Optimizing, Tweaking and plain old Speeding up Windows 98
By The Weekly Geek

The first thing you should do before performing any task on a Windows 98 computer is to update the Startup disks. To do this go to *Start | Settings | Control Panel* choose *Add/Remove Programs.* Select the *Startup Disk* tab and choose *Create Disk.* Also make sure you have backed up your documents and files as described in Chapter 1 Section B. Don't forget to write the new date (in pencil) on the disk or label so you know it is current.

Virtual Memory:

Virtual Memory (VM) is simply hard drive space reserved to be used if or when standard RAM overflows. Since hard drives run 10 to 100 times slower than RAM it only makes sense to use as little VM as possible. By default Microsoft uses a whole lot of VM and thus can slow down the performance of your machine dramatically.

Before setting up VM you must run a scan disk and then a system defragment on all hard drives. This keeps the system from placing VM on a bad section of the hard drive and keeps the VM from being fragmented and thus losing its benefits.

For a tutorial on running a scan disk and or defragmentation please visit www.TheWeeklyGeek.com.
The next step is to select which hard disk to put the VM on. In most cases you will only have one hard drive and it will be "C:". In some cases you may have one physical drive and several partitions (pieces of one drive divided into separate storage drives [D:, E: …]). I do not recommend putting multiple VM segments on one physical drive even though may have several partitions. If you have multiple physical hard drives then several VM segments will enhance system performance.
As a note, the more RAM and VM the more the CPU has to keep track of and the less data transferring it can do. So there is such thing as too much RAM and VM. As a rule of thumb I select the VM minimum to be 1.5 times my RAM and the maximum to be 2x my RAM up to 512MB. The reason for a limit is that you start eating too much hard drive space, and access time from the hard drive is extremely slow when compared to that of RAM.
So if I have 64 MB of physical RAM my VM would be 96 and 128MB* on each physical drive. After entering the amount select "*OK*". The system will require a reboot to make this effective. If I have multiple hard drives I set up the VM one at a time and reboot between each time.
Enough talk, let's begin.
To check and adjust you VM need to be at the desktop.
Right-click on *My Computer* and select *Properties*.
On the new window that appears click on the performance tab. See Figure 4Bii98-1.
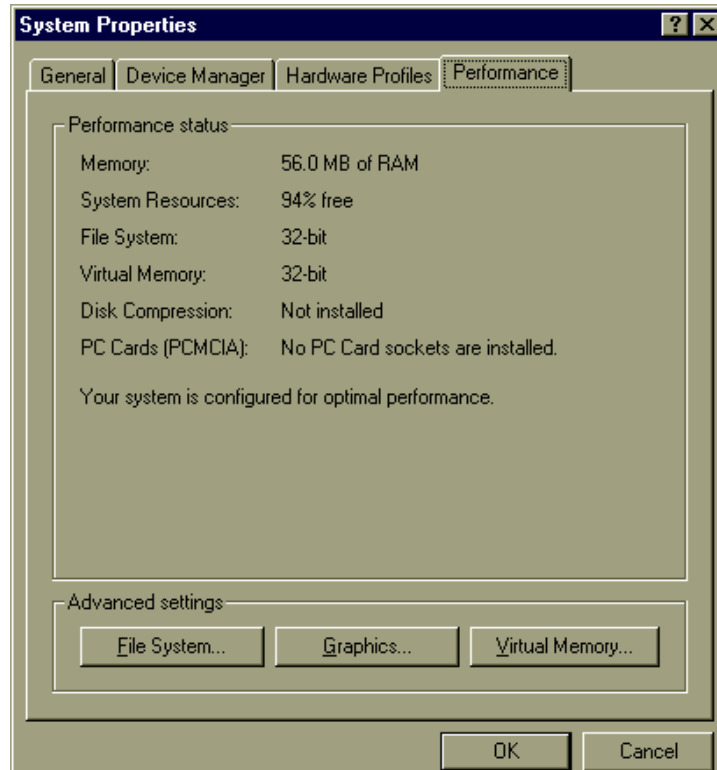
Figure 4Bii98-1

Next you will need to click on the *Virtual Memory* button in the lower right hand corner of Figure 4Bii98-1 and a new window will appear much like figure 4Bii98-2.
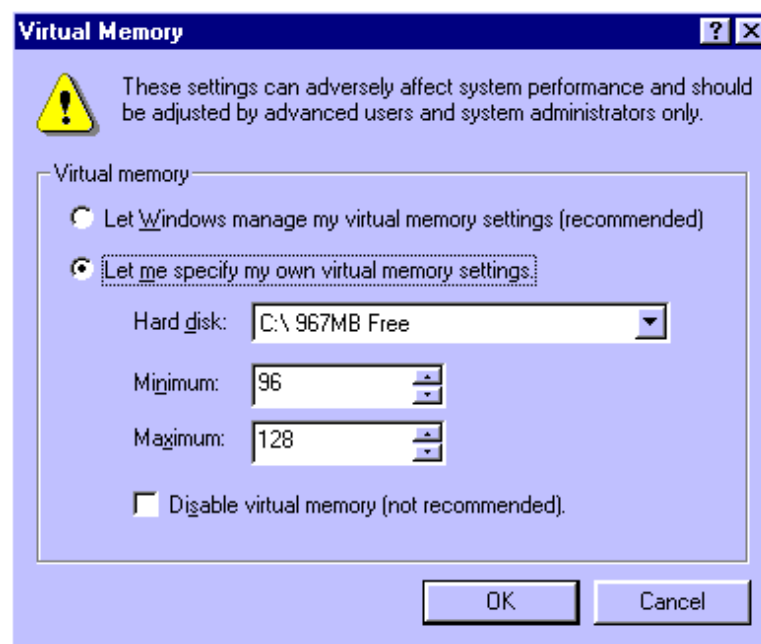

Figure 4Bii98-2

You will need to select the *Let me specify…*(as I have done in the above example) and then enter 1.5 time your RAM in the *Minimum* and two times the RAM in the *Maximum*. In our example figure 4Bii98-1 shows only 56 MB of RAM but we put 96 and 128 in the VM. The reason is

there is 64MB of RAM however the video is built on the motherboard and uses the system RAM, in this case 8MB. We are going to assign VM based on **actual** RAM not RAM after video is removed.

Select *OK* to continue, then click *OK* on the warning and allow the system to reboot.

*Because hard drives are so slow and as quantities of RAM increase there is less of a need for VM never exceed 512MB as the *Minimum* or *Maximum* sizes. If you have 512MB of physical RAM set both settings of the VM to 512MB. Due to performance loss never exceed 512MB of physical RAM in Windows 98 the delay is not worth it.

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If you have **over 64 MB of RAM** you are not getting the full potential of the RAM above 64MB. As you have probably already read above, I suggest setting your own Virtual Memory (VM), well if you do or do not, Win98SE uses up to 64MB of RAM, then the VM, then after the VM is full, the remaining memory.

Yes, First the fast RAM is used, then slow VM, then back to the fast RAM. To solve this horrid Microsoft oversight, follow the directions below.

1. Simply go to *Start | Run.*
2. Type in *Msconfig* and press the *enter* key on your keyboard. capitalization does not matter. See figure 4Bii98-3 for an example.
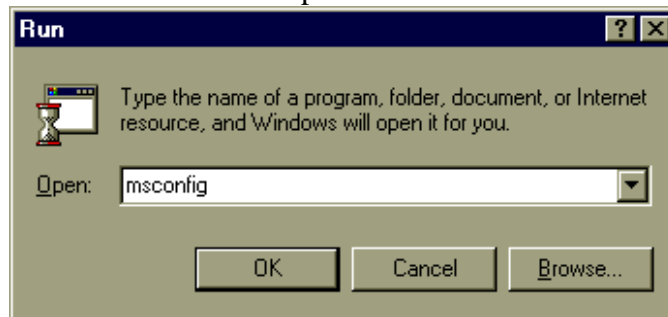

Figure 4Bii98-3

3. Go to the *System.ini* tab as shown on Figure 4Bii98-4.
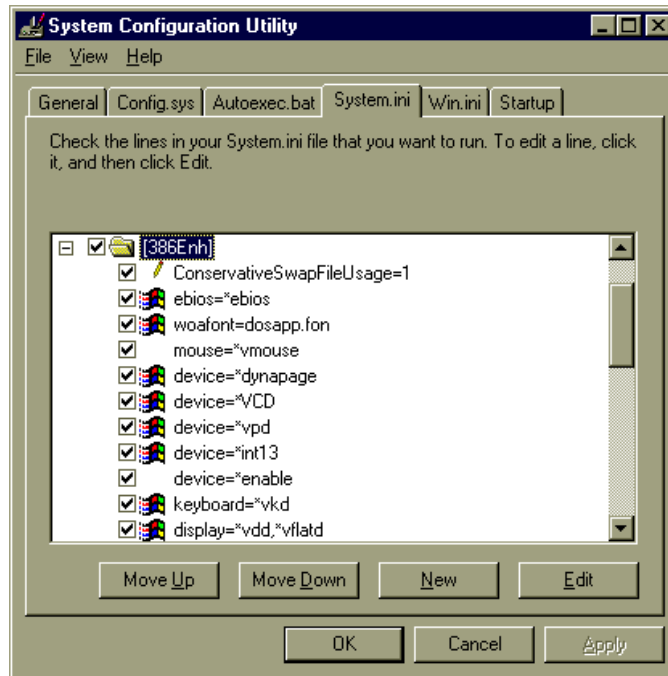4. Click on the + *[386Enh]* as shown on Figure 4Bii98-4.

Figure 4Bii98-4

5. Scroll down and see if the following value is present: *ConservativeSwapFileUsage=1*.
6. If the value is present but *=0* then **click** on the word, and select *Edit* and change the value to *=1*.
7. If the line is not present then make sure [386Enh] is highlighted as shown on Figure 4Bii98-4.
8. Select *New* from the lower right corner.
9. A new box/line will appear.
10. Simply type in C*onservativeSwapFileUsage=1* (that is the number one and no spaces). Capitalization does count here.

Select *OK*.
 The system will ask you to reboot, go ahead and do so. You should now notice a big difference in your systems performance.
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Computers with 64 MB RAM or less:
Adding memory to your system is a great way to speed up your system. The question is what if your system won't hold any more than 64 MB of memory? Well we are going to add a little speed by tweaking.
By default, Windows 98 uses some memory as a disk cache, which speeds up performance on systems with more than 64 MB of RAM. What happens is this chunk of memory is not available for applications or data and this can slow your system if you have more than a couple of programs open at the same time. This feature can be disabled in the registry.

Warning- as I have repeatedly stated, messing with the registry can be dangerous and destroy everything, leaving Uganda with out power, the Soviet Block in a famine and leave your sister in laws second cousins third child in need of a village to raise her. So if you are not comfortable with messing with the registry DON'T DO IT.

1. Run regedit (Click on *Start* / *Run,* then type in *regedit* much like Figure 4Bii98-3 just changing the words*)*
2. Back up the registry (*Registry* / *Export registry* select a place and a name – I suggest the "C:" drive and using the date as the name)
3. Click the pluses (+) down the left side sections:
   HKEY_LOCAL_MACHINE, SYSTEM, CurrentControlSet, Services, VxD as shown in Figure 4Bii98-5.
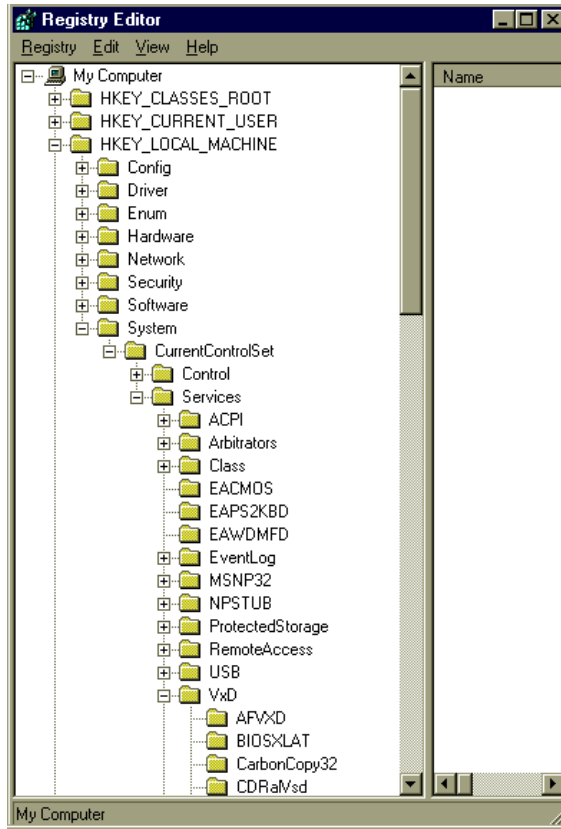

Figure 4Bii98-5

4. Select the *VMM* folder by clicking one time on it.
5. Right-click in an empty space in the right window pane
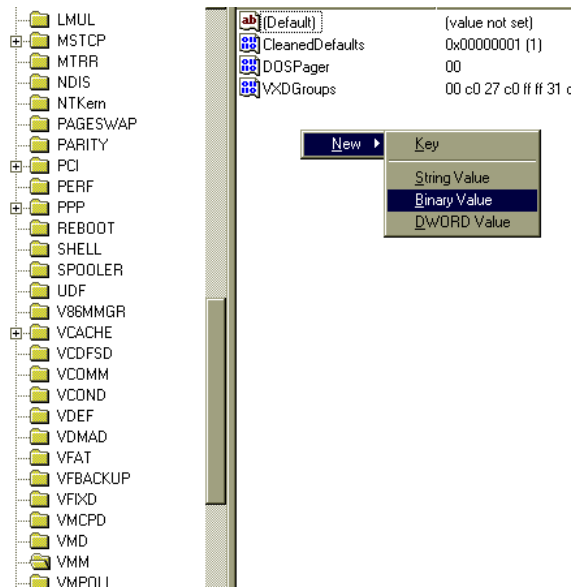6. Select *New,* then *Binary Value* as shown in Figure 5Bii98-6.

Figure 4Bii98-6

7. Type in *MapCache* as the name where *New Value #1* is with no spaces and yes to the capitals, press *Enter*. You do not need to enter a value.
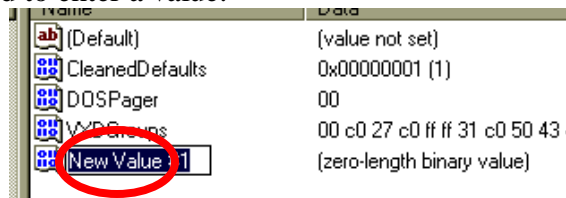

Figure 4Bii98-7

8. Exit Regedit and restart Windows.

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Speeding up Windows by removing unneeded visual effects can be a real performance booster.

Windows has a number of visual effects that can be demanding on older video cards, processors, and systems with limited amounts of memory. You should consider disabling some of them:

1. 1. Right-click on an empty space on the *Desktop* and click *Properties* and then the *Effects* tab. You should have a screen similar to Figure 4bii98-8.
2. 2. Uncheck the boxes at the bottom in the *Visual Effects* area that you think you can do without.
3. 3. If I have a system limited to 64MB of RAM or less, and 4MB or less of video memory, then I remove the checkboxes by *Show icons using all possible colors* and next to *Smooth edges of screen fonts*.
4. 4. Click *Apply* and then *OK* to make your changes, you will most likely need to reboot for them to take effect.
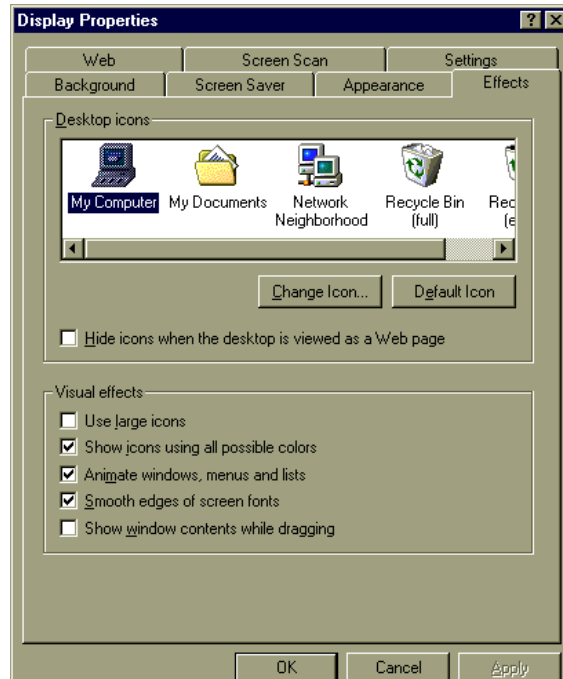
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Figure 4Bii98-8

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Are you tired of waiting on an already slow computer that's tries to read what is in the floppy drive each time you open *My Computer*? If this is happening to you, the cause could be an incorrect registry setting. This is fairly simple to correct using the *regedit* command.

Before you make the following changes to the registry, be sure to first back it up. The last person who did <u>not</u> backup the registry and follow these steps exactly ended up Lost In Space on the Jupiter 2, I believe his name was Smith, Dr. Zachary Smith.

1) Click *Start* | *Run*.
2) Type *regedit* in the box.
3) Click *OK*.
4) Navigate the left window to *HKEY_CURRENT_USER* | *Software* | *Microsoft* | *Windows* | *CurrentVersion* | *Policies.* Click one time on *Explorer.*
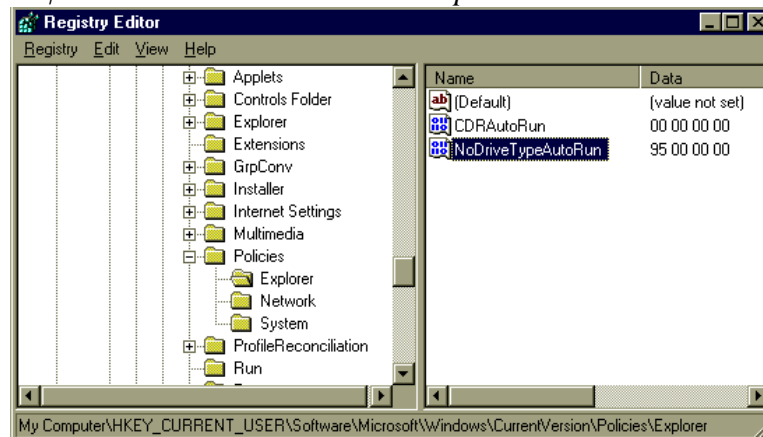

Figure 4Bii98-9

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5) In the right windows pane double-click the *NoDriveTypeAutoRun* entry and change the value to *95*. Figure 4Bii98-10.
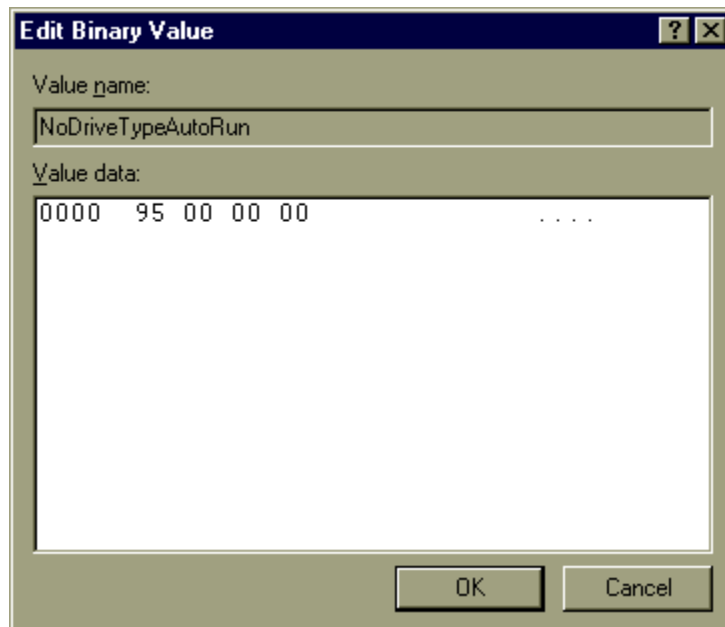6) Select *OK* to make your changes and close the registry.

Figure 4Bii98-10

Restart your computer for the changes to take effect. Once your computer has restarted, open *My Computer* and check to see if your drives appear immediately. You should not hear the floppy running.

Removing old replace hardware or duplicate values/items listed in the Device Manager will free up system resources (RAM and CPU cycles) and speed up the boot time. The safest way to do this is to boot into Safe mode by restarting your computer and pressing the F8 key before the Windows logo appears. Booting into safe mode bypasses all drives and uses only the essential generic drivers, and it can take several minutes so just hang loose.

Once the system boots completely (your screen will appear larger and in only 16 colors) right-click *My Computer* and select *Properties.*

Next you will need to select the plus sign next to *Device Manager* from the list.
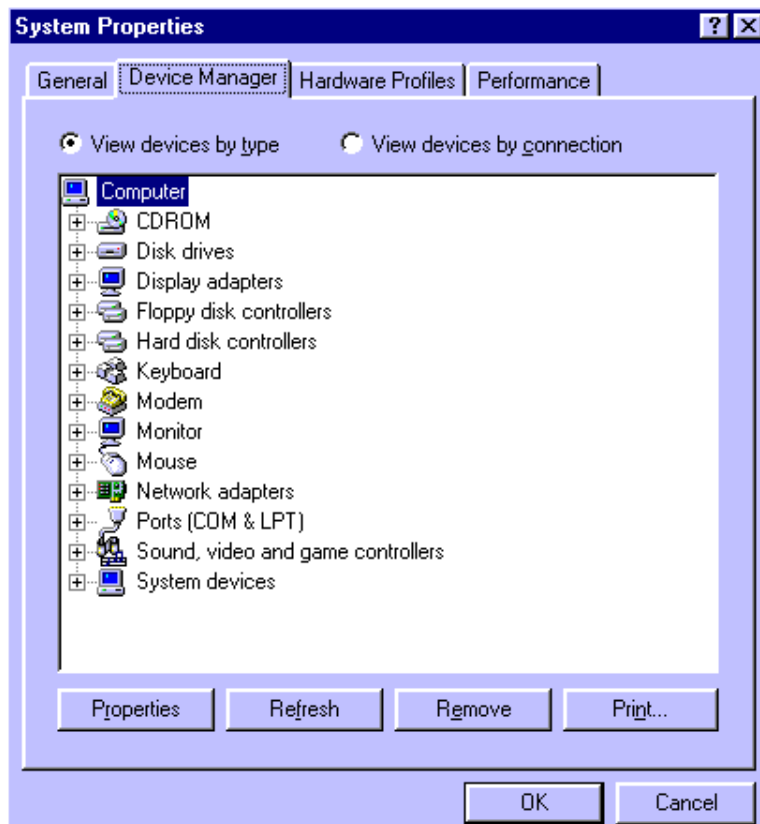
Figure 4Bii98-11

Now you will need to look one by one for duplicate devices listed or hardware you have removed such as the old video card or modem.

Select them by clicking one time on the item to highlight it and then press the *delete* key on your keyboard.

Once you have selected and removed all of the old and/or duplicated listed items, reboot into normal mode (do nothing while it boots).

If, while the system is booting the *Found New Hardware* wizard appears then you either accidentally removed a piece of hardware that is still in the system or out of the ones listed you chose the one you did have and accidentally left the old information.