

# TUNE UP YOUR PC

Maintenance Care and Tips

By Lou Koch

October 12, 2005

# Today's Program

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SOFTWARE

# Maintain Operating System

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- What is the operating system
  - Windows --- The software that runs your computer
  - Hardware Drivers --- software supplied with various hardware by the manufacturer to make it work with the operating system
- What maintenance can be done
  - Install fixes to operating system
  - Update hardware drivers
- Why maintain your OS
  - to make sure that system runs smoothly and efficiently
- How often should I check for updates
  - Windows
    - check immediately if you have a problem
    - otherwise monthly
  - Hardware Drivers
    - Check immediately if you have a problem
    - Otherwise every 6 months

# System Updates

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- **Windows –**

- Microsoft releases patches (small issues) or Service Packs (larger problems) to deal with reported flaws in the system
- Set Windows to automatically notify you of updates and approve installation of those that are relevant. If you are not sure, install them.
  - You have a choice to automatically install update ... I prefer notification and approve rather than auto install but that is a personal preference – some updates are not relevant to you ... eg. Foreign language updates
  - **(right click) My Computer → Properties → Automatic Updates → choose**  
**OR**
  - Check Microsoft periodically to be sure you have latest updates to your OS  
<http://v5.windowsupdate.microsoft.com> (note: you must be using Internet Explorer)

- **Hardware Drivers –**

- If you have a problem, start the problem solving process by making sure that your drivers are current.
- Periodically check with manufacturer's website to make sure that your drivers are current – you will prevent problems and get latest features.
- Older hardware will have less driver changes but still check

# Software Updates

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- Get updates for major software that you use
- Why – As with Windows, software companies release updates to fix or improve their programs.
- How to get upgrades
  - **Check websites of manufactures – e.g. (Google the name of the software to find URL)**
    - MS Office is <http://office.microsoft.com/en-us/default.aspx>
    - Quicken is <http://www.intuit.com/support/quicken/updates/index.html>
    - Eudora is <http://www.eudora.com/techsupport/win/>
- How Often
  - **Auto updates notification are often available – your choice**
    - Other than system and security updates, I generally do not use these since they create excessive startup and background processes
  - **Antivirus/Firewall check daily (automate)**
  - **Spyware programs – whenever you use them**
  - **Quarterly for frequently used programs**
  - **If you have problems for seldom used programs**

# Get Rid of Background Applications

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- **What are background applications**
  - Programs are running in the “background” if you do not start them by clicking on them
  - They do not show up in the taskbar at the bottom of the screen
  - They sometimes show up in the System tray at the bottom left corner of the screen – you can right click on these to find out what they do
  - Some are required – they are good
  - Many are loaded when you load software and select “typical installation” and may not be important to you – they may not provide you any benefit – YOU should decide
- **Why manage them → they make your system inefficient**
  - consuming RAM
  - using processing speed
  - using disk space
  - cluttering the registry.
- **How to find out what is running in background**
  - **Windows task manager** → hold down *ctrl-alt* keys then click *del*
    - *Applications are programs that you choose to run*
    - *Processes are background programs that you do not initiate*

# Get Rid of Background Applications Tools

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- **Look at active processes... *you'll be surprised at how many there are!***
- **What do these processes do and do I need them ?**
  - I generally use <http://answerthatwork.com/> → task list
    - explains purpose, gives recommendation and provides removal instructions if recommended
  - Others can be found ... “Google” the application or process
- **How do I get rid of those that I don't want?**
  - Depending on the process there are several different methods ... follow recommendation of Answerthatwork or other process database
  - Tools are available
    - Freeware programs are available to download ... several are required
      - Check out <http://www.majorgeeks.com/> → Admin Tools
      - [Startup Inspector for Windows](#) or [Service Controller XP](#)
    - [Answerthatwork.com](http://answerthatwork.com/) offers software that makes it easy ... I use this.
      - The Ultimate Troubleshooter (TUT) - \$35/yr
- **How Often – generally monthly should be adequate**

# Eradicate Spyware

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- What is spyware
  - **Software that collects data from your computer and reports it back to software author.**
    - Much of spyware is installed without your knowledge or consent
    - Not all spyware is malicious – some actually tell you what they are doing
    - Some free software requires that you let them get feedback
    - Even if it is not malicious you probably do not want it ... but you decide
- Why get rid of it – to maintain your privacy
- How to get rid of it
  - Run Ad-aware and Spybot. Both are free downloads.
  - Be sure that the you check for updates prior to running program
- How often – weekly if you spend time on the internet

# Hard Drive Cleanup

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- **Why clean up hard drive**
  - Unused software consumes space
  - If your drive becomes too full it takes longer to load programs
  - Programs get segmented ... load and run slower and more apt to crash
- **How do I clean up hard drive**
  - Windows provides a great tool – Windows Disk Cleanup
    - Start→All Programs→Accessories→System Tools→Disk Cleanup
    - Provides a list of files that can potentially be eliminated
      - Information and explanations are provided
      - You have to make the decision ... be more aggressive as your hard drive gets full
    - After you have dealt with the disk cleanup, click *More Options* to decide if there are any Windows components, programs or old system restore files that can be removed
      - Once again information and explanations are provided
- **How Often – 6 mos if you have adequate disk space**

# Hard Drive Maintenance

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- Why is hard drive maintenance required
  - Prevent crashes
  - A well organized hard drive runs more efficiently
- What maintenance should be done
  - Defrag
  - Check disk
- How often
  - Defrag ... 6 months
  - Check Disk ... 6 months

# Defrag

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- When Windows stores data onto your hard drive it sometimes breaks large files into segments and stores them in different parts of the drive. Since a mechanical arm moves in and out to read and write data it must move more if a file is not located in one place.
- How
  - Click on **Start**→**All Programs**→**Accessories**→**System Tools**→**Disk Defragmenter**
  - Click Analyze
    - Your hard drive will be analyzed and a report will be given
    - A recommendation as to whether defrag is needed is given
    - If it is needed, click on the *Defragment* button and all of your files will be reorganized onto continuous segments of the drive.
  - Note: if it appears that the defrag process keeps restarting, some background process is probably interfering. The best way to handle this - run the defrag in the Safe mode
    - Safe mode operation – **Start**→**Run (type in msconfig)**→ **OK**
    - Click on *diagnostic startup...* and restart computer
    - Run defrag
    - Use steps i and ii (above) to reset the startup to *normal startup*

# Disk Check

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- What is disk check
  - occasionally small segments of the hard drive media fail, if you write to these areas the data is lost and problems result. The disk is checked by writing info to a segment and then reading it back
  - Also sometimes fragmented files get lost when the reference to the cluster is corrupted. These lost clusters are identified and repaired or quarantined
  - It takes a long time – possibly several hours
- How
  - Close all open files
  - Click on **My Computer** → **Right click on drive you want to check (e.g. drive C)** → **Tools** → **Check Now**
  - check both options (*Automatically fix ...*, and *Scan for and ...*) and click start
  - allow the computer to restart when requested
  - you will see CHKDSK utility open which will run 5 steps before it is done
    - Verifying files
    - Verifying indices
    - Verifying security descriptors
    - Verifying file data
    - Verifying free space
  - After CHKDSK completes the standard Windows XP startup screen appears.

# Backing Up Data

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- Why back up data
  - Data can be lost by deletion, file corruption, malicious intervention or hardware failure
- How Often
  - Key data weekly
  - Major backup quarterly
- How do I back up data – there are numerous ways to back up data. Examples are:
  - individual file backups
  - custom backups of groups of folders
  - system backups

# Back Up Processes

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- Individual file backup
  - Often a program (Quicken for example) asks if you want to back up your data to a floppy or separate drive
  - This is a good idea for important files
- Groups of files
  - On a new computer Windows creates a *MY DOCUMENTS* folders and many of your documents and files are stored there
  - It is easy to just copy this entire file onto a floppy, ZIP or CD to make a backup of all the files that you create
    - Hint: to make it easy to backup data, always change the default save location for your files to a sub-folder under MY DOCUMENTS (there is usually an options or properties tab on the file or tools tab on the toolbar which allows you to specify default locations).
- Systems backup – use Microsoft Backup
  - Start→All Programs→Accessories→System Tools→Backup
  - Use the wizard to back up as much of your computer as you would like

HARDWARE

# Hardware Problems

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- Major problems in electronics are caused by heat and ESD (electrostatic discharge)
  - Your computer and peripherals gather dust, dirt, oils.
    - prevents heat transfer
    - can also cause damage to rotating media
  - You can introduce ESD to components by touching components when not grounded.
- What can you do?
  - Clean your hardware every 6 months (more if you find lots of dust)
  - Be sure air can circulate freely around your PC
    - A PC located on the floor collects more dust than one that is elevated
  - Always wear grounded wrist guard if you open case

# Hardware Cleaning - Tools

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- **Screwdriver to open case**
- **Can of compressed air (EndDust, Dust-Off or equivalent)**
- **Cleaning liquid**
  - Rubbing alcohol (50% solution)
  - or
  - mild cleaning agent, e.g. dish detergent mixed with water
- **Antistatic solution – Half vinegar/half water**
- **Q-tips and paper towels or cotton cloth**
- **Wrist guard**

# Computer Case

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- Why clean – to reduce dust and for appearance
- How to clean
  - Turn off and unplug computer
  - Dampen paper towel or cloth with cleaning solution
    - Don't use excessive liquid – liquid should not drip
  - Wipe down case
    - pay particular attention to area around the fan opening
  - After cleaning wipe down surface with antistatic solution on towel
  - Check all cables for proper seating ...
    - Be sure any screws that secure connectors in place are tight
    - Check all other connectors to be sure they are tight
  - Note – If you must touch anything inside the case, use a grounded wrist strap (~\$5). E.g. if you install a new card (Ethernet, wireless, etc) or internal drive. It is always a good practice to wear the wrist strap when you open the case.
- When to clean – monthly or as needed

# Inside the Computer

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- Why clean – increases air circulation, removes dust which prevents heat transfer
- How to clean
  - Turn off and unplug computer
  - Remove casing – usually several screws must be removed
  - Using short bursts from a can of compressed air, blow dust off of components
    - Fan and vents, heatsink
    - Underneath the motherboard
    - All drives
    - All circuit boards
    - Bottom of case
    - Power supply
  - Note: Avoid physical contact with any components
  - Replace case and secure screws
- When to clean – every 6 months (more often if you find lots of dust)

# DVD and CD Drives

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- Why clean – Prevent disc read errors
- How to clean
  - Open drive
  - Blow short bursts from a can of compressed air into drive
- When to clean
  - if you get any read errors from drive
  - regular cleaning is **not** recommend if no problems exist

Note: Hard Drive gets no internal cleaning - just blow off surface when cleaning the inside of the computer

# Monitor

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- **Why clean – clean screen easier to view**
- **How to clean - Laptop or LCD (flat panel) screens**
  - Lightly dust with soft antistatic cloth or microfiber wipes (paper towels are somewhat abrasive) to remove dust. CAUTION
    - Do not to press too hard. Laptop and LCD screens are easily damaged and costly to replace.
    - Laptop and LCD displays, unlike CRT monitors, are not made of glass.
  - To remove fingerprints, smudges, etc on the display follow the manual's instructions (which vary depending on the type of display) or check manufacturers website
- **How to clean - CRT Monitors**
  - Wipe surface with cleaning solution on cloth (or pre-moistened screen wipes)
    - Use eyeglass cleaner, a mild dish detergent solution or a commercial monitor cleaning solution.
  - CAUTION
    - Do not try to clean inside of monitor – only screen and case.
    - Do not use Windex or other ammonia, acetone or alcohol based cleaners since they can strip anti reflective coating.
    - Do not spray liquid on screen as it may seep into shell around edges.
- **When to clean – as needed or monthly**

# Keyboard

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- Why clean – removes dust, dirt and other foreign material that can harm circuit boards ... also appearance
- How to clean
  - Unplug keyboard
  - Turn upside down and shake to remove foreign material
  - Use compressed air to blow between keys while holding upside down
  - Use cloth or paper towel moistened with cleaning liquid to clean top of keys
  - Moisten Q-tip with cleaning liquid (not dripping) and clean between keys
- When to clean – 6 months

# Mouse

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- **Why clean – make the mouse run smoother**
- **How to clean – Roller ball type**
  - Unplug the mouse
  - Wipe down outside surface of mouse (especially bottom) with paper or cloth towel dampened with cleaning liquid.
  - Remove cover on bottom by turning it counter-clockwise (<1/4 turn)
  - Remove ball. Frequently there is buildup that you will have to scrape off with fingernail or blunt blade. After buildup is gone, clean rollers (either 2 or 3) with a damp Q-tip.
  - Clean ball with clean water.
  - After it dries reassemble ball into mouse, replace cover and plug into computer again.
- **How to clean – Optical type (with internal red light)**
  - Follow 1st 2 steps above
- **When to clean – 6 months**

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# QUESTIONS