library (zipfldr.dll). To do this

- 1) click - Start
- 2) click – Run
- 3) type `regsvr32 /u zipfldr.dll`



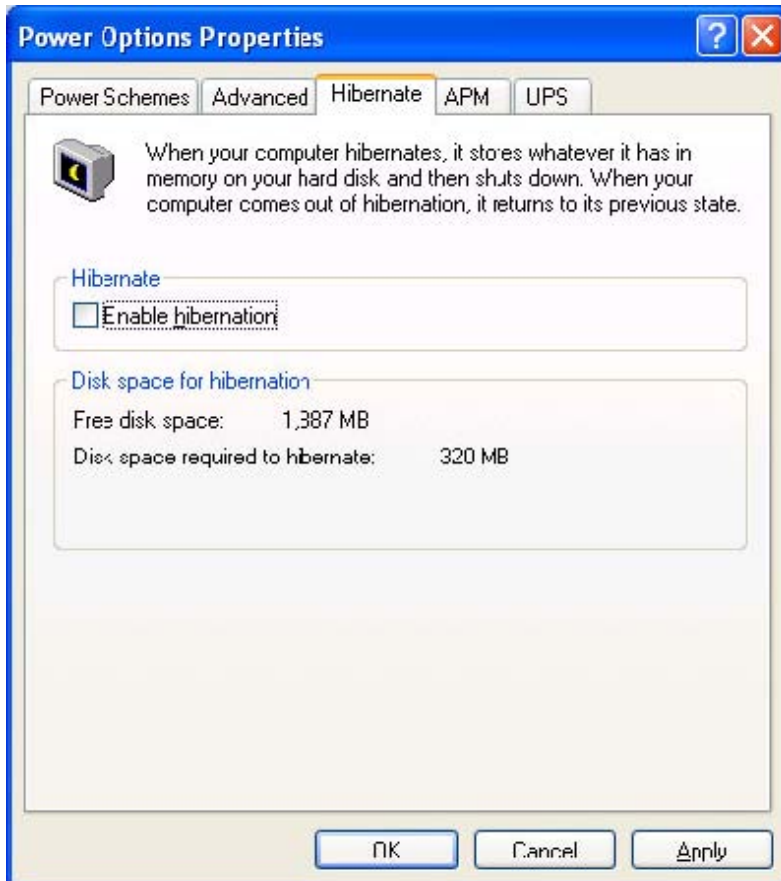
Zip files will now be displayed as files & not folders & your resources used to process the display of folders returned to you.

2.15 Hibernation – Disable it

Hibernation is a facility to place your PC into suspended animation. When the computer is placed into hibernation, the entire contents of RAM are stored on your hard drive. When switched back on, the PC returns to exactly the point it was at when hibernation was invoked. Neat but very rarely used.

The downside, is that disk space equal to your ram is reserved. To get the space back

- 1) click – Start
- 2) click – Control Panel
- 3) click – Power Options
- 4) click – the hibernate tab



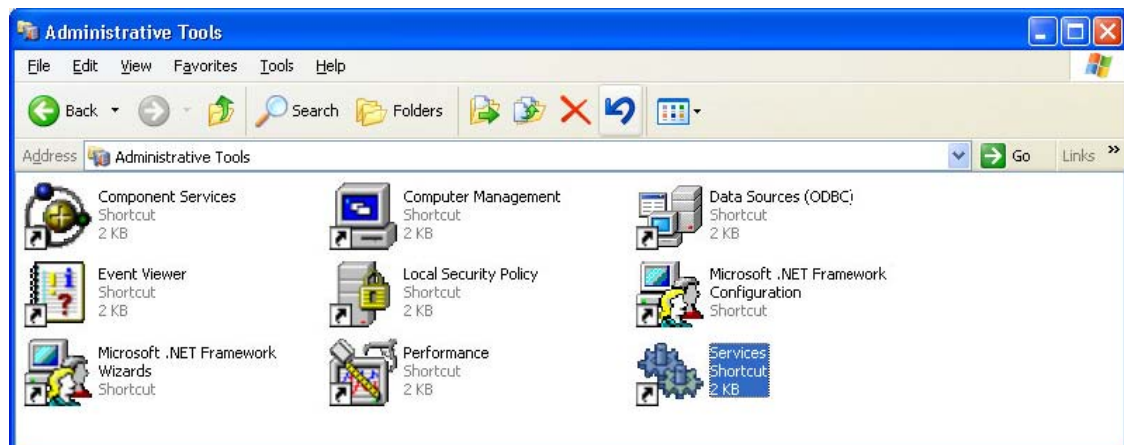
- 5) Un-check (untick) the enable hibernation check box. 6) click – the apply button

Chapter 3 – System Services

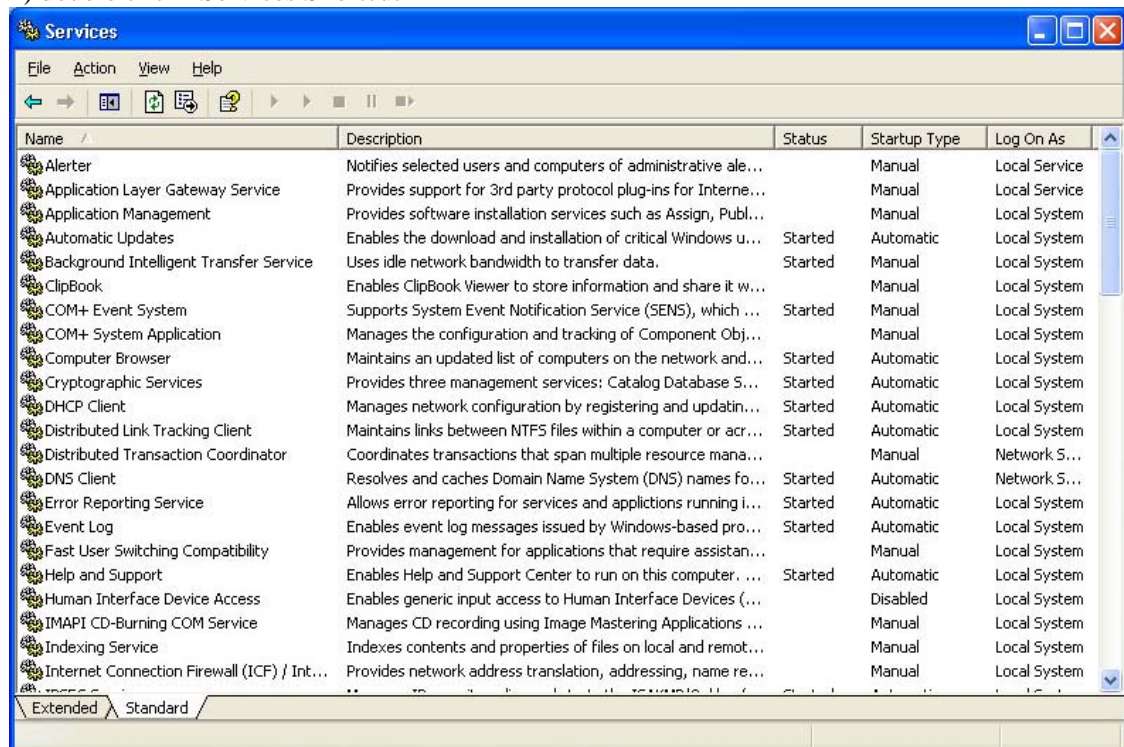
A feature familiar to windows NT users & now utilised in windows XP are the Services. These are essentially background tasks & programs that are automatically installed & started. Some services are essential to the operation of XP, while some services support components & tasks that you may not have or may never use. It is possible to switch off the components you don't need to regain resources, without affecting the things you do use.

To access the services :

- 1) click - Start
- 2) click - “Control panel”
- 3) double click - “Administrative Tools”



- 4) double click “Services Shortcut”



Each service can be set to
Automatic (Loads and starts at boot up)
Manual (Loads but doesn't start)
Disable (Does not load or start)

The best strategy is to leave the essential services as automatic, but change any services that you do not believe are required to manual.

If your system continues to function correctly (eg you get no "this service isn't started" errors) then you can try disabling the services (to free memory & speed up boot time)

To change the setting on a service,

- a) double click the service name.
- b) Change the 'startup type' to your required selection.



- c) Click the "Apply" button.

Services that can be safely disabled

Automatic updates	Prompts for automatic download of XP updates
Clipboard	Allows remote computers to access clipboard data
Error reporting service	Prompts to transmit errors to remote support
Fast user switching compatibility	Multi user profile & switching
Help & Support	Tracks errors & gets info for remote support
Human device interface access	Hot key support on special keyboards etc
IMAPI CD burning COM service	(if you use 3 rd party burning software – nero etc)

Indexing service	Indexing of filenames & properties for advanced
Search	
IPSEC Services	Manages the IP security policy
Netmeeting remote desktop sharing	Enables remote desktop access via netmeeting
Network dde	Dynamic data exchange to other PC applications
Network dde dsrm	Manages dde network shares
Performance logs & alerts	Collects performance data
Portable Media serial number	Gets serial number of music devices connected
Remote desktop help session mgr	Manages remote support access to this PC
Remote registry	Enables remote users to modify your registry
Routing & remote access	Enables remote PCs to dial into this PC
Secondary logon	Allows starting of programs under false credentials
Security accounts manager	Stores security info for local user accounts
Smart Card	Manages access to smart cards read by this computer
Smart card helper	Supports non plug & play smart card readers
System restore helper	Performs system restore functions
TCP/IP netbios helper	enables netbios network over tcp/ip support
Telnet	Allows remote telnet connection to/from this PC
Uninterruptible Power Supply	Interacts with & manages a UPS connected to this
PC	
Volume shadow copy	Manages shadow copy feature of backup utility
Webclient	allows this PC to create & modify internet based
files	
Wireless zero configuration	Sets up 802.11 bases wireless network
WMI Performance adapter	Provides library info from WMI providers

Services to leave automatic

Cryptographic services	key and security certificate management
DHCP client	manages IP addresses and computer names
DNS client	Resolves domain names
Event log	stores events and errors
Plug & play	detects new devices, usb devices etc
Protected storage	management & security of personal keys etc
Remote Procedure Call	Endpoint Mapper (programs interacting)
System Event Notification	tracks events & notifies users
Task Scheduler	Launches scheduled tasks
Themes	Provides theme management (save your fast
desktop)	
Windows Audio	Manages Audio
Windows management	
instrumentation	Needed by most windows programs to talk to XP
Windows Time	Date/Time synchronisation

Services to set to manual

Anything else not mentioned above, could possibly be set to manual. A little common sense & experimentation should enable you to get a feel for what is needed and what is not. If you are unsure about an item, read the description and look at the dependencies. You can also check the Microsoft web site for full details on services.

Chapter 4 – Group Policy Editor (Only available on XP Professional)

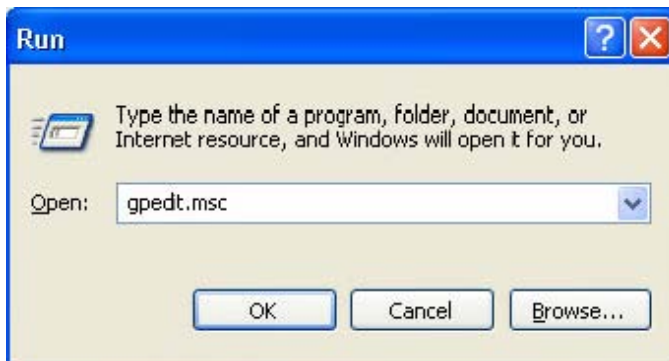
The group policy editor is a computer/user management tool that allows the tailoring of settings to individual users, or across the entire PC.

The Policy editor has a tree like folder selection box with two main branches.

- a) Computer Configuration (affects all users)
- b) User Configuration (affects current user only)

the group policy editor is most easily reached by :

- 1) click - start
- 2) click - Run



- 3) type gpedit.msc and click the OK button



By clicking on the + & - icons in the directory tree in the left hand window, you can navigate through the available settings.

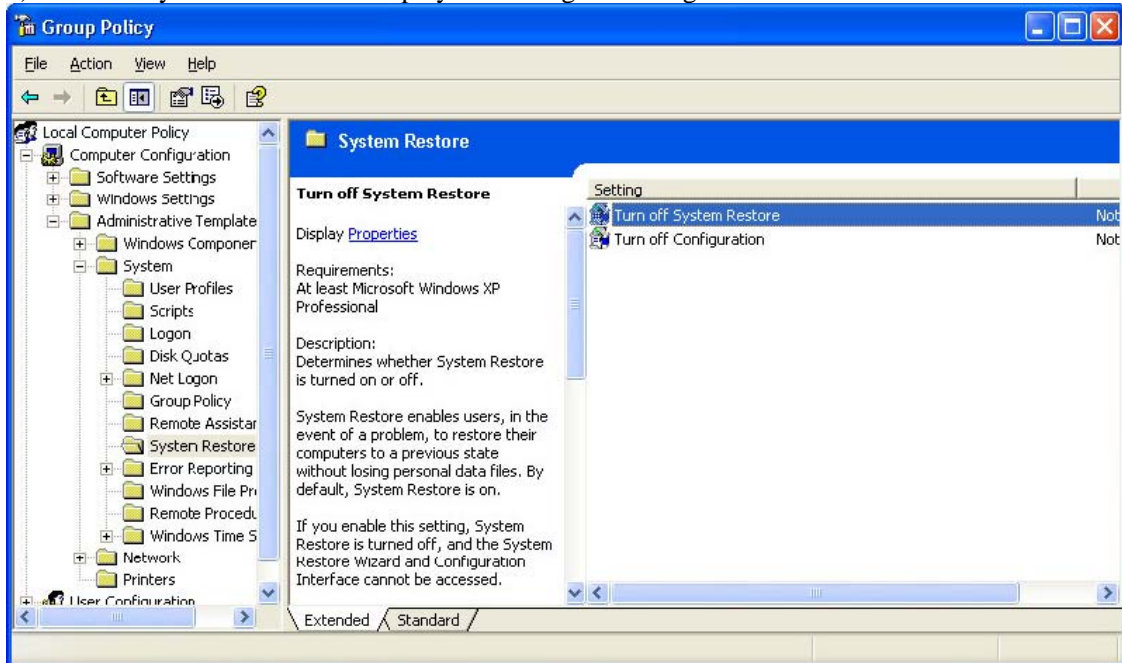
By clicking on the required item in the “tree”, its settings will be displayed

By Double clicking each setting, the options available will display & can be changed

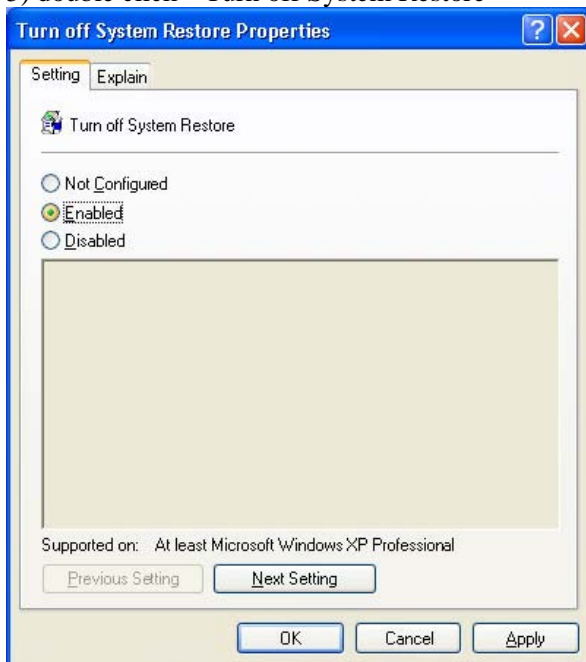
4.1 Permanently disable system restore

In the left hand frame (window)

- 1) expand (click on the + symbol next to) "Computer configuration"
- 2) expand - "Administrative Templates"
- 3) expand - "System"
- 4) click on "system restore" to display the settings in the right hand frame



- 5) double click "Turn off System Restore"

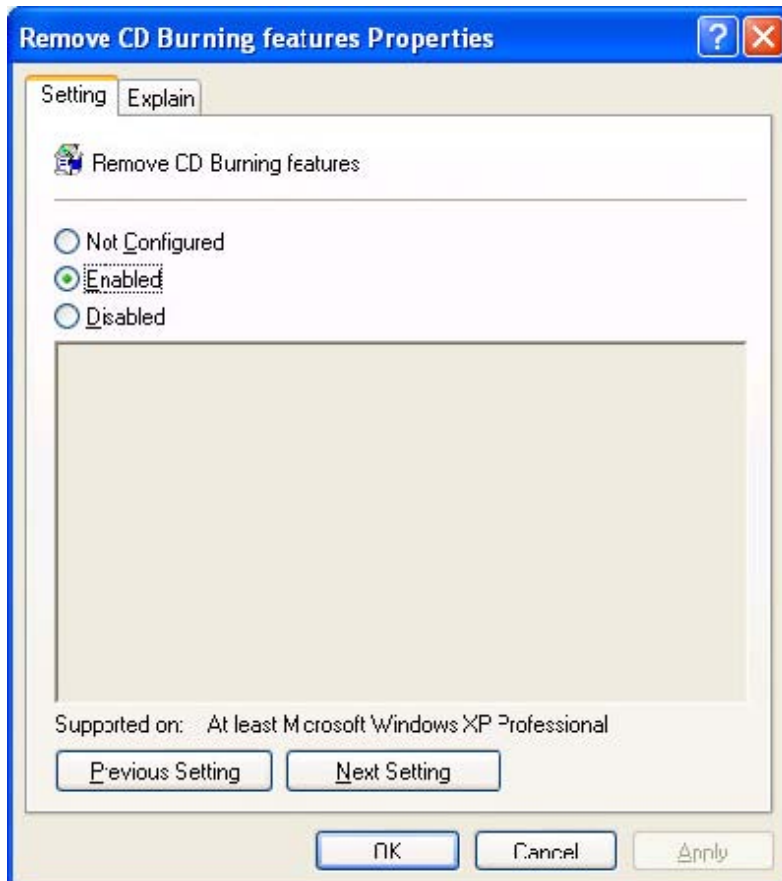


- 6) change the setting value to "Enabled"
- 7) click the apply button
- 8) double click the "turn off configuration" setting in the right hand frame
- 9) change the setting value to "enabled" .. click the apply button

4.2 Disable CD burning feature

If you are like most typical PC users & use a CD Burner, you probably use 3rd party CD software such as Nero, Roxio etc. This makes the CD burning features of XP obsolete. If this is the case, you can disable this feature & regain some system resources by :

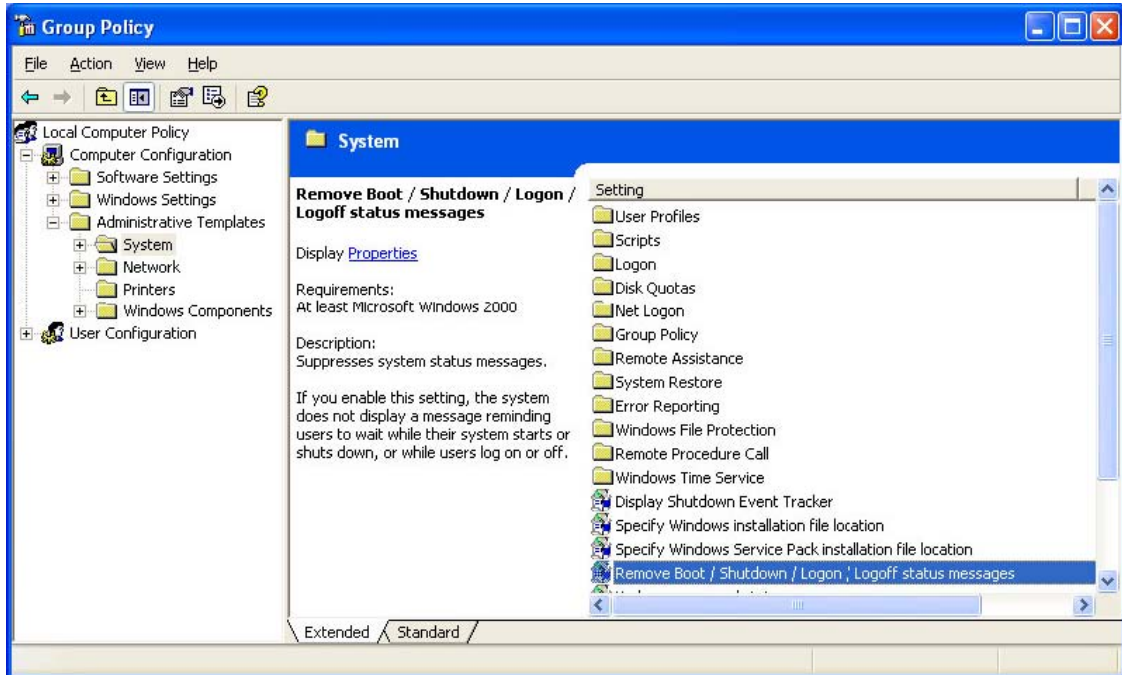
- 1) expand the “user configuration”
- 2) expand “Administrative templates”
- 3) expand “ Windows components”
- 4) click on “Windows Explorer” to reveal the settings in the right hand frame
- 5) double Click “Remove CD Burning Features”
- 6) change the setting to “enabled”



4.3 Suppress Shutdown/Restart & Log off messages

This change will stop the “are you sure “ delays when you shut down or restart your PC
While not a massive gain, every little helps

- 1) Expand “Computer configuration”
- 2) Expand “Administrative Templates”
- 3) Click on “System”
- 4) Double click – “Remove boot / shutdown / log on / log off messages”



- 5) change the setting to “Enabled”

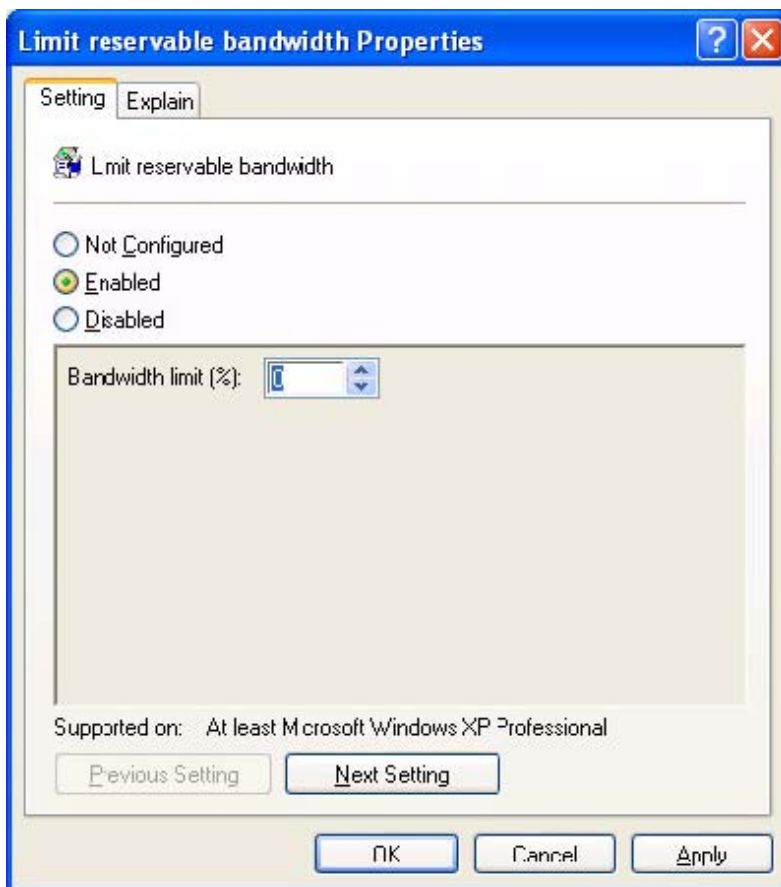
4.4 QoS network bandwidth

QoSRRP Quality of Service Resource Reservation Protocol is an internal method by which XP reserves network bandwidth for use by applications needing to transfer data across a network. The reserved bandwidth is not consumed by any other process (ie you downloading music).

This is great if you have programs that specifically request QoS bandwidth. This however is an unnecessary degradation in your network performance if you don't.

To reclaim the reserved bandwidth :

- 1) Expand – Computer configuration
- 2) Expand – Administrative Templates
- 3) Expand – Network
- 4) Click – QoS Packet Scheduler
- 5) Double click – “Limit Reservable Bandwidth” in the right hand frame.



- 6) Change the setting to “Enabled”
- 7) Change the bandwidth limit % to 0

Chapter 5 Advanced System Registry Edits

Disclaimer : The system registry should not be edited, unless you are very confident what you are doing. Changes to the registry if performed incorrectly can make your system unstable or unusable.

You should always make a back up of your registry prior to making any changes.

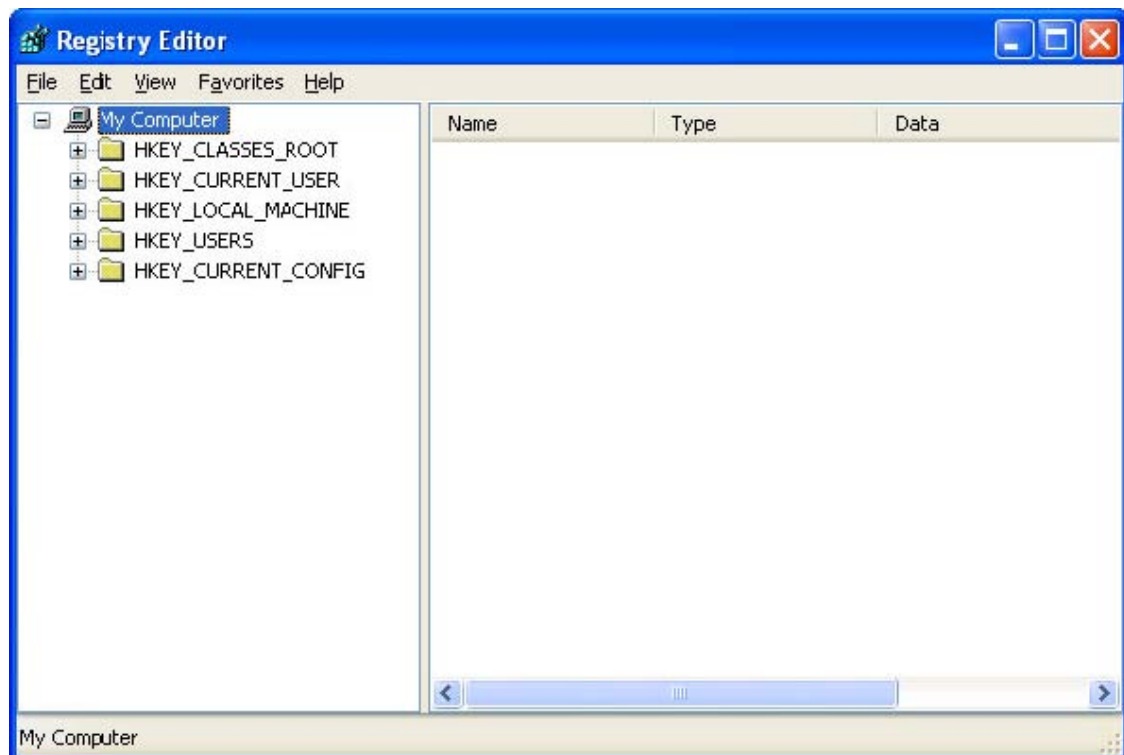
Although we have tested the below changes, we cannot guarantee the results on individual systems.

Any changes you make to your registry, you do so at your own risk.

The registry is a file much like a database that contains information that controls the behavior of programs loaded onto your PC. It also controls much of the behavior of XP itself. There are lots of settings that can be manipulated to provide performance increases.

To access the registry editor

- 1) click START
- 2) click RUN
- 3) type regedit



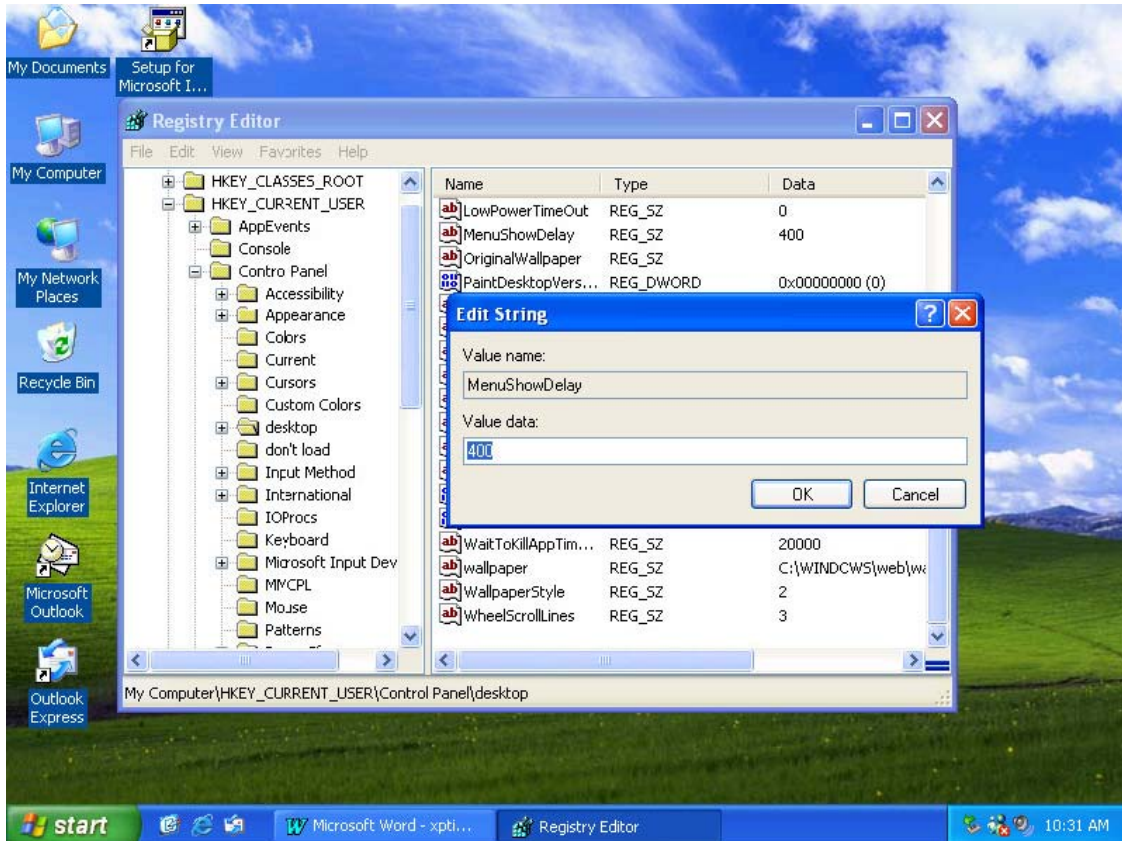
This will display a window with the registry broken down into a tree style view in the left hand frame, and the individual registry names and values on the right hand side. By navigating through the various branches of the registry, the values at each level will display in the right hand frame. By double clicking on the individual registry setting, you are able to enter new values.

5.1 Menu Speeds and shutdown/restart

Navigate to the HKEY_CURRENT_USER \ Control Panel \ Desktop registry

Having opened the registry editor :

- 1) Expand HKEY_CURRENT_USER
- 2) Expand "Control Panel"
- 3) Click on "desktop"



Double Click each of the following Registry settings & enter the new value

MenuShowDelay = 50

AutoEndTasks = 1

WaitToKillAppTimeout = 4000

HungAppTimeout = 5000

Time delay on showing menu pop ups Auto close apps during shutdown Shutdown delay

Terminate delay on hung program

5.2 Speed up NTFS file performance

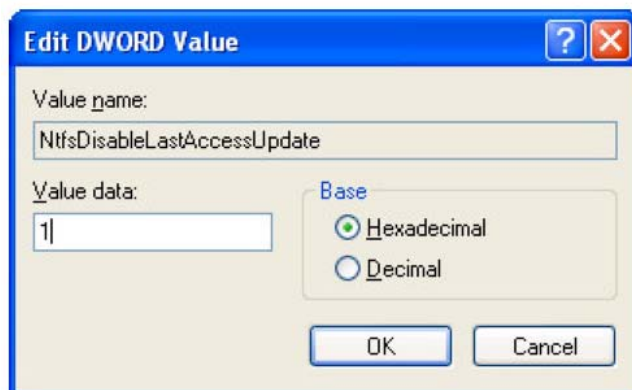
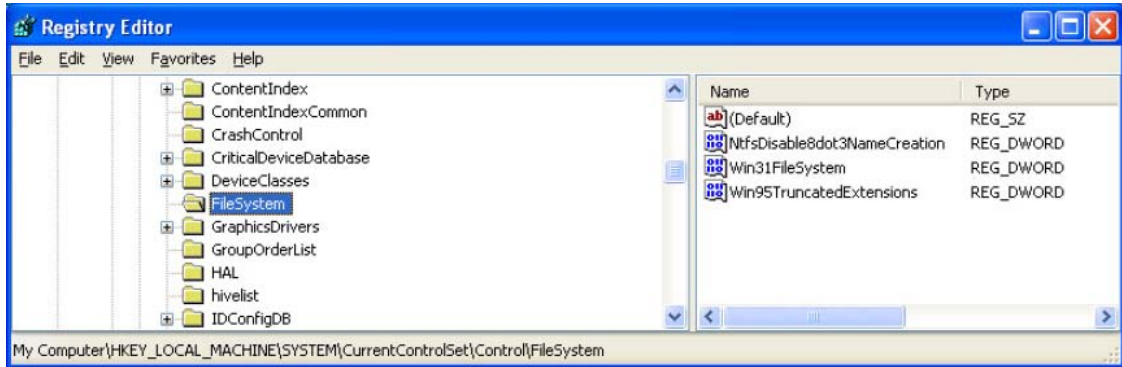
This change disables the time/date stamp applied to a file every time it is accessed.

If you do not refer to time & date a file was last accessed, you can do this:

Navigate to

HKEY_LOCAL_MACHINE / SYSTEM / CurrentControlSet / Control /

FileSystem Change DisableNTFSLastAccessUpdate = 1



(If the DWORD register does not exist, Right click the right hand window, click new Dword)

5.3 Set IRQ priority to the cmos/real time clock

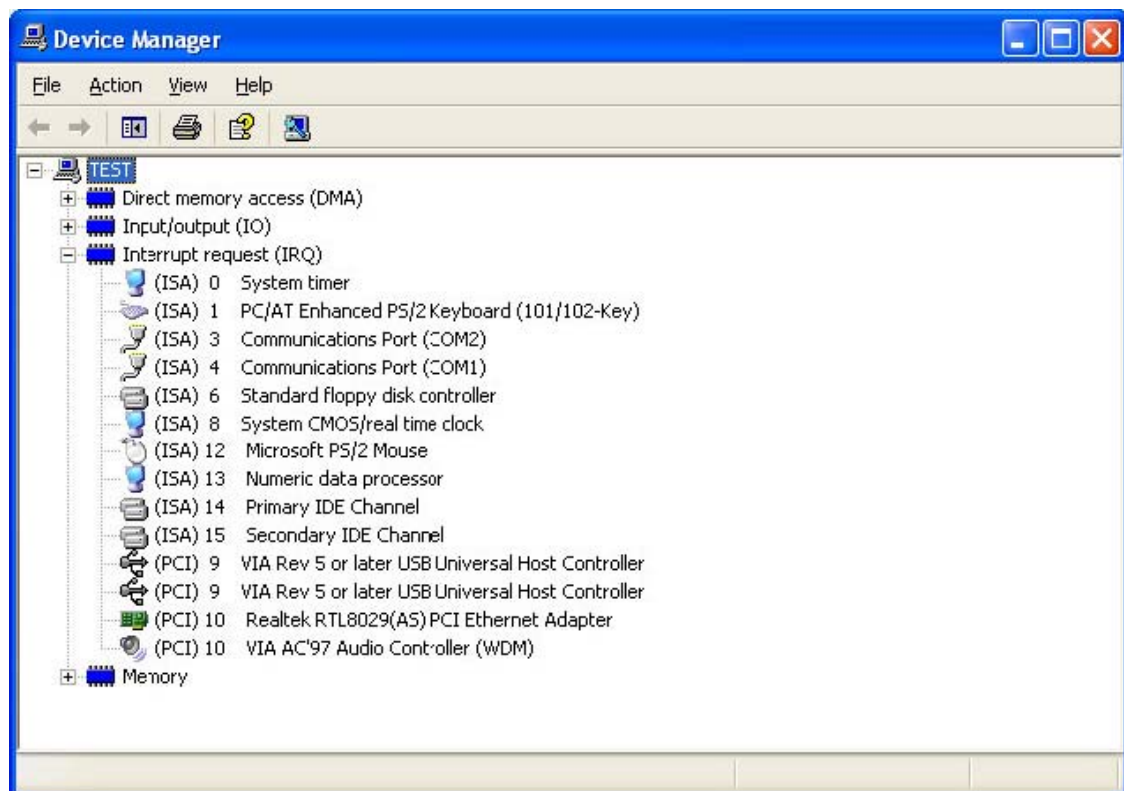
XP allows you to give priority to the interrupt request channels (IRQ) that are allocated to devices in your PC. Requests to process commands to & from these devices interrupt each other (hence the name), so for instance, while a command is sent to the parallel port, all the other devices wait.

The greatest performance increase can be gained by giving priority to the CMOS. This gives priority to motherboard resources during times of heavy usage of other devices.

Establish the IRQ number that the CMOS/Real time clock is using. This can be done by inspecting the looking at the properties of the “computer” element in the device manager.

This is typically IRQ8.

- 1) click Start
- 2) right click “My Computer”
- 3) click “Properties”
- 4) click the “hardware” tab
- 5) click “Device Manager”
- 6) click “view”
- 7) click “resources by type”
- 8) expand (click the +) “Interrupt request (IRQ)”



Make a note of the IRQ number assigned to the “System CMOS / real time clock”

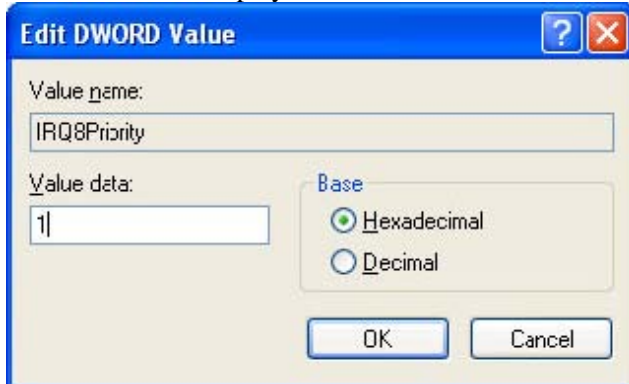
In this instance it is the 6th line “(ISA) 8 System CMOS/real time clock”

- 9) close the windows you just opened
- 10) click start

11) click run 12) type regedit 13) expand HKEY_LOCAL_MACHINE 14) expand System 15) expand CurrentControl Set 16) expand Control 17) click on “ PriorityControl”

For the required IRQ, (eg IRQ8) set IRQ8Priority = 1

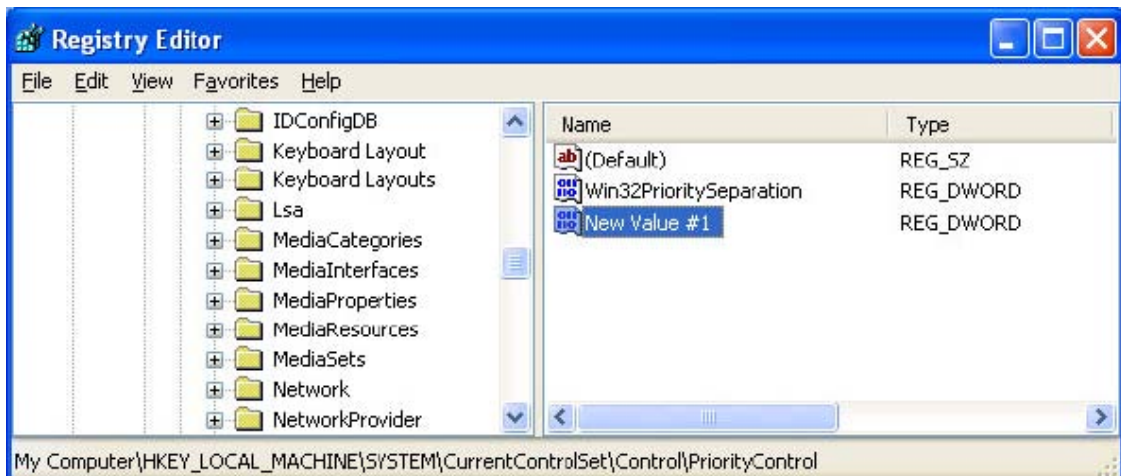
To do this – double click the IRQ8Priority registry setting in the right frame and enter the value 1 in the box that is displayed



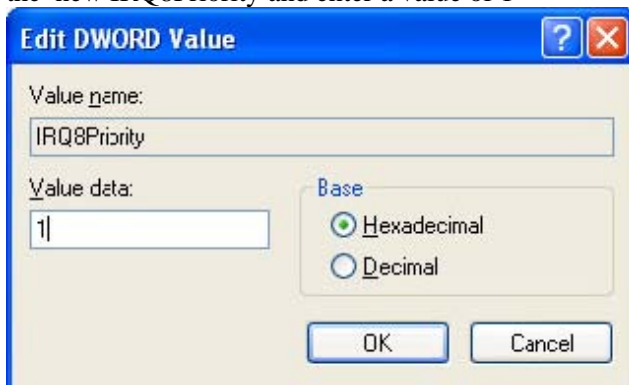
If the registry entry is missing, (eg IRQ8Priority for IRQ8, IRQ5Priority for IRQ5 etc etc)

Right click the anywhere in the right hand frame of the registry editor (eg a blank area under the name or type columns)

- a) Click “New”
- b) Click DWORD value



c) in the new value box enter IRQ8Priority (Upper & lower case sensitive) d) double click the new IRQ8Priority and enter a value of 1

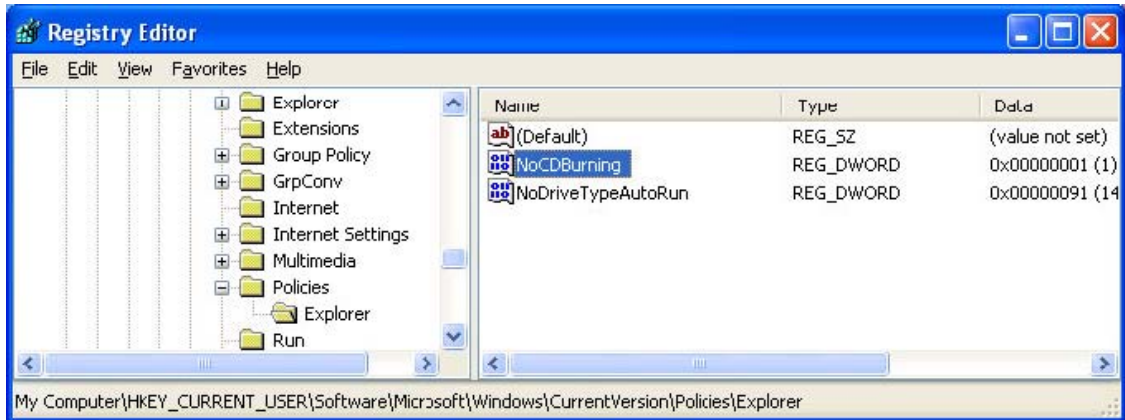


5.4 Turn off XP built in CD burning

A small overhead can be eliminated by switching off the ability of XP to burn CD's. Especially if you don't have a cd burner, or you use other software (roxio, nero etc)

Navigate to

HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer



NoCDBurning = 1

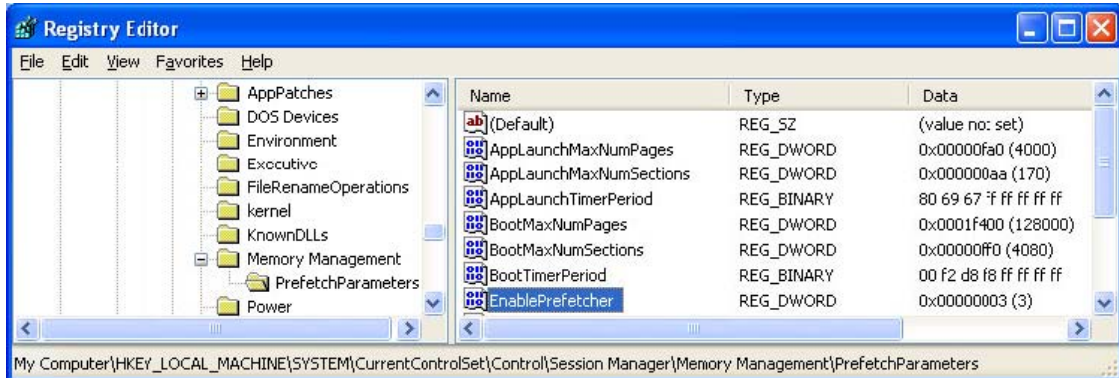
5.5 Speed up Prefetcher

To speed up the windows Prefetcher (pre-loads data during boot) do the following

Navigate to

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management\PrefetchParameters

Double click the EnablePrefetcher register DWORD and set the value to 3

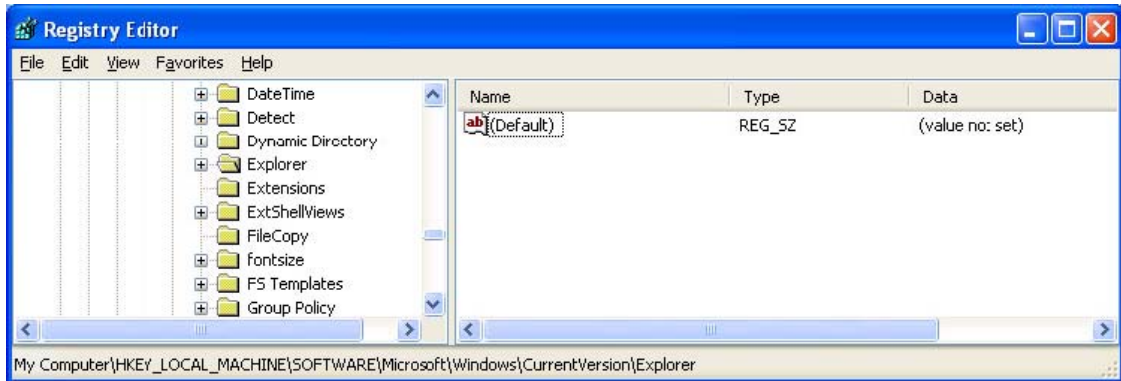


5.6 Unload unused DLLs

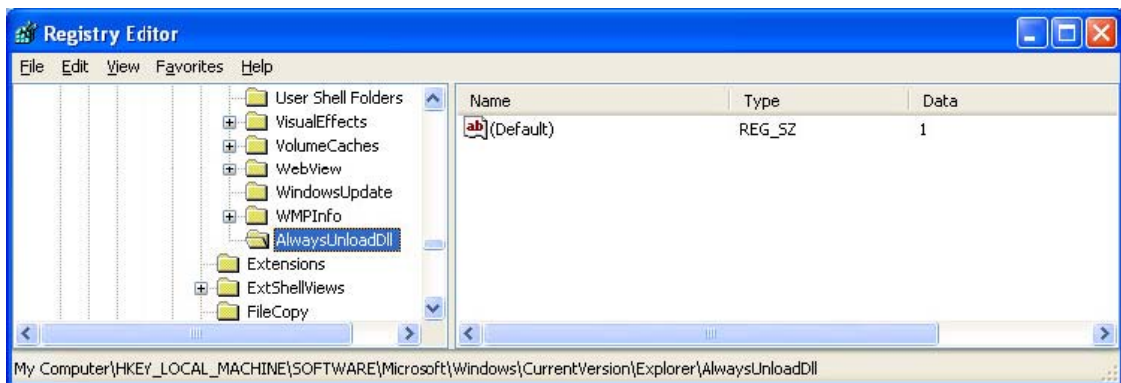
Windows will retain dynamic link libraries (DLL) information, which is essentially data and components required by a program, in memory long after you have closed a program. To unload DLL libraries from memory that are not being used.

Navigate to

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer



Create a new Key (Right click the right hand frame, click new) Call the key AlwaysUnloadDll



Double click the (Default) register & change the default value to 1

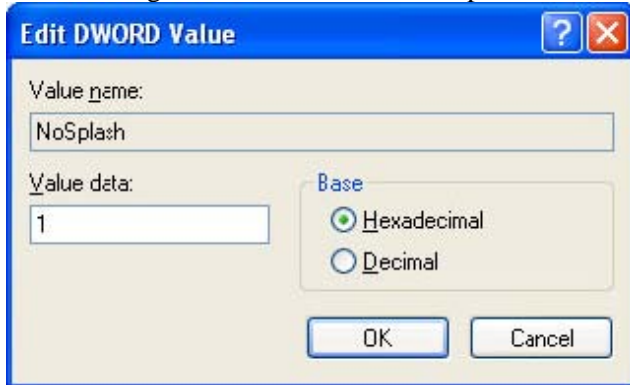
5.7 Remove the Outlook Express splash screen

Not a huge saving, but every little helps. If you are using outlook express & don't want to wait for the computer to advertise the fact that you have just opened outlook express : Navigate to HKEY_CURRENT_USER\Identities\{Unique no.*}\Software\Microsoft\Outlook

Express\5.0

* will be a unique number on your Pc eg: {8A734400-2E37-11D7-ABDE-D5CA4DC18774}

Add or change the Dword value of NoSplash to 1



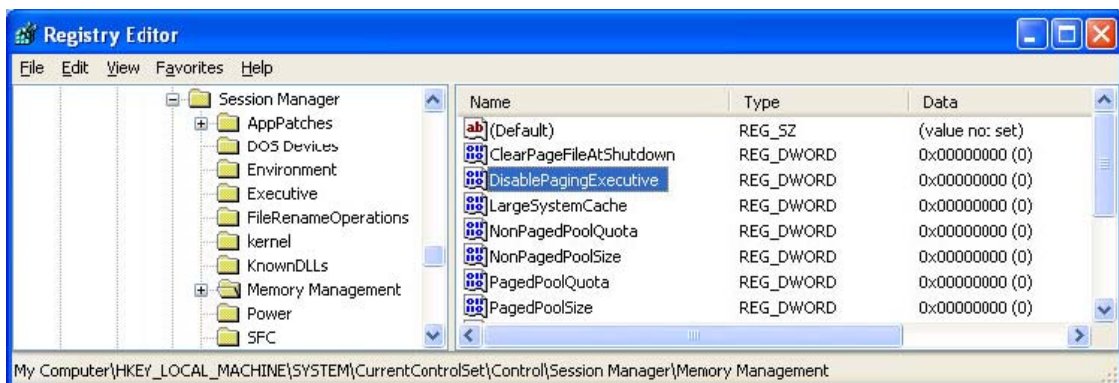
5.8 Advanced Memory – Disable Paging Executive

As standard XP pages (or swaps) data held in RAM onto the hard disk.

This is not entirely necessary on systems with large amounts of RAM (256MB or higher)

To prevent this “swapping” and retain the data entirely in RAM it is possible to disable this “paging”.

- 1) Expand HKEY_LOCAL_MACHINE
- 2) Expand SYSTEM
- 3) Expand CurrentControlSet
- 4) Expand Control
- 5) Expand Session Manager
- 6) Click – Memory Management
- 7) Double click – DisablePagingExecutive



- 8) Change the registry value to 1



5.9 Advanced Memory – Large System Cache

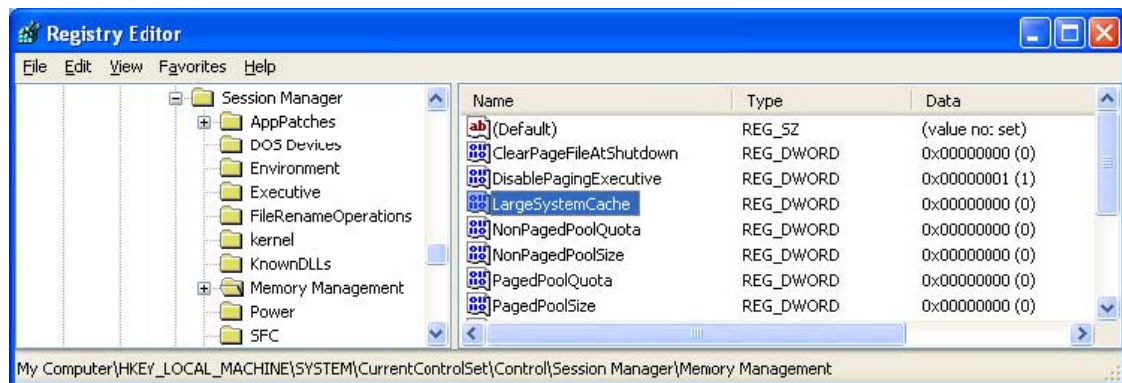
Setting the large system cache register to 1 will force XP to allocate most of your available memory to the file system cache, leaving the XP kernel running in memory, which provides a good performance boost.

This is suitable for systems with 256MB RAM or higher.

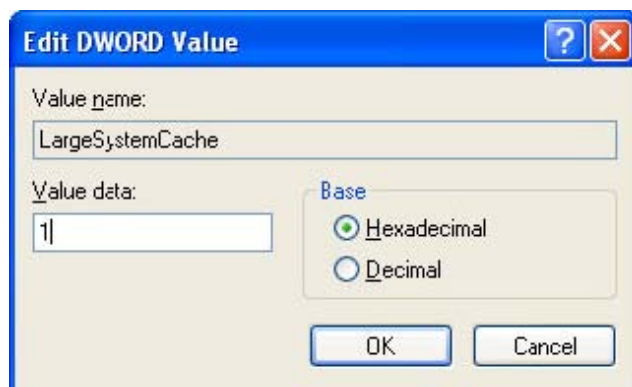
If you have some very processor intensive program, you may find a decrease in performance, but overall we have found the majority of systems benefit from this change.

If you do experience a performance decrease, change the setting back to 0

- 1) Expand HKEY_LOCAL_MACHINE
- 2) Expand SYSTEM
- 3) Expand CurrentControlSet
- 4) Expand Control
- 5) Expand Session Manager
- 6) Click – Memory Management
- 7) Double click – LargeSystemCache



Change the register value to 1



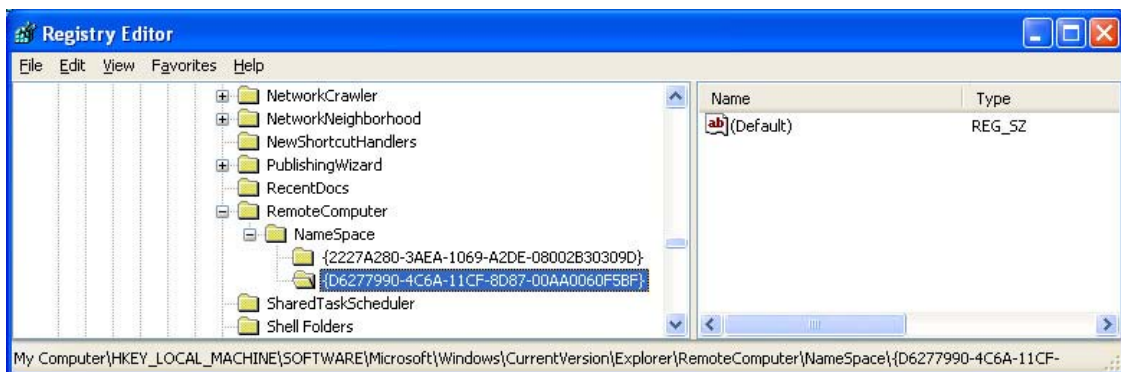
5.10 Disable search for scheduled tasks on network shares

This edit only applies if you connect to other computers on a network.

XP will search each computer it is connecting to for any scheduled tasks. This is unnecessary and can be very slow, especially if you have a number of PCs on your network.

By removing a registry key, this search is disabled & the computers displayed quickly.

- 1) Expand - HKEY_LOCAL_MACHINE
- 2) Expand – Software
- 3) Expand – Microsoft
- 4) Expand – Windows
- 5) Expand – CurrentVersion
- 6) Expand – Explorer
- 7) Expand – Remote Computer
- 8) Expand – NameSpace

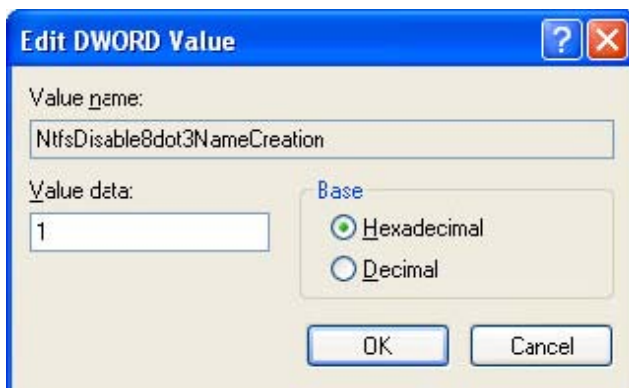
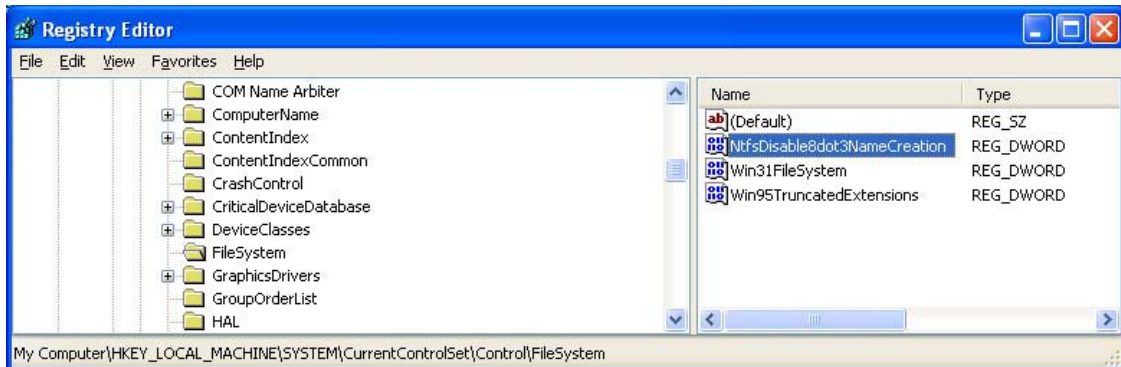


- 9) right click the {D6277990-4C6A-11CF-8D87-00AA0060F5BF} key and delete it

5.11 Disable DOS short naming convention

The ability to support short file names is only required if you have DOS or Windows 3.x client computers connecting to yours. By switching this feature off, some resources & overheads are recovered.

- 1) Expand - HKEY_LOCAL_MACHINE
- 2) Expand – system
- 3) Expand – CurrentControlSet
- 4) Expand – Control
- 5) Expand – FileSystem
- 6) Double Click the NtfsDisable8dot3NameCreation register & change the dword value to 1



**** Warning – This may affect Norton Live Updates ****

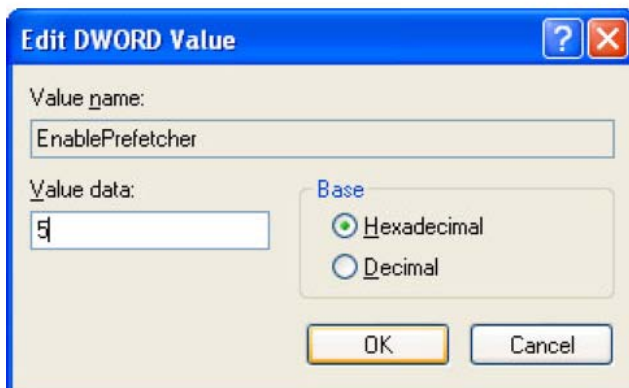
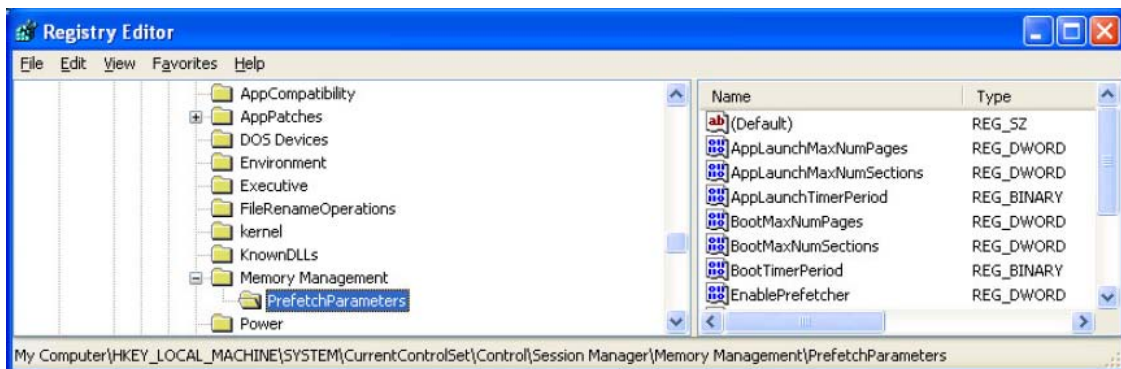
If this is the case, change the register back to “0”, reboot, update Norton then repeat the above.

5.12 Tuning the prefetcher

The prefetch component of XP monitors the resources and programs needed during boot up. Changing the EnablePrefetch register from values between 1 & 6 can improve the time it takes to start up your PC.

The fastest setting varies depending on the programs you have in your start up, but generally a setting of 5 seems to work best for most.

- 1) Expand – HKEY_LOCAL_MACHINE
- 2) Expand – SYSTEM
- 3) Expand – CurrentControlSet
- 4) Expand – Control
- 5) Expand – Session Manager
- 6) Expand – Memory Management
- 7) Click – PrefetchParameters
- 8) Double Click the EnablePrefetch register - set the required value (try 5)



Monthly Computer Maintenance Schedule

Month: _____

- | | |
|------------------------------------|---------------|
| 1) Disk Clean Up (Section 1.0) | Done () |
| 2) Clear TEMP Directory (1.2) | Done () |
| 3) Clear Prefetch (Section 1.3) | Done () |
| 4) Compress Outlook Folders (1.11) | Done () |
| 5) Defrag (1.1) | Done () |

Performed By: _____ Date : _____