



# PC CARE – Maintaining your Windows PC

Intermediate-Advanced course – applicable to Windows 7, 8, 8.1 and 10

## 1. PROTECTION

Antivirus software – not all antivirus programs are created equal. Test and experience (reputation) are the criteria to follow. Will look at several free and paid antivirus programs.

## 2. CONFIGURATION

Will try to set up the GUI (Graphical User Interface) as friendly as possible. Will set it up the way YOU like, not what somebody else thinks you should like.

## 3. SPEED

There are a number of settings (tweaks) you can do to improve the speed of your Windows PC. These “tweaks” range from simple display settings, startup files, as well as the use of different programs, such as different Internet Browsers.

## 4. MAINTENANCE

Speed can also be improved by doing proper maintenance of the Registry, File System and the Hard Drive. Learning how to do this using just a few free utility programs.

## 5. FINI – PUTTING IT ALL TOGETHER

Although the above tasks can be quite laborious and time consuming, some of it can be automated, while others are one and only time tasks.

# PROTECTION

It is truly difficult to find the “best” antivirus, when it comes to the security of Windows Operating Systems. As I already mentioned, not all antivirus programs are created equal. The best criteria to follow, when deciding on THE Antivirus, seems to be experience and reputation. That is not to say that you should totally disregard the reviews you can find on the Internet.

Here are some links, we will want to visit and examine:

<https://www.av-test.org/en/antivirus/home-windows/>

<http://www.pcmag.com/article2/0,2817,2372364,00.asp>

<http://www.pcadvisor.co.uk/test-centre/security/best-antivirus-for-pc-laptop-2016-uk-free-summary-3263332/>

<http://www.tomsguide.com/us/perfect-windows-10-antivirus.news-21834.html>

<http://pc4u.org/best-antivirus-for-windows/>

[http://offers.eset.com/compare-windows-antivirus/?CMP=knc-Google-G|S-CA-NB-C-Review|P&k=Antivirus-Software-Review&os=For-Windows&gclid=CP\\_rqdHrgcwCFQIKaQodJuUBrQ](http://offers.eset.com/compare-windows-antivirus/?CMP=knc-Google-G|S-CA-NB-C-Review|P&k=Antivirus-Software-Review&os=For-Windows&gclid=CP_rqdHrgcwCFQIKaQodJuUBrQ)

<https://www.vipreantivirus.com/promos/visp2yr.aspx?gclid=CPS0t9PvgcwCFQqoaQodJMLMw>

Other things to consider:

- Automatic, fast, easy updates (several times a day)
- Ease of deleting offending software, once it is found
- Email protection
- Internet browsing protection
- Compatibility with another Antivirus. It is prudent to have another Antivirus installed and do occasional “double-check”. For example I like using Eset as my main Antivirus, but run occasional checks with Malwarebytes. While running Malwarebytes, I do not have to disable Eset!!
- It is important to remember, that sometimes a free Antivirus version will perform better than an Antivirus with a “known” name (such as Norton).

By the way, keep in mind, that should you decide on a paid version of an Antivirus software, chances are you can get it a lot cheaper on eBay, than getting it from the publisher (seller) of the particular Antivirus software.

Let's take some time and practice the downloading and installation of some free Antivirus versions.

Make few notes re what you liked (not liked)

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## VERY IMPORTANT!!!

Every time, before making any significant changes (actually one should do this before making **ANY** changes, period) **create a RESTORE POINT**.

RIGHT click Computer icon (on the Desktop, make sure it is not a shortcut)  
In the Context Menu click Properties  
System Protection

At the bottom of this panel window where it says: Create a restore point..

Click Create

Give it some name, for example: **BeforeAvastInstall**

Notice that current date and time are added automatically.

# CONFIGURATION

## **Creating shortcuts on your Desktop (for Windows 7):**

Here are some simplified instructions that with a bit of practice, you should be able to follow quite easily.

Click              Start  
                     All Programs  
                     Picasa 3 (folder)  
                     Picasa 3 (app)

Then              RIGHT click on Picasa 3 (app) and DRAG it onto your Desktop  
 Then              in the Context Menu click on **Create shortcuts here**

Can you now create a shortcut to the Calculator, which is in All Programs/Accessories folder?

Write the simple instruction steps for yourself in here:

Click ..



## **Placing shortcuts on your Taskbar (this is about the same for all versions .. 7, 8, 8.1, 10):**

This starts the same way as above, but when you come to “RIGHT click on .. and DRAG”, you do not DRAG, but RIGHT click ONLY and then click on the **Pin to Taskbar** in the Context Menu.

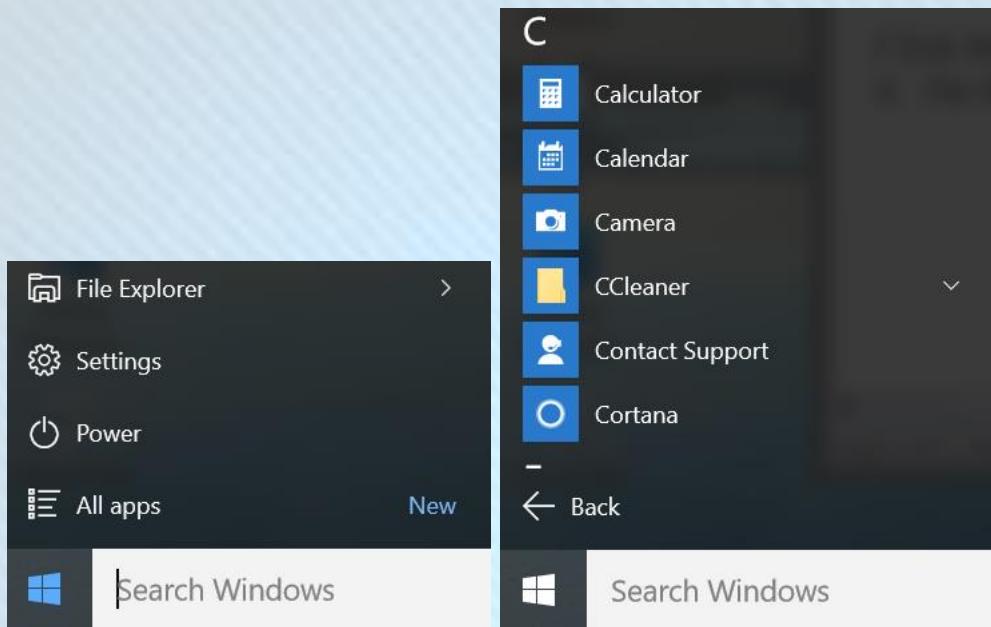
Place a shortcut to the Calculator on the Taskbar, then select another app of your choice and again place a shortcut to it on the Taskbar.

Here are the steps (write them down)

Click ..

## Creating shortcuts in Windows 10:

Let's create a shortcut to the Calculator and place it on the Taskbar.



Click the blue “window” in the bottom left corner. Now click the **All apps** immediately above it. On the right side use the “slider” to locate the **Calculator** app. Then RIGHT click on it. Can you figure out how to complete it?

Write some notes about it?

Can you figure out how to place the Calculator shortcut on the Desktop?

It looks like the RIGHT click DRAG & DROP does not work here. How about LEFT click DRAG & DROP?

When you click on the **All apps** and see all the icons on the left, what are these icons?

.....

When you left click drag & drop these icons, what is it, that you are actually doing?

.....

Here are some GUI configurations you may be interested in too: (Windows 10)

- Set up your Desktop, so that it displays the computer icon (This PC), User's Files icon, Control Panel icon.

RIGHT click Desktop

Personalize

Themes

Desktop icon settings

Then select the icons you want to show on your Desktop.

- Set it up so that when you click on the “start” at the bottom left of the Desktop, (it is the 4-panel window icon, you will have direct access to folders such as Documents, Downloads, Pictures, etc.

Click the “start” (window icon)

Settings

Personalization

Start

Choose which folders appear on Start (at the bottom)

- You can also try to make the Desktop picture smaller, so that you can better see the icons that are on your Desktop (on the left).

RIGHT click Desktop

Personalize

Background

Then choose your picture and choose the **Fit**.

- Arrange “side by side” view.

Open a folder, hold down the WIN key and press ← (or →).

Open another folder and place it on the side of this one.

Steps .....

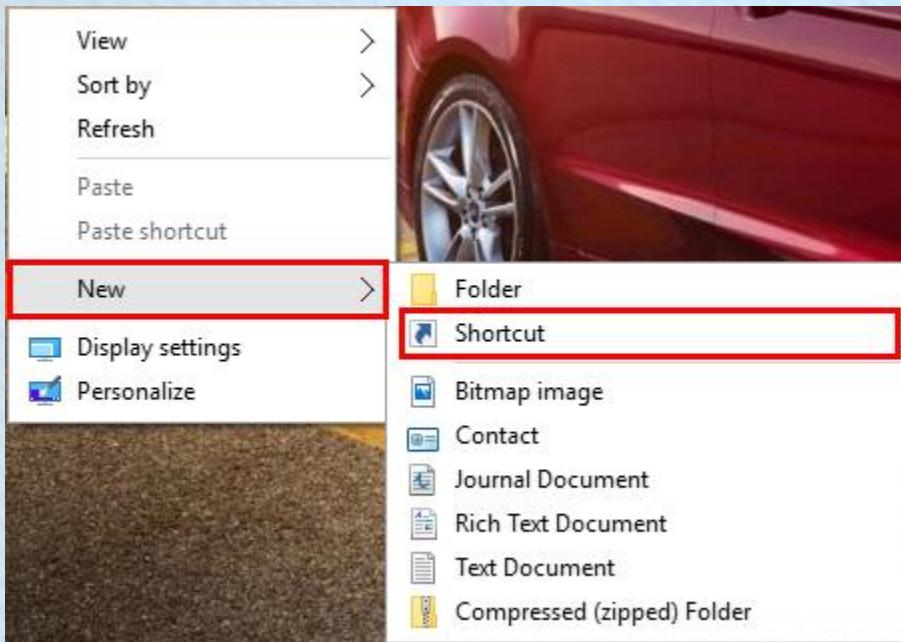
Practice .....

(you can actually do this by simply dragging the window by its Title bar all the way to the left (or right) till it just about “leaves” the Desktop)

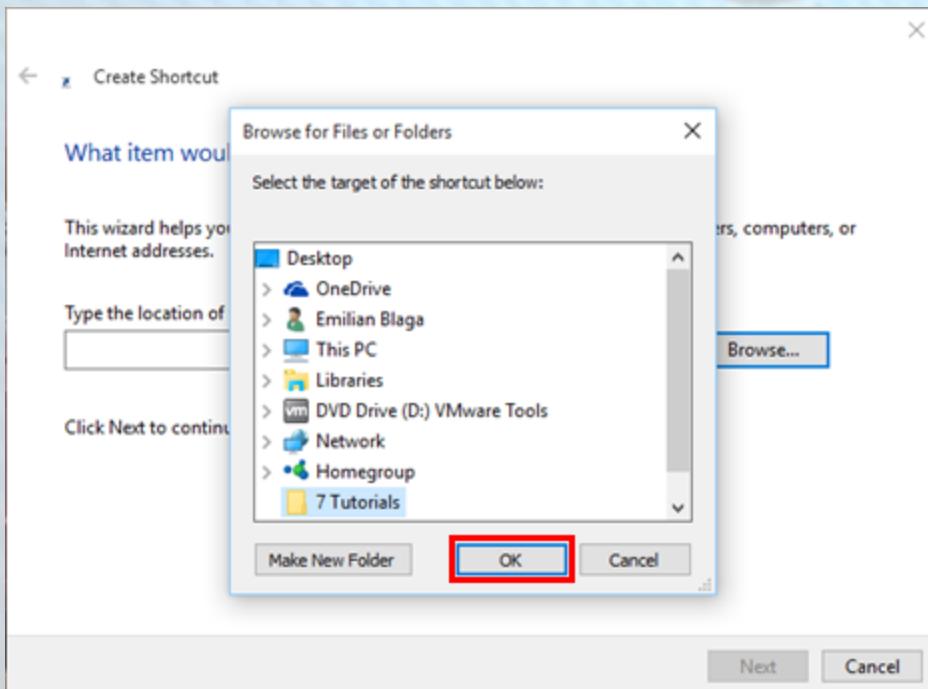
## Challenge – creating a shortcut to a folder and placing it on the Taskbar.

First, you need to know that you can't just right-click a folder in *Windows Explorer* or *File Explorer* and choose "Pin to taskbar" as you do with programs, but the process is still not difficult.

For starters, you will need to create a shortcut to your chosen folder on the *Desktop*. Whether you use Windows 7, Windows 8.1 or Windows 10, **right-click** or press and hold on an empty space from the *Desktop*, until the contextual menu is displayed. Then, select *New* and choose *Shortcut*.

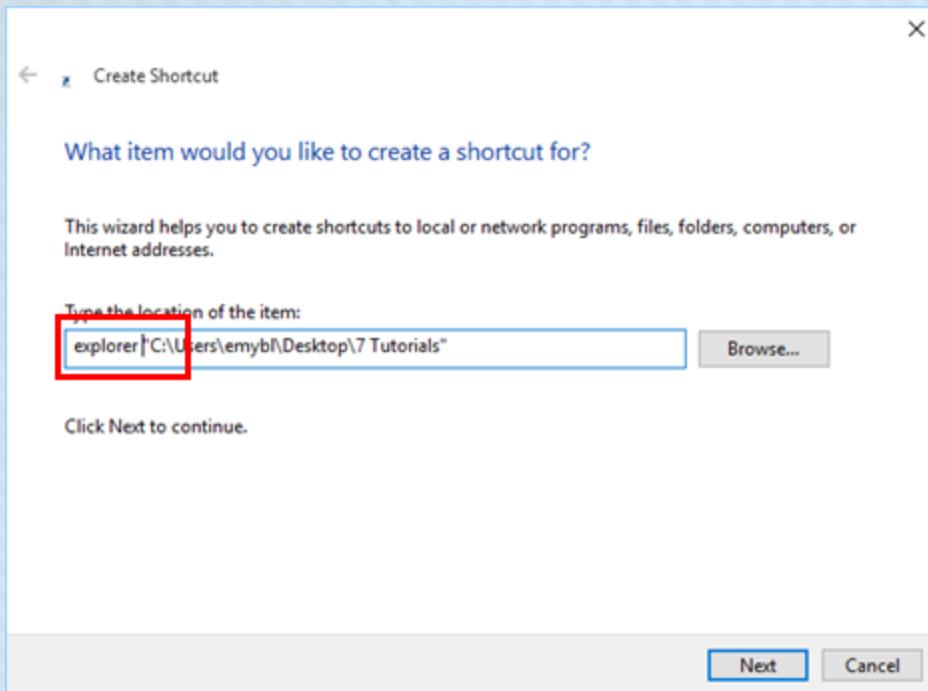


Next, click or tap *Browse* and navigate to the folder you want pinned, select it and press *OK*.

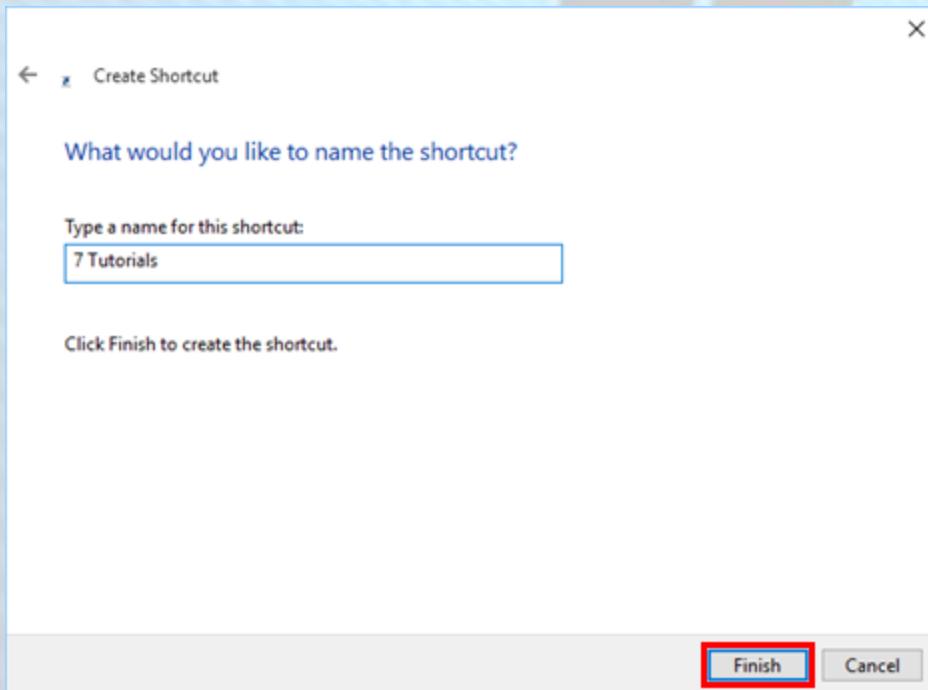


This will put the full path of the folder into the *Location* field, in the *Create Shortcut* wizard.

Before you click/tap *Next*, you will need to insert the word *explorer*, followed by a *space* (the space is important - without it, this procedure will not work) before the folder's path.



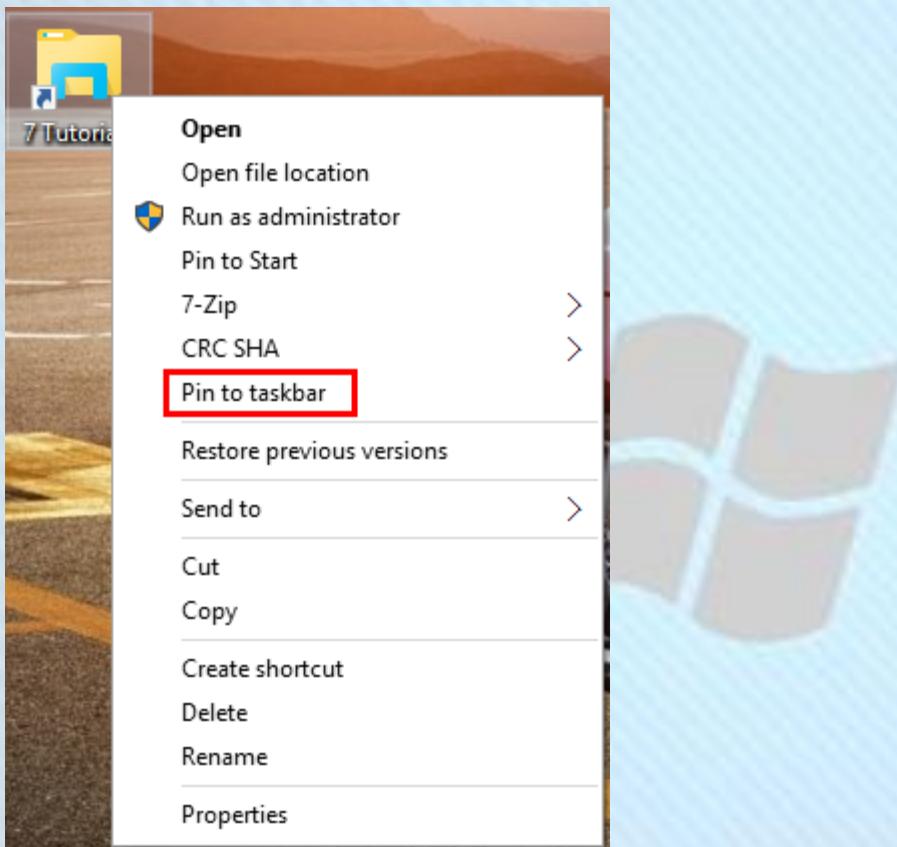
Then, you'll be asked to enter a name for this shortcut. Type in whatever you want and click or tap on *Finish*.



The folder shortcut will show up on your *Desktop*.



From here on, it's a simple matter: drag and drop the shortcut onto the taskbar. Or, if you prefer, you can right-click or tap and hold the shortcut and choose "*Pin to taskbar*" from the menu that pops up.



There are some other GUI settings you may be interested in:

- Display some other icons (computer, user files, etc. icons on your Desktop) similar to the Desktop of Windows 7.
- ..
- Choose which folders you want to see when you click on the “windows” icon (bottom left corner – that used to be “Start” in Windows 7). Start by RIGHT clicking on the Desktop/Personalize/Start/Choose which folders..

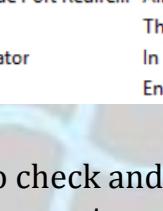
# SPEED

Here are some of the settings (tweeks) you can use to speed up Windows (any version of Windows!!

- Eliminate some of the files that start up (and keep running) at the boot up of the computer, even if they do not need to be running. Remember, every program that is running (whether you see it or not) is using up CPU time (Central Processing Unit – the main chip – “brain” of the computer) and taking up valuable RAM (Random Access Memory). The result is slower computer.
  1. Go to: Control Panel/Administrative Tools/System Configuration/**Startup**  
 Make sure you do not have a whole bunch of unnecessary programs running (for example Adobe Reader updater, Flash updater, Java platform updater, etc.)  
 Another way to do this is from the Start icon .. click on it and where it says: Search programs & files, enter **msconfig**. Notice it opens a panel window and at the top it displays: **msconfig.exe** or just **msconfig**. RIGHT click on it, then click on **Run as Administrator**. Then click on **Startup**.  
 Of course there are other ways to do this. In Windows 10, just RIGHT click on the Taskbar, then Start Task Manager.
- Adjust graphics settings. RIGHT click on the computer icon (usually in the top left corner, in Windows 10 it is called **This PC**) and click on Properties. You have to make sure that you are clicking on the actual computer folder NOT on the shortcut! So the steps would go like this:  
 RIGHT click      Computer icon (on the Desktop)  
 Click Properties  
 Advanced system settings  
 Advanced  
 Settings  
 Choose Custom: then deselect all the boxes, except the last 4.
- Change the Page File size (and if you have 2 hard drives, the location):  
 RIGHT click      Computer icon (on the Desktop)  
 Click Properties  
 Advanced system settings  
 Advanced  
 Settings  
 Advanced

Then in the Virtual memory section click Change. Make the initial and maximum size the same – as recommended.

- Disable some unnecessary processes that run automatically. Here are some examples of processes that can be disabled:



The table displays two screenshots of the Windows Services list. The top screenshot shows the 'Netlogon' service, which is set to 'Disabled' and 'Manual'. The bottom screenshot shows the 'RPCSS' service, which is set to 'Automatic' and 'Running'. Both screenshots show other services like 'Network Connected Devices Auto-Setup' and 'Remote Desktop Services'.

Service	Description	Startup Type	Status
Netlogon	Maintains a secure channel between this co...	Manual	Disabled
Network Connected Devices Auto-Setup	Network Connected Devices Auto-Setup ser...	Manual	Manual
Network Connection Broker	Brokers connections that allow Windows St...	Disabled	Disabled
Network Connections	Manages objects in the Network and Dial-U...	Disabled	Disabled
Network Connectivity Assistant	Provides DirectAccess status notification for...	Manual	Manual
Network List Service	Identifies the networks to which the compu...	Running	Manual
Network Location Awareness	Collects and stores configuration informati...	Running	Automatic
Network Setup Service	The Network Setup Service manages the ins...	Manual	Manual
Network Store Interface Service	This service delivers network notifications (e...	Running	Automatic

Service	Description	Startup Type	Status
Quality Windows Audio Video Experience	Quality Windows Audio Video Experience (q...	Manual	Manual
Remote Access Auto Connection Manager	Creates a connection to a remote network ...	Manual	Manual
Remote Access Connection Manager	Manages dial-up and virtual private networ...	Manual	Manual
Remote Desktop Configuration	Remote Desktop Configuration service (RD...	Manual	Manual
Remote Desktop Services	Allows users to connect interactively to a re...	Manual	Manual
Remote Desktop Services UserMode Port Redire...	Allows the redirection of Printers/Drives/Port...	Manual	Manual
Remote Procedure Call (RPC)	The RPCSS service is the Service Control Ma...	Running	Automatic
Remote Procedure Call (RPC) Locator	In Windows 2003 and earlier versions of Win...	Manual	Manual
Remote Registry	Enables remote users to modify registry sett...	Disabled	Disabled

There are other processes, you may want to check and see if they are running: "Server" (not needed if you do not have at least 2 computers networked together), Windows Defender (if you are using another Antivirus – likely a better one than Defender), Windows Error Reporting Service, etc.

Here we should also take some time to download and install Waterfox browser. And set up an Ad blocker. Then you will probably want to export & import all your bookmarks (favorites) from another browser (such as MS Internet Explorer).

Then to make the Internet work better yet, let's make a use of some fast, free & secure DNS servers.

**DNS** is an abbreviation for **Domain Name System**, a system for naming computers and network services that is organized into a hierarchy of domains. **DNS** naming is used in TCP/IP networks, such as the Internet, to locate computers and services through user-friendly names.

Homework .. "google" DNS servers, so you get to know a bit ..

<http://www.online-tech-tips.com/cool-websites/free-dns-server/>

**OpenDNS IP Addresses that I like using:**

- 208.67.222.222
- 208.67.220.220

This is how you would go about setting this up:

Click Start

Control Panel

Network and Sharing Center

Change Adapter Settings

RIGHT click Local Area Connection

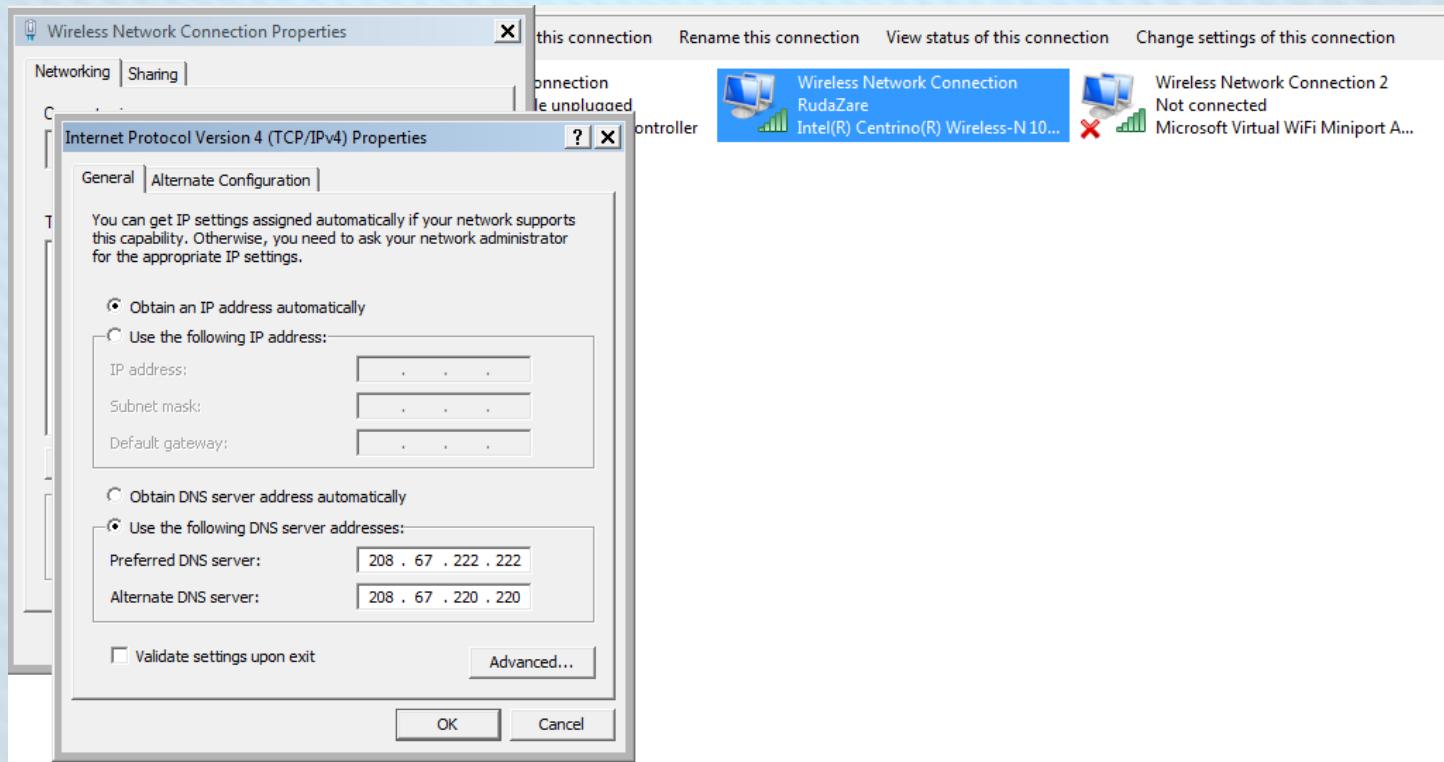
(or Wireless Network Connection)

Then click Properties

Then highlight (select)

Internet Protocol Version 4 (TCP/IPv4)

Properties



I like using these Open DNS IP addresses because of extra speed, reliability and security.

# MAINTENANCE

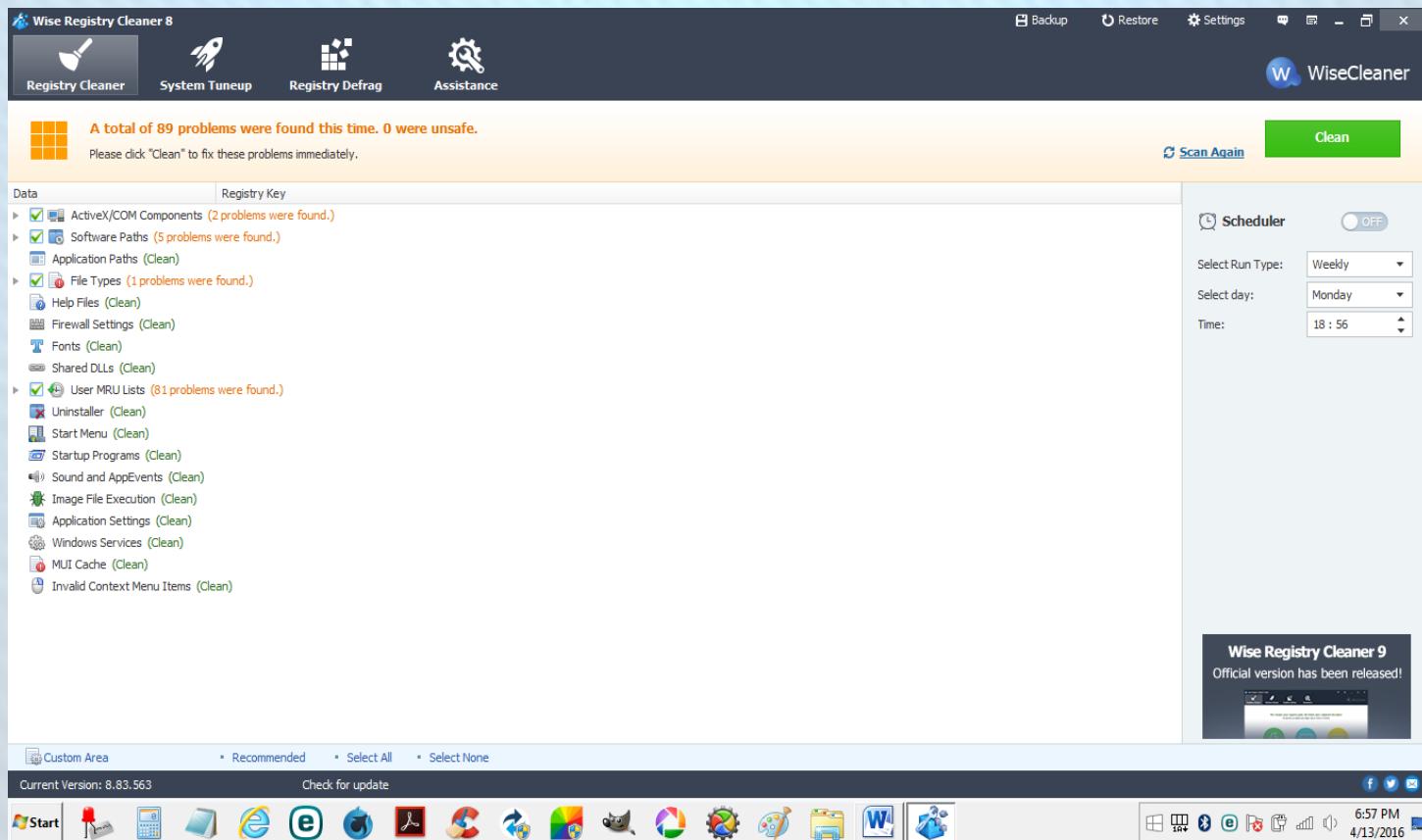
Proper maintenance will not only improve **security** and **reliability**, but also further increase the system's **speed**.

- Keeping the **Registry** clean and defragmented.

The Registry is Windows' record keeping book, reference book, directory book, configuration record book, and more. In short, it is a huge database with all types of essential records without which Windows will not run at all.

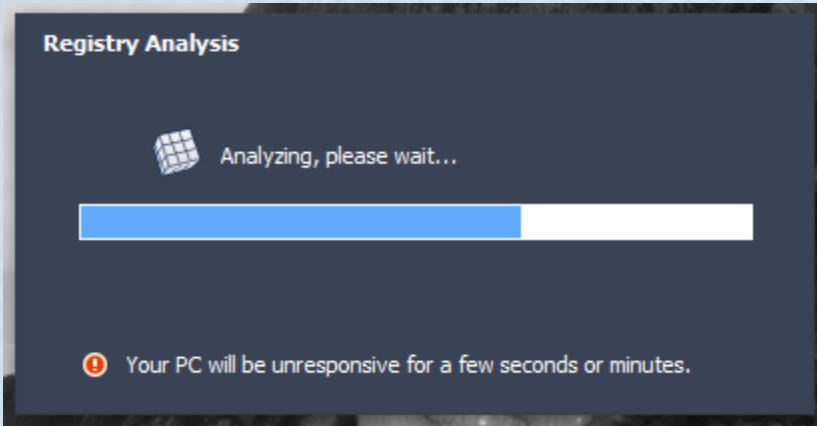
It stands to reason, that a "messy" record keeping book will not prove very efficient for running this "Windows" business.

Here are a couple of utility programs (proven & free) that will help you to keep this Registry organized:



This program has been already downloaded for you, so we just have to install it and practice running it a few times.

When running the Registry defragmentation, you may have to be patient, as it could take up to few minutes.



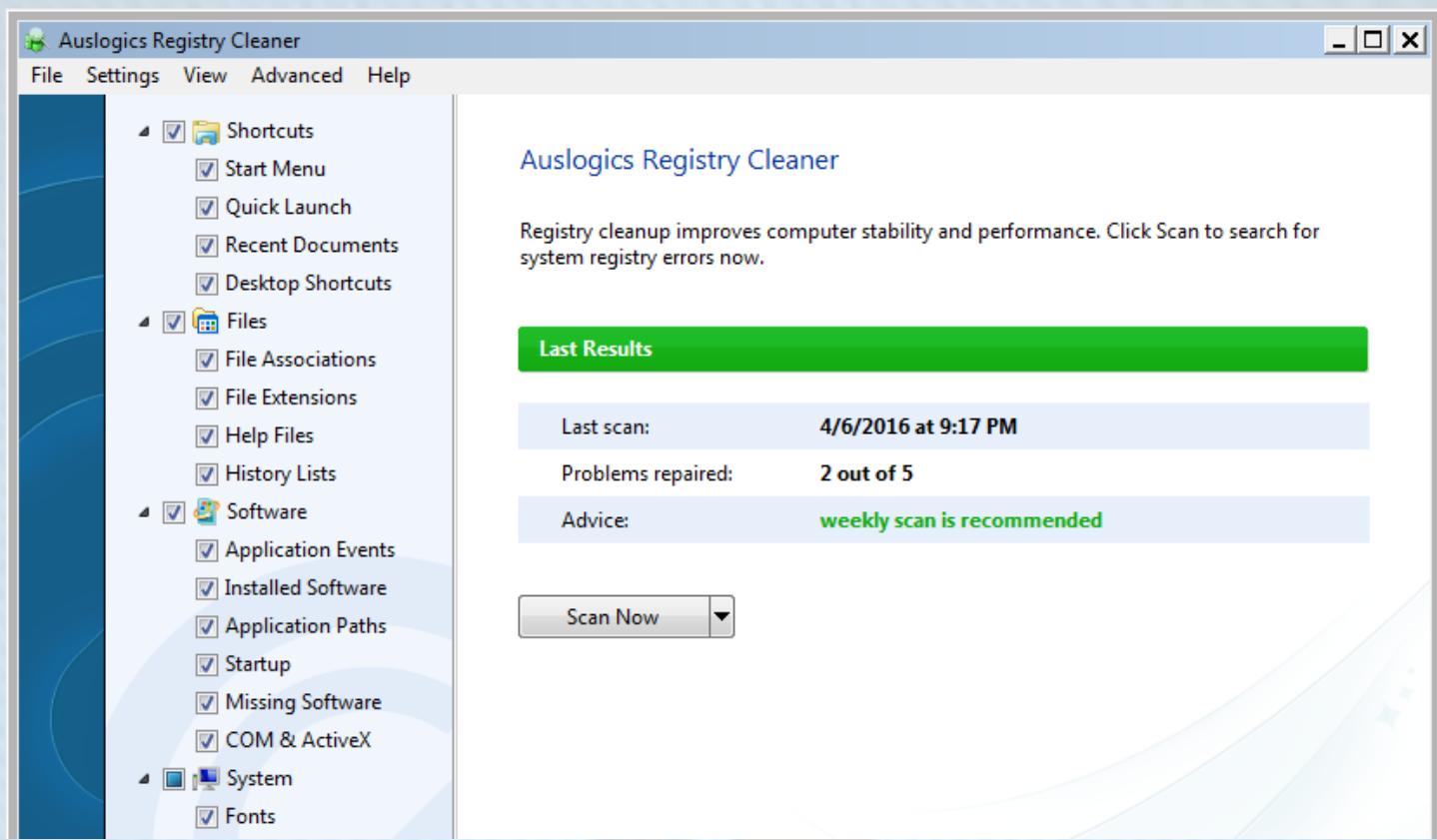
Hive Name	Current Size	New Size	Redundancy Rate
\REGISTRY\MACHINE\SOFTWARE	77.5 MB	68.8 MB	11.21%
\REGISTRY\USER\DEFAULT	256.0 KB	176.0 KB	31.25%
\REGISTRY\MACHINE\SECURITY	256.0 KB	24.0 KB	90.63%
\REGISTRY\MACHINE\SAM	256.0 KB	60.0 KB	76.56%
\REGISTRY\USER\S-1-5-20	320.0 KB	316.0 KB	1.25%
\REGISTRY\USER\S-1-5-19	248.0 KB	244.0 KB	1.61%
Total	78.8 MB	69.6 MB	11.66%

Notice the “Redundancy Rate” in the last column on the right. The **\REGISTRY\MACHINE\SECURITY** section is 90.63% larger (“messier”) than it should have been.

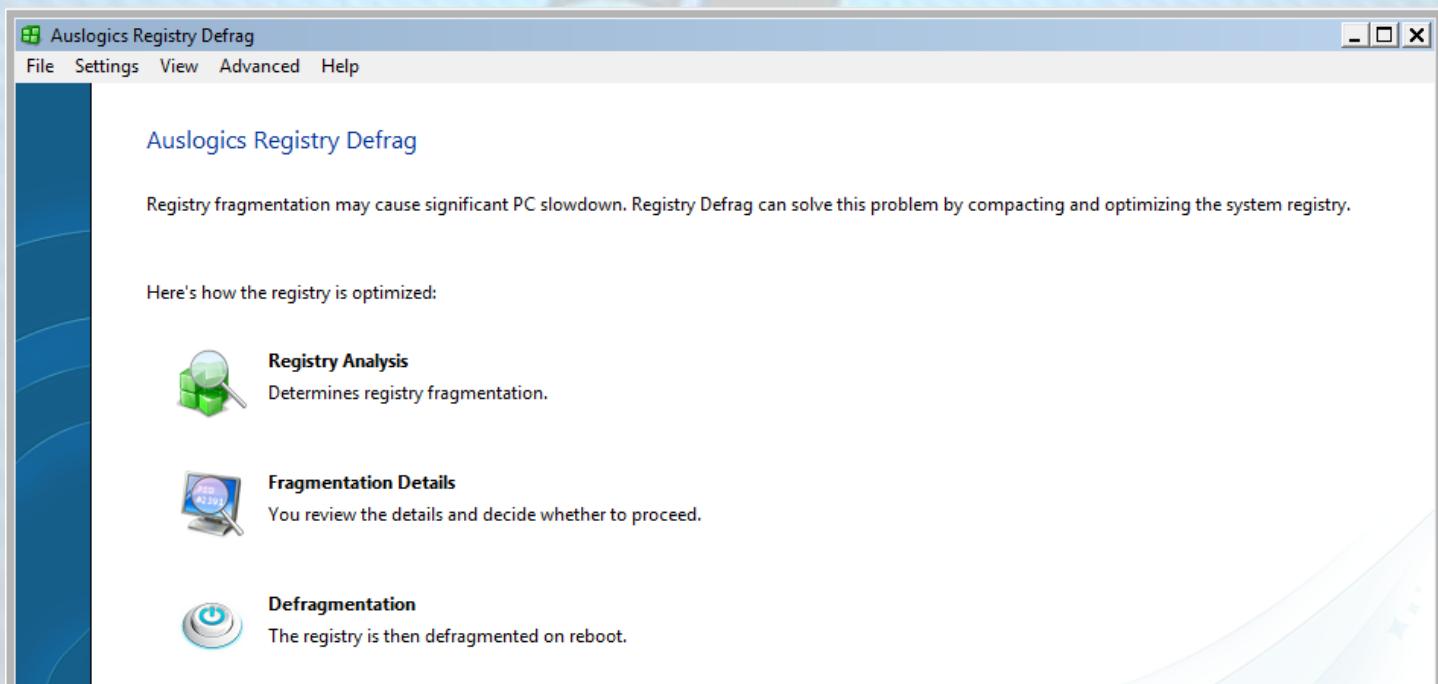
No wonder, that after a few years of total neglect, the computer becomes “too slow” and consequently “too old”. So it is time to buy a new computer right?

Here is another Registry cleaner by Auslogic. The Defragmenter comes as a separate program for Auslogic. As with the Wise Registry Cleaner, it too, is already downloaded and ready to be installed and used. In some cases, as with the Auslogic Registry Cleaner, the Defragmenter comes as a separate program.

## The Auslogic Registry Cleaner:

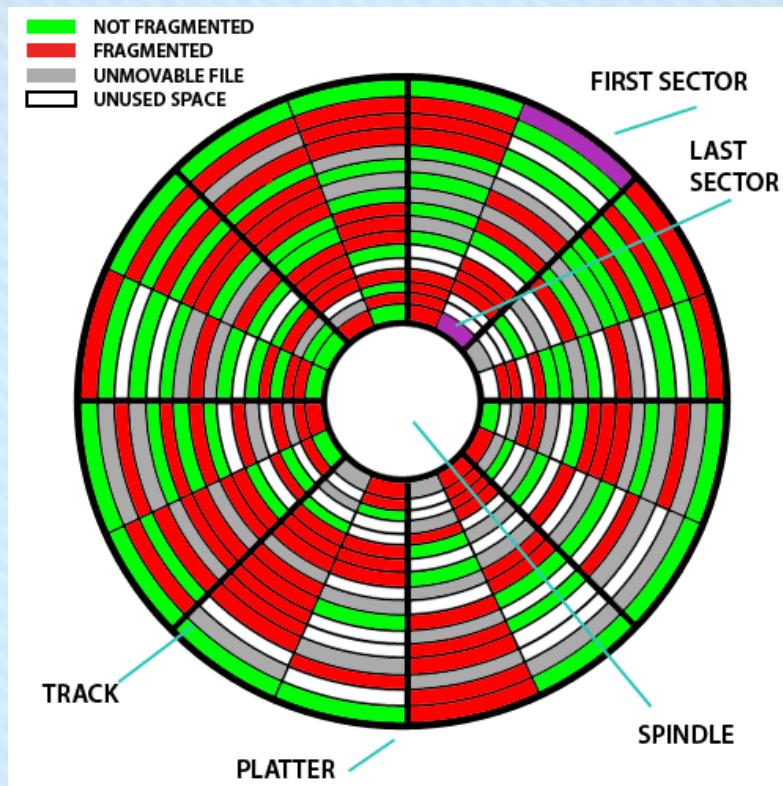


## And here is the Defragmenter:



Another important factor in Windows performance is the condition of the Hard Drive. If the data stored on the Hard Drive are “scattered” all over the place (the surface of the drive plate) then even a very “fast” computer will be slowed down while “searching” all the pertinent pieces of data. Typically, this “scattering” of data is referred to as “Fragmentation”.

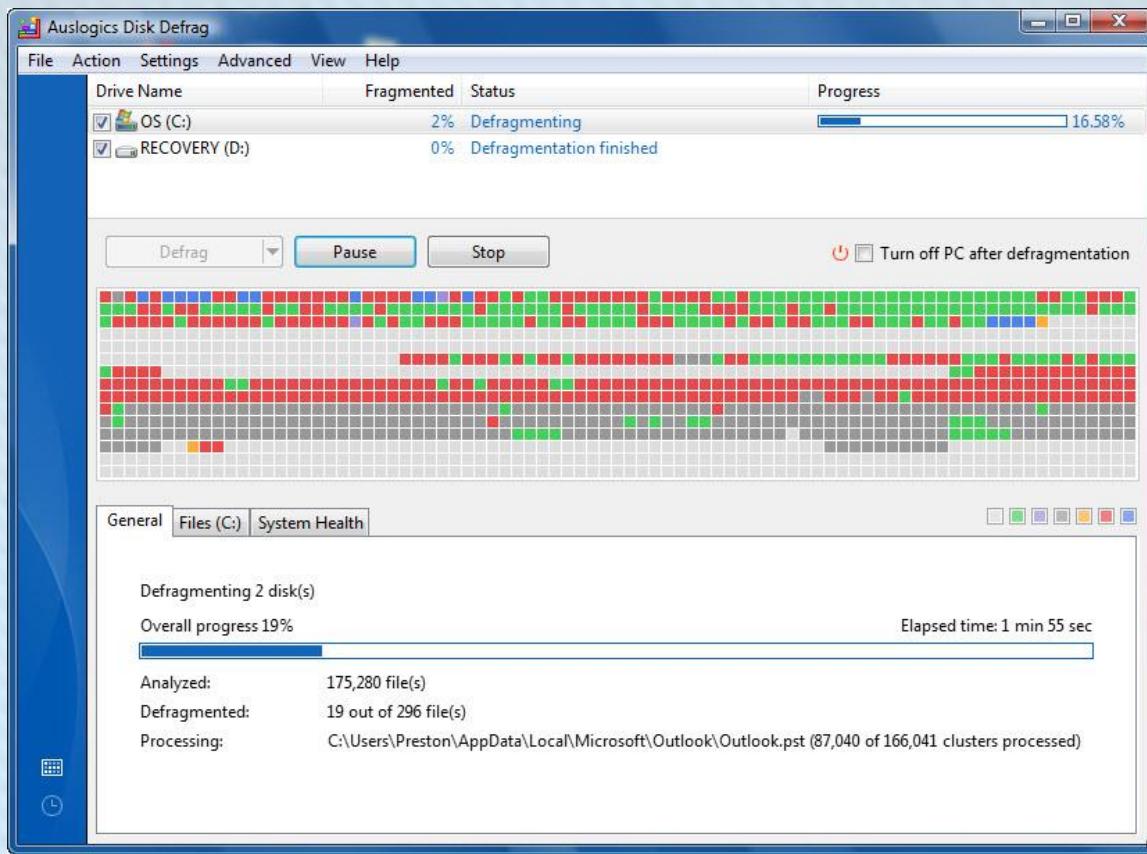
Picture of a fragmented plate of a computer hard drive:



This “fragmentation” problem is almost entirely removed by the use of SSD (Solid State Drive). This “drive” is actually no drive at all, but a bunch of memory chips arranged in “blocks” mimicking the organization of the Sectors on the disk drive.

However, if you are using one of the “old” mechanical spinning hard drives, then “defragmenting” is what you have to do to keep your computer speed in shape. You do have a choice of using Windows’ “built in” defragmenter and schedule it to run at times when you are not using the computer, or use a third party Defragmenter (hopefully better than that one provided by Microsoft) and also schedule it, or simple run it manually once in a while. How often? For average home, or small business user, maybe once in a month would do.

Here is a snapshot of Auslogic Defragmenter:



## Windows 7: Disk Defragmenter Schedule - Turn On or Off

<http://www.sevenforums.com/tutorials/3292-disk-defragmenter-schedule-turn-off.html>

How about Windows 10?

<http://www.tomshardware.com/faq/id-2723517/defrag-windows-computer.html>

Of course all these “fragmentation” issues, whether they pertain to the system data, program files, or the registry, disappear with the use of SSD. But since these are still quite small and costly, most people have to put up with the fragmentation problems.

- Another maintenance – utility program that is very useful is CCleaner. Its' free version works very well, is reliable and allows you to do all kind of “maintenance” work. Here are some of them:

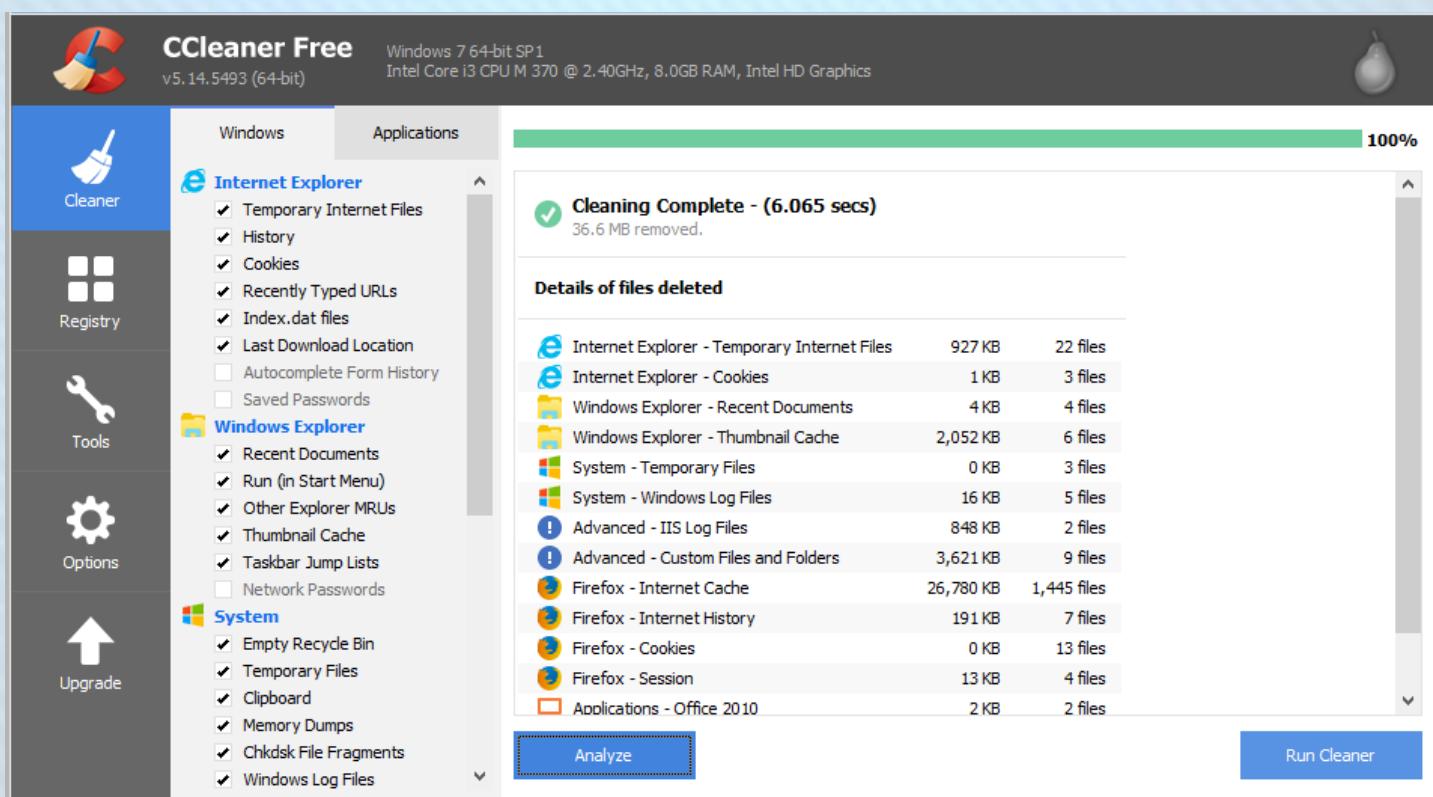
It allows you to “clean up”, i.e. to delete all kinds of “leftovers” especially after browsing the Internet.

You can use it to uninstall old programs.

You can control which programs run upon “Start up”.

You can set which “cookies” from which websites you want to keep and which to delete.

Here is a snapshot of this CCleaner:



Notice the number of Internet Cache files collected by Firefox during about ½ hour while working on these notes (1,445 files)!!

# PUTTING IT ALL TOGETHER

Here are some final thought about all the factors that make up proper maintenance of a Windows PC.

The number 1 issue without question is the use of a good antivirus. It is good to know that a free version is not necessarily inferior, but rather that it does not include all the “bells & whistles” provided with the paid version. Moreover, you may not be even interested in the extras and want just the basic protection. Also, even if you decide to go with a paid version, you can often get a good discount through “Amazon” or “eBay”.

Take a look at some of these deals:



[ESET Smart Security 2016 | 9 | 9.0 License 1 PC 1 Years Download Edition](#)

**\$9.99**  
Buy It Now

From United States  
Customs services and international tracking provided



[AVAST Internet Security 2016 - \[1 PC\] \[365 Days | 1 Year\] - License KEY](#)

**\$7.22**  
Buy It Now  
Free international shipping

From Canada

The issue of “customizing” your GUI, is more – less a personal matter, not important for security and reliability. However, it can make the use of your computer a lot easier, if you have it “set-up” your way, rather than having to put up with Microsoft’s idea of what you should like.

Increasing the “speed” of Windows using some of the described “tweaks” works OK and it is free. However, by far the biggest gains are achieved by hardware upgrades: the use of a SSD (Solid State Drive), a video card with its own processor and memory dedicated to the graphics display, and finally the computer RAM (Random Access Memory).

The proper maintenance of the Registry and the hard drive (meaning the conventional, mechanical spinning drive) cannot be overemphasized. As a matter of fact, it is quite common to see computers with such “messy” Registries and hard drives that they hardly run at all!!

Finally, just a little note of interest. These notes, including the screenshots, were for the most part done using Windows XP, running on hardware about 12 years old. The only hardware upgrades and changes done were a new SSD Kingston, and an older dual output video card, so that dual monitors can be used. And this old computer runs faster than those you are sitting in front of – Lenovo Think Centers (about 2 years old) running Windows 10.

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