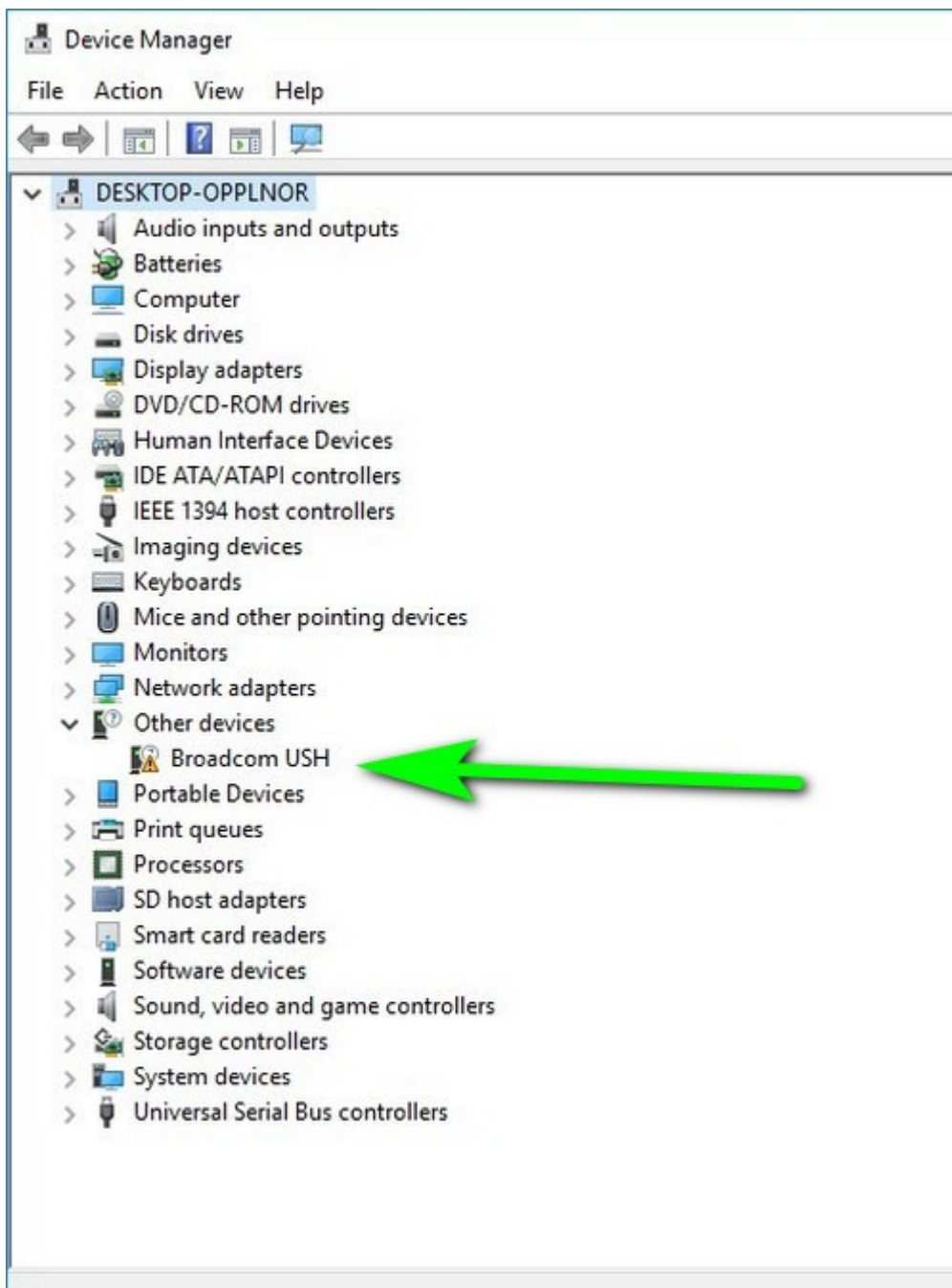


Computer Hardware Troubleshooting In Easy Steps

For troubleshooting computer hardware we will use a simplest tools that are included in Windows operating system – Device Manager, Troubleshooting Wizard a few commands, Event Viewer and Windows Memory Test.

I usually use them when the computer suddenly shows a blue screen (BSOD).

You can access **Device Manager** in Windows 10 by clicking Start then type “Device Manager” and hit Enter.



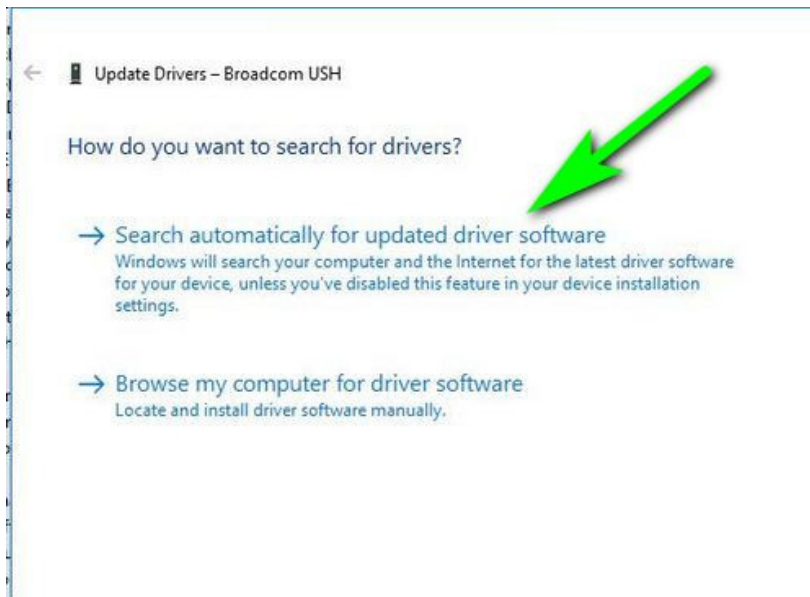
This will bring up a window that has a list of all devices in the computer.

On very old Windows XP this can be accessed by clicking Start, Control Panel, click System icon, System Properties and Hardware tab.

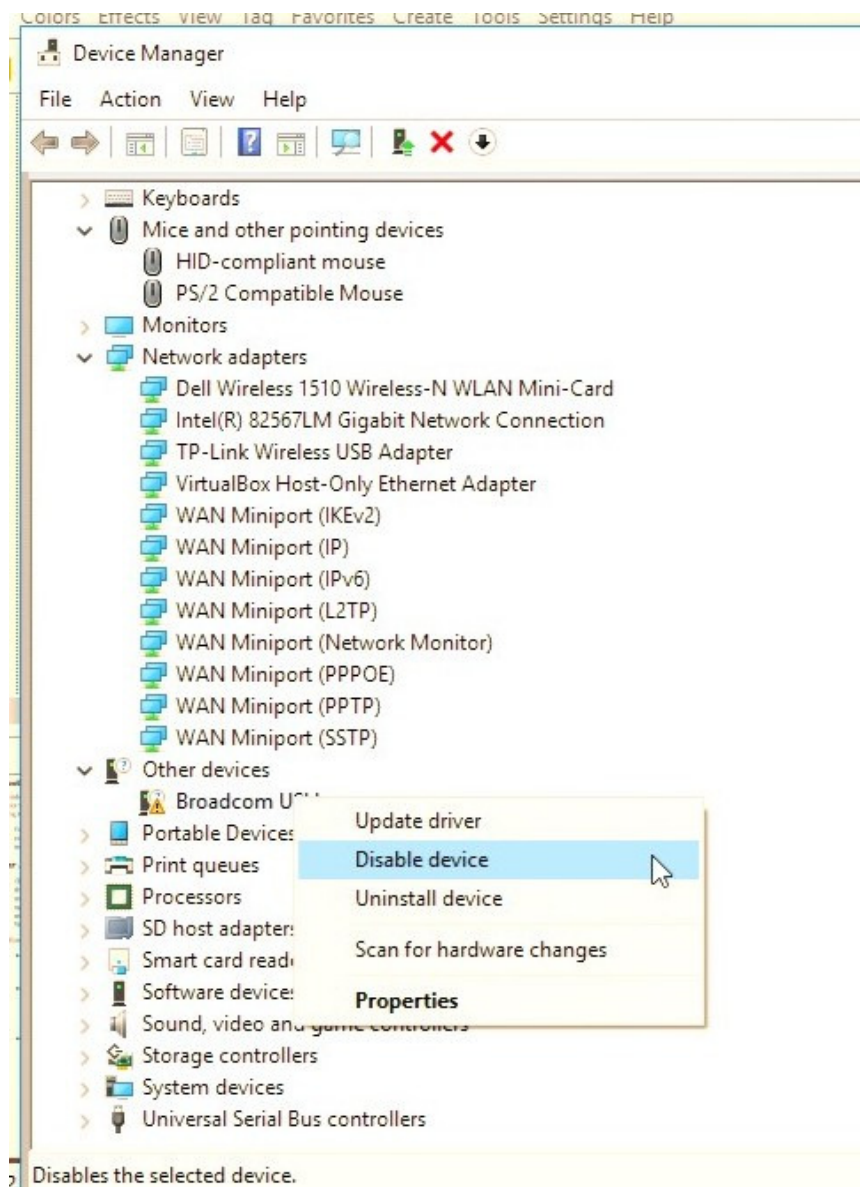
On Windows Vista click Start, Control Panel, make it Classic View, click Device Manager,

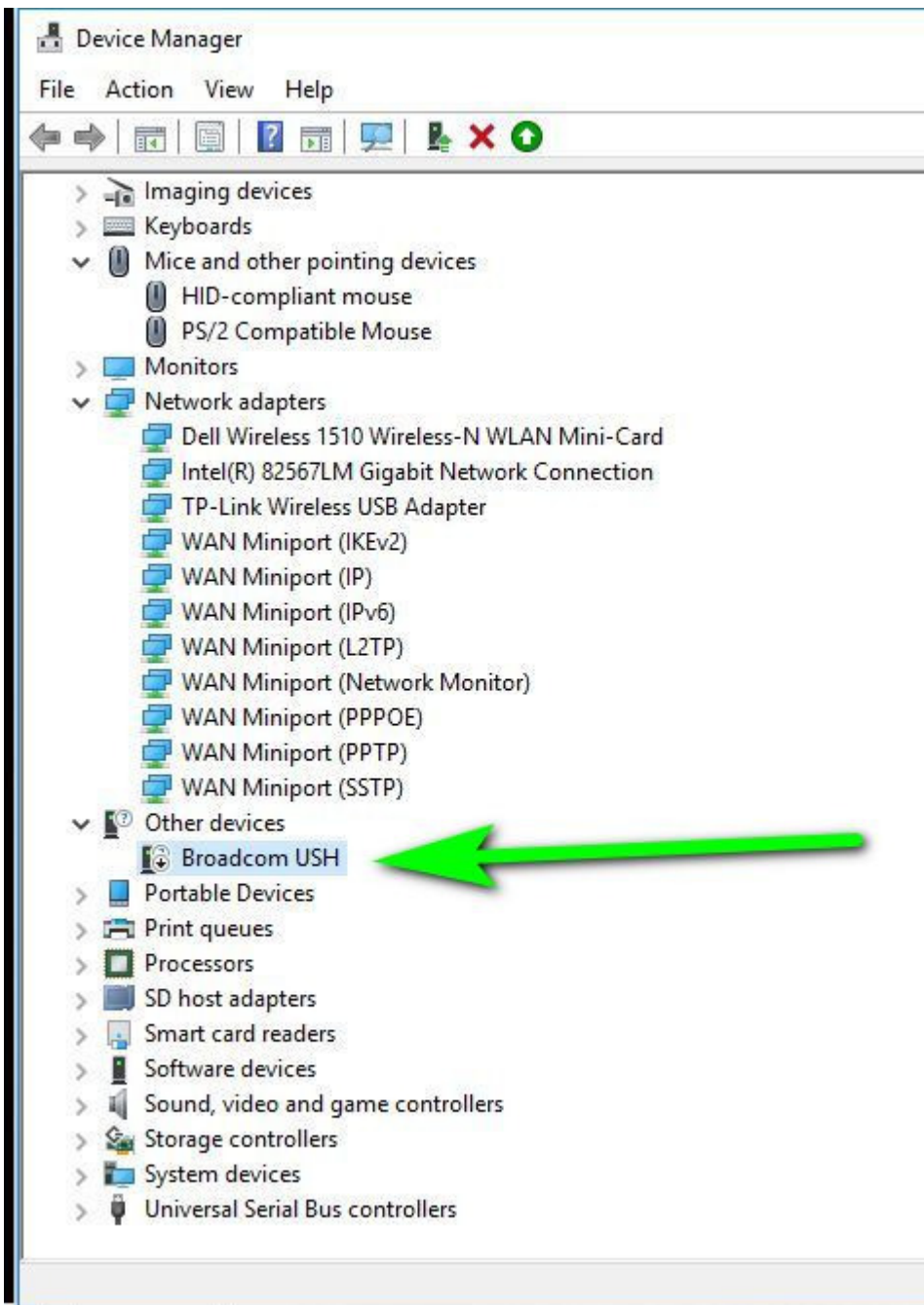
I have here it showing exclamation mark in a yellow triangle which means there are no drivers installed for this device. We will go and install drivers for it.

Right click on this device, click Update Driver, now click Search Automatically for Updated Driver Software (you need internet connection for this to work).

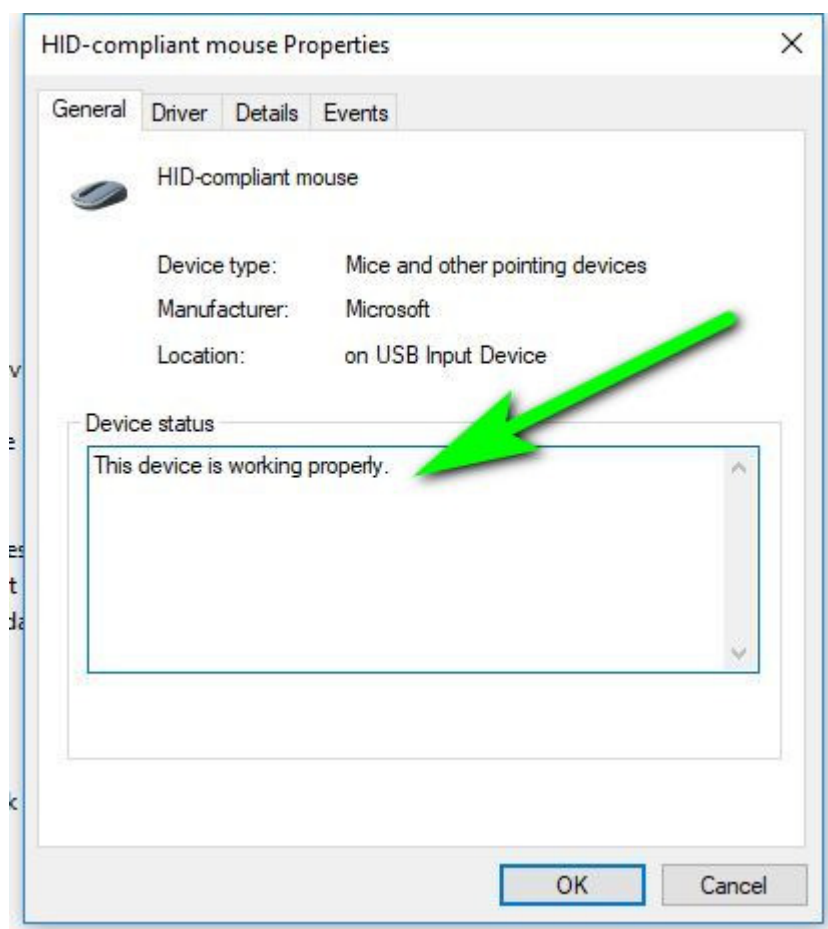


It will take some time and usually it will find the right driver. In case it will not find go to manufacturer's web site to look for drivers. If this automatic update did not find drivers and you can't find drivers on manufacturer's web site simply disable this device. Right click on the device and choose Disable Device.





An exclamation point in a yellow circle indicates potential hardware conflict. Again right click on that device; choose Properties and in General tab where is Device Status you will see that is has some conflicts.

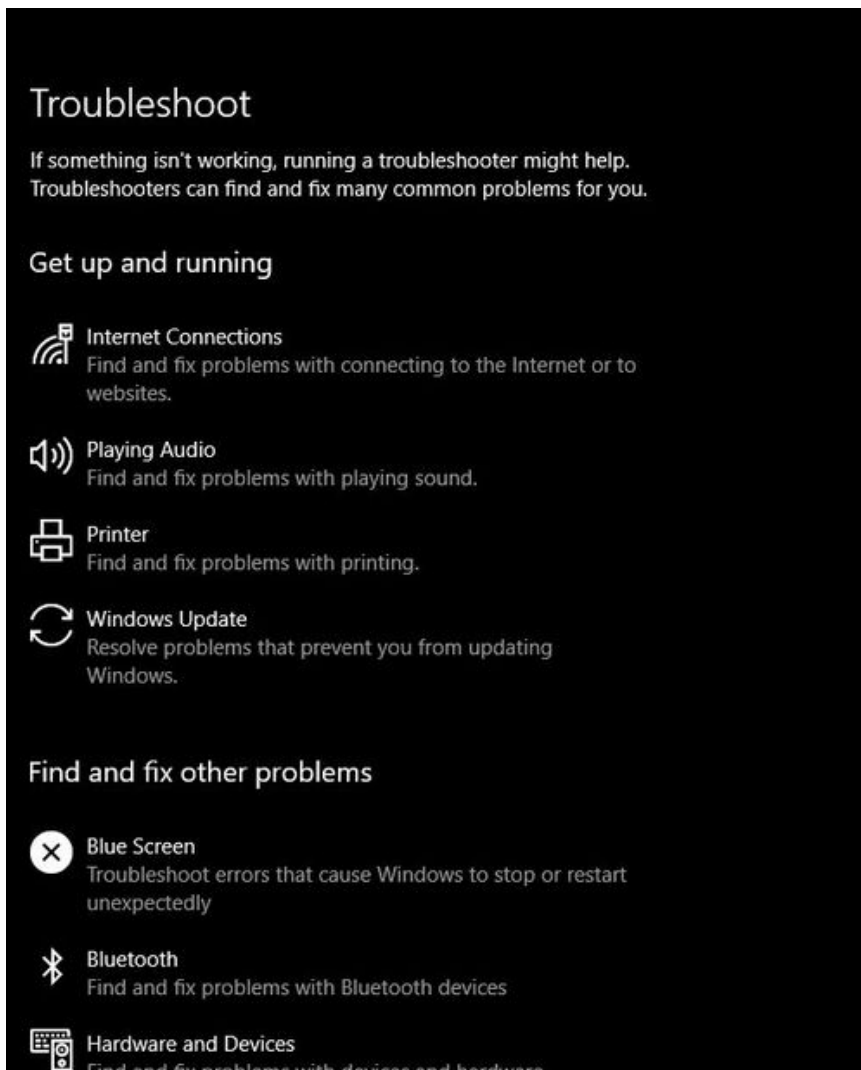


For this problem a quick solution to try is simply to restart the computer. If it has some conflicts after the restarting we can disable the device. Right click on the device and choose Disable Device. It will show now an arrow pointed down (in Windows XP this will be an X in a red circle).

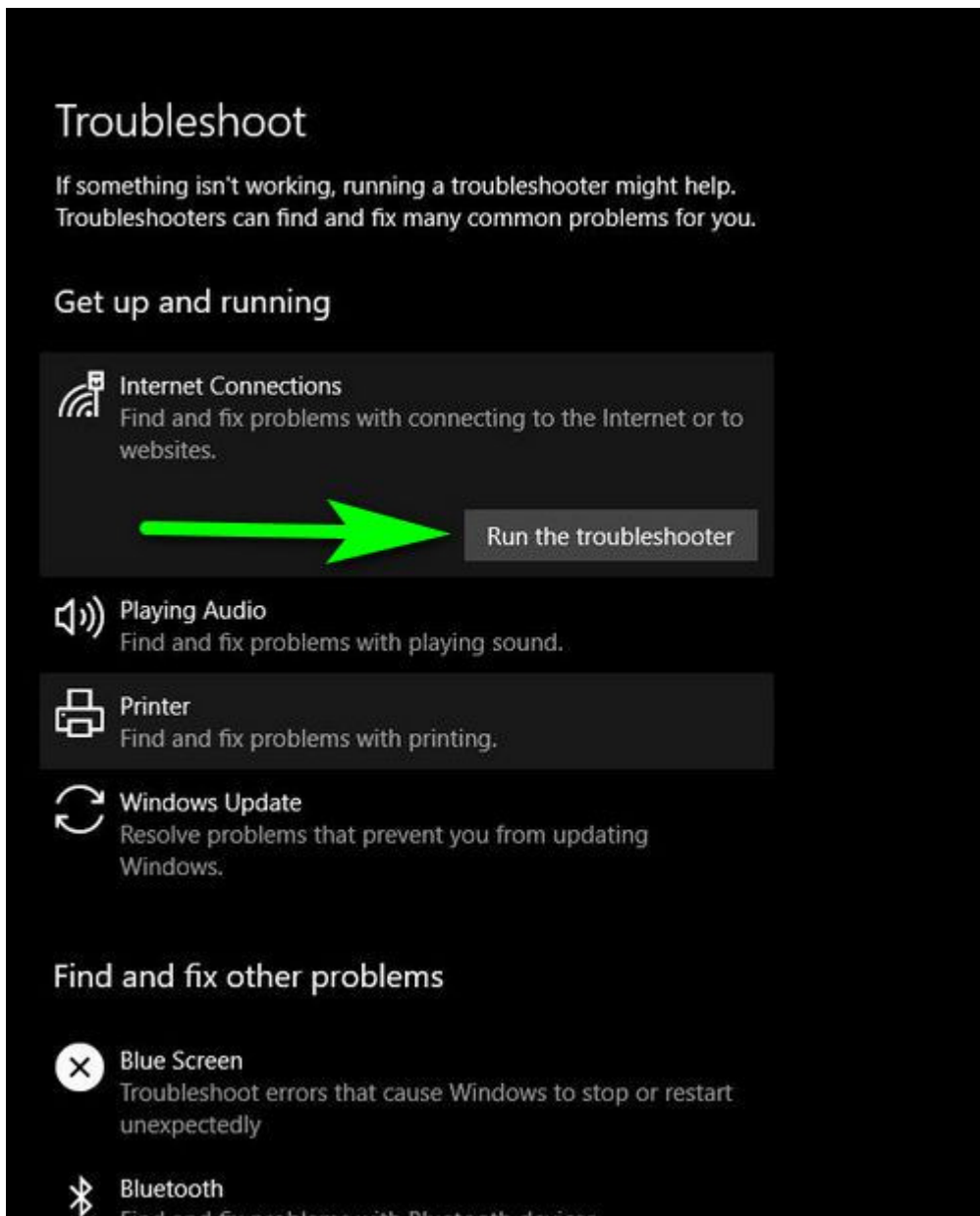
Using Windows Troubleshooting Wizard

I will show how to do it on Windows 10. For Windows 7 and Windows XP it's a bit different.

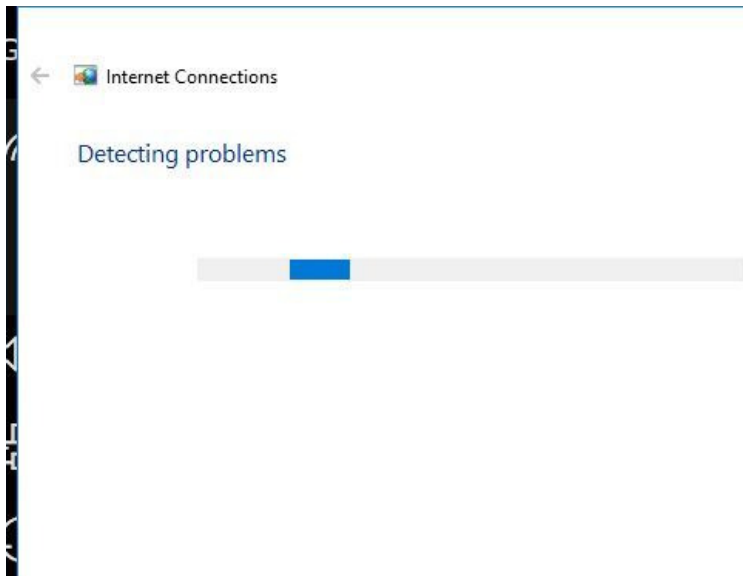
Click start and type Troubleshoot; click on the Troubleshoot icon. This will bring up a long list of devices and features.



I have a problem with my internet connection so I will click Troubleshoot Internet Connections.

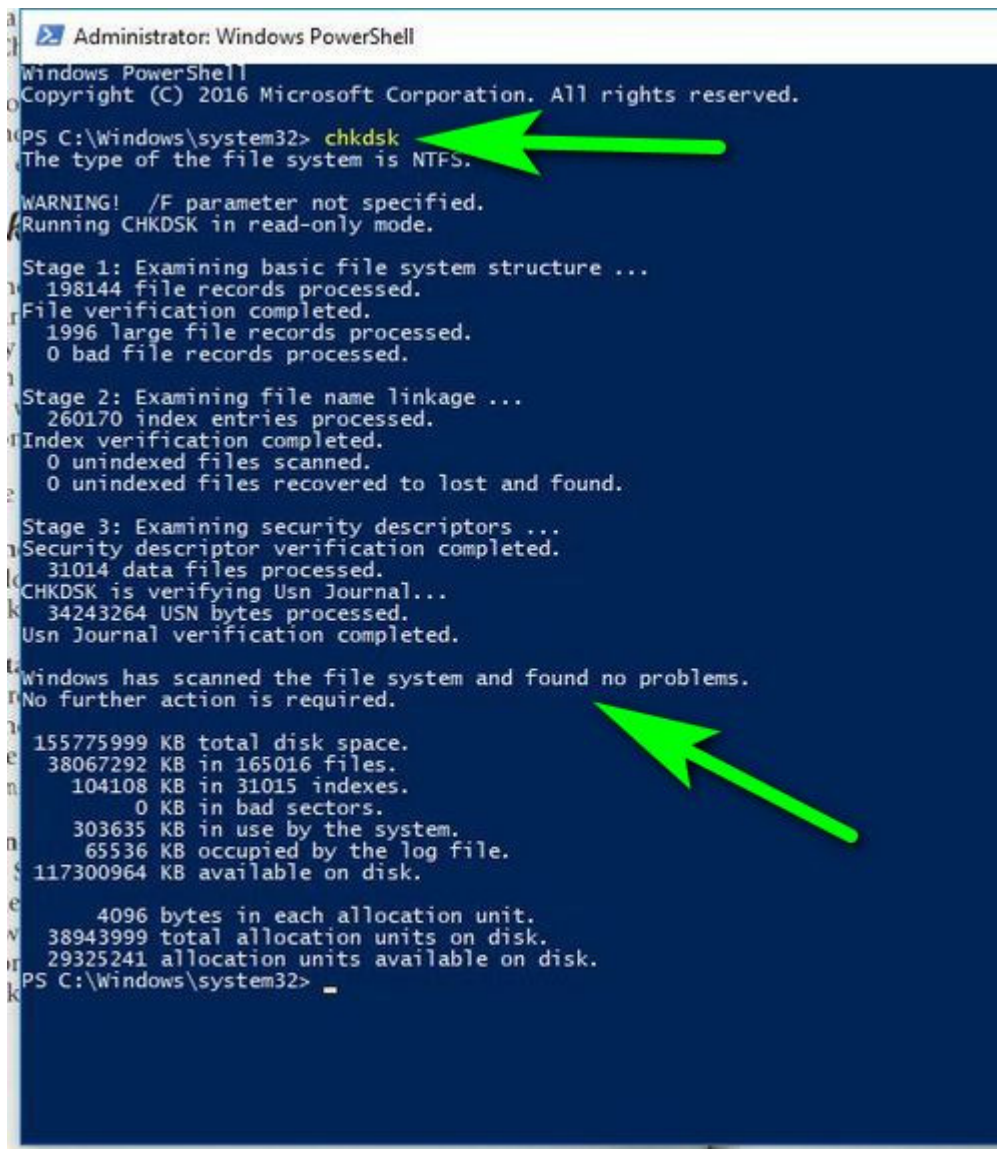


Now depending what's wrong it will show slightly different dialog box where you can choose to troubleshoot it further or it simply will find what's wrong.



Hard Drives

In Windows 10 you can run a **chkdsk** command which will start short hard drive check. Hit Windows key and X key together, this will bring up a dialog box where you choose Windows PowerShell (Admin), type **chkdsk**. The test will take a few minutes.



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Windows\system32> chkdsk
The type of the file system is NTFS.

WARNING! /F parameter not specified.
Running CHKDSK in read-only mode.

Stage 1: Examining basic file system structure ...
   198144 file records processed.
File verification completed.
   1996 large file records processed.
   0 bad file records processed.

Stage 2: Examining file name linkage ...
   260170 index entries processed.
Index verification completed.
   0 unindexed files scanned.
   0 unindexed files recovered to lost and found.

Stage 3: Examining security descriptors ...
Security descriptor verification completed.
   31014 data files processed.
CHKDSK is verifying Usn Journal...
   34243264 USN bytes processed.
Usn Journal verification completed.

Windows has scanned the file system and found no problems.
No further action is required.

155775999 KB total disk space.
 38067292 KB in 165016 files.
 104108 KB in 31015 indexes.
   0 KB in bad sectors.
 303635 KB in use by the system.
  65536 KB occupied by the log file.
117300964 KB available on disk.

   4096 bytes in each allocation unit.
 38943999 total allocation units on disk.
29325241 allocation units available on disk.

PS C:\Windows\system32> _
```

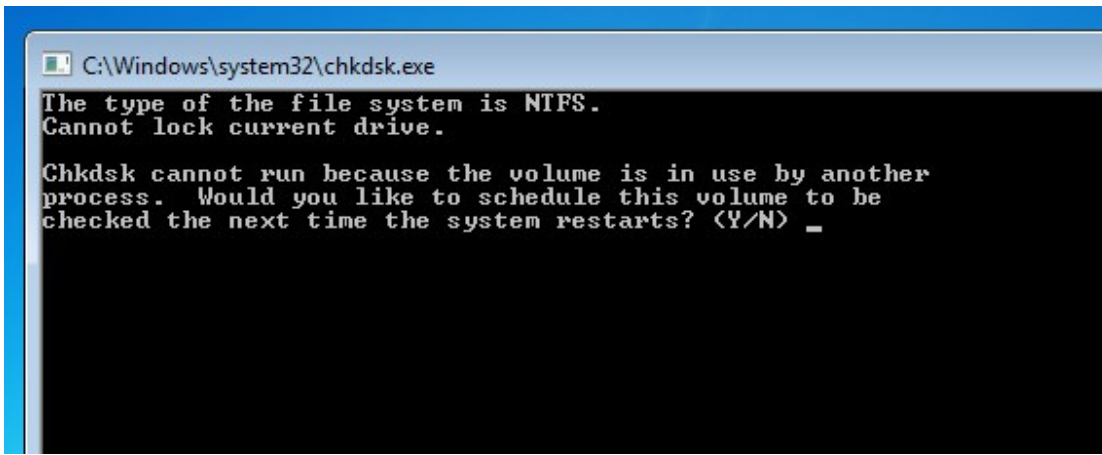
Note that this is not a thorough test.

To make it run complete test and try to fix errors (bad sectors) we need to use so called switches. Do the same as previously but now type **chkdsk /r** . You will get a message saying: “Chkdsk cannot run because the volume is in use by process. Would you like to schedule this volume checked the next time the system restarts? (Y/N)” Hit Y key and press Enter.

This will start the hard drive check when you power on the computer the next time. The process will take a long time (1 hour or longer).

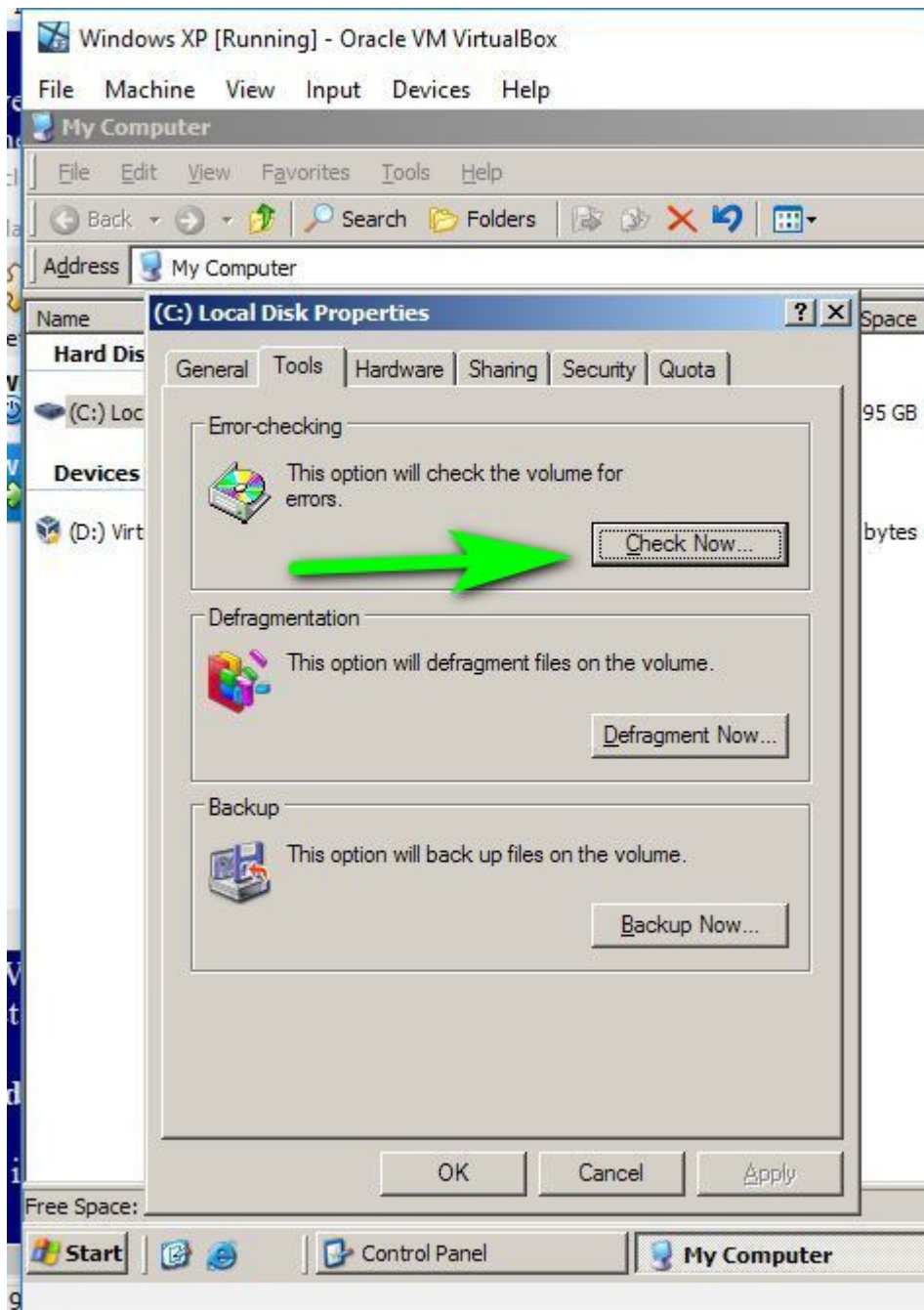
In Windows 7

Click Start, type **cmd** and hit **Ctrl+Shift+Enter**. Type **chkdsk /r** if you want it to run and fix errors; hit Enter. Again it will say that: “Chkdsk cannot run because the volume is in use by process. Would you like to schedule this volume checked the next time the system restarts? (Y/N)” and you can hit Y key.

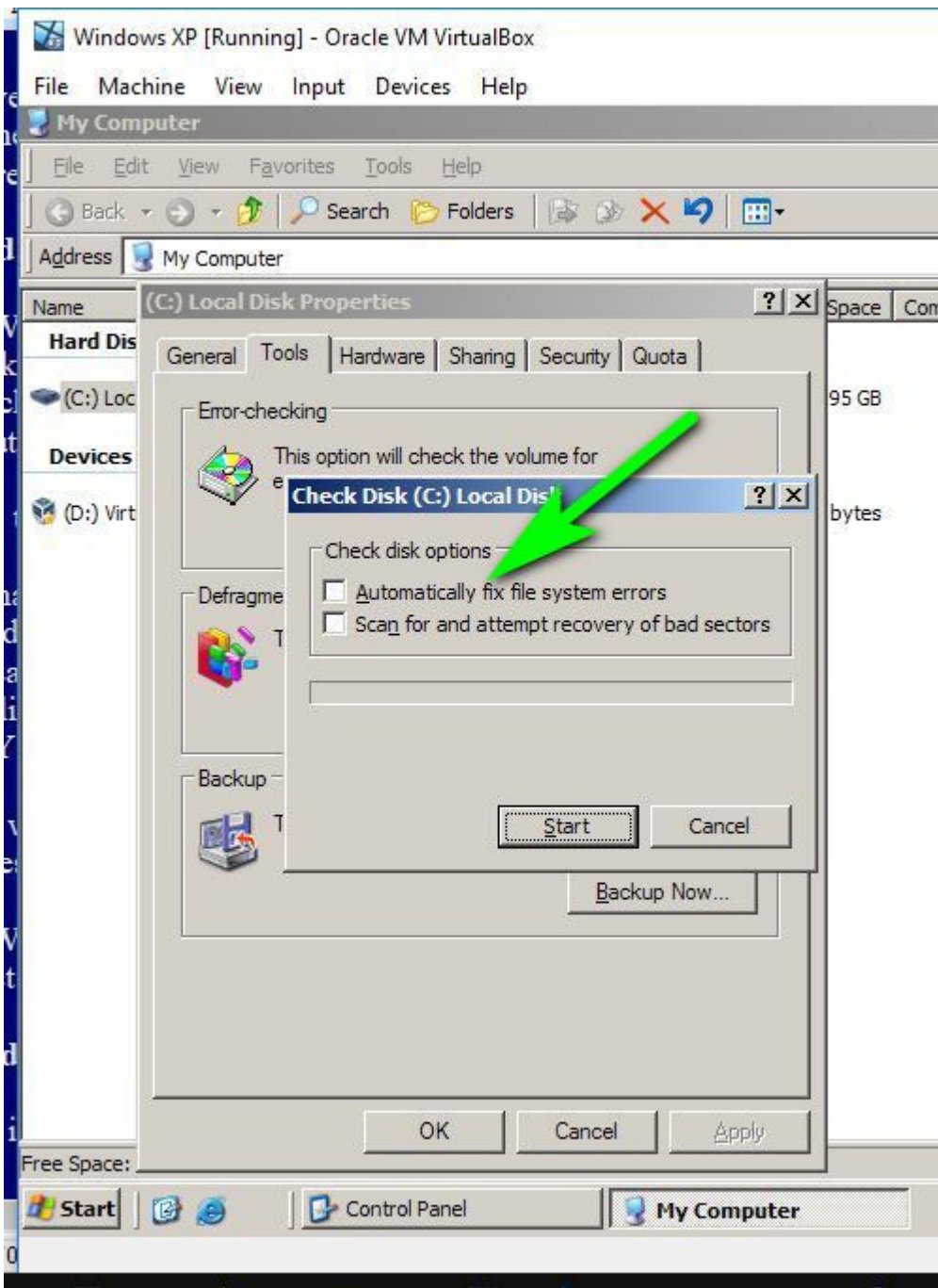


It will perform a long hard drive test when you power on the computer next time.

In Windows XP go to My Computer, right click on C disk, choose Properties,



select Tools tab, there will be an item Error-checking click Check Now.

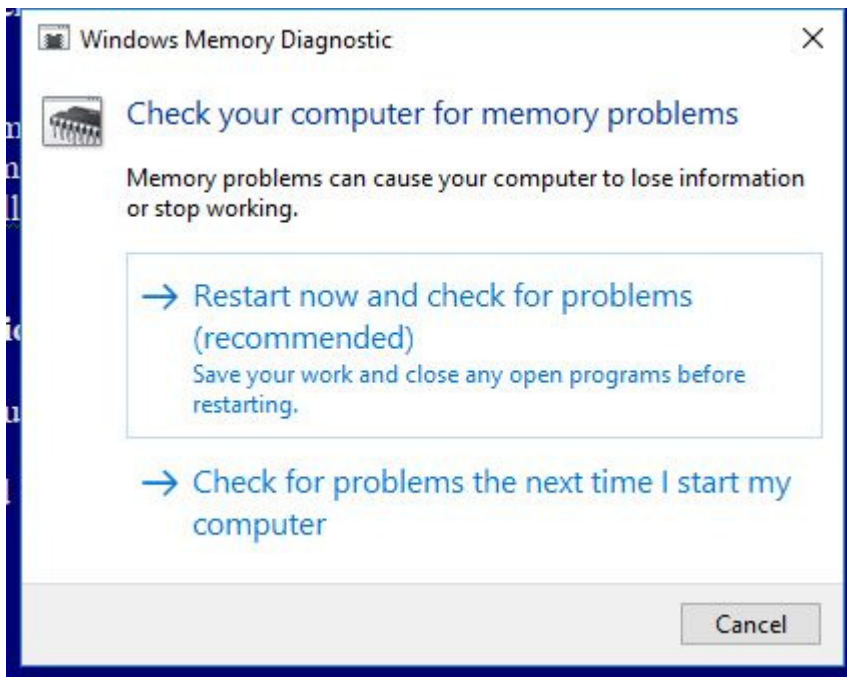


If you want thorough test tick Automatically fix file system errors and Scan for and attempt recovery of bad sectors.

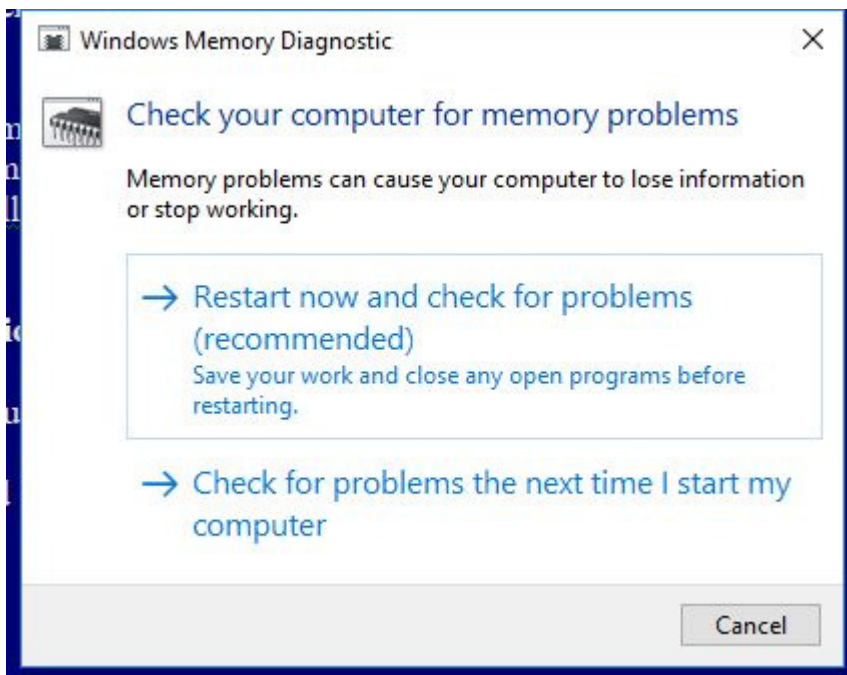
Windows Memory Diagnostic

This is another tool that is inbuilt in Windows 10 and Windows 7.

In Windows 10 click Start and type “Memory”; click the Windows Memory Diagnostic icon. In the opened dialog click Check for problems the next time I start my computer.



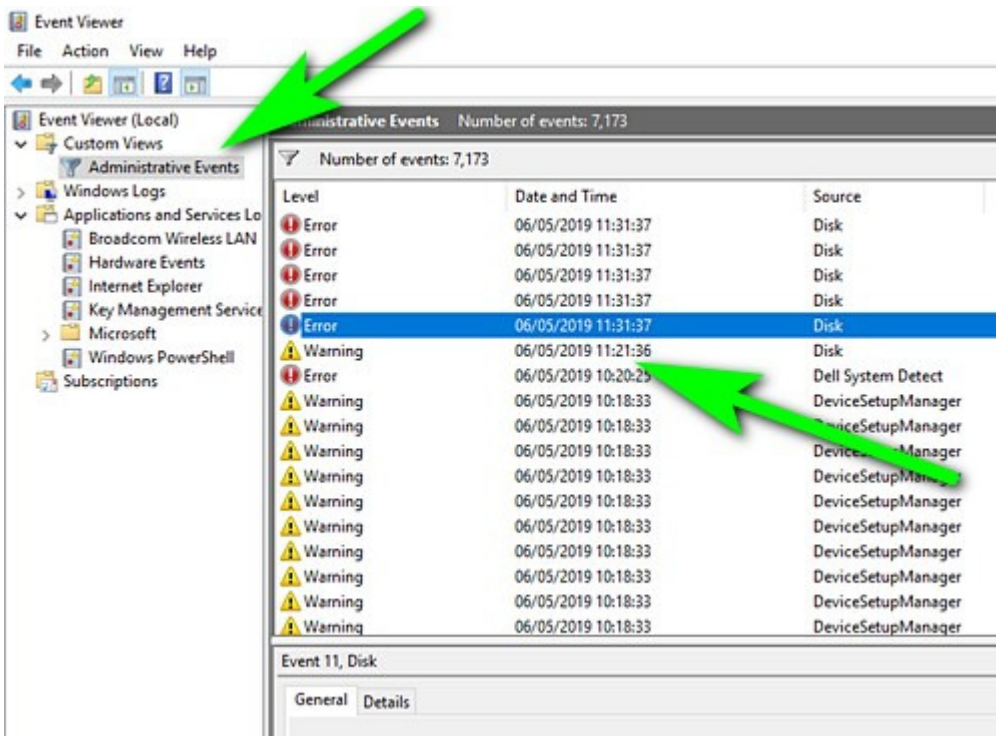
In Windows 7 click Start, type Memory and click Windows Memory Diagnostic icon. Click Check for problems the next time I start my computer.



Or you can do this straight away by clicking the above option that says Restart now.

The Event Viewer is another powerful tool that can give you some hints about computer's hardware health.

In Windows 10 Click Start and type Event, click Event Viewer icon. This will bring a windows where you click Custom Views, Administrative Events.



As you can see it shows me a warning about an error which relates to the disk (hard drive). And this is correct as I have in my computer setup an external hard drive that disconnects randomly and I can't access files on it unless I restart it.

In Windows 7 access to Event Viewer is the same as in Windows 10.

In Windows XP click Start, Settings, Control Panel, Administrative Tools, click Event Viewer. This will bring up a list that is similar to lists in Windows 10 and Windows 7.

