

10 Steps to make Windows 98 SE run faster

Introduction

Most PCs that ship with Windows 98 SE are pre-installed at the supplier. The quality and completeness of the installation depends on the person doing the installation. The installation can vary from poor to excellent. You can tune the installation and improve performance and stability by taking maximum advantage of your computer hardware and software settings.

This can be accomplished by implementing the appropriate tips we are going to show you. Over time, as you install/uninstall software and hardware, drivers and configurations are changed. With precise tuning, we can return your PC to an optimised state. In addition, by following these tips we can correct faulty Windows 98 SE installations. While each tip can be used separately they incrementally improve performance, stability and usability. To get the largest increase in performance implement as many tips as are appropriate for your PC.

These tips will not increase your computers speed by 1000%. Each tip incrementally increases your speed. You will also notice a bigger difference on a slower computer. For example, if your computer takes 5 seconds to complete a task before the tips and afterwards it takes 4 seconds that is a 20% increase in speed even though you only saved once second. On a slower PC, if it took 5 minutes before and took 4 minutes afterwards that would be a very noticeable difference.

The more of the tips you implement the greater the speed increase.

Remember: Make sure you have backed up your data and verified that the backup is valid before trying any of these tips. Make sure you have all the software, drivers, data and time to restore your system should anything go wrong. Although all these tips have been tested time and again unforeseen circumstances like power failures, incorrectly typed values, virus infected downloaded files, hard drive crashes, etc could cause data loss. Do not continue unless you are very sure you can easily recover your system.

Tip

1. Download, install and configure the latest video driver for your video card. Download the latest drivers from your manufactures web page.
<http://mirror.ati.com/support/drivers/powerd.html>
<http://www.matrox.com/mga/support/drivers/latest/home.cfm>
<http://www.nvidia.com/content/drivers/drivers.asp>
<http://download.com.com/3150-2108-0-1-1.html?legacy=cnet>
If the drivers are self-installing, run setup.exe then skip to step 11.
 1. Right click on an empty portion of the desktop.
 2. Click Properties.
 3. Click Settings.
 4. Click Advanced Properties. The type of video card is listed here. In our example we have a Matrox Millennium video card.
 5. Click Change.
 6. Click Have Disk.
 7. Click Browse.
 8. Find the drivers in the directory you downloaded them to.
 9. Select your video card.
 10. Click Ok. Ok.
 11. You must restart your computer before the new settings will take effect. Do you want to restart your computer now? Click Yes.

2. Download and install the latest Microsoft Direct X drivers. Installing the latest version of Direct X insures that all Direct X games and applications run correctly. Most Windows games use Direct X. Direct X will also upgrade your video drivers if Direct X has a newer version this is useful is you are unable to download video drivers.

1. Download the latest drivers from Microsoft's web page.
<http://www.microsoft.com/windows/directx/downloads/default.asp>
2. Double click the Direct X setup file.
3. Restart your PC.

3. Set your display to the highest refresh rate that your video card and monitor can support in the current resolution. The refresh rate is how often a screen is refreshed. A higher refresh rate provides a clearer screen and less eyestrain.

Note: *Setting a refresh higher than your monitor can handle can cause damage to the monitor itself. A refresh rate of 72Hz or higher is recommended for reduced eye strain. This procedure will vary slightly on different video cards below is a basic procedure. If your monitor image is unreadable after changing your refresh rate reboot the PC in safe mode and lower the refresh rate.*

1. Right click on an empty portion of the desktop.
 2. Click Properties.
 3. Click Settings.
 4. Click Advanced Properties.
 5. Click on Adapter.
 6. Click the arrow on Refresh rate drop down menu.
 7. The available choices on the drop down menu vary depending on your video card and monitor. First try optimal and see how the screen looks. If optimal is already selected try 72Hz or higher.
4. Erase unnecessary files in the windows temporary folder. During installation and other tasks the operating system creates temporary files these files are stored in the temp folder. Improper shutdown, crashes or failed installations can prevent proper clean up of these files. After the task is completed these files can safely be deleted.

1. Double Click My Computer.
2. Double Click the drive where windows is installed. This is typically drive C.
3. Double Click the windows folder. This is typically C:\Windows.
4. Double Click the temp folder. This is typically C:\Windows\temp.
5. Press control-A to select all files and folders.
6. Press the delete key.
7. If confirmation is asked to delete these files choose yes to all.

(This process can be automated to run at every boot by adding the following lines to the Autoexec.bat.)

```
deltree /y c:\windows\temp
```

```
md c:\windows\temp
```

5. Convert partitions from FAT16 to FAT 32. Hard disks allocate space in clusters. Bigger hard disks have larger clusters. Every file is allocated an entire cluster no matter how much of it is physical used. For example, a 1 kilobyte file occupies one cluster whose size is 4k-32k depending on drive size. If the file is one byte more than the one cluster it is allocated two clusters. With thousands of files on your hard disk this can result in hundreds of lost megabytes. The FAT32 file system uses smaller clusters (that is, 4K clusters for drives up to 8 GB in size), resulting in 10 to 15 percent more disk space on average compared to a large hard disk using FAT16. FAT32 partitions do not have a 2.1GB limit as FAT16.

Note: *There are two ways to install FAT32. One way is to run FDISK from a Windows 98 SE boot disk and enable large disk support. FDISK is a low-level format and will erase (destroy) everything on this partition. This method will require you to reload the operating system and all applications from the original installation disks. The second way is:*

1. Run Scandisk.
 2. Backup entire hard disk.
 3. Uninstall old disk utilities and virus scanners.
 4. Make a Windows 95B dos boot disk.
 5. Copy the necessary Partition Magic files to the floppy disk.
 6. Restart the PC with the new Partition Magic boot disk.
 7. Use Partition Magic to resize partition from FAT16 to FAT32.
6. Make sure the DMA(Direct Memory Access) option is enabled for IDE Hard Disks. DMA access lowers CPU overhead and increases the speed of data transfers.
Note: *Not all hardware supports DMA access. If DMA is not supported by your hardware you will need to restart your PC in safe mode to disable DMA.*

1. Edit \Windows\Inf\Mshdc.inf.
2. Find the header [ESDI_Addreg]
3. Add the last two lines if they are not present.
4. [ESDI_AddReg]
HKR,,DriverDesc,,"ESDI Port Driver"
HKR,,DevLoader,,"*IOS
HKR,,PortDriver,,"ESDI_506.pdr
HKR,,IDEDMADRIVE0,3,01
HKR,,IDEDMADRIVE1,3,01
5. Remove your hard disk from device manager.
6. Reboot.
7. Right click My Computer. Click properties. Click the Device Manager tab.
8. Double Click Disk Drives. Double Click your Hard Disk.
9. It is usually labeled Generic IDE Type xx.
10. Click the settings tab.
11. Enable DMA by click the mouse in the box.
12. Click ok. Click ok.
13. You will prompted to restart the computer. Click Yes.

Note: *After the PC restarts if the DMA option is still checked everything is working.*

7. Optimise the Swap File Performance. On systems with larger amounts of memory, 64Mb and more, the hard disk based swap file need not be used as much. This tweak optimises the use of the swap file on such systems.
 1. Using notepad open the SYSTEM.INI file in your Windows directory.
 2. Find the [386Enh] section and add a new line reading
ConservativeSwapfileUsage=1
 3. Save the file and restart Windows for the change to take effect.

8. If your PC has more than 16MB of RAM, change the Typical role of this machine to Network Server. Increase the size of the file and directory cache. This results in increased speed when accessing the hard disk.
 1. Right click my computer.
 2. Click Properties.
 3. Click Performance.
 4. Click File System.
 5. Click the arrow next to Typical Role of this machine and select Network server.
 6. Click and drag the Read-ahead optimisation slider all the way to full.
 7. Click Ok.
 8. You must restart your computer before the new settings will take effect. Do you want to restart your computer now? Click Yes.

9. Virtual Memory: It is a good idea to create a custom swap file for Windows 98. This prevents swap file fragmentation. If you've got enough room on your hard drive, dedicate 256 to 512Mb to Virtual Memory. Make the minimum and maximum settings the same.
 1. Right Click My Computer
 2. Select Properties
 3. Select the Performance tab
 4. Select Virtual Memory
 5. Click Let me specify my own virtual memory settings
 6. Choose the drive (Using a different hard drive than the boot drive for the swap file should also speed things up some. Try and choose your fastest hard drive.
 7. Select the minimum and maximum amount. (e.g. 512)
 8. Click OK, OK, OK
 9. Reboot your PC

10. Creating, modifying and deleting files causes fragmentation. When files are fragmented, it takes longer for the computer to read or write those files. You should defragment your hard disk every week to maintain optimal disk performance. Eliminating fragmentation results in increased hard disk speed.
 1. Close all applications.
 2. Disable your screen saver.
 3. Disable all the programs on the taskbar if possible.
 4. Click Start.
 5. Click Program.
 6. Click Accessories.
 7. Click System Tools.
 8. Click Defrag.
 9. Select the drive to defrag. You should defrag every hard disk on your system. This process can take a long time.
 10. Click Ok.
 11. Enable your screen saver.