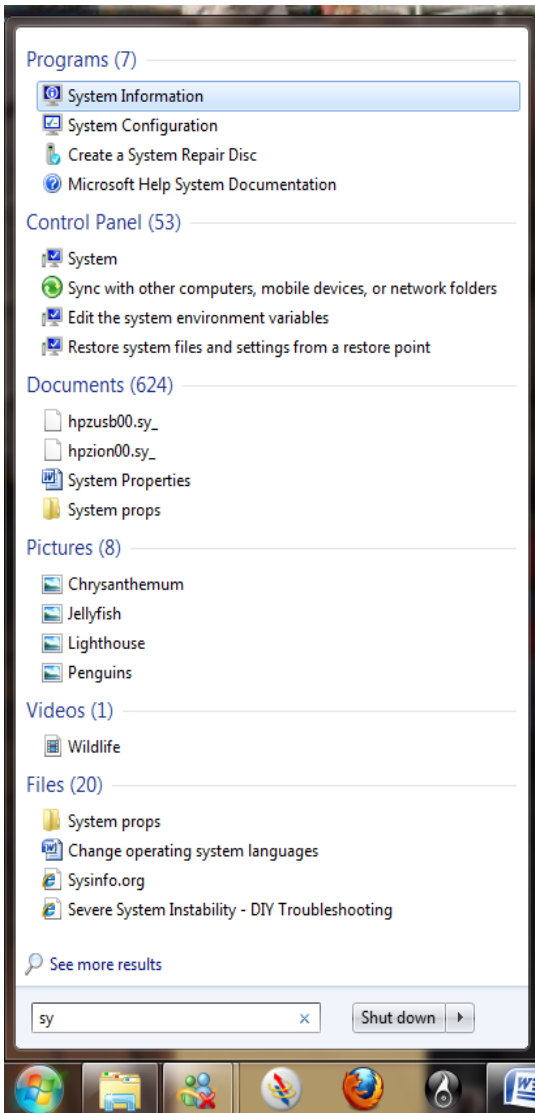


System Properties

The System Properties window is the first place to look for basic information about your computer and can also be used to make changes to important settings. It may not be needed very often but knowing how it works can prevent small annoyances getting any bigger.

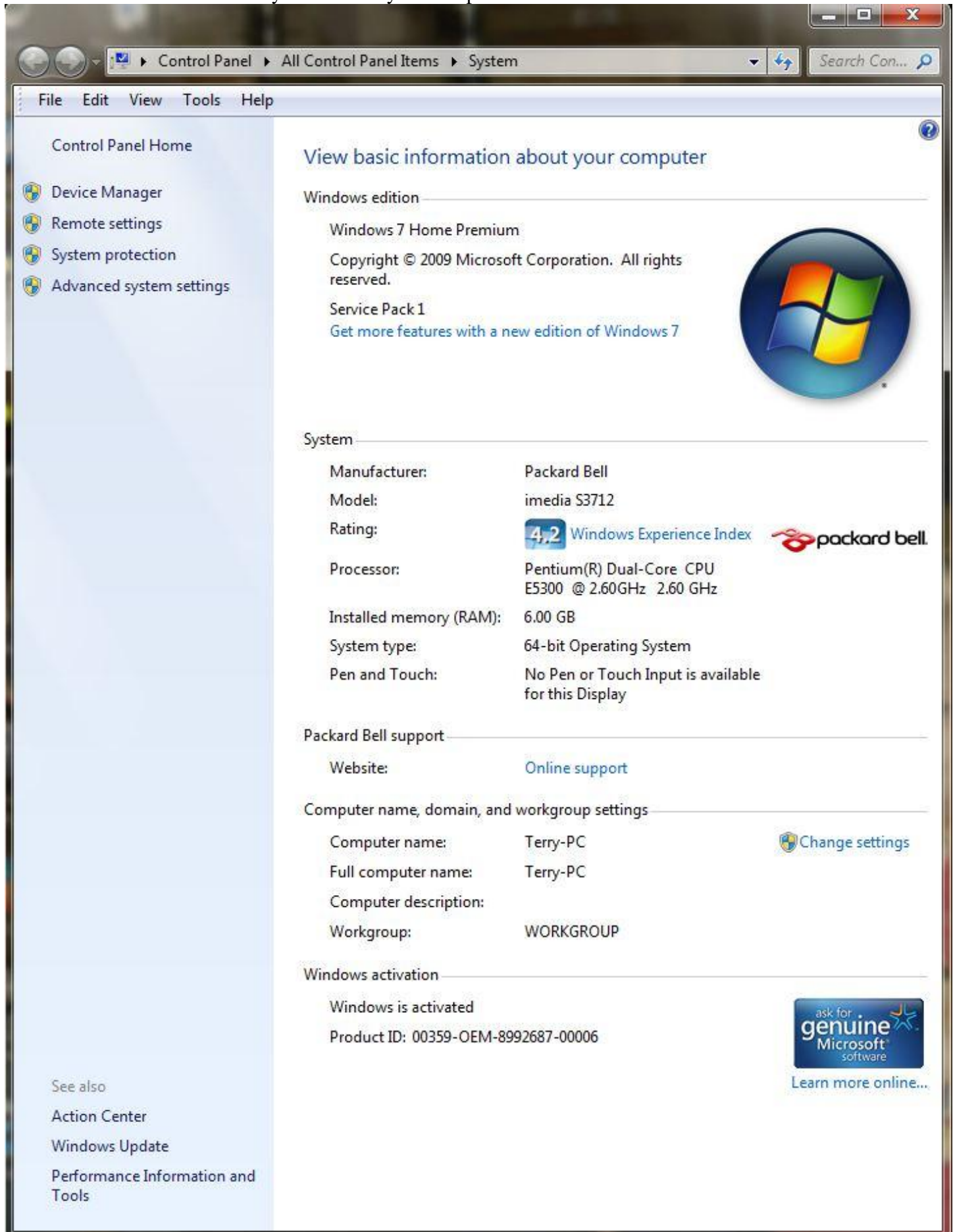
XP users will find it useful but for Windows Vista and Windows 7 System Properties was given a makeover and is much easier to use than its XP counterpart. In this article we will explain what the items you'll find are for. We will use Windows 7 and Vista as an example and point out the differences for XP users where appropriate.

The System Properties panel is easy to find in all versions of Windows. In Windows 7 and Vista, click on the Start button type system and then click on the System icon that appears in the list under the heading Control Panel.




Windows XP users can find it on the Start menu by right-clicking on My Computer and then clicking on Properties. The dialogue box that appears displays a brief summary of the computer including the version of Windows you have, along with any Service Packs that have been installed, the processor time and amount of memory.

The first window is which tells you all about your computer.



The image shows a screenshot of the Windows 7 System Control Panel window. The window title is "Control Panel > All Control Panel Items > System". The main content area is titled "View basic information about your computer". It displays the following information:

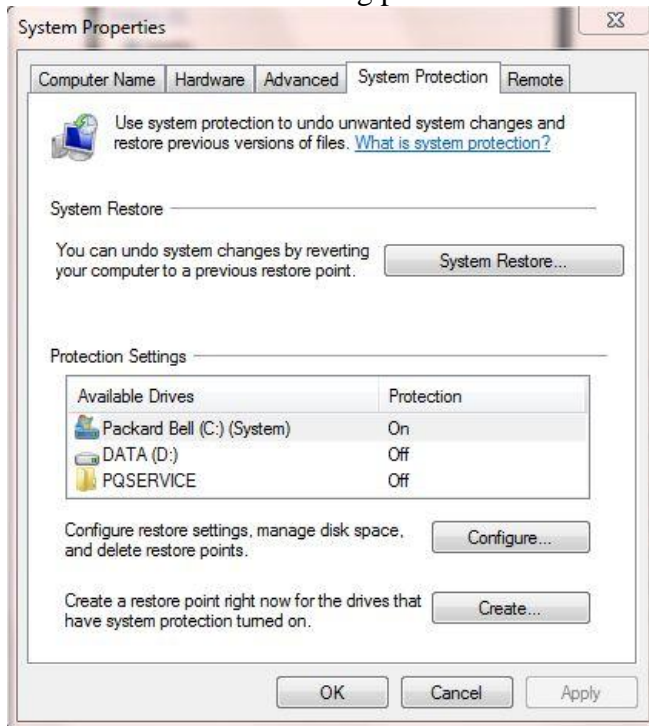
- Windows edition:** Windows 7 Home Premium. Copyright © 2009 Microsoft Corporation. All rights reserved. Service Pack 1. [Get more features with a new edition of Windows 7](#).
- System:**
 - Manufacturer: Packard Bell
 - Model: imedia S3712
 - Rating: **4.2** Windows Experience Index 
 - Processor: Pentium(R) Dual-Core CPU E5300 @ 2.60GHz 2.60 GHz
 - Installed memory (RAM): 6.00 GB
 - System type: 64-bit Operating System
 - Pen and Touch: No Pen or Touch Input is available for this Display
- Packard Bell support:**
 - Website: [Online support](#)
- Computer name, domain, and workgroup settings:**
 - Computer name: Terry-PC [Change settings](#)
 - Full computer name: Terry-PC
 - Computer description:
 - Workgroup: WORKGROUP
- Windows activation:**
 - Windows is activated
 - Product ID: 00359-OEM-8992687-00006

At the bottom left, there is a "See also" section with links to "Action Center", "Windows Update", and "Performance Information and Tools". At the bottom right, there is a "genuine Microsoft software" logo and the text "Learn more online..."

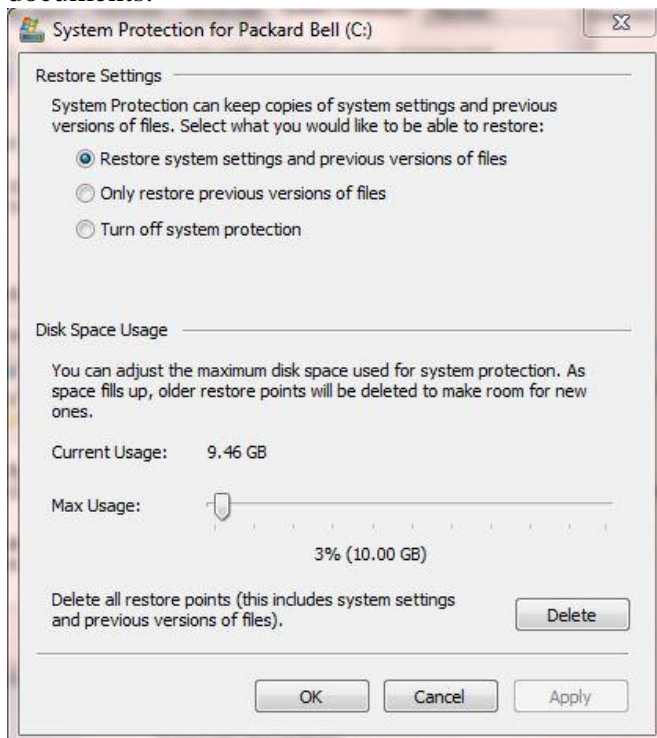
System Restore

System Restore settings one of the most important tools in the System Properties control panel is System Restore which takes snapshots of important Windows settings. If an update or new software installation causes a problem System Restore can be used to reverse the changes and take your computer back to the point where everything was working, and without affecting any documents you have created since then.

Click on the System Protection link on the left of the System Properties window. A window will appear that shows which disks are being protected.



Click on Configure and Windows 7 provides the option to save Windows setting and previous versions of documents.



In the latter case this means that every time an application such as Excel saves a file automatically a copy of it is kept on the hard disk enabling you to recover it if the main saved version is deleted. We recommend selecting the top option to "Restore system settings and previous version of files."

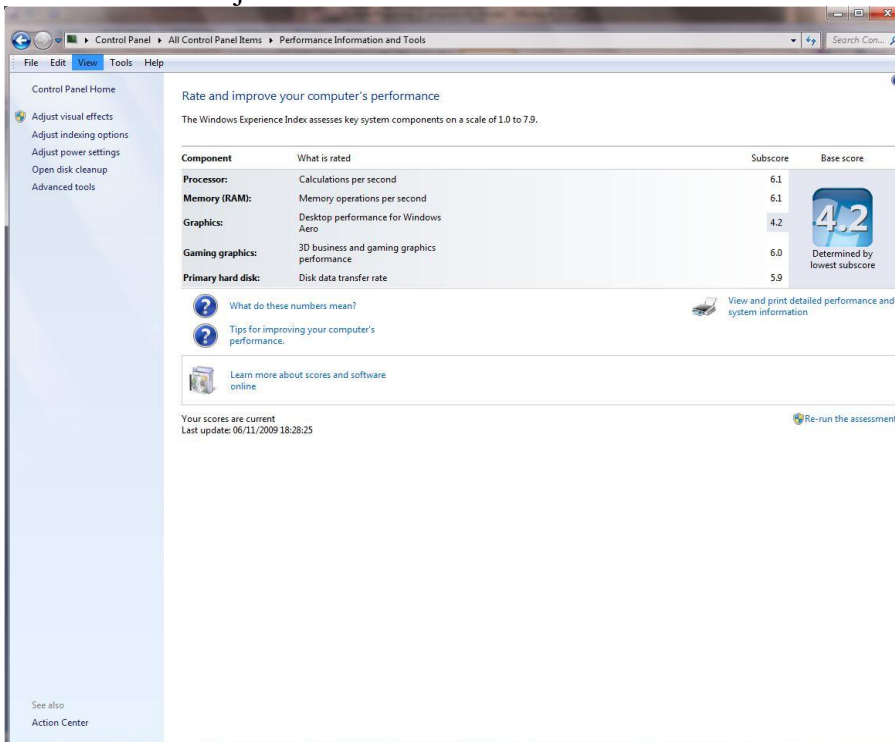
At the bottom of this dialogue box is a slider that can be used to set the maximum amount of disk space that system restore can use to save old files and settings. Most hard disks are sufficiently large that giving System Restore somewhere between five and 10 per cent of the disk's capacity using the slider won't cause problems. Old restore points are automatically deleted as the space is used up. Click on OK when you are happy with the changes.

Windows Vista users should check for a tick to show that a drive is protected. There is no option to change the amount of space used by System Restore.

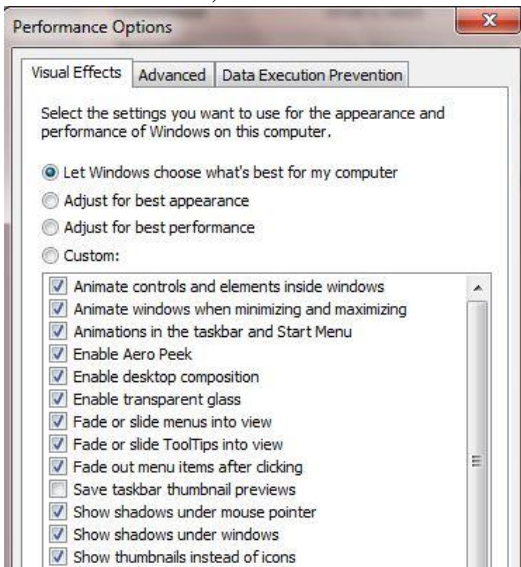
In Windows XP, click on the System Restore tab in the System Properties windows. Make sure 'Turn off System Restore' is not selected. The bottom box will tell you which disks are monitored and there is a slider as in Windows 7. You can click on a disk and then on the Settings button to change the amount of space Windows devotes to Restore Points although we recommend leaving this alone.

Visual effects and updates.

Fancy desktop effects may look good but can slow down older PCs. Click on the Performance Information and Tools link at the bottom left in Windows 7 or Performance in Windows Vista and then Adjust visual effects on the left.



In Windows XP, click on the "Advanced" tab and then the Settings button in the Performance section.



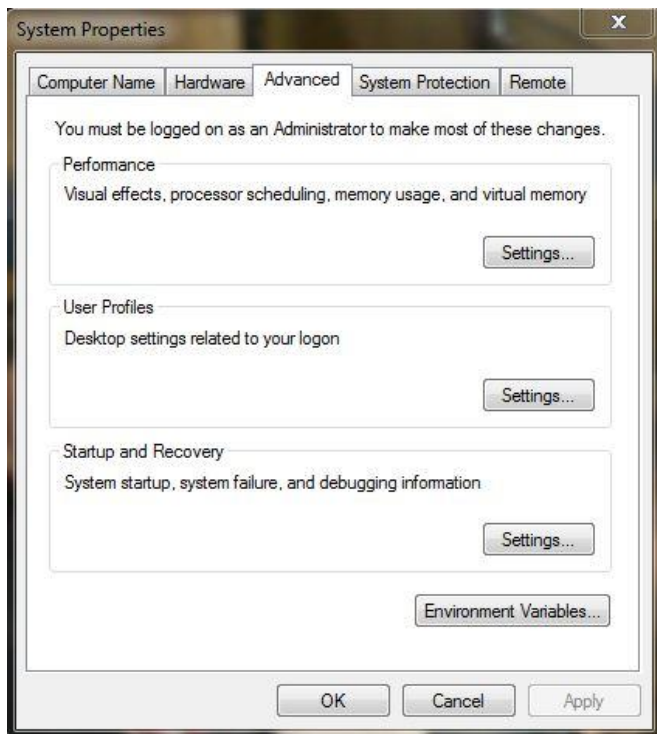
It is usually best to let Windows choose the effects to use. Although you can select 'Adjust for best performance' to see if there is a notable performance boost. Remember you can always return here and reverse the changes. We recommend setting Windows to download and install updates as soon as they are available. To check this, click on Windows Update at the bottom left of the System Properties screen. Click on the Change settings link on the left. Click on the top dropdown menu and select install updates automatically. The time setting can be ignored; Windows will install the updates the rev time it starts. Click on the OK button to save the changes. Windows XP users can find this choice in the automatic updates tab.

Managing memory.

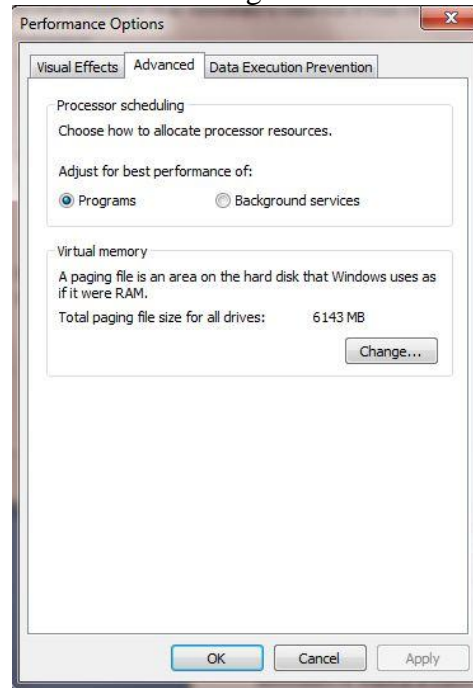
When the memory modules inside the PC are full Windows can start to use the hard disk as a temporary alternative which it calls Virtual Memory in the majority of cases it's best to let Windows manage how much of the hard disk it can use, so if you see an error message warning you that a specific application is running low on virtual memory it's worth checking to see if it is set correctly

Click on Advanced System Setting in 7 and Vista, or the "Advanced" tab in Windows XP and then Settings in the Performance section.

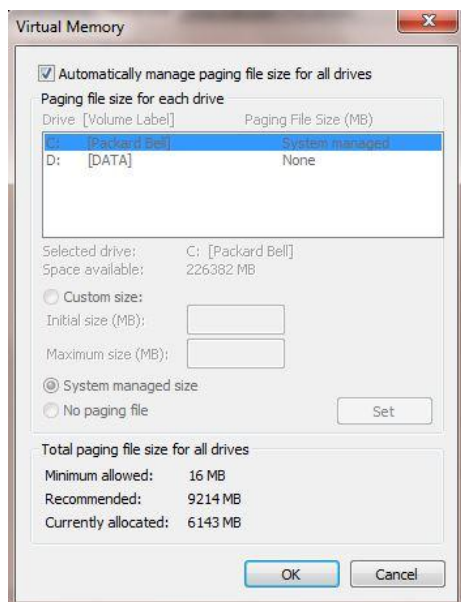
This will bring up the system properties window.



Click on the settings for "Visual Performance"



Click on the "Advanced" tab and then the Change button for virtual memory.



Make sure the option 'Automatically manage paging file size for all drives' is selected in Windows 7. For Windows Vista and XP, click on the entry for C: in the top part of the window select 'System managed size' and then click on Set. Click on OK to save the changes.

Use Windows Device Manager

Recent versions of Windows have taken much of the effort out of getting devices such as hard disks, modems, scanners, cameras and printers to work properly with a PC. In most cases, you can switch off the computer, replace any of its major components and switch it on again in the knowledge that it will work properly. USB devices can even be attached while the PC is running.

In this back-to-basics brush up, we will take a look at what to do on those rare occasions when Windows doesn't recognise a device or can't communicate with it. With the help of a tool called Device Manager, you can view details of any item of hardware that is connected to your computer and see whether it is working properly. If it isn't, then Device Manager provides the tools you need to help Windows get it working again.

Driving lessons

Any device connected to a computer has to be able to communicate with other devices and with the programs that are running. Even Windows Solitaire needs to send pictures to the screen, audio instructions to the soundcard and information to the computer's processor. It also has to receive and respond to a user's commands issued via the mouse and keyboard.

This interaction is handled by Windows, which makes life easier for the creators of games and applications - individual programs don't have to be written for specific types of hardware. On the flip side, this makes life hard for the programmers of Windows, because they have to ensure that Windows will work with the hundreds of thousands of hardware devices made by hordes of manufacturers.

This is where Device Manager comes in. It stores the information needed to control any device that forms a permanent part of the computer or which has been plugged into it. Devices are detected when they are first plugged in and by scanning for them during the boot sequence that takes place before Windows starts. Having located a device, Windows uses a suitable device driver to communicate with it.

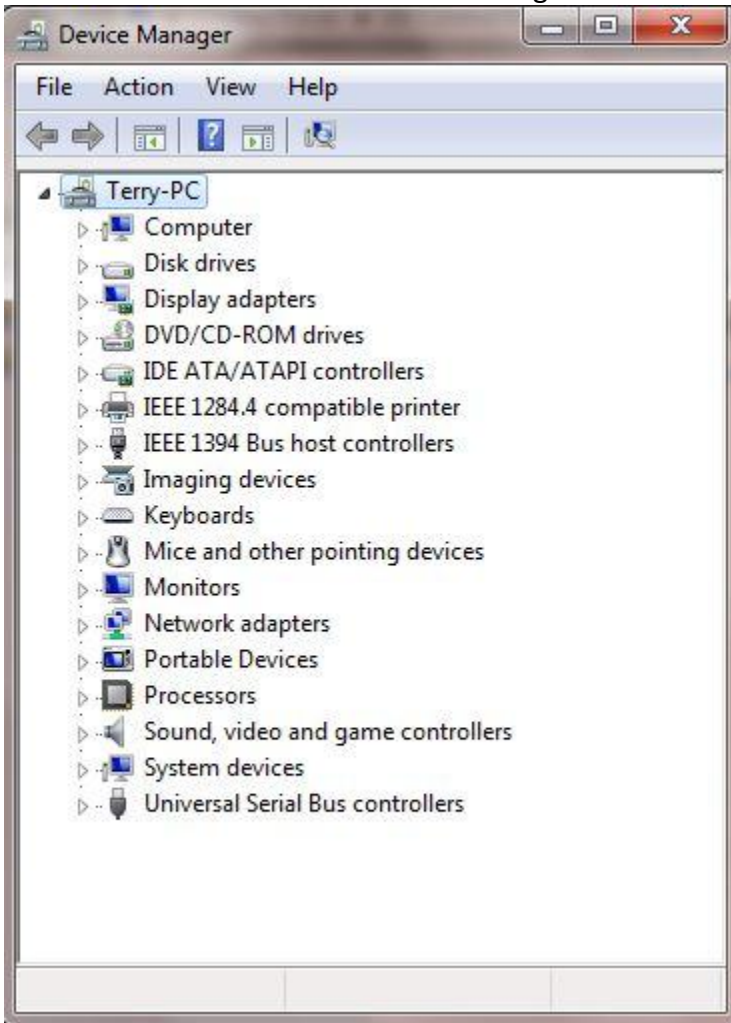
A device driver is a very small program, stored on your hard disk, which acts as an interpreter between Windows and a piece of hardware. If Windows wants the soundcard to play a piece of music, it sends instructions to the soundcard driver, which passes them on to the soundcard and so to the speakers.

Though all of this might sound unnecessarily complex, it makes a great deal of sense because it enables a Windows-based computer to work with a wide range of devices from different suppliers, which leads to healthy competition between suppliers and keener prices. It also means that a manufacturer can improve the

way a device works by simply changing the driver instead of having to redesign the hardware, and users can implement changes by downloading free device drivers instead of having to buy expensive new hardware.

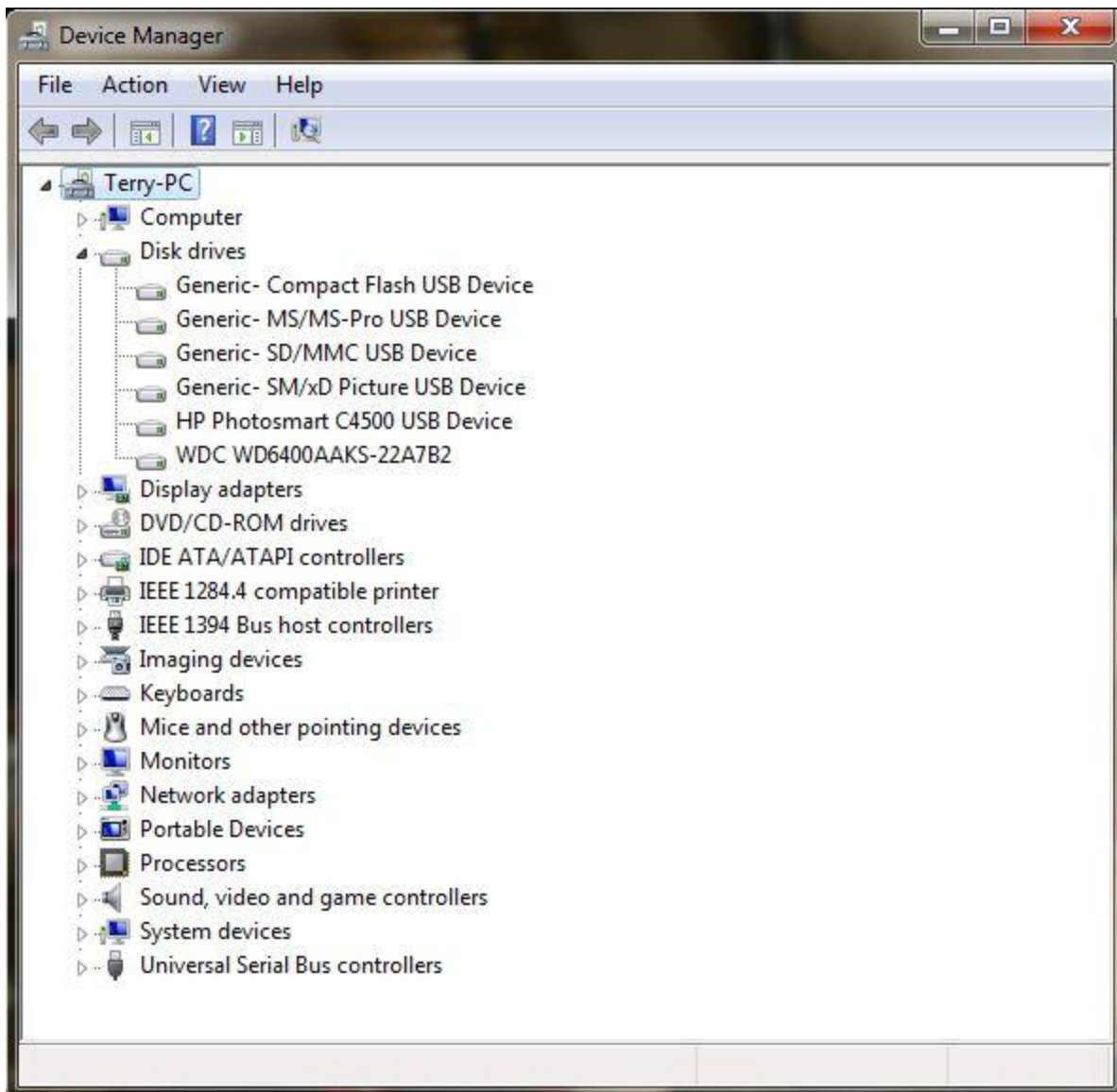
First steps with Device Manager

There are several ways of starting Device Manager but the quickest way in both Windows XP and Windows Vista is to hold down one of the Windows keys and press Pause. Subsequent actions depend on the operating system being used: - in Vista simply click Device Manager in the Task Pane on the left; in Windows XP click the Hardware tab and then the Device Manager button.



The default view in Device Manager is to list all the installed devices grouped by type, so all you see are headings such as disk drives, display adapters, monitors and so on. Next to each entry is a plus sign which, when clicked, reveals the names of individual devices in the group.

The image below shows the devices in the "Disc drives" group on a computer. Different computers will show different drives.

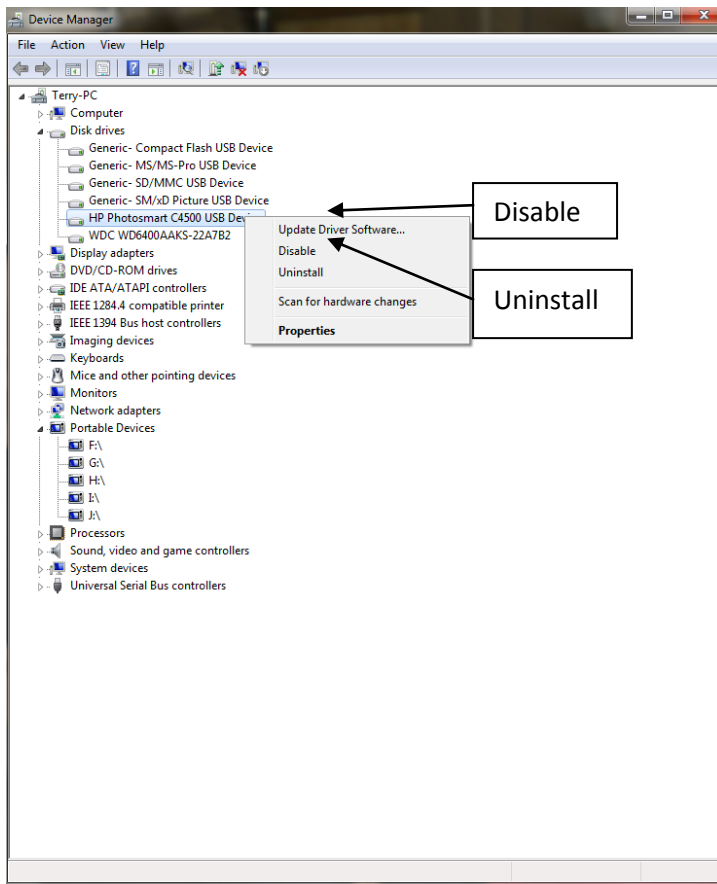


Using options on the View menu it is possible to display devices grouped in different ways, but the default view is suitable for most purposes.

To help users identify problems with devices, Windows uses a simple system of flags. If a device has been disabled for any reason, it is flagged by a red cross (Windows XP) or a black arrow pointing downwards (Windows Vista). If there is a problem with a device or if its driver has not been correctly installed, this is flagged under both operating systems by an exclamation mark.

When a device is connected to a computer, it is identified by Windows and a suitable driver is automatically installed. Windows can draw on thousands of drivers from a compressed store kept in the folder `C:\Windows\Driver Cache\i386`, but if Windows cannot find a suitable driver it prompts the user to insert a driver CD provided by the device's manufacturer.

Fixing common problems



Normally you won't need to disable a device unless you're troubleshooting. But if you do, it's a simple matter of right-clicking the device and selecting Disable.

Devices that have been disabled for any reason can be restored by right-clicking and selecting Enable. Normally, the enabling and disabling of devices doesn't affect the operation of Windows and doesn't require a restart but if you disable a vital component such as the display adapter, your computer will close down and restart automatically.

Any computer built within the past 10 years or so uses Plug and Play technology, which means that hardware can be added or removed without having to go through any special installation or removal procedures. Nevertheless, right-clicking an entry in Device Manager reveals an Uninstall option, whose purpose is to completely remove all the driver and Windows Registry entries for the selected device. In situations where a device is malfunctioning and all attempts to revive it have failed, choosing the

Uninstall option and then rebooting can sometimes do the trick. When the computer restarts it thinks the device has been newly added, reassigns resources to it and then looks for an appropriate driver to get it working.

If a device is installed but is not working correctly, and therefore is flagged with an exclamation mark, the first line of approach is to double-click the item's entry in Device Manager to display its Properties dialogue box. On the General tab is a panel labelled Device status, which contains an error code, a plain English message describing the problem and a suggested solution. In nearly every case the problem is with the driver, and clicking the Reinstall Driver button launches the New Hardware Wizard to guide you through the process of installing one.

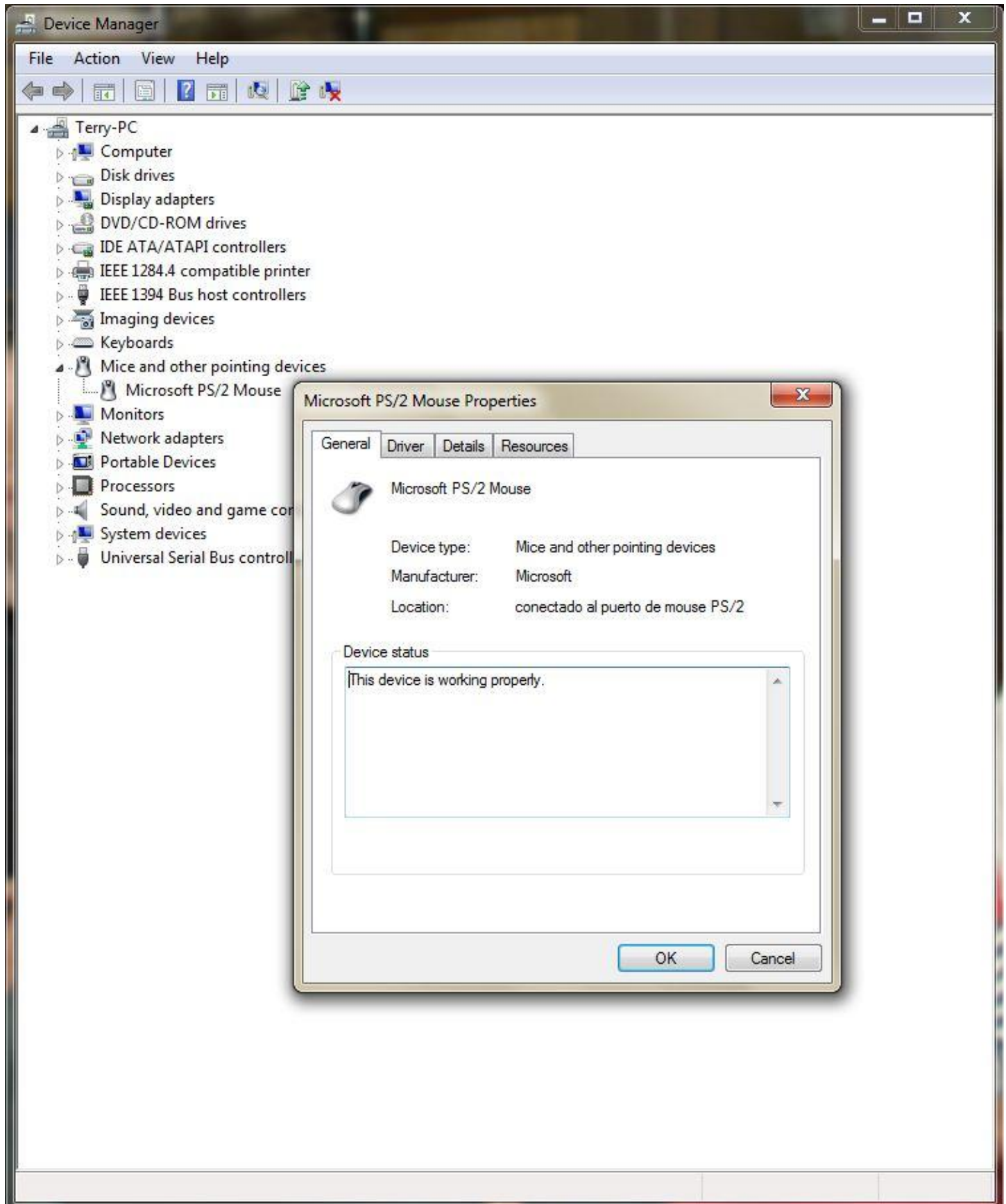
If you suspect that a fault has been caused by a recently updated driver, don't use the Reinstall Driver button. Instead, click the Driver tab and use the Roll Back Driver button to reinstate the old driver. In general, it's a good idea to use the most up-to-date drivers, but some recently released versions might contain bugs, so the roll-back facility can be a life-saver.

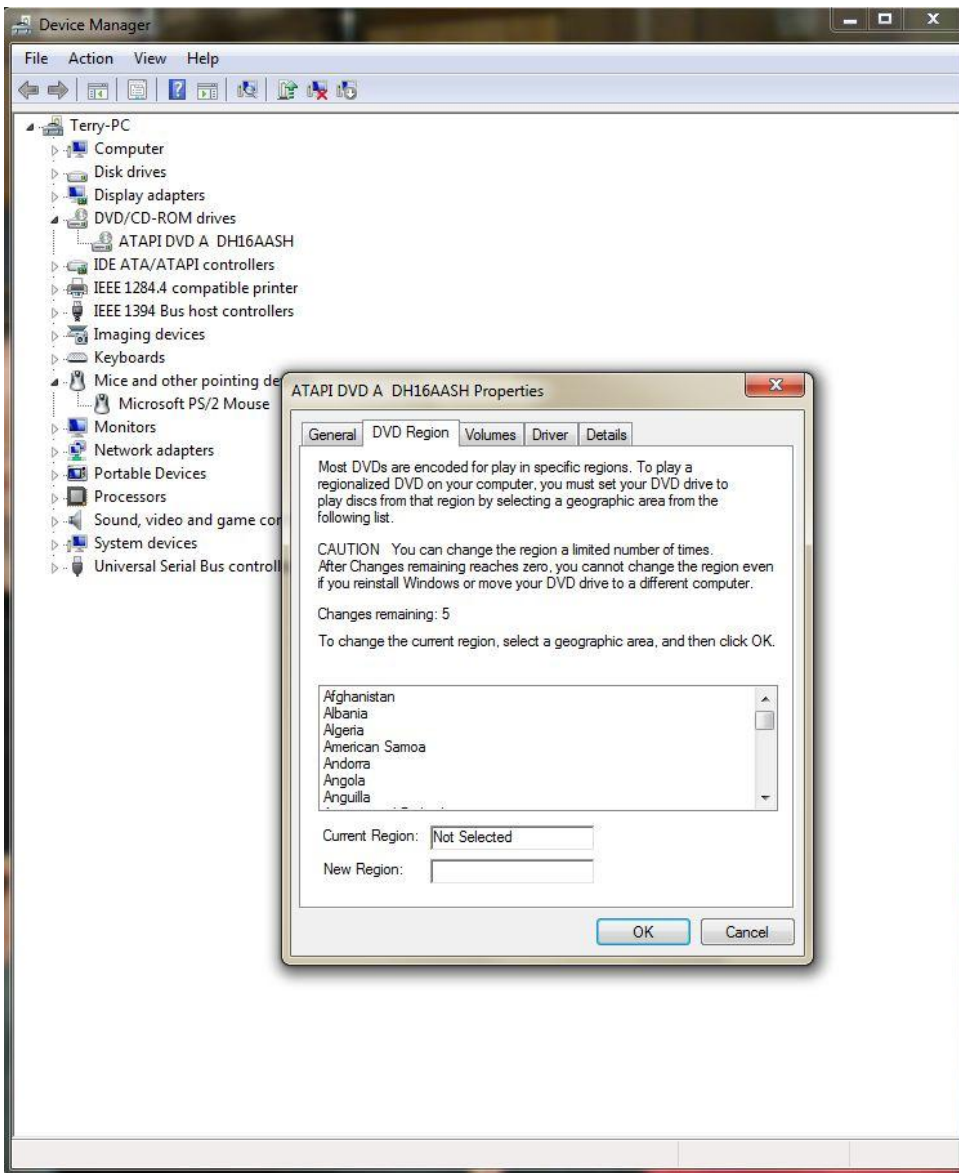
In the worst cases, installing a new driver that's unsuitable or flawed can cause a computer to display a blue-screen error and fail to load Windows. In such cases, tap the F8 key while the computer is starting up and choose to use Safe Mode (or Safe Mode with Networking if you have an internet connection). This is a minimal troubleshooting mode that enables you to fix problems that are preventing Windows from starting normally, while networking-enabled mode allows you to search for help and new drivers on the web. Once in Safe Mode, use the Roll Back Driver function to fix the problem and then reboot as usual.

Other tricks

Device Manager is more than just a place to troubleshoot hardware problems; it also provides a means of fine-tuning how certain hardware items operate. Double-clicking the entry for any device displays its

Properties dialogue box, which at the very least contains General, Driver and Details tabs, but there may be several more.





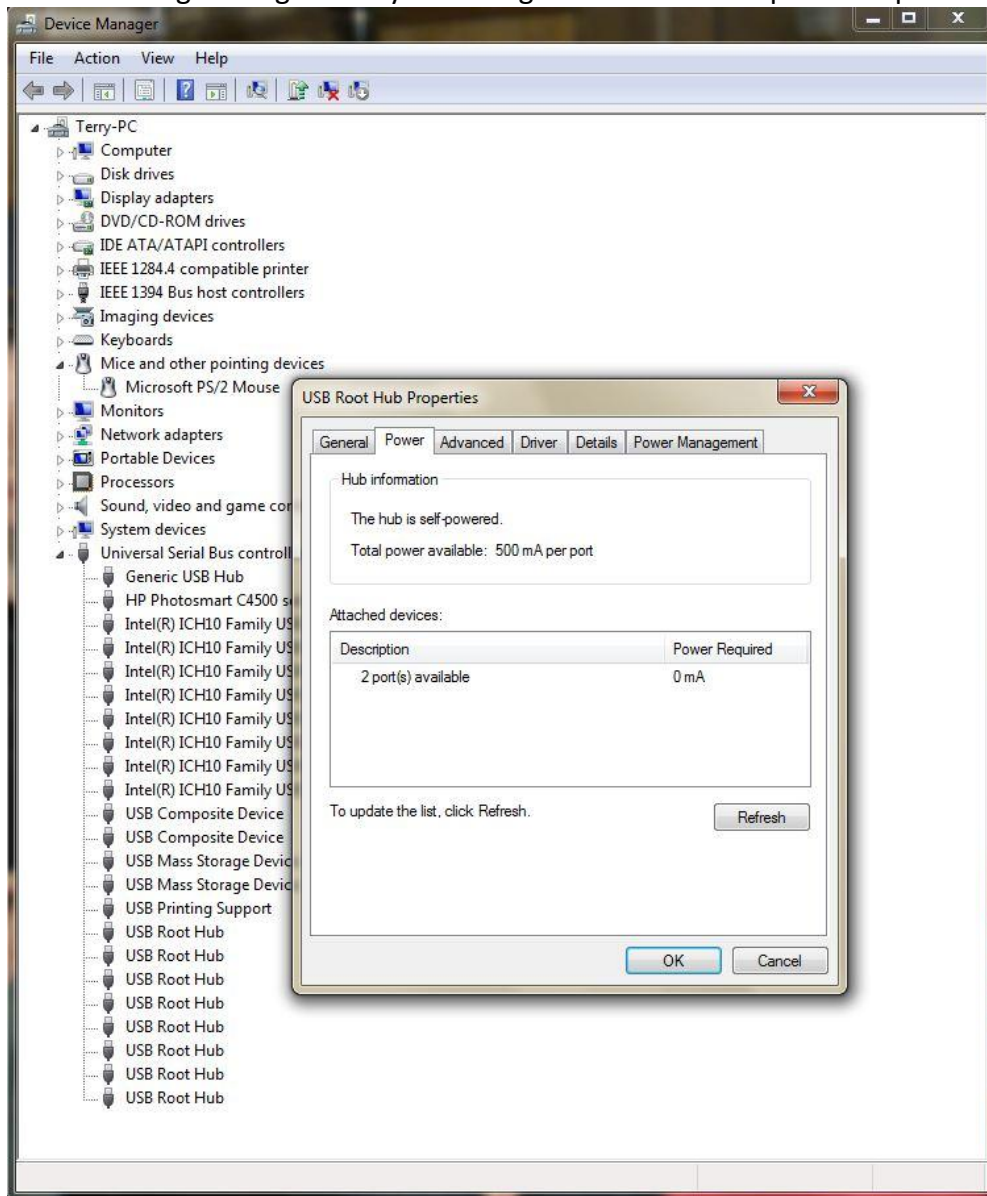
DVD drives, for example, have a tab on which the default DVD region can be changed.

Note that you are only allowed a limited number of changes so do not change unnecessarily

Hard disks have a Policies tab where you can disable write caching if there is a risk of losing data through sudden power loss, and many network adapters have a Power Management tab where you can decide whether the adapter is allowed to turn off the computer or automatically bring it out of standby.

Devices attached using USB are not listed separately; they're assigned to an appropriate Device Manager category, so expect to find scanners, cameras and webcams listed as Imaging devices and external hard drives and memory keys as Disk drives. If you have two or more devices in the same category and you can't work out which is which, simply unplug one of them and see which disappears.

Device Manager is a great way of finding out whether USB ports are powered or unpowered.



Powered ports, such as those built into a PC or attached to a separate DC power adapter, can supply webcams, scanners and similar devices with up to 500mA of power. Many USB devices, including most hard disks, cannot operate from unpowered USB ports.

To view the status of USB ports and devices, open up the Universal Serial Bus controllers branch of Device Manager to reveal a list of USB Root Hubs. Right-click on each one of these in turn and select Properties. The Power tab contains information on whether the hub is self-powered or unpowered. If devices are currently attached to any of the hub's ports, they are named along with the amount of power they are drawing.

Where to get help with Device Manager

Familiarity with all the workings of Device Manager is not something most users need on a day-to-day basis, and the information presented here should be ample unless something goes seriously amiss. If a device fails to work properly and can't be fixed with a simple driver update or roll-back, don't rule out a physical defect and test it with a different computer before doing anything hasty.

When you view the properties of a problem device in Device Manager there is an error code and an explanation. If these are insufficient, Microsoft provides information on all the Device Manager error codes together with recommended resolutions at <http://support.microsoft.com/kb/310123>.