



PC Tune Up

Everyman IT

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Introduction

Tuning Up Windows PC's is probably the most common task you will run into. Windows systems require regular maintenance in order for them to remain secure, and to function properly.

Best Practices

Tuning Up Windows computers is not difficult, but it can be very time consuming. Depending on what scans need to be run, and how many updates need to be installed it may take 8 or more hours to do a Tune Up. Because if this it is best to try to tune up multiple computers at once. In a shop environment you should setup 2-4 complete work stations so that you can run up to 4 tune ups at once, and at a client location you should try to tune up 2-4 computers at one time.

Do not try to tune up more than 4 computers at a time. Trying to do more generally leads to confusion, and you will forget what you have done to each computer.

Always tell the client that the Tune Up will take longer then you expect it to. Unexpected problems can cause the process to take much longer then you anticipate, and the client will be happier to get the computer back before the deadline vs. after it.

Always come up a Tune Up Checklist and have it beside each computer you are working on. This will make sure that you do not skip, or redo steps.

Before you start a Tune Up verify that the hardware is adequate for the system to do what the client needs. Many times systems were purchased with little RAM, or cheap processors. Additionally new software may require more hardware resources then the PC will be able to be upgraded to. Before you start the Tune Up verify the client needs and the hardware. If the hardware is insufficient the PC will need to be upgraded, or the user should be migrated to another PC vs. the Tune Up.

If the Computer is heavily infected with viruses it is generally best to do a Wipe and Reload vs. a Tune Up. It is very difficult to remove many types of viruses and you may not be able to get rid of them.

Always ask the client for the Operating System and Application disks before you start working on the computer. Many times it takes clients a long time to find these disks so it's better for them to find them early in the process.

Warnings

Generally you do not have to worry about backing up client's data before a Tune Up. The Tune Up Process should not involve you deleting Documents, Pictures or other Data Files.

Make sure that the client understands the PC will run as well as they did when they bought it, not like a "new" computer. Many clients think the computer will run like a new PC from Best Buy after a Tune Up.

Warn the client that you will do what is required to make the computer run well which may involve uninstalling free games, and software.

You cannot honestly say that a user will not reinfect their computer with viruses and malware the minute they get it back home, but giving a 1 week or 30 day warrantee makes clients feel better, and generally you should have few computers come back for “warrantee” tune ups.

Windows Tools

Tools and Utilities built into the Windows Operating System can be invaluable for tuning up and troubleshooting your computer. Generally Microsoft Operating Systems since Windows 2000 have used the same Utilities and Tools. So you will generally use the same tools in Windows XP as you would in Server 2008 or Windows 7.

Best Practices

Eli generally checks the Task Manager, System Properties and Hard Drive Space as soon as he sits down at a computer. This will show how the computer is running and if there is a real problem or not. If the CPU and RAM are not maxed out, and the Hard Drive has enough space it means that the client generally has expectations that are too high, or is doing something wrong.

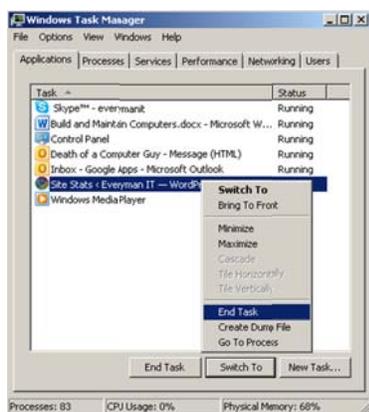
If the PC only has 1 GB of RAM or less for Windows 7 / Vista, or less then 512MB for XP the PC will still run slow even after a tune-up.

Task Manager

Task Manager shows you the resources that your computer is currently using, and the processes and applications that are active. You can use this to determine if the computer is actually running slow, and you can kill processes and applications that may be slowing the computer down.

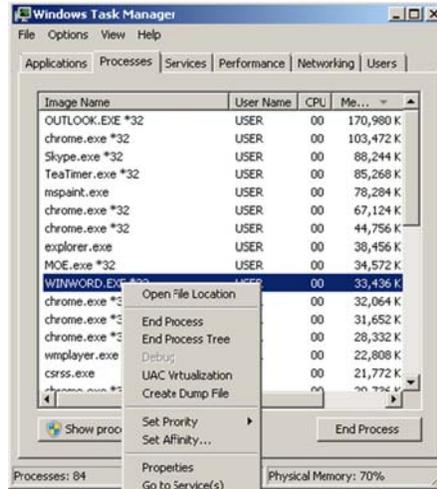
To Use Task Manager

1. Right Click Taskbar
2. Click “Start Task Manager”



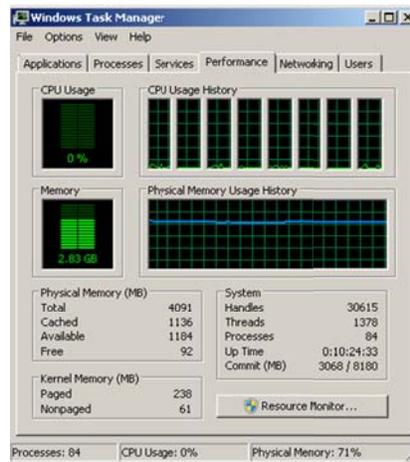
Application Tab:

- To Kill an Application – Right Click Application and then Select “End Task”



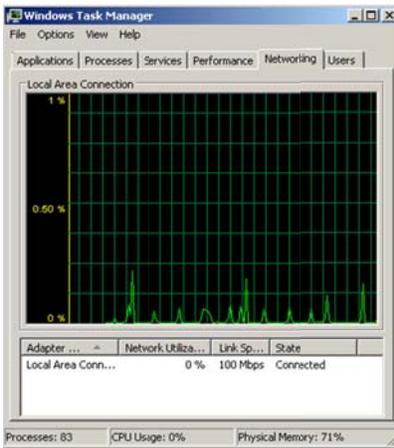
Processes Tab:

- You can see what Process are Using Your Resources by Sorting by CPU, or Memory
- To Kill a Process – Right Click Process and Select “End Process”



Performance Tab:

- CPU Usage should be below 50%. If CPU is 90-100% you have too many programs running, or need a better processor.
- Memory shows you how much RAM you are using. Memory should be less than your total amount of RAM



Networking Tab:

- Shows how much network traffic your computer is using.

System Properties

System Properties will show you what Operating System is installed on the computer, how much RAM the system has and what type of CPU is installed.

To Use System Properties

1. Start Button
2. Right Click "Computer" of "My Computer"
3. Select "Properties"





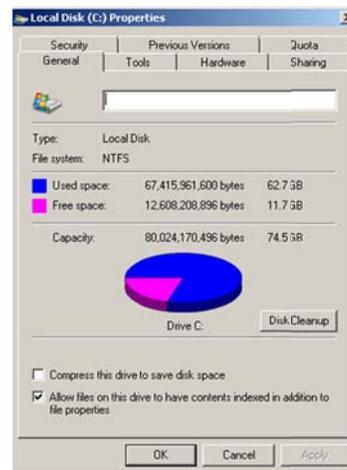
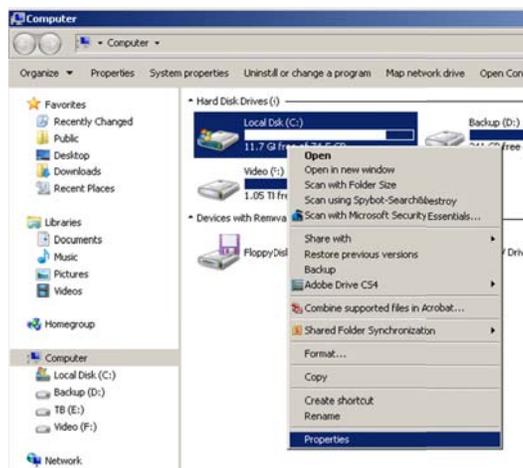
Disk Properties

Disk Properties will show you how large your hard drive is, and how much space it has left. Generally you should have 10% of your hard drive space free, and if you have less than 1 GB free your computer will start having problems.

Although Disk Properties has a Disk Clean Up utility it is generally best to use a third party tool like CCleaner.

To Use Disk Properties

1. Open "Computer" or "My Computer" from Start Menu
2. Right Click C Drive
3. Select Properties



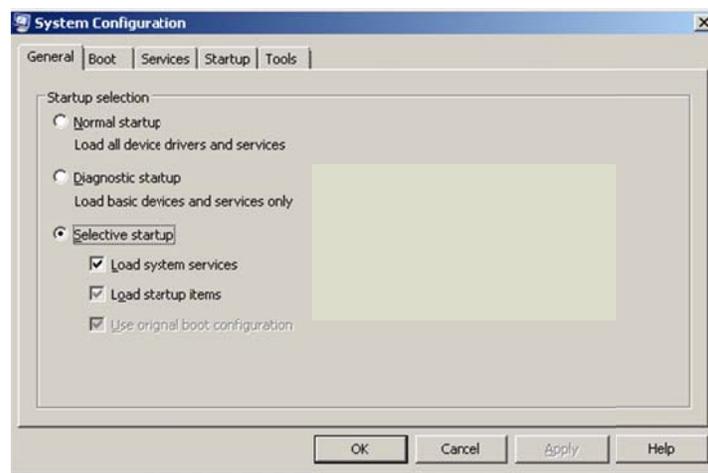
MsConfig

Msconfig allows you to specify what Programs and Services will load when the Computer Boots. This is generally better than Safe Mode because you can run Virus Scans and Install/ Uninstall Programs.

To Use MsConfig

1. Click "Start" Button
2. Type **msconfig** in Run bar and Click "OK"
3. Restart Computer

Generally Select "Selective Startup" and Uncheck "Load Startup Items" Checkbox.



Safe Mode

Safe Mode starts the PC with as few applications, services and drivers as possible. This is a good way to try to delete files or configurations if the computer is running very slowly.

You generally cannot install, or uninstall software in Safe Mode.

To Use Safe Mode

1. Start Computer
2. After BIOS Screen hit "F8" key
3. Choose "Safe Mode" from options

System Restore

System Restore restores Applications and the Operating System settings to a previous condition. System Restore does not affect documents and pictures.

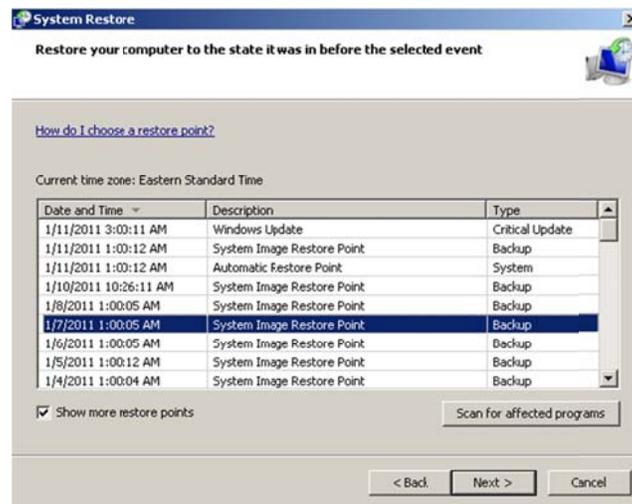
System Restore is useful if you know when a computer started acting poorly. You can restore to a day, or week before the computer started having problems, and this will many times fix the current issue. You should still do a full tune up on the computer to prevent further problems.

To Use System Restore

1. Select Start Button
2. Select "All Programs"
3. Select "Accessories"
4. Select "System Tools"
5. Select "System Recovery"



6. Select Previous Time and Date to Restore to and Click "Next"



Clean Start Up

Many Applications automatically start when the computer boots and you login. These applications unnecessarily use system resources and can slow you PC significantly.

Clean Startup Folder

The Startup folder contains shortcuts that are triggered when you login. Deleting these shortcuts does not uninstall the software from your system.

To delete these shortcuts:

1. Click "Start" button
2. Go to "All Programs"
3. Open "Startup" folder
4. Delete Shortcuts



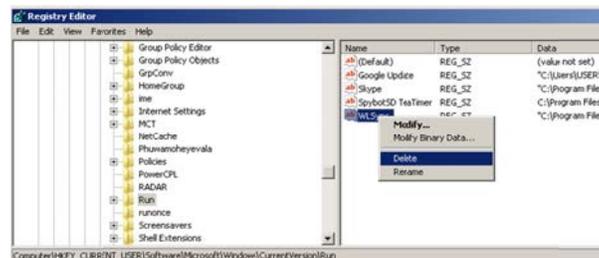
Clean Registry Startup Items

There are keys in the Registry that trigger applications to start when the computer boots up or you login. By deleting the keys in the Registry you can make your PC run faster.

Generally delete all Keys unless they have to do with Printers, or Security.

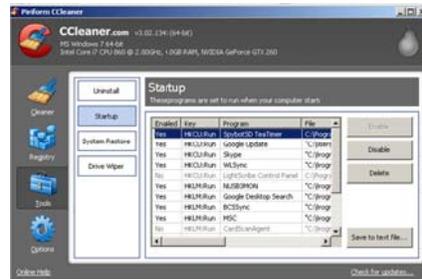
To Delete Keys:

- Go to Start
- Select "Run" or type into Run box
- Type **regedit** and click "ok"
- Delete all Keys that are not Printer or Security in:
 - HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run
 - HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Run



Use Software to Disable Startup Items

If you are worried you might delete a Startup item you need you can use tools in CCleaner to simply disable Startup items vs. deleting them.

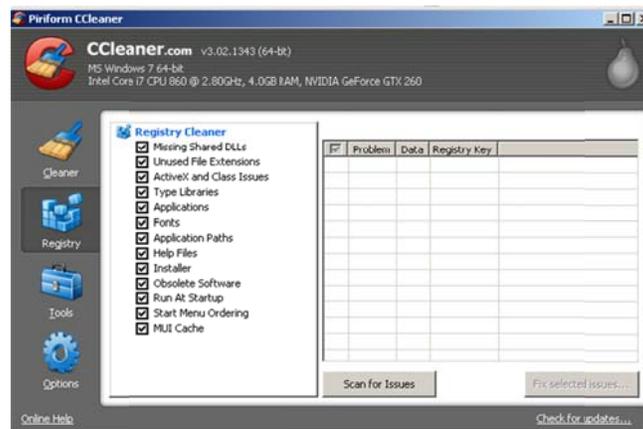


Tune Up Software

There are numerous pieces of Freeware available to help you Tune-up your computer. Be careful to stay away from Tune-up software that is actually malware in disguise. Eli like CCleaner for most Tune-up procedures.

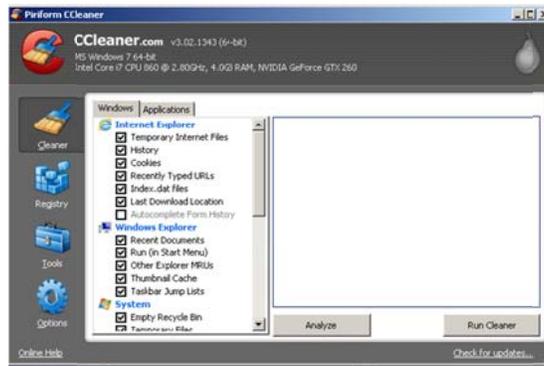
Registry Cleanup

The Registry is the main database that contains most configuration information for you computer. Windows does a poor job of keeping the Registry clean. Eli recommends using the Registry Cleaner utility in CCleaner to clean up the Registry.



Temp File Clean Up

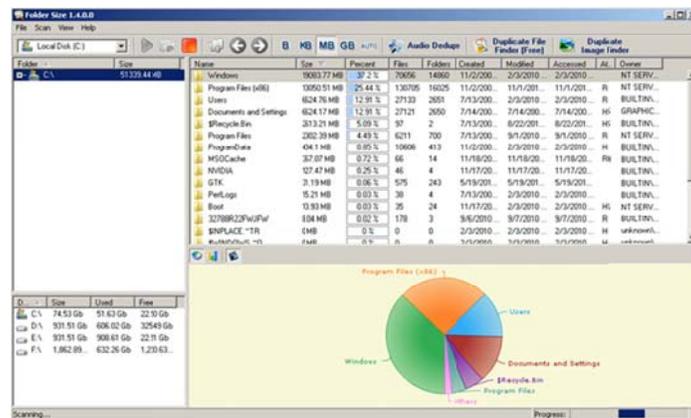
Temp Files are generally not bad unto themselves, but if you are going to be running virus and malware scans your software will needlessly scan these files. You can speed up the scanning process by deleting the Temp files. Eli generally uses CCleaner to delete Temp files.



Folder Size

If your Hard Drive is full it can sometimes be difficult to figure out what is filling it up. Folder Size is a free utility that will show you what folders are taking up the most space.

<http://www.mindgems.com/products/Folder-Size/Folder-Size.html>



Site Advisors

Site Advisors are web browser plugins that can tell you when a site you are going to may be risky. This is a simple tool to keep average people from going to bad web sites.

McAfee SiteAdvisor is free, and there are other free Site Advisor utilities that are available.

<http://www.siteadvisor.com/#>



Anti-Virus

Viruses are malicious pieces of software that generally try to damage the operating system of your computer, and they replicate themselves to infect other computers. Viruses and malware or spyware are different things and the software required to get rid of them are different

Warnings and Best Practices

Never install 2 pieces of anti-virus software on the same computer. The real time scanners in the software will think their counter parts are viruses and the entire computer may crash.

Beware of “free” antivirus software licensing. Most free software is only “free” for noncommercial use. If you use it in a business the license may be \$30-\$80 per workstation.

Servers generally require a different license for antivirus software then client workstations. Generally the retail antivirus software you buy at Best Buy will not install on a server.

Some types of antivirus software provide too much protection and cause more harm than good. The “Internet Security Suites” sold by Norton, McAfee and others can block legitimate computer activity. Eli advises that you only install the antivirus component of a security suite and not the Firewall and other security software.

Pick a piece of antivirus software and stick with it. All antivirus software has quirks and problems. It is best to find one antivirus product that you like, and then migrate all of your clients to it. This will cause fewer problems for your clients since you will know the product, and when there are problems you will know the solutions. Every IT Consultant has their own favorite antivirus program, find your favorite and then use it for everyone.

Norton/ McAfee Removers

Sometimes Norton and McAfee are not completely uninstalled when you run the uninstall wizard. You may have to use a Removal Tool to fully get rid of them. You can download these removal tools from the vendor’s website.

Microsoft Security Essentials

Microsoft Security Essentials is Microsoft’s free antivirus software. It works well, and is licensed for offices with up to 10 computers. Due to this it is generally the best solution for cost conscious business clients.

Anti-Malware

Malware is software that generally tries to collect information about you (spyware), or tries to get your system to do tasks on behalf of the malware creator (bots). This software generally does not replicate itself like viruses do, and is generally installed accidentally by users trying to get free software or services.

Best Practices

You can install multiple types of anti-malware software on your computer. Unlike anti-virus software, anti-malware software will not attack each other. It is still best to only use one piece of anti-malware software if possible.

Free anti-malware software is very good, and generally is better than pay for versions.

Spybot Search and Destroy

Spybot Search and Destroy is a terrific piece of free anti-malware software. It will clean your system of malware, and will also “immunize” your system to try to prevent reinfection.

Generally it is best to run “immunize” as soon as you install Spybot Search and Destroy. You can then update the software, “immunize” again and then run the anti-malware scan.

Combo Fix

Combo Fix is a free utility that will try to rip out viruses and spyware from your system. It can be very effective as a last resort. Combo Fix can fix many problems other utilities cannot, but can also crash your computer. Be careful when you use this product and be ready to do a Wipe and Reload if it fails.

<http://www.bleepingcomputer.com/download/anti-virus/combofix>

Updates

Operating System and Software Updates are required for a system to be secure and run well. Many pieces of software require that the operating systems be fully updated. You can waste hours of time trying to troubleshoot a software problem and find out that simply updating Windows fixes the issue.

Windows/ Microsoft Update

Windows Update only installs updates to the Windows Operating System. Microsoft Update updates all Microsoft Products. If you see an option to Upgrade to Microsoft Updates then do it.

Update Windows and Microsoft Office. Install All Critical Updates and Recommended Updates.

Set Updates to Automatic and to install at 3am. Advise client to leave computer running when they leave at night.

Do not Install Driver Updates from Windows Update!

Adobe Updates

All Adobe Products need to be updated.

Adobe Flash and Reader are the most critical updates. Hackers can access your system by using vulnerabilities in old versions of Flash and Reader.

Simply go to: <http://www.adobe.com/> and download updates from the download section.

Java Updates

Update Java by going to www.java.com and installing the most current version of Java.

Most people never update Java on their computers so hackers find vulnerabilities in old versions and they are able to attack computers.

Other Software Updates

Software such as QuickBooks needs to be updated regularly just like Windows. Certain settings and functions may not work right if the software is not updated.

Defragmenting Drives

Modern Computers rarely need to have their hard drives defragmented. If you have a computer under your care for longer than a day you may do it as a “good deed”, but it’s generally not worth the billable hours to run one for a client.

Defraggler

<http://www.piriform.com/defraggler>

If you are going to defragment the hard drive use Defraggler. It is quicker and more stable than the built in tool in Windows.

Uninstall Needless Software

Crapware is the term used for the junk software that vendors install on their computers before you buy them, and the free software that many users download.

Uninstall All Toolbars

Toolbars can cause numerous problems for users of Internet Explorer. They can prevent pages from displaying correctly and can hijack searches on the web. Uninstall ALL toolbars. Generally clients don’t want any of them, and if they do want one or two they can reinstall them.

Uninstall Unnecessary Tune Up and Security Software

With security software more is rarely “better”. Security and tune up software can cause conflicts and problems, and is many times simply malware in disguise. Uninstall ANY Tune U or Security software that you are not planning to keep using.

Physically Clean the Computer

Use a can of air to clean the dust out of the computer. Also take off the front cover and make sure that the front air vents are not clogged with hair and dust. The CPU needs to remain cool for the computer to run properly and if the air intakes are clogged the CPU will overheat.

Standard Problems

Most computers that need tune-ups have the same standard problems.

Computer Cannot Get on the Internet

If the computer cannot get to the Internet it generally means that networking isn't working properly on the system.

Firewall is Blocking Port 80

"Internet Security Suites" such as Norton's have a terrible habit of blocking Port 80 that is required to browse the web. Uninstall the Security Suite, or open the Port 80 block.

Sometimes Norton keeps blocking Port 80 even after it is uninstalled. You may have to use the Norton Remover Utility to fully get rid of it.

Windows Firewall that is built into Windows is good enough for most users.

DNS Settings are Incorrect

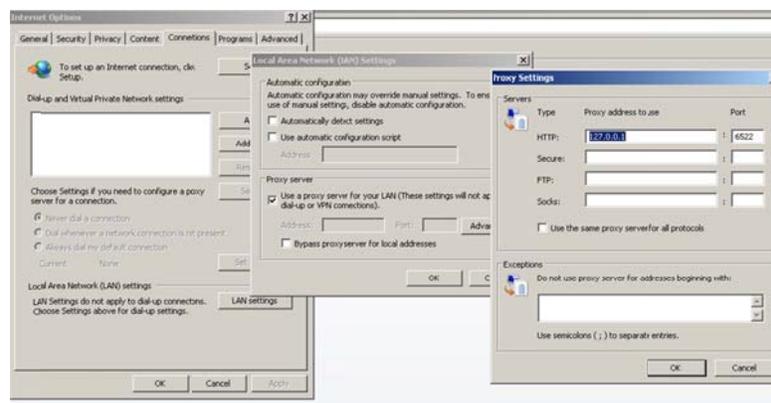
DNS settings in the network card, or that are given by the DHCP server may be incorrect. Verify that they were not inputted improperly.

Internet Explorer has a Proxy Server Set

Proxy servers are used to control how computers get to the Internet. Some hackers, and viruses, will set Internet Explorer to use their Proxy server so that they can steal you information.

To clear the Proxy Settings:

- Open Internet Explorer
- Go to "Tools"
- Select "Internet Options"
- Select "Connections" Tab
- Click "LAN Settings" Button
- Clear any configurations that you see



Computer Does not Have an IP Address

Use IPCONFIG command to verify computer has an IP Address. If it does not:

- Verify the network cable is plugged in
- Verify the switch and/ or router are on
- Verify the Network Card Driver is installed, and is not disabled
- “Internet Security Suite” software may block your computer from receiving an IP Address.
 - Uninstall “Internet Security Suite” Software

Computer is Running Slow

Generally when a computer is running slow it means that it does not have enough RAM. You can increase the amount

Cannot Access Task Manager or Other Windows Tools

Hackers, and Viruses can change Registry Keys to prevent you from using certain Windows functions. If you cannot get to task manager or other Utilities do a Google search for the Registry Keys that need to be changed to enable them.

Cannot Install/ Uninstall Software

Generally if you are unable to install or uninstall software you are not logged in as an Administrator. Log into the computer with an account that has Administrator permissions and you should be able to install and uninstall software

Computer Freezes Up

This is generally caused by the CPU overheating. Clean off the CPU Heat Sink and all intake air vents in the case. Also verify that the CPU Heat Sink fan spins, and is plugged in.

Computer Shuts Down Unexpectedly

The computer unexpectedly shutting down is usually caused by the CPU overheating. The computer will try shut down automatically before the heat can damage the processor. Make sure the air vents and heat sink are clean.

Tune Up Check List

Verify System Has Enough RAM		
Verify Free Hard Drive Space		
Uninstall Crapware	Uninstall All Toolbars	
	Uninstall All Security/ Tune Up Software	
Clean Start Up Folder		<i>Leave Printer Shortcuts</i>
Clean Start Up Registry Files		<i>Leave Printer Keys</i>
Clean Temporary Files		<i>CCleaner</i>
Clean Registry		<i>CCleaner</i>
Install Antivirus Software	Run Full Antivirus Scan	<i>Microsoft Security Essentials</i>
Install Spybot Search and Destroy	Immunize	
	Run Full Scan	
Windows Updates	Install Microsoft Updates	
	Install ALL Updates	
	Set Automatic Updates to Install	
Install Latest Java		
Install Adobe Flash		
Install Latest Adobe Reader		
Install Adobe Updates		
Install Quickbooks Updates		
Defragment Hard Drive		<i>Defraggler - If Time Allows</i>

Tune Up Checklist