

# Spring-Clean Your Machine

How and Why to Remove Unwanted  
Files and Programs

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# Introductory Notes

- Slides have rather a lot of text -
  - -so that you can refer to them as your notes
- Tasks are graded - we look at easy tasks first, tricky ones later

# Reasons To Remove Stuff

- You have run out of disk space
- Your machine takes forever to boot up
- Your machine runs slowly

# Things You Can Do - 1

Assuming that your machine is **NOT** infected

- Remove "Dust Bunnies" using CCleaner
- Remove redundant registry entries using CCleaner
- Remove programs you don't use
- Remove surplus Restore Points using Disk Cleanup
- Remove redundant Windows Uninstal files
- Remove browser "barnicles"

# Things You Can Do - 2

Assuming that your machine is **NOT** infected

- Turn off Start-up programs
- Clean and de-fragment the hard disk drive using Disk Cleanup
- Clean and de-fragment the registry
- Format the hard disk drive and re-install Windows  
(This takes a very long time and has a few pit-falls. It is usually necessary to backup all your data **FIRST**)

# If Your Machine is Infected - 1

Disinfecting your computer is not within the scope of this presentation

- *\*Try\** to update your security programs
  - virus definitions (fingerprints)
  - the whole program
- Clean with CCleaner
- Scan with your primary security programs (antivirus first - antispyware next)
- Scan with a second and third antispyware program

# If Your Machine is Infected - 2

Disinfecting your computer is not within the scope of this presentation

- \*Note: Malware infection may have:
  - blocked access to your protection program updates
  - disabled your protection program
  - disabled task manager
  - disabled Windows Update
- Try using:
  - HijackThis
  - Autoruns
- Install ONLY ONE antivirus program
- Consider using an online scanning service (eg Panda or Trend Micro)

# Using CCleaner to Remove "Dust Bunnies"

CCleaner is a FREE program that is easy to install and use

Download from: <http://www.ccleaner.com>

The site provides plenty of help in using the program

Suggestions:

Beginners - Use only the Cleaner tab (top tab) use both

- Windows and
- Applications sections
- These two are very safe (little risk)

Advanced Users - Use the registry cleaner and be sure to use the built-in backup feature. Then go round this "loop" again until there are no further issues.





**CCleaner.com** v2.08.588

MS Windows XP SP3

Intel Pentium M processor 1.50GHz, 1.0GB RAM, Mobile Intel 915GM/GMS,910GML Express Chipset Family



Windows Applications

- Internet Explorer**
  - Temporary Internet Files
  - Cookies
  - History
  - Recently Typed URLs
  - Delete Index.dat files
  - Last Download Location
  - Autocomplete Form History
- Windows Explorer**
  - Recent Documents
  - Run (in Start Menu)
  - Search Autocomplete
  - Other Explorer MRUs
- System**
  - Empty Recycle Bin
  - Temporary Files
  - Clipboard
  - Memory Dumps
  - Chkdsk File Fragments
  - Windows Log Files
  - Start Menu Shortcuts
  - Desktop Shortcuts
- Advanced**
  - Old Prefetch data
  - Menu Order Cache
  - Tray Notifications Cache
  - Window Size/Location Cache
  - User Assist History
  - IIS Log Files
  - Hotfix Uninstallers
  - Custom Files and Folders



CLEANING COMPLETE - (18.474 secs)

3.71MB removed.

Details of files deleted

IE Temporary Internet Files (21 files) 0.21MB  
 C:\Documents and Settings\Paul\Recent\Africa Network.lnk 470 bytes  
 C:\Documents and Settings\Paul\Recent\Domestic.lnk 440 bytes  
 C:\Documents and Settings\Paul\Recent\project planning and management ZA.doc.lnk 833 bytes  
 C:\Documents and Settings\Paul\Recent\SeniorProjectProposal B.doc.lnk 736 bytes  
 C:\Documents and Settings\Paul\Recent\SeniorProjectProposal.docm.lnk 731 bytes  
 C:\Documents and Settings\Paul\Recent\Spring Clean your Machine.lnk 685 bytes  
 C:\Documents and Settings\Paul\Recent\Spring\_Clean\_Your\_M.pdf.lnk 1.02KB  
 C:\Documents and Settings\Paul\Recent\Spring\_Clean\_Your\_M.ppt.lnk 1,007 bytes  
 C:\WINDOWS\TEMP\Cookies\index.dat 16.00KB  
 C:\WINDOWS\TEMP\e1baf65b-90b4-4072-b737-7e48b7f0e49d.tmp 6.22KB  
 C:\WINDOWS\TEMP\f79c4283-558d-4d86-9b90-07d019c4e315.tmp 1.76MB  
 C:\WINDOWS\TEMP\History\History.IE5\desktop.ini 145 bytes  
 C:\WINDOWS\TEMP\History\History.IE5\index.dat 16.00KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\17JZ2346\061-4512.English[1].dist 6.60KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\17JZ2346\061-4609.English[1].dist 18.04KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\17JZ2346\061-4972.English[1].dist 16.69KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\17JZ2346\061-5850.English[1].dist 17.33KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\17JZ2346\061-6175.English[1].dist 32.50KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\17JZ2346\desktop.ini 67 bytes  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\desktop.ini 67 bytes  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\FQPU94XK\061-4513.English[1].dist 6.71KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\FQPU94XK\061-4664.English[1].dist 24.86KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\FQPU94XK\061-5374.English[1].dist 23.99KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\FQPU94XK\061-5969.English[1].dist 17.30KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\FQPU94XK\061-6201.English[1].dist 16.75KB  
 C:\WINDOWS\TEMP\Temporary Internet Files\Content.IE5\FQPU94XK\desktop.ini 67 bytes



Analyze

Run Cleaner

# Removing Programs You Don't Use

This means removing legitimate (not malware) programs

Go to the Control Panel  
(If Vista switch to Classic view)

- In XP select Add and Remove Programs
- In Vista select Programs and Features
  - Select Detail View and add columns - used and last used + +
  - Click selected program then click Uninstall
  - Repete as necessary

# Add or Remove Programs



- Change or Remove Programs
- Add New Programs
- Add/Remove Windows Components
- Set Program Access and Defaults

Currently installed programs:

Show updates

Sort by: Name

<b>Access Help</b>		Size	2.02MB
<a href="#">Click here for support information.</a>			
To change this program or remove it from your computer, click Change/Remove.			
Ad-Aware		Size	49.04MB
Adobe Flash Player 10 ActiveX			
Adobe Flash Player 10 Plugin			
Agilix GoBinder Lite		Size	56.43MB
Alias SketchBook Pro 1.1.1		Size	9.82MB
Apple Mobile Device Support		Size	40.00MB
Apple Software Update		Size	2.16MB
AVG 8.5		Size	30.70MB
Bonjour		Size	0.48MB
Broadcom Management Programs		Size	3.49MB
Buzan's iMindMap V4		Size	267.00MB
CCleaner (remove only)		Size	1.25MB
Compatibility Pack for the 2007 Office system		Size	95.51MB
DiagramStudio 5.4		Size	23.50MB
Eazy Backup 4		Size	19.77MB
Everything 1.1.4.301		Size	1.03MB
Fingerprint Tutorial		Size	9.10MB
Folder Size for Windows		Size	0.20MB
Foxit Reader		Size	6.57MB



# Remove Surplus Restore Points (preview)

Restore Points (registry backups) Can consume up to 12% (XP) 15% (Vista) of your hard disk drive space (Min 300MB Vista) To change settings:

XP - Go to Start -> Help and Support -> System Restore -> System Restore Settings

Vista - Go to Start -. Help and Support -> Security and Maintenance -> Backup and Restore (Backup your files -> "Click to open Backup and Restore Center")

To Clean-up see next slide

# Remove Surplus Restore Points (How-To)

XP - Go Start -> Run -> Type into the box "cleanmgr" (no quotation marks) box and wait..

Vista - Go Start and Type into the box "cleanmgr" (no quotation marks) and wait ...

In the window that appears,

- select More Options ->
- in System Restore click Cleanup...
- then answer Yes

Note: This windows also gives access to two other cleanup areas: Installed programs and Windows Components (Also see defragment)

# Disk Cleanup



Disk Cleanup is calculating how much space you will be able to free on IBM\_PRELOAD (C:). This may take a few minutes to complete.

Calculating...



Cancel

Scanning: Compress old files

# Disk Cleanup for IBM\_PRELOAD (C:)

Disk Cleanup | More Options



You can use Disk Cleanup to free up to 547,577 KB of disk space on IBM\_PRELOAD (C:).

Files to delete:

<input checked="" type="checkbox"/>		Downloaded Program Files	0 KB	▲
<input checked="" type="checkbox"/>		Temporary Internet Files	0 KB	☰
<input type="checkbox"/>		Office Setup Files	255,395 K	
<input type="checkbox"/>		Recycle Bin	0 KB	
<input type="checkbox"/>		Temporary files	0 KB	▼

Total amount of disk space you gain: 289,381 K

### Description

Downloaded Program Files are ActiveX controls and Java applets downloaded automatically from the Internet when you view certain pages. They are temporarily stored in the Downloaded Program Files folder on your hard disk.

View Files

OK

Cancel

# Disk Cleanup

Disk Cleanup is calculating how much space you will be able to free on IBM\_PRELOAD (C:). This may take a few

## Disk Cleanup for IBM\_PRELOAD (C:)

Disk Cleanup More Options

### Windows components



You can free more disk space by removing optional Windows components that you do not use.

Clean up...

### Installed programs



You can free more disk space by removing optional installed programs that you do not use.

### Disk Cleanup

Are you sure you want to delete all but the most recent restore point?

Yes No

### System Restore



You can free more disk space by removing all but the most recent restore point.

Clean up...

OK Cancel

View Files

OK Cancel

# Remove Windows ntUninstall files

If you know that you will not need to uninstall any of the (many) Windows Updates that you have made, you can remove the uninstall files and potentially free-up several GB of disk space.

Doug Knox Utilities can do this but:

The best option is to run CCleaner, which can remove all sorts of unwanted files. Versions after v1.27.260, released on February 14, now include Windows HotFix Uninstaller cleaning.

If you want to do this, you will need to check boxes in the Advanced options and in doing so, answer a few pop-up questions - (Use Google to find answers)





CCleaner.com v2.08.588

MS Windows XP SP3

Intel Pentium M processor 1.50GHz, 1.0GB RAM, Mobile Intel 915GM/GMS,910GML Express Chipset Family



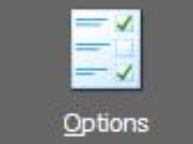
Cleaner



Registry



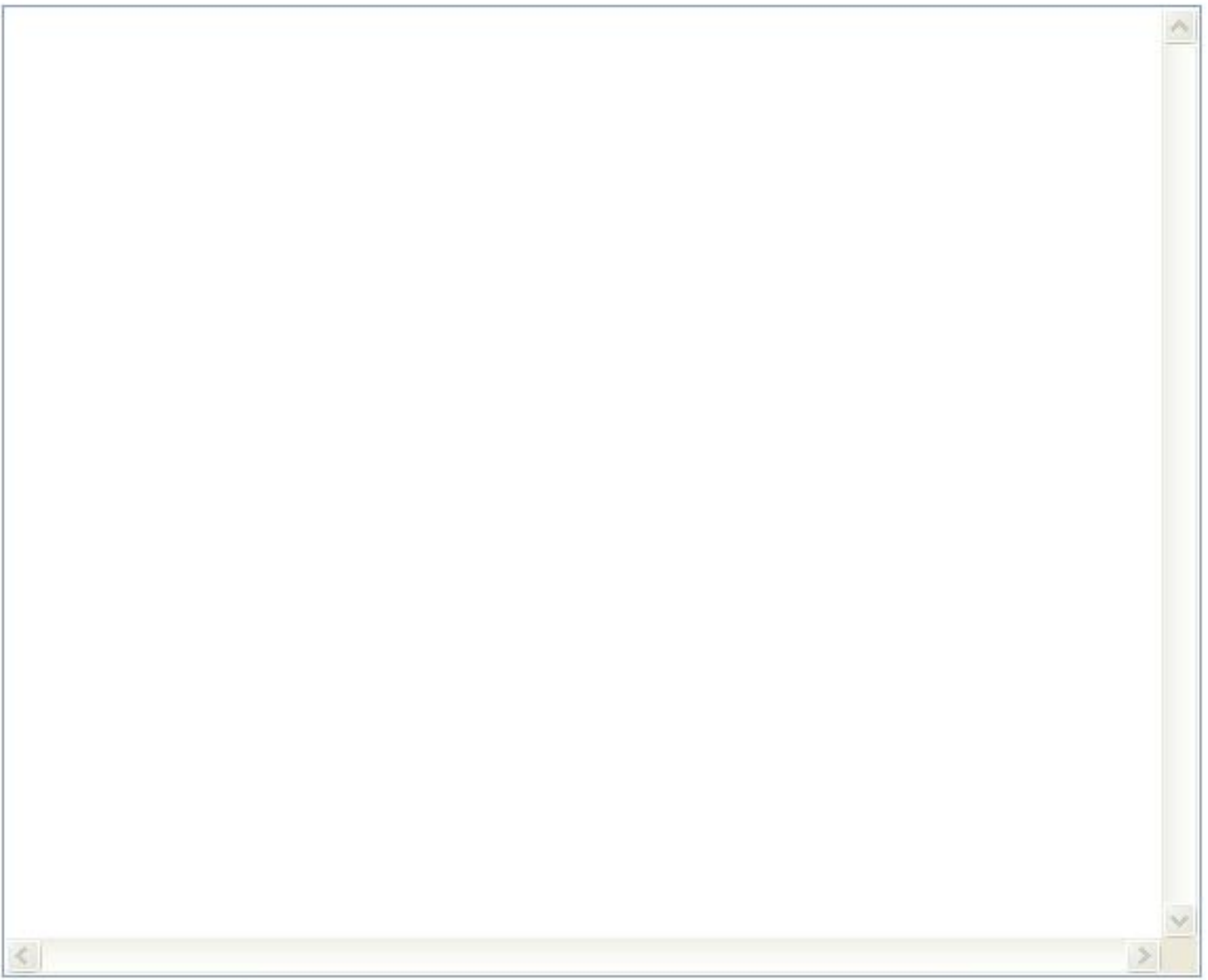
Tools



Options

Windows Applications

- Internet Explorer**
  - Temporary Internet Files
  - Cookies
  - History
  - Recently Typed URLs
  - Delete Index.dat files
  - Last Download Location
  - Autocomplete Form History
- Windows Explorer**
  - Recent Documents
  - Run (in Start Menu)
  - Search Autocomplete
  - Other Explorer MRUs
- System**
  - Empty Recycle Bin
  - Temporary Files
  - Clipboard
  - Memory Dumps
  - Chkdsk File Fragments
  - Windows Log Files
  - Start Menu Shortcuts
  - Desktop Shortcuts
- Advanced**
  - Old Prefetch data
  - Menu Order Cache
  - Tray Notifications Cache
  - Window Size/Location Cache
  - User Assist History
  - IIS Log Files
  - Hotfix Uninstallers
  - Custom Files and Folders



Analyze

Run Cleaner

# Remove Browser "Barnicles"

Barnicles (my term) for extra programs that get added to browsers to make them "better" such as Tool bars.

- Internet Explorer calls them: Add-Ons
  - Go to Tools -> Manage Add-ons
  - This opens a window where you can
  - Enable, Disable, or Delete
- Firefox calls them: Add-ons, Extensions, Plug-ins
  - Go to Tools -> Add-ons
  - This opens a window where you can select a tab for
  - Get Add-ons, Extensions, Themes or Plugins ->
  - Enable, Disable, or Delete

# Manage Internet Explorer Addons

View and manage add-ons that are installed on your computer. Disabling or deleting add-ons might prevent some webpages from working correctly.

Show: Add-ons currently loaded in Internet Explorer

Name	Publisher	Status	Type	File
McAfee SiteAdvisor Too...	McAfee, Inc.	Disabled	Toolbar	mciexplg
RealPlayer Download a...	RealNetworks, Inc.	Disabled	Browser Helper Object	rpbrow
Research		Disabled	Browser Extension	
Send to Mindjet MindMa...		Disabled	Browser Extension	
Software Installer		Disabled	Browser Extension	
Windows Messenger		Disabled	Browser Extension	
<b>Enabled</b>				
Gears Settings		Enabled	Browser Extension	
Google Dictionary Comp...	Google Inc	Enabled	Browser Helper Object	fastsea
Google Gears Helper	(Not verified) Google Inc.	Enabled	Browser Helper Object	gears.c
Google Toolbar	Google Inc	Enabled	Toolbar	Google

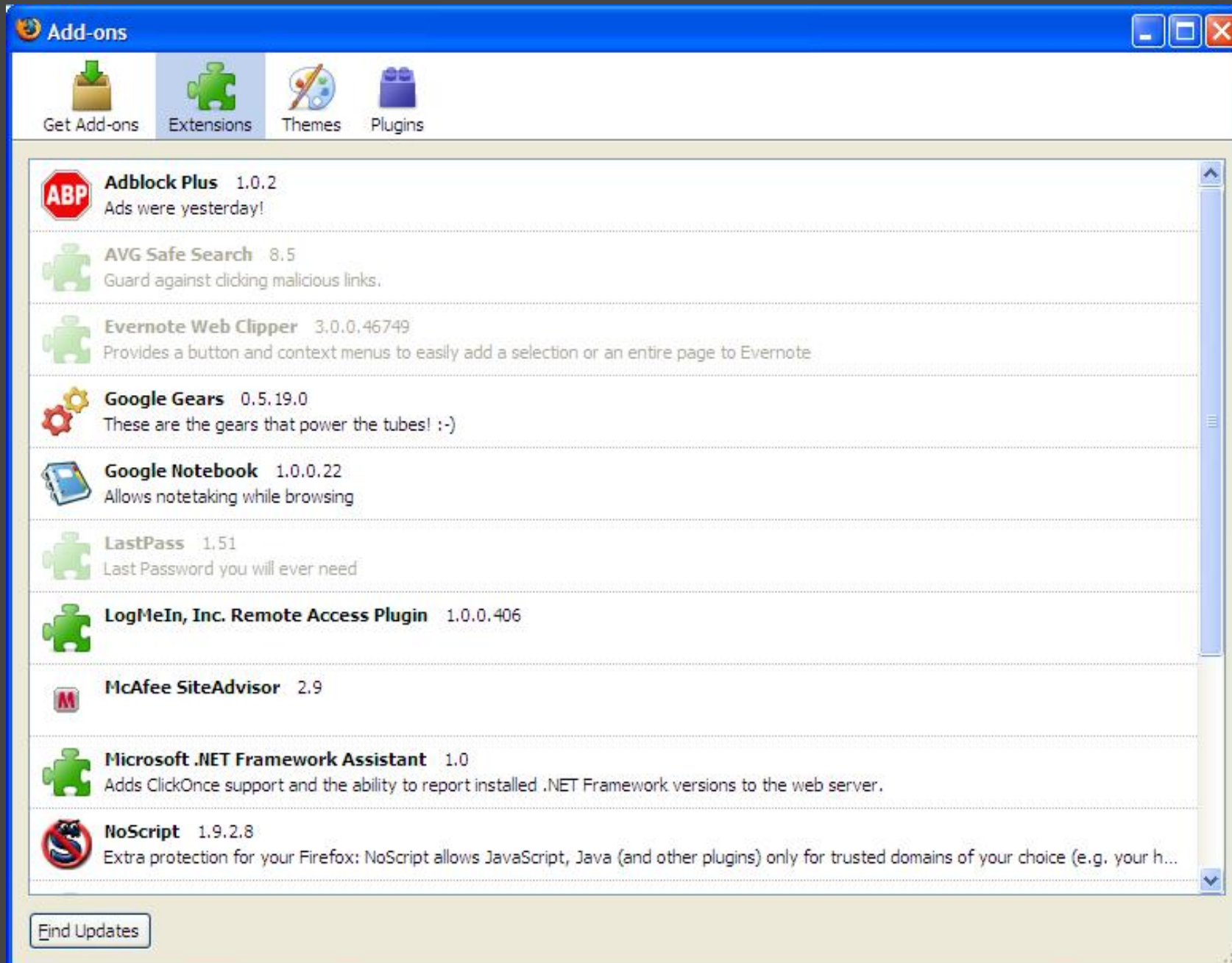
**Settings**  
Click an add-on name above and then click Enable or Disable.  
 Enable  
 Disable

**Delete ActiveX**  
Click the name of an ActiveX control above and then click Delete.  
Delete

[Download new add-ons for Internet Explorer](#)  
[Learn more about add-ons](#)

OK

# Manage Firefox Add-ons



The screenshot shows the Firefox Add-ons Manager window. The title bar is blue and contains the Firefox logo and the text "Add-ons". Below the title bar are four tabs: "Get Add-ons", "Extensions", "Themes", and "Plugins". The "Extensions" tab is selected. The main content area displays a list of add-ons, each with an icon, name, version number, and a brief description. The add-ons listed are:

- Adblock Plus** 1.0.2: Ads were yesterday!
- AVG Safe Search** 8.5: Guard against clicking malicious links.
- Evernote Web Clipper** 3.0.0.46749: Provides a button and context menus to easily add a selection or an entire page to Evernote.
- Google Gears** 0.5.19.0: These are the gears that power the tubes! :-)
- Google Notebook** 1.0.0.22: Allows notetaking while browsing.
- LastPass** 1.51: Last Password you will ever need.
- LogMeIn, Inc. Remote Access Plugin** 1.0.0.406
- McAfee SiteAdvisor** 2.9
- Microsoft .NET Framework Assistant** 1.0: Adds ClickOnce support and the ability to report installed .NET Framework versions to the web server.
- NoScript** 1.9.2.8: Extra protection for your Firefox: NoScript allows JavaScript, Java (and other plugins) only for trusted domains of your choice (e.g. your h...

At the bottom left of the window, there is a button labeled "Find Updates".

# Manage Startup Items (there are lost of them)

Upon installation, many applications configure themselves to start automatically when you log on. Applications do this so that they can:

- automatically check for updates
- use system tray icons to interact with users
- add functionality to Windows components such as Windows Explorer.

However, most such applications don't ask permission before inserting themselves in your logon process and almost never provide an interface to let you disable their autostart functionality

Startup Control Panel (free) allows you to disable and re-enable these startup items

# Some Choices to Manage Startup Items

## \*\*Startup Control Panel (free)

Very popular and has been in use for many years

## \*\*WinPatrol (free and paid-for versions)

Has many other tools in addition to Startup control

## Windows Defender (free download from MS)

This program is recommended by Microsoft

## CCleaner (free)

This popular cleaning tool is not recommended for managing startup items (search the web for the complicated reasons)

## Autoruns (free)

Very full featured. Not for the feint hearted

\*\* = Recommended



# Startup Control Panel

The image shows two instances of the 'Startup Control Panel 2.8 by Mike Lin' application. The main window displays a list of programs to be run from the HKEY\_LOCAL\_MACHINE registry key. The secondary window shows programs to be run from the current user's Startup folder.

**Startup Control Panel 2.8 by Mike Lin (Main Window)**

Run these programs from the HKEY\_LOCAL\_MACHINE (all users) Run registry key:

Name	Path
<input checked="" type="checkbox"/> Ad-Watch	"C:\Program Files\Lavasoft\Ad-Aware\AAWTr...
<input checked="" type="checkbox"/> AVG8_TRAY	"C:\PROGRA~1\AVG\AVG8\avgtray.exe"
<input type="checkbox"/> AwaySch	"C:\Program Files\Lenovo\AwayTask\AwaySch...
<input type="checkbox"/> BLOG	"C:\WINDOWS\SYSTEM32\rundll32.exe" C:\P...
<input type="checkbox"/> cssauth	"C:\Program Files\IBM ThinkVantage\Client Se...
<input type="checkbox"/> dla	"C:\WINDOWS\system32\d...
<input checked="" type="checkbox"/> EZEJMNAP	"C:\PROGRA~1\ThinkPad\...
<input type="checkbox"/> Google Desktop Sear...	"C:\Program Files\Google\G...
<input checked="" type="checkbox"/> googletalk	"C:\Program Files\Google\G...
<input type="checkbox"/> HotKeysCmds	"C:\WINDOWS\system32\h...
<input checked="" type="checkbox"/> IBM Warranty Notific...	"C:\Program Files\IBM\acc\...
<input type="checkbox"/> IBMTBCTL	"C:\Program Files\ThinkPad\...
<input checked="" type="checkbox"/> IgfxTray	"C:\WINDOWS\system32\ig...
<input type="checkbox"/> iTunesHelper	"C:\Program Files\iTunes\iT...
<input checked="" type="checkbox"/> KernelFaultCheck	"%systemroot%\system32\du...
<input type="checkbox"/> LogMeIn GUI	"C:\Program Files\LogMeIn\...
<input type="checkbox"/> LPMailChecker	"C:\PROGRA~1\THINKV~1\...
<input type="checkbox"/> LPManager	"C:\PROGRA~1\THINKV~1\...
<input type="checkbox"/> MMRReminderService	"C:\Program Files\Mindjet\M...
<input type="checkbox"/> pdfSaver3	"C:\Program Files\IBM Think...
<input type="checkbox"/> PDSservice.exe	"C:\Program Files\IBM Think...
<input checked="" type="checkbox"/> Persistence	"C:\WINDOWS\system32\ig...
<input checked="" type="checkbox"/> PWRMGRTR	"C:\WINDOWS\SYSTEM32\...
<input type="checkbox"/> QuickTime Task	"C:\Program Files\QuickTime\...
<input type="checkbox"/> Snippet	"C:\Program Files\Microsoft I...
<input checked="" type="checkbox"/> SoundMAX	"C:\Program Files\Analog De...
<input checked="" type="checkbox"/> SoundMAXPnP	"C:\Program Files\Analog De...
<input checked="" type="checkbox"/> SpySweeper	"C:\Program Files\Webroot\W...
<input type="checkbox"/> TabletTip	"C:\Program Files\Common F...
<input type="checkbox"/> TabletWizard	"C:\WINDOWS\help\Splsh\...
<input type="checkbox"/> TRAYFX	"C:\WINDOWS\SYSTEM32\trayfx.exe"

**Startup Control Panel 2.8 by Mike Lin (Secondary Window)**

Run these programs from the current user's Startup folder:

Name	Path
<input type="checkbox"/> JCVGantt Pro 3 - Aut...	C:\Program Files\I and A Research\JCVGantt Pr...
<input type="checkbox"/> OpenOffice.org 3.0	C:\Program Files\OpenOffice.org 3\program\qui...
<input type="checkbox"/> Secunia PSI	C:\Program Files\Secunia\PSI\psi.exe

# WinPatrol (Free version available)

A more comprehensive and user-friendly tool than Startup Control Panel is **WinPatrol**


- Winpatrol (free) gets very good reviews and provides several tools including the tool to manage startup programs
- WinPatrol PLUS (\$29.99) also includes access to an **online database** that answers many of the questions like:
  - "What does the file **IGFXSRVC.DLL** do? and do I need it?"
  - To compare free and PLUS see:
    - <http://www.winpatrol.com/compare.html?download>



# WinPatrol




















**WinPatrol PLUS**

Active Tasks | Cookies | File Types | Hidden Files | Recent | PLUS | Options  
Startup Programs | Delayed Start | ActiveX | IE Helpers | Scheduled Tasks | Services

 In the morning, when you turn on your computer or anytime you restart Windows, the programs listed below will run automatically unless disabled. Select a Program Title and press Info... or double-click an item for more info.

Display Secret Startup Locations (Advanced mode)

Help  
Monitor

Title	Command	Company	Type	First Detected
 WinPatrol PLUS	winpatrol.exe ...	BillP Studios	HKLM_RUN	09/24/2008 9:45 PM
 TVT Scheduler Proxy	scheduler_pro...	Lenovo Group Li...	HKLM_RUN	09/24/2008 9:44 PM
 TSMResident	TSMRESIDENT...	Lenovo Group Li...	HKLM_RUN	09/24/2008 9:45 PM
 TrackPointSrv	tp4serv.exe	Lenovo Group Li...	HKLM_RUN	09/24/2008 9:44 PM
 SoundMAXnP	SMax4PNP.exe	Analog Devices, ...	HKLM_RUN	09/24/2008 9:44 PM
 SoundMAX	Smax4.exe /tray	Analog Devices, ...	HKLM_RUN	09/24/2008 9:45 PM
 PWRMGRTR	RunDLL32.exe...	Lenovo Group Li...	HKLM_RUN	09/24/2008 9:45 PM
Persistence	igfxpers.exe	Intel Corporation	HKLM_RUN	09/24/2008 9:44 PM
IgfxTray	igfxtray.exe	Intel Corporation	HKLM_RUN	09/24/2008 9:44 PM
 IBM Warranty Notification	ERTS0749.exe...	IBM Corporation	HKLM_RUN	09/24/2008 9:45 PM
 googletalk	googletalk.exe...	Google	HKLM_RUN	10/26/2008 9:05 PM
 EZEJMNAP	EZEJMNAP.EXE	Lenovo Group Ltd.	HKLM_RUN	09/24/2008 9:44 PM
 AVG8_TRAY	avgtray.exe	AVG Technolog...	HKLM_RUN	09/24/2008 9:44 PM
KernelFaultCheck	dumprep 0 -k		HKLM_RUN	
Ad-Watch	AAWTray.exe	Lavasoft	HKLM_RUN	04/27/2009 6:41 PM
 SpySweeper	SpySweeperUI...	Webroot Softwar...	HKLM_RUN	09/24/2008 9:45 PM
 Malwarebytes' Anti-Malware	mbamgui.exe /...	Malwarebytes Co...	HKLM_RUNO...	05/16/2009 10:53 PM
 USB Safely Remove	USBSafelyRem...		HKCU_RUN	09/24/2008 9:45 PM
 H/PC Connection Agent	WCESCOMM.EXE	Microsoft Corpor...	HKCU_RUN	09/24/2008 9:44 PM
 Google Update	GoogleUpdate...	Google Inc.	HKCU_RUN	02/22/2009 1:38 PM
 ctfmon.exe	ctfmon.exe	Microsoft Corpor...	HKCU_RUN	09/24/2008 9:44 PM
 swg	GoogleToolbar...	Google Inc.	HKCU_RUN	09/24/2008 9:44 PM
 Google Calendar Sync	GoogleCalend...	Google	STARTUP_FO...	09/24/2008 9:44 PM

Info... | Add | Remove | Disable | Close

# Sources of Information on file purpose

[Google.com](https://www.google.com)

[ProcessLibrary.com](https://www.ProcessLibrary.com)  
[dllinformation.com](https://www.dllinformation.com)

[LiUtilities.com](https://www.LiUtilities.com)

[Greatis.com](https://www.Greatis.com)  
[BleepingComputer.com](https://www.BleepingComputer.com)

# Note of Caution

- If you disable a startup item using the previous tools, some programs will attempt to re-insert themselves into the startup list whenever you next decide to run the program by clicking its icon. (eg. AOL)
- There is a danger of "complications" if you uninstall a program that has had its entry in a startup location disabled or deleted.  
This opinion is Web "gossip" ie not exactly an authoritative source.
- If you find files with random /unverifiable file names, it's an *indication* that your machine is infected with malware

# Clean and Defragment the Hard Disk Drive

There is an on-going debate over the efficacy of "defragging" the hard drive. If you want to do this:

Open My Computer -> Right-click C: drive -> select Properties

In the window that appears,

- select the Tools tab
- select Defragment now
- In the window that appears select the c: drive
- click Defragment
- retire for the evening
- in the morning, see if you notice any difference ;-)

# Defragment the C: drive

IBM\_PRELOAD (C:) Properties

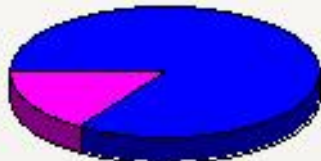
General Tools Hardware Sharing Security Quota

IBM\_PRELOAD

Type: Local Disk  
File system: NTFS

Used space:	46,256,295,936 bytes	43.0 GB
Free space:	8,313,081,856 bytes	7.74 GB

Capacity: 54,569,377,792 bytes 50.8 GB



Drive C Disk Cleanup


Compress drive to save disk space  
 Allow Indexing Service to index this disk for fast file searching

OK Cancel Apply


IBM\_PRELOAD (C:) Properties

General Tools Hardware Sharing Security Quota


Error-checking

 This option will check the volume for errors. Check Now...

Defragmentation

 This option will defragment files on the volume. Defragment Now...

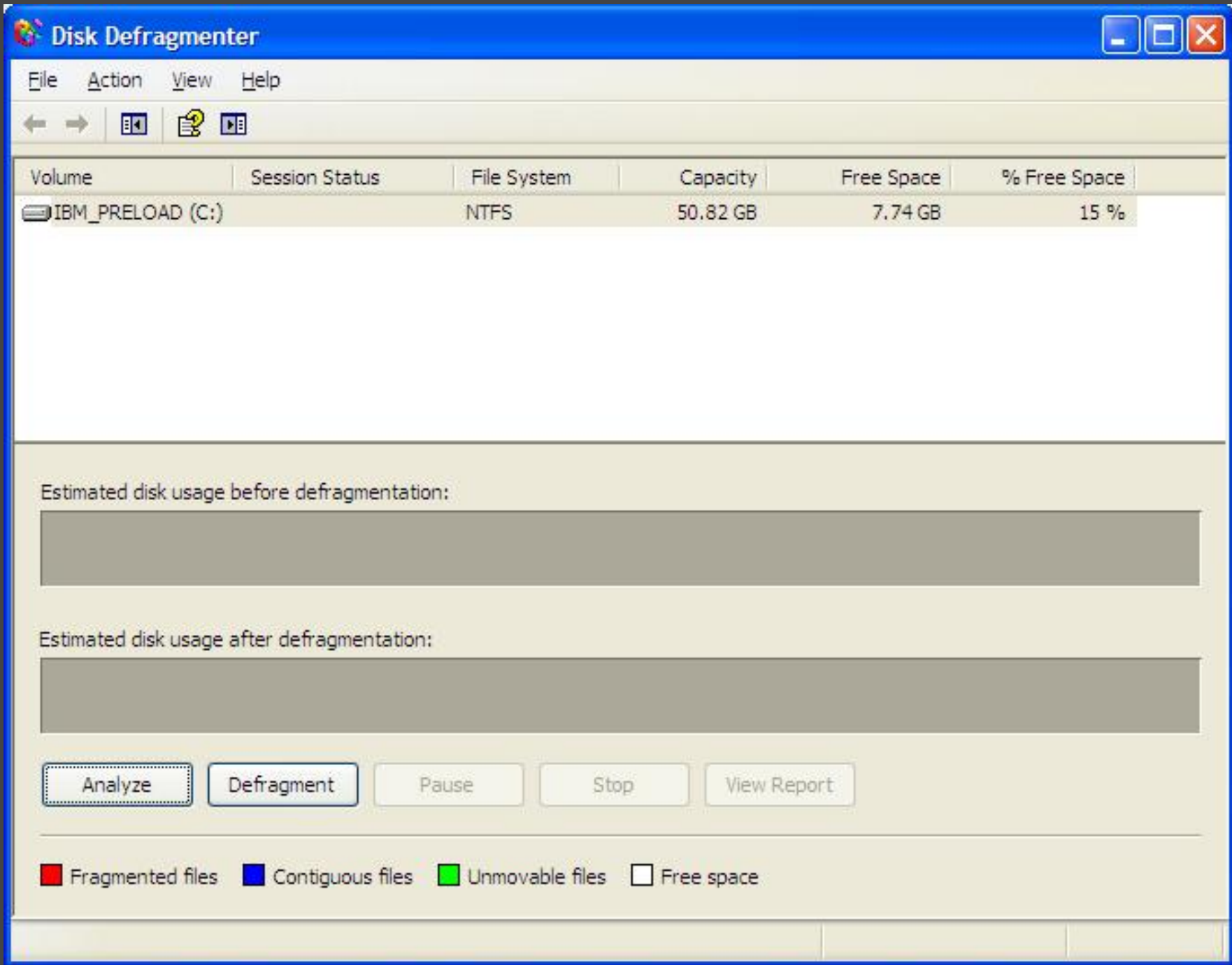
Backup

 This option will back up files on the volume. Backup Now...

OK Cancel Apply



# Disk Defragmenter



# Defragmentation Report

Defragmentation report for: IBM\_PRELOAD (C:)

Volume information:

Volume IBM_PRELOAD (C:)	
Volume size	= 50.82 GB
Cluster size	= 4 KB
Used space	= 43.07 GB
Free space	= 7.75 GB
Percent free space	= 15 %
Volume fragmentation	

Files that did not defragment:

Fragments	File Size	File Name
2	15 KB	\RRbackups\usersids.dat
4	16 KB	\RRbackups\C\2
3	24 KB	\RRbackups\SAM
13	52 KB	\RRbackups\C\0
111	7 MB	\RRbackups\system
13	142 MB	\System Volume Information\_restore{B6DC...
409	163 MB	\Downloads 2\Mindmap\MindMap_4.0.0_7i...
3	226 MB	\Documents and Settings\All Users\Application...
24	320 MB	\Documents and Settings\Paul\Local Settings...

Print... Save As... Close

# Disk Defragmenter - after defrag operation

The screenshot shows the Disk Defragmenter application window. The title bar reads "Disk Defragmenter". The menu bar includes "File", "Action", "View", and "Help". Below the menu bar is a toolbar with navigation icons. The main area displays a table with the following data:

Volume	Session Status	File System	Capacity	Free Space	% Free Space
IBM_PRELOAD (C:)	Defragmented	NTFS	50.82 GB	7.74 GB	15 %

Below the table, there are two horizontal bar charts. The first chart is labeled "Estimated disk usage before defragmentation:" and shows a highly fragmented disk layout with many small, scattered blocks of data. The second chart is labeled "Estimated disk usage after defragmentation:" and shows a much more organized disk layout with large, contiguous blocks of data.

At the bottom of the window, there are five buttons: "Analyze", "Defragment", "Pause", "Stop", and "View Report". Below the buttons is a legend:

- Fragmented files (represented by a red square)
- Contiguous files (represented by a blue square)
- Unmovable files (represented by a green square)
- Free space (represented by a white square)

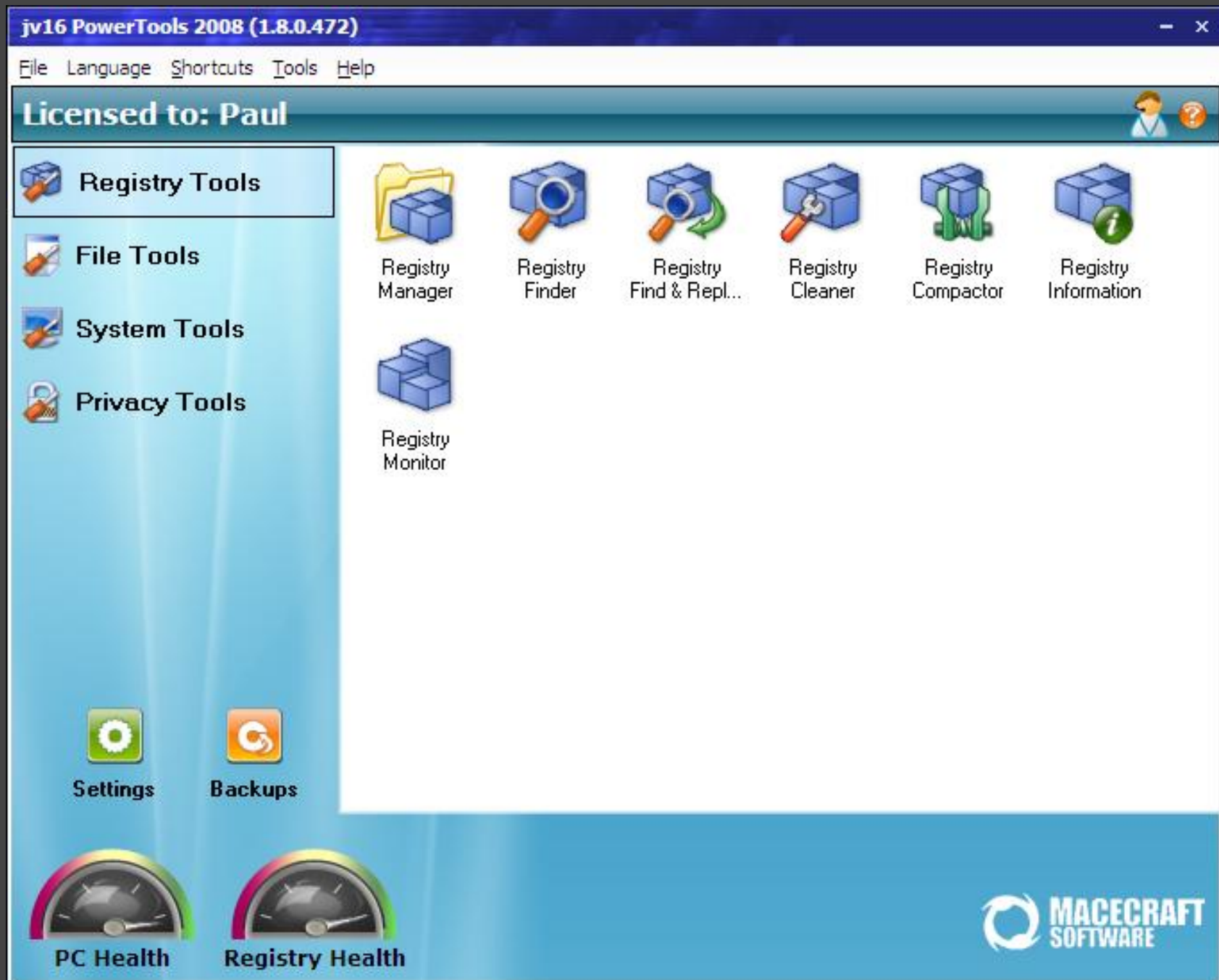


# Meddling with the Registry

The usual advice is "Meddle with the registry at you own risk"  
If you want to do this:

- Use the registry section of CCleaner and be sure to use the backup facility built into CCleaner
- Numerous programs are available to clean and optimise the registry. Seek advice elsewhere ;-)
- Try jv16 Power Tools. This is a full-featured application.

# j16 Power Tools by Macecraft



# References

## Microsoft References

For more information about how to modify the startup programs for Windows XP Professional, click the following article number to view the article in the Microsoft Knowledge Base:

[314488](http://support.microsoft.com/kb/314488/) (<http://support.microsoft.com/kb/314488/> ) How to modify the Group Policy for programs that run at user logon on a computer that is running Windows XP

For more information about other startup issues with Windows XP, click the following article numbers to view the articles in the Microsoft Knowledge Base:

[147381](http://support.microsoft.com/kb/147381/) (<http://support.microsoft.com/kb/147381/> ) How to use system policies on a stand-alone computer

[179365](http://support.microsoft.com/kb/179365/) (<http://support.microsoft.com/kb/179365/> ) Run, RunOnce, RunServices, RunServicesOnce and Startup