

Keeping Your Computer in Shape



Although it's great to get your computer tuned up by a certified technician, there are a variety of things you can do to keep your computer running well in between tune-ups. This session will take you through a series of steps you can do yourself to maintain your computer. In addition, the session will cover some of the steps you can take to keep your data safe and your system secure.

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An Important Note:

The following handout covers a variety of things you can do as an individual computer user to keep your computer running safely and securely. HOWEVER, if you work with an organization with a dedicated IT (Information Technology) person or staff, find out what they are doing first. They may (and probably will) have a lot of the following systems in place to protect your computer, and keep it running ship-shape. Also keep in mind that when it comes to technology, there is more than one way to do things, and one method may be just as valid as another. If you ask ten different IT people what the best anti-virus program is, you may easily find several different answers. As far as this handout is concerned, rather than picking the “best” of something (since the “best” will endlessly change), it is more important that you take a look at everything that is out there, get used to doing a little research, and at very least, take the basic precautions to make sure your computer is kept safe and up to date.

This handout is not meant to replace the advice of a certified IT professional. Sometimes, adversarial relationships develop between an IT Department and the staff they serve. Keep in mind that if your IT person or staff doesn't allow you to do certain things on your work computer, it is because their primary goal is to protect the ENTIRE computer network for the organization. Besides, most of us can really *can* wait until we get home to log into Facebook.

Even if you do use some of the skills in this handout, it is still worth the money to take your personal computer in for a “check up” at least once a year. Just like you might take a car in for a tune-up. However, even if you do take your computer in for a yearly tune-up, you will still use skills such as backing up the data on your computer, since some repair services will still require that you protect your own data before they do any work on your computer.

Life Long Learning

When it comes to using technology effectively, you will have to adopt a philosophy of life-long learning. It doesn't mean you have to become a computer expert, but it sure does help if you feel comfortable typing an error message your computer message gives you into Google. You may not get a solution to that error, but sometimes you will at least get a hint as to why it is occurring. Similarly, if you get strange messages popping up telling you to download a specific program for viruses, you may want to Google the name of the program you are being asked to download, before you download it.

For those of you “who don't have time” to do this research, have no fear. There are plenty of people waiting to charge you \$50 an hour to do something you might have been able to do yourself. We all make the choice to pay for convenience.

For those of you who are a little bit curious and adventurous, you can easily learn to maintain your computer, just like a person might want to learn to change the oil in their car. How do you think your kids or grandkids know all this stuff? When they run into trouble, they go to Google (or a similar search page) and look it up.

Now one of the potential issues you may run into when it comes to researching technical advice on the internet is the same thing people run into when researching medical advice. You may run into suggestions that are right out to lunch. When doing your research, don't be afraid to look at a dozen or more search results based on the topic you are looking for. If you see similarities between results, those are probably the most likely solution to your problem.

Finally, if you do your own research, and find that fixing the problem makes you nervous, there is no shame in taking your computer to a certified computer technician.

The skills provided in this handout are helpful and primarily harmless. Every once in a blue moon, you might perform a tune-up task or an update

on your computer that will drive it haywire, but we'll also talk about getting out of that trouble as well.

Great Research Sites

If any of the steps in this handout don't seem to work on your computer. Or if you are simply interested in learning more about maintaining your own computer and keeping it safe, remember that the Internet has a plethora of information to supplement this handout. More importantly, printed material like this goes obsolete very quickly, but the Internet does not.

So if there is a topic in this handout that you require more information on, simply search for that topic with Google (for example, search for "tune up your computer" with Google, and you will only find about 19 million results).

Services like Youtube (www.youtube.com) will also include tutorials that you can learn computer skills from. For example, a search of "how to tune up your computer" on Youtube brings up 3500 video tutorials. Keep in mind that not all of these may be directly related to computer tune ups, and some may just be ads for products a company is trying to sell. However, if you take a moment or two, you will probably find videos that will give you easy steps you can take to tune up and secure your computer. I find Youtube very useful for tutorials on how to get rid of certain kinds of computer viruses.

Check out the following two sites:

www.microsoft.com/athome/

office.microsoft.com

Both of these sites contain information on tuning up your computer, as well as methods to troubleshoot potential problems with your computer. The site office.microsoft.com is also useful because of the free online tutorials for a variety of Microsoft Office software (such as Word, Excel and PowerPoint).

Last but not least, the site www.makeuseof.com has a variety of free downloadable software tutorials you can download.

You might especially take a look at the MakeUseOf Guide called Hackerproof at <http://www.makeuseof.com/pages/hackerproof-your-guide-to-pc-security>

The guide is written for normal people to understand, and lets you know what you can do as a user to take care of your computer.

Last But Not Least, We Live in Interesting Times

At the time of this writing, it is just possible that you can one of three different versions of the Windows operating system on your computer. If your computer is more than five years old, you may be running Windows XP. If your computer is 3 to 5 years old, you may be running Windows Vista. If your computer is fairly new, it is probably running Windows 7.

In this handout, we will focus on how to maintain your computer in Windows 7. Windows 7 and Windows Vista are reasonably similar. Where possible, we have also included “how to” steps for Windows XP as well.

In This Handout, We Will Cover the Following:

- System Restore Points
- Backing Up Your Data
- Disk Cleanups, Defragmentation and Error Checking
- Windows Updates
- Downloading Utilities
- Uninstalling Programs
- Anti-Virus, Anti-Spyware, Firewalls and Spam Blockers

System Restore Points

A System Restore Point, simply put, is a “snapshot” of your computer at a certain point in time. The Restore Point records what programs you have on your computer, as well as a variety of computer settings. Items like Windows Updates, and most new software will set Restore Points before they are installed. In addition, Windows will often set its own Restore Points at intervals, known as System Checkpoints.

Why do we use them? On occasion, we may add a program to our computer that causes problems. Our computer may not function properly after the software has been installed. If this is the case, we can return to a System Restore Point that was created at an earlier time. The idea is to “turn the computer back” to a time when it functioned properly. A System Restore will usually extract the program that is causing the problem, but it will leave behind any of the documents we have created, such as written reports or emails.

Now although Windows will make checkpoints, you may still want to create your own System Restore Points, especially when undertaking major changes to your computer. For instance, if you are installing a program that someone has custom made for you, you may want to set a Restore Point before installing it, just in case.

Set a System Restore Point in Windows 7 (the same steps apply with slight modification in Windows Vista).

1. Click the Start Button in the lower left corner of your screen.
2. Click in the “Search programs and files box” and type “create restore point” (without quotes).
3. Click “Create a restore point” from the menu that appears.
4. On the System Properties window that appears, click on the Create... button.
5. A smaller Create a restore point window will appear. In the blank white box in this window, type the name you want to use for the restore point. Then click the Create button on the lower right corner of this window. That date and time that the restore point was created will be added to the restore point name.
6. It may take a few moments for the restore point to be created, and you will be presented with a message that tells you this. Once you receive a message that the restore point was created, click any appropriate Close or OK buttons to get back to your desktop.

Use Restore Points You have Created in Windows 7

1. Click the Start Button in the lower left corner of your screen.
2. Click in the “Search programs and files box” and type “restore” (without quotes).
3. Click “System restore” from the menu that appears.
4. You may be presented with a message indicating it may take a few moments for your system restore to take place.
5. A System Restore screen will appear, and the phrase “Restore system files and settings” will be on this window. Click the Next button on this window.
6. You will be presented with a list of possible restore points to return your computer to. Click on the restore point you want.
7. Click the Next button on this window.
8. On the last window to appear, click the Finish button.
9. Your computer will then begin to shut down and restart. As part of this process, a message will appear on the screen indicating that the system is being restored.
10. When the system finally restarts (you may need to log back in again), your computer will be returned to the state it was in when the restore point was initially created. No changes should occur to documents you have created or items like emails.

In Windows XP, you can get to System Restore by following this chain of commands:

1. Click Start and go to All Programs.
2. From All Programs, go to Accessories.
3. From the menu that flies out of Accessories, go to System Tools.

4. From the menu that flies out of System Tools, click on System Restore.

This will bring you to the first screen of a Wizard (a program that guides you through a process), that will allow you to choose between creating a new restore point or restoring your computer to an earlier time. Choose the option you want by clicking the little circle to the left of the option, then click the Next button in the lower right corner of the screen. As long as you read the instructions presented on the screens, you should be guided through whichever option you have chosen.

BEWARE! System Restore Points are not foolproof (especially System Checkpoints). Sometimes if you are hit by an especially nasty virus, Restore Points may be of little help. That's why we make a habit of backing up our data.

Backing up information from your hard drive

Backing up simply means making a copy of your most important information on something that can be taken away from the computer. You could argue that printing out your document is making a backup of it, and in a sense, it is. However, in the computer world, backing up often means making an electronic copy of your work.

We only need to back up the information that we create (letters, documents, the contents of a book you may be writing, etc.). The actual programs you have on your computer we don't have to worry about. Usually when we buy a computer, we are given (or we should be given), the compact disks that contain the programs on our computer. So if something goes wrong, those programs can be put back in (also known as re-installing).

You may also see that on some computers, a D: drive has been created to store "Recovery Files". In this scenario, a technician can go in and run the files on the D: drive to restore the computer to factory settings. This will put all of the software that originally came with the computer back on to it, but it

often erases anything else that was added to the computer. Also keep in mind that this applies to some, but not all, brands of computers.

Nonetheless, we usually only back up the information that we created, and that is important to us.

For this reason, it is often a good idea for us to save all of our information in a place called My Documents (also known as Documents in Windows Vista and Windows 7). We can subdivide My Documents (or Documents) by creating more folders (information storage areas) within My Documents (or Documents). Then, when it comes time to back up our information, we need only copy the My Documents folder (or Documents Folder) to another storage device. Anything within My Documents (or Documents) will be copied to that other device.

In some organizations, computer users are told to store their information to a location with a totally different name (the storage location may be on a network drive, and may be named after the employee). In this case, the following steps could be applied to that storage location as well.

Now depending on how much information we have to back up, we can use two possible types of storage.

A memory key, also known as a:

- Memory stick
- Flash drive
- Thumb drive

The memory key has replaced the floppy diskette as a means of temporary data storage. Some would also argue that it is replacing CD's and DVD's as well. The advantage of the memory key is that it is as easy to use as a floppy diskette, yet it can hold much more information. Present memory keys can hold up to 32 gigabytes of data (that's 32 billion characters worth of information, or a bit more than 6 DVD's worth of information). Chances are, a lot of use may have less than 4 GB of data that we may want to backup.

If you have more than 32 GB of data, you want to consider purchasing an external hard drive. These are usually more expensive, but they work the same way as a memory key. The exception is that they can store from 100 gigabytes to over a Terabyte of information (that's 1000 gigabytes, or a trillion characters worth of data). Most of us won't have anywhere near that much information on our entire computer! The added advantage of an external hard drive is that some of them feature "one touch backup". You simply press a button on the external drive, and the hard drive backs everything up for you (this may require some initial setting up, but after that, it is a one button process).

Steps to backing up My Document to a Memory Key (this should also work for external hard drives).

In Windows 7 (and the same steps should work in Vista):

1. Plug in your Memory key in to the rectangular USB plug-ins either on the front or back of the computer (The USB plug ins are small and rectangular, the plug in on they key will only be able to fit one way, you should not have to force it).
2. In a couple of moments, the computer should recognize that the key is there (it will probably pop up a message such as "Found New Hardware" or something similar. You can close this message).
3. Click the Start button in the lower left corner of your screen.
4. From the menu that flies up, click on Documents.
5. The Windows Explorer Windows will appear.
6. Right click on the Documents library folder on the list in the left side of the Windows Explorer window.
7. From the menu that appears, go to Send To:
8. From the menu that flies out, click on the name or letter that represents your memory key or external drive. You should see an indication that the Documents folder (and its contents) are being copied to your memory key or external drive.

These same steps can be used to copy the Pictures or Music folders to your memory key or external drive. In fact, you can use these steps to copy almost anything on your computer to key or external drive.

To Be Sure The Files Have Made it to the Drive

1. Click the Start button in the lower left corner of your screen.
2. Click Computer on the menu that appears.
3. Double-click on the icon for the key or external drive.
4. The contents of that key or external drive (including the folders and/or files you have copied) should appear.
5. If you right-click on this folder, you can actually use the Send to command to copy it back to the Documents folder. Or you can use other copy and paste methods to copy the items back to the folder or storage location they came from.

The Windows XP Method

1. Plug in your Memory key in to the rectangular USB plug-ins either on the front or back of the computer (The USB plug ins are small and rectangular, the plug in on they key will only be able to fit one way, you should not have to force it).
2. In a couple of moments, the computer should recognize that the key is there (it will probably pop up a message such as “Found New Hardware” or something similar).
3. Double-click on My Computer on your desktop.
4. A window will open up, showing you all the information storage areas on your computer.
5. At the top of this list should be two folders. One will probably say Shared Documents, the other may say User Account’s Documents, or it may have your user name beside it.
6. Right-click on the folder that says User Account’s Documents (or if it has your name on it, right click on that one).
7. A menu will pop out with the words Send to. Rest your pointer on the words Send to.
8. Out will pop a menu that has your memory key listed on it. It will probably be the last thing on the list, and may have the name of the

memory key manufacturer beside it. Click on the name of your Memory key.

9. You may see a little animation pop up on your screen. This indicates that items are being copied to your key.
10. Once you are done, you can close all windows.

To make sure your files made it to the key:

1. Double-click My Computer.
2. Double click the icon for your Memory key.
3. You should see that the file(s) you copied are sitting there.

To correctly remove your memory key:

1. Down by the time on your computer, there will be a little grey box with a green arrow above it. Rest your pointer on that.
2. In a moment, it should pop up a little yellow box that says "Safely remove hardware". Click on the little grey box with the green arrow above it.
3. A little grey box should pop up that says "Safely remove...." Click on that grey box.
4. You should then get a message that it is safe to remove your hardware. You can then safely unplug the key.

Backing up information to a Compact Disk (CD)

You can buy programs that will perform automatic backups of information to compact disks at regular intervals. For the average home user, however, you may not need to go to the trouble.

When you get a computer with a CD recorder in it (also commonly referred to as a "CD burner"), you often also have programs that allow you to record information to a recordable compact disk (known as a CD-R). Each CD burning program behaves a little differently. Your best bet is to read the

manual that came with your CD-burner, or look at the Help file in the CD burning program, or go to the Internet. Often, the manufacturer of your CD recorder will have a website that will have instruction guides and tutorials on how to record information to a CD using the CD burner. Often these programs will also work with recordable DVDs as well, which have a larger storage capacity.

For people who have Windows XP on their computer, Windows XP makes it fairly easy to record information to a compact disk. Following are the steps to record information to a compact disk.

The Windows 7 Method

Windows 7 and Vista make it reasonably easy to burn data to a CD or DVD.

1. Locate the file you would like to burn.
2. Click the Burn button at the top of the window.
3. Another window will display all the files you've added to the burn list. OR your computer may pop up a message in the lower right corner of your screen indicating that "You have files waiting to be burned to disc", clicking on this message will display the window listing files ready to be recorded to the CD or DVD. OR you can click the icon for your CD/DVD recorder on the list on the left side of the Windows Explorer screen. Any way you choose to show the list, you can add more files to the list, or you could just launch the data burning procedure. In this regard you need only click "Burn to disc" near the top of the Windows Explorer window.
4. You will be asked to insert a disc in the burning drive. If a disc is only inserted, you will be asked to give it a name. At this point you can select the speed at which data will be burnt onto the disc. By default, Windows 7 selects the highest speed.
5. Click the Next button to start burning data onto the disc.

6. Click the Finish button and you're done. Your completed disc should be "popped" out of your computer.

As part of the recording process, you may be asked whether you want to make the disc behave like a USB key, or record the data as a "Mastered disc". The latter choice allows you to use the disc on different electronic devices. For instance, some DVD players that you attach to your TV will be able to display photos you record to a mastered CD or DVD on your computer. If you set the disc up to behave like a USB key (memory key), the disc may not work on other electronic devices.

To Make Sure the Data Made it to Your CD or DVD.

1. Insert your burned data CD or DVD into your computer.
2. Wait a moment or two. Some computers are set to automatically open a window to reveal what is stored on the CD or DVD.
3. If this does not occur, a screen may open up offering you the choice to "Open folder to view files". Click on this option to see what is stored on the disc.
4. If the above two methods do not work, click the Start button in the lower left corner of your screen, and from the menu that pops up, click on Computer.
5. From the window that appears, double-click the icon for your CD/DVD recorder.

Much like your memory key or external drive, you can right click on items on your CD or DVD and use the Send to command to return items to the Documents folder. Or you can use a variety of other copy and paste methods to copy items from your CD or DVD back to the Documents folder, or whatever location you want to copy them to.

CD Burning on a computer running Windows XP.

1. Make sure you have a Recordable CD (CD-R or CD-RW) in the CD drive of your computer.
2. Use either the Windows Explorer or My Computer to find the file(s) you want to copy to a CD.
3. Using whatever selection method you like, select the file(s) you want to record on the CD.
4. Once selected, right-click on the selected file(s).
5. From the menu that pops up, move your mouse pointer to the Send to: command.
6. From the menu that pops out, click on the icon for the CD-RW drive icon (it is the D: drive on your machine).
7. If you have selected a bunch of files, or a very large file, you may see an animation indicating that a copy of the file(s) are being prepared for copying.
8. A D: drive window will pop open, and you should see all the files you have selected for copying will be in this window. These are temporary copies of your files that will be used for the burning process. The original files you chose in Step 5 will remain untouched.
9. Look to the left side of this window. There should be a column of text on that side with a hyperlink piece of text saying "Write these files to CD". Click on that link.
10. You will be taken into a CD Writing Wizard. There will be a box in this window that will ask you to give a name to your CD. It is up to you if you want to type in a specific name for the CD, or if you want to leave the generic name the computer chooses. Giving the CD a specific name might make it more useful if you have to search through a ton of CD's at a later time.
11. Click the Next button at the bottom of this window.
12. The actual copying, or "burning" of the CD should start.
13. You may then see a message saying "Adding data to the CD Image", and perhaps even progress bar that will show you how far along the burning process is.

14. When the burning process is done, the computer will automatically pop out the CD tray.
15. The window will then show a message asking if you want to burn another CD. Unless you do want to make another copy, click the Finish button at the bottom of the window.

If you want to make sure the burning process has worked.....

1. Put the CD you just burned back into the computer.
2. It may take a moment or two, but you will here the CD drive start to spin (it makes a little whiny noise).
3. Once the CD gets going, a window will pop up, giving you a whole bunch of options.
4. Double-click on Open Folder to View Files.

A little more about Backing Up

Backing up is a way to thwart computer viruses in their tracks. As mentioned earlier, this simply means making a copy of your most important data on diskette or CD-R (a recordable compact disk), and storing that information in a safe place. That way, if you are hit by a virus, or if your hard drive becomes damaged, you have a copy of your most important data that can be re-installed once your computer is repaired.

Large businesses back up their data weekly, or sometimes even daily. For the average computer, it is largely up to you. If the amount you are backing up is small, a weekly backup is best. Or, if you are simply typing a document you want to keep, when it comes time to save it, just use the Save As command to save a copy of the document to both My Documents and a separate diskette.

Otherwise, backing up your documents once or twice a month should be fine.

In addition, any time your computer starts to act seriously strange, or your are about to take it in for servicing for whatever reason, it is a good ideas to back up your most important data. In fact, most computer repair places will

make you sign a document saying that you took steps to back up your own important data, and they are not responsible if anything they do destroys it.

Alternative Backup Methods

Online Backups

Some organizations offer online backup services. In these situations, the backup process is set up to be automated, and at a time convenient to you, a program will run that will copy the information on your computer(s) to a remote computer that will act as an information storage warehouse. In this method, a copy of your data is kept off site. So if a calamity happens your actual computer(s) is/are damaged, your data is kept safe in an outside location. At the time of this writing, the author has not had practical experience with online backups, so if you do decide to use such a service, do the research to find out about other client's experience with the service.

Hands Free Backups

For those of you who want to back up the information on your computer, but don't want to go through the hassle of setting up a backup program, or going through the steps listed above, a hands-free backup is a special kind of external hard drive that has a backup program built into it. When you plug the drive into your computer, the computer automatically recognizes it, and starts a program that searches for all of the pictures, documents and music stored on your computer. Then it copies all of this information to the hands free backup drive. You don't have to do a thing. And if you leave the backup drive plugged into the computer, it will save changes that you make to any your files on the computer. If you choose to unplug it, and plug it back in at a later time, the hands-free backup looks at the files it has saved previously, checks what is on your computer, compares both sets of files, and saves the changes.

Basic Tune-up and Clean-up Programs in Windows

Disk Cleanup, Disk Defragmenter and Error Check

Each of these programs are built into Windows, and in Vista and Windows 7, the Defragmenter is set to run automatically once a week. However, when a computer slows down, being able to run each of these programs manually may be a good first step to getting things back on track.

Disk Cleanup

By simply using your computer, you start to accumulate junk and garbage files such as temporary files. These garbage files can be safely gotten rid of. If you have any concerns about deleting these files, set a System Restore Point before undertaking a cleanup. However, when it comes to the Disk Cleanup, the process does not delete any files you create (such as emails or word processing documents). The files that Disk Cleanup finds and offers to get rid of can safely be gotten rid of.

To run Disk Cleanup in Windows 7 and Vista:

1. Click the Start Button in the lower left corner of your screen.
2. Click in the “Search programs and files box” and type “cleanup” (without quotes).
3. Click “Disk Cleanup” from the menu that appears.
4. You will be asked which drive you wish to clean up. By default, it will choose the C: drive, which is fine, since that is your main storage drive anyway. Click the OK button on this screen.
5. Disk cleanup will run through the drive, looking for files to safely remove. You will then be presented with a screen which lists the files that can be removed, along with how much space they take up. Making sure there is a check box by every item in the list ensures all of the files we be cleaned out. If you don't know what a particular type of file is, you can click on it, and a definition for that type of file will appear. If these definitions still don't make any sense, you can write

down the description and Google it to find out what it refers to. Once again, whatever is on this list is safe to delete.

6. Click the OK button for the cleanup to take place. You will be asked if you want to permanently delete the files. Click OK on this message, and the cleanup takes place.

The Windows XP Disk Cleanup Method:

1. Click the Start button at the lower left end of your Task Bar.
2. From the menu that pops up, go to Programs
3. From the menu that pops out, go to Accessories
4. From the menu that pops out, go to System Tools
5. From the menu that pops out, click on Disk Cleanup
6. A window will pop up, asking you to Select the drive you want to clean up. By default, it will be set to the c: drive, which is the hard drive of your computer, and the most likely drive that you would want to clean up. Click the OK button at the bottom of this window to start the process.
7. Disk Cleanup will then begin to search the drive for garbage files it can get rid of. This process may take a while, especially if the drive is over 1 gigabyte in size, or if the drive has not been cleaned in a long time.
8. Disk Cleanup will then present you with a window listing the potential file locations that contain files that can be safely tossed away. In order to make sure that these files will be deleted from your hard drive, make sure they have a check mark in the white box to the left of them in the list of locations. Any items in the list which do not have a check mark beside them will not have their files deleted. If you are unsure as to whether or not to delete these files, consult your Help Files, internet sites such as the ones listed in our maintenance section, or a trusted, knowledgeable computer user. Files located in the Temporary Internet Files, Recycle Bin and Temporary Files in this window can be safely deleted.
9. Click the OK button at the bottom of this window to start to permanently delete these files. You will be given a warning window

asking if you are sure that you want to delete the files. Click the OK button on this window to complete the disk cleanup process.

Disk Defragmenter

After doing a Disk Cleanup, you may also want to do a Disk Defragment. Think of a Disk Cleanup as being cleaning up a file cabinet, and think of the Disk Defragment as re-arranging the remaining files in the cabinet so that they are packed closer together and use the space in the filing cabinet more efficiently.

As mentioned earlier, in Windows 7 and Vista, the Disk Defragmenter runs automatically once a week. However, if you wish to do the process manually:

1. Click the Start Button in the lower left corner of your screen.
2. Click in the “Search programs and files box” and type “defrag” (without quotes).
3. Click “Disk Defragmenter” from the menu that appears.
4. You will be presented with a screen that will indicate when the Disk Defragmentation is regularly scheduled for. In addition, there will be buttons to Analyze and Defragment the disk.
5. If you click the Analyze button, Windows will analyze the drive and let you know how fragmented it is, and whether or not you even need to defragment it. After the analysis, you will be asked whether or not you want to proceed with the defragmentation.
6. If you simply click the Defragment button in Step 4, an analysis still takes place, but then Windows proceeds directly into the defragmentation process.

Defragmentation in Windows XP

1. Click the Start button at the lower left end of your Task Bar.
2. From the menu that pops up, go to Programs
3. From the menu that pops out, go to Accessories
4. From the menu that pops out, go to System Tools
5. From the menu that pops out, click on Disk Defragmenter
6. A window will pop up, asking you Which drive you want to defragment. By default, it will be set to the c: drive, which is the hard drive of your computer, and the most likely drive that you would want to clean up. Click the OK button at the bottom of this window to start the process.
7. You will then see a window that shows you the progress of defragmentation by a percentage.
8. Once the process is done, a screen will pop up indicating that the defragmentation process is complete.

Error Checking

On occasion, there may be an error on the disk which causes the computer to misread where data is stored, or sometime the drive itself may be damaged. Either situation can cause your computer to behave oddly. You might get errors messages popping up that refer to "File System Errors". If this is the case, an Error check may be in order. You can perform an error check on your hard drive the same way in multiple versions of Windows.

1. Click the Start button in the lower left corner of your screen.
2. From the menu that comes up, click on My Computer (or Computer in more recent versions of Windows).
3. From the window that appears, right-click on your C: drive icon (the symbol that represents your hard drive).
4. A window will pop up with a tab called Tools. Click on that tab.

5. The top section of the screen that appears will have the phrase Error-checking on it. There will also be a button that says Check Now. Click on this button.
6. Another screen will pop up asking if you want to Automatically fix file system errors and Scan for an attempt recovery of bad sectors. Click on both of the little white boxes by these sentences. A check mark should appear in each of them.
7. Click the Start button on this little window.
8. You will probably be told that you the Error Check will take place the next time you start Windows. Go ahead and restart your computer, and be prepared to wait.
9. The computer will go through the process of checking itself out. This may take a little while, but the computer will tell you when it is done, and will report back any problems it encounters.

Scheduling Disk Cleanups and Other Tasks

At the Microsoft at Home website, there is a great article on how to use the Task Scheduler built into Windows to automate when programs like Disk Cleanup will run.

The article is available at:

<http://www.microsoft.com/athome/setup/maintenance.aspx>

The methods of scheduling tasks vary between the different versions of Windows, but in the article, it gives the steps of how to schedule the Disk Cleanup task for each version of Windows (the steps are about half way down the page, and you have to click on the version of Windows you have to show the steps).

The article also goes into creating an actual PC maintenance plan you can establish to regularly clean up your computer and keep it running well.

As mentioned previously, you could also Google the topic of “scheduling tasks in Windows” and you would find loads of step by step instructions.

Windows Updates

Hackers sometimes reveal the security flaws in Microsoft products. In response Microsoft improves their software and fixes bugs and glitches that might be in it. Microsoft will then make these “fixes” part of Windows Update. This is a process where you can access the latest additional software that will help make Windows run better. You will find that almost any software you buy offers updates or “patches”, which are just chunks of software that makes the programs run better. We will focus on how the Windows Update works. Updates to different types of software may vary.

The Windows Update process is often set to run automatically by default. Usually updates take place in the wee hours of the morning, although they can be set to run at any time. In fact, Windows will warn you when upcoming updates are available and will make the download and installation of the update almost seamless. This is why you may come back to your computer and see a message in the lower right corner of your screen indicating that “Updates have been installed” and/or “As a result, your system has been restarted”.

Also keep in mind that not only does your computer have to be on to be updated, but it also has to be connected to the Internet. That doesn't mean you have to start Internet Explorer, Firefox or Google Chrome. As long as your computer is powered on (even if it is asleep) and connected to a cable or high speed phone connection, updates can take place.

To Manually Run a Windows Update in Windows Vista or 7:

1. Click the Start Button in the lower left corner of your screen.
2. Click in the “Search programs and files box” and type “update” (without quotes).
3. Click “Windows Update” from the menu that appears.
4. A screen will appear, indicating if any updates are available, whether or not they are critical/important (your system should really have them) or optional. Click the link for the important update(s).

5. A screen will pop up with a list of update(s) you may download. If there is more than one update, you can click the check boxes by each item in the list to indicate that you wish to download them all. For every update you check, a definition should appear that explains what the update does.
6. Clicking the OK button on this screen will start the downloading and installation of the update(s). Don't be surprised if your computer restarts itself as part of the process.
7. When the updates are completed, a message will appear indicating that the system has been updated.

The steps below are more extensive, but they will work, especially if you are using an older operating system.

You must be connected to the internet before these steps will work.

To Manually Run a Windows Update in Windows XP

1. Click the Start button in the lower left corner of your screen.
2. From the menu that pops up click on the Windows Update command (which should be near the top of the menu).
3. Your Internet Explorer browser program (or Firefox or Google Chrome if you are using those programs) will appear onscreen. In a few moments, the Windows Update site will appear. In time, you should see a button that says Scan for updates. Click on this button.
4. You will see messages that say that your computer is being looked at by the Windows Update website, and you may also see a percentage amount that lets you know how much of the inspection process is being done. What is happening is that the Windows Update website is seeing if any previous Windows Updates have been applied to your computer. In short, it is checking how up to date your software is.
5. In a few more moments, you should see the phrase "Review and install updates". Click on that phrase and a list of Windows updates should appear in the Internet Explorer window. You can pick and choose to download and install only certain updates, but often, it is a good idea to download and install all updates.

6. Click the Install Now button on this window. You will be confronted with a license agreement which you must accept before the update will proceed.
7. Click the Accept button at the bottom of this little window.
8. A Windows Update Web Page dialog window will pop up. It will include two progress bars this will eventually fill in with blue. One progress bar will be called Download Progress, and the other will be called Install Progress. Once both of these bars fill with blue, the download is done. You just have to sit back and watch.
9. Once the download and installation of the update files is complete, you will be asked to restart the computer for the changes to take affect. You may do so.
10. Once the computer has restarted, all of the update files that were downloaded become applied to and start to function in your Windows Operating System software.

NOTE: You can also set up your computer to automatically do Windows Updates, by Turning on Automatic Updates.

Turning on Automatic Updates

1. Click the Start button in the lower left corner of your screen.
2. Click Control Panel from the menu that pops up.
3. In the window that appears, there should be an icon for Automatic Updates. Double-click on that icon.
4. In the windows that appears, click in the little white circle to the left of the words Automatic (recommended).
5. Click the OK button at the bottom of this little window.

Keep in mind that Windows XP is getting a little long in the tooth, so in time, Windows Updates for XP will no longer be distributed. It will join it's ancestors, Windows 98 and Windows 95, in the computer great beyond.

As mentioned earlier, programs such as your Antivirus and Antispyware programs will often download updates as well (usually on a weekly basis). Nowadays, these processes are largely automated by default. If you open up your Anti-Virus program, however, you can often find the Options for the program, which will allow you to change when updating may take place. Many people simply choose to leave their computers on (with their monitors turned off) and let their Antivirus programs update themselves. Again, if you are a laptop user, and/or choose to turn your computer off, your computer will wait until the next time it is turned on to update and/or prompt you to click a message in order to update it.

Downloading Utilities

On occasion, you may find it beneficial to download small program called utilities to help improve the performance of your computer. In addition, more and more regular programs are moving toward being downloaded, rather than you buying a box with CD's or DVD's with the software in it.

BEWARE! Before you download a program to your computer (especially free ones) be sure to Google the name of the program, to read reviews and do research on it. Site like www.pcmag.com and www.cnet.com have review sections that talk about what certain free programs do. Most importantly, if you think a free program seems a little bit fishy, play it safe and **DO NOT** download it. Some virus makers use free programs as a way to sneak viruses into people's computers. In fact, if you download a free program with a virus or piece of spyware attached to it, you are basically opening the front door and letting it into your computer. That is also why we keep our Antivirus and Antispyware programs up to date, as they will often detect infected files we might download, and most importantly, quarantine them before we can install them

However, not all utilities are bad. An example of a useful utility is the Belarc Advisor.

The Belarc Advisor creates a report that outlines all of the components and software on your computer. This is a treasure trove for any technician who may need to repair/upgrade your computer.

Downloading and Installing a software utility from the Internet – The Belarc Advisor

You can download a whole variety of useful software for your computer from the Internet. An example of such software is the Belarc Advisor. This program basically creates a profile, or specification sheet, that outlines all of the components and software that is on your computer. This can be invaluable for a technician who might be making repairs to your computer.

NOTE: The software being downloaded and installed in this example is for personal use only. That is, only for your own computer. In a business situation, where you are putting it onto a series of computers, the software producer requires that you purchase license for every computer you are putting the software onto.

Also keep in mind that this is just one example of a software download and install. Although download and installation of software is a reasonably standard process, there are nuances here and there that you may have to deal with. The steps are not EXACTLY the same each and every time you download and install.

Download Belarc

1. Start up Internet Explorer, and go to www.belarc.com
2. Once at that site, click on the FREE DOWNLOAD link near the top of the web page.
3. You will be taken to a web page that will have a large square with rounded corners. Inside this square will be the phrase, "CLICK HERE TO DOWNLOAD YOUR FREE COPY OF THE BELARC ADVISOR". Go ahead and click on it.
4. You will get a File Download – Security Warning that will ask "Do you want to run or save this file?"
5. If you click the Run button, the program will go ahead and install itself. This may not be the way you want to go, if you don't know exactly what the computer may do to your computer.

6. Clicking the Save button will open up a Save As dialog box that will allow you to save the program to a location on your computer. You may wish to save the program to My Documents, and you may even want to create a folder to save the program in. At very least, it is a good idea to create a Download folder on your computer, and save the programs you download from the Internet to that folder. NOTE: Make a mental note of the name of the file you are downloading, as some of these file names are pretty obscure.
7. For the purposes of this example, click the Save button, and make sure you Save the file into My Documents. Your computer may also want to download the program into a Download folder. That is a fine location as well. You just need to remember where you told the computer to download the file to, because you will be looking for it later. It is also a good idea to make a mental note of the file name you are downloading (or even write it down).
8. You will get a File Download dialog that will let you know when the file is completed downloading. The dialog will give you a progress bar, and an indication of how quickly the file is downloading. Depending on how your computer is configured, this dialog may disappear as soon as the download is complete.
9. Once the download is complete, you may click the Run button on the dialog box, if it is still there. In the event that the dialog box is no longer there, you can use the following steps.

Installing Downloaded Software

Downloading software from the web only means that you are taking the software from the Internet. It does not mean that the software is running. Usually, you have to install the software you have downloaded before it will function.

Once again, the installation process may vary depending on the type of software you are installing. However, we will continue using our Belarc download as an example.

1. Find where you downloaded Belarc to in the previous set of steps.
2. Look for the Belarc setup program (it will be named advisor.exe)

3. Double-click on the icon for advisor.exe
4. You will get an Open File – Security Warning dialog box that will offer you a Run or Cancel button. These security warnings are standard, and there is no reason for alarm. Click the Run button on this dialog box.
5. This will start what is known as an Installation Wizard. This is a set of steps you will have to go through to complete installation. Click the Install button at the lower right corner of the Belarc Advisor Installation screen.
6. You may see a brief animation appear on your screen, and eventually, you will be presented with a Belarc License Agreement dialog. Any piece of software will require you to accept the proposed license agreement. If you do not accept it, the installation will not continue. Click the I Agree button.
7. You will see an animation of a progress bar as Belarc performs a Belarc Analysis of your system.
8. In moments, an Internet Explorer window will open, and it will contain the Belarc Advisor report for your system. You can save and/or print this report.
9. Once you close the report, you may notice that on your desktop there is an icon for Belarc. If you make any major changes to your system, double-click on this icon to get a current report on your system.

A Brief Note about Downloading Utilities from the Internet

Just to let you know, you may not have to give information each and every time you download software, but it is pretty common. Nothing is stopping you from providing an alias name, and an address like go@away.com. Some people will even set up a free e-mail account through a service like Hotmail, and then use that for registering their trial or free software. That way, any advertising e-mails go to an e-mail box that they never check, and after a number of weeks of inactivity, the messages get trashed.

HOWEVER, if you are registering software that you have purchased, give your real name and real address, because if you need technical assistance, the company will want your real information. In addition, if there are any pertinent registration numbers, warranty confirmation numbers, etc. you want that information to come to you. Free e-mail accounts are useful ONLY to divert junk mail.

Keep in mind that downloading the file is only half of the process. You will then need to install the program on to your computer. The steps for installing a program vary from program to program, but basically they follow the following pattern.

The Steps to Installing a Program:

Most times when we download software, we need to install it in order to get the software to run.

1. Find the icon for the program that you just downloaded.
2. Double-click on the icon for the program
3. An installer program will start to run. The program will be a series of screens that will let you know how the installation of the program is proceeding. Most often you can keep clicking the Next button at the bottom of the screens until you come to a button that says "Finish".
4. Along the way, you may be asked to accept a license agreement. Often, you need to click on the circle beside a statement saying that you accept the license agreement, then click the Next button. If you do not accept the agreement, the installation will not continue.
5. When you finally see the button called "Finish", click on it.
6. You may be asked to restart the computer for the software to be fully and completely installed. Click the Yes or OK button on the screen when you are asked to restart your computer.
7. Once the computer has restarted, the program you just installed should be able to be used.

Steps to removing a program

Something that is not really publicized very well is that our computers are usually sold to us with software that we really don't need.

On top of that, sometimes we buy software that fights with other software, and the end result is that your machine fails to work well.

Either way, getting rid (also called un-installing) software can help you free up hard drive space, and in the case of programs that fight with each other, it takes one of the fighting programs off of your machine, and hopefully your machine gets back to running well.

1. Click you Start button on the lower left corner of the screen.
2. From the menu that pops up, click on Control Panel.
3. Double click on the Add Remove Programs icon.
4. A list of all of the programs on your computer will appear. Click on the program you want to uninstall.
5. Click the Remove button to take the software out.
6. You may see a screen called an Uninstall Wizard pop up. Let it go through its motions, and read what is on the screen. You may need to click an OK or next button to complete the process. Sometimes, YOU WILL NOT see this screen. Every program can be a little different.
7. The computer may sometimes also tell you that it must restart the computer in order for the process to complete. Click the Yes or OK button if asked to.

PLEASE NOTE that is someone tried to remove the program you want to remove, but did it improperly, this method may not work. You may have to go as far as re-installing the program to uninstall it correctly. Most folks find it easier just to leave it alone.

ANOTHER NOTE: Computer programs sometimes share computer files. If you are removing one program, you may get a warning saying that it is sharing a file, or files, with another program. Then it asks you if you want to get rid of the file. It will offer you the option to keep or get rid of these files.

If you don't know what the files do, play it safe and keep them. The software uninstall process will then get rid of any remaining files that are not shared, so at least most of the program is gotten rid of.

Ccleaner, Another Useful Utility

Not to be rude, but Ccleaner stands for Crap Cleaner, and this free utility gets a little deeper into your system than a Disk Cleanup does. You can also customize all the settings on it to get in there and clean up only specific segments of your computer.

Before you download and use Ccleaner, however, take the time to read the instructions and help files for it, and make sure you know what it is deleting. Like the Disk Cleanup, Ccleaner will give you a variety of items it will clean out, and you can "check off" what items you want it to remove, and what you want it to leave alone.

In addition, set a System Restore Point before running Ccleaner, just in case.

You will also find a variety of other items like Ccleaner, which describe themselves as Registry Cleaners. Once again, take the time to read reviews and see what the feedback is on these programs. If you run something that wrecks the Registry rather than clean it, you may be looking at reinstalling everything on your computer! (And once again, that's why we backup our most important data before undertaking major clean-ups and repairs!).

Anti-Virus, Anti-Spyware, Spam Blockers and Firewalls

As mentioned earlier, this handout is not a discussion of "what is the best product" out there. You can find a variety of sites out there that will do comparative reviews of all the products, an example would be the following article at pcmag.com:

<http://www.pcmag.com/article2/0,2817,2369749,00.asp>

This article basically compares the best Internet Security Suites of 2011.

Now there's a good chance you could find another site that would tell you the exact opposite.

Again, this handout is more focused that you have SOMETHING on your computer to keep your protected.

Usually, an Internet Security Suite is the way to go. You can either buy a subscription to a complete one, or cobble together one from free security applications on the web. The latter option may require a little more skill and tending to.

Regardless of the option you take, your Internet Security Suite should include:

An Antivirus program, that will detect, block, heal, quarantine and/or delete programs that will take control of your computer away from you and/or damage your files.

An Antispyware program, which will detect, block, quarantine and/or delete programs that will send messages from your computer as to where you are going on the internet, or what you may be doing on your computer.

A Firewall which will "hide" the identity of your computer from people who are potentially trying to get into it. A firewall still allows you to communicate with the Internet for web surfing and items like email, but it acts like a security guard, keeping potential intruders out of your computer.

A Spam Blocker which will filter out Junk Email. This is not the most critical thing to have, and nowadays a lot of email programs and Internet Service Providers run their own spam blocking systems. However, if your Security Suite includes a Spam Blocker, it will often integrate with your email program and create a folder in which email the Spam Blocker identifies will be automatically sorted into.

You will also find that your Security Suites will also boast a whole variety of other features that will identify potentially harmful websites, and prevent

people from seeing where you have been on the Internet, and prevent security problems from entering your computer.

You will even find that a lot of programs like Internet Explorer, Firefox and Google Chrome will have security features built right into them to notify you if a website is potentially dangerous.

The most important thing to keep in mind that no matter what you select as your computer protection software, **KEEP IT UPDATED**, and **DON'T LET IT EXPIRE!** Most of the programs are sold on a yearly subscription basis, and they will give you plenty of warning as to when they are about to expire. Do whatever is required to renew them.

Even after all that, keep in mind that for every advance in Antivirus and Antispyware, there is someone trying to figure out a way around it. Luckily, most protection software is now written to try and identify new threats as they appear, and before they can cause problems with your system.

Tell Tale Signs of Infection

There are some common signs of potential virus or spyware infection. These include:

- More frequent system crashes (your computer freezes up).
- Your computer significantly slows down.
- You find that the lights on your modems and/or routers seem to be flashing non-stop.
- You can't update your Windows or your Antivirus program
- Your computer just starts behaving strangely and or information starts to go missing or you seem to be unable to open files.
- Error messages on your screen become more frequent.

Now these are **POTENTIAL** symptoms. A computer older than five years may crash more frequently simply because the actual hardware is failing. Hard drives naturally get corrupted, so you might not be able to get to files

stored on them. Even a new computer off the shelf may have a defective part in it that causes problems.

Yet if any of these symptoms appear, try some of the skills outlined earlier in this handout (especially backing up your data). These may alleviate the problem.

In addition, there are a variety of free online virus scanners from Norton, McAfee, ESET and Trend Micro that might be able to at least identify potential issues on your machine (especially if the virus has disabled the Antivirus program presently on your computer).

Sometimes, if the Antivirus program is not affected, a manual update of the program and a scan of the system will deal with the issue. If not, it is important to record all of the problems you are encountering (including EXACTLY what any error messages may say). Then you can head to Google and see if any other people have had similar problems, and what you might be able to do. If you are not that adventurous, recording your problems accurately will also give a technician a better idea of what they might need to do if you take your computer in for repair.

The document Hackerproof, which was mentioned earlier in this handout, also gives a variety of potential steps one can undertake to identify and clear out malware on your computer.

When it comes to Viruses and Spyware however, an ounce of prevention really is worth a pound of cure. Keep all of your protection software up to date. Avoid opening email attachments from people you do not know. Avoid using free file sharing services and Torrents (illegal music and video sharing is a great way to welcome infections into your computer). Finally, ask yourself, is that free screensaver really worth the risk? Feel free to play around with your home computer, but especially with computers you use for work, only install software that will actually help you do your work, and research the safety of any and all programs that you may want on your system.

New Hardware

Your average computer is built to last about five years before a major upgrade is required. Most commonly, a hardware upgrade will involve increasing the amount of RAM in your computer. RAM chips are the components that juggle the multiple programs you may be running at once on your computer. RAM also helps display high quality video and run “memory intensive” programs more smoothly.

What you may often find, however, is that at the five year mark of a computer’s age, hardware repairs such as increasing RAM, adding hard drive(s) and/or even swapping out a motherboard might get to be suspiciously close to buying a new computer.

In five years, you will also find that new computers on the shelves easily have 3 or 4 times the capability of that older computer.

Now keep in mind, this does not mean you **HAVE** to buy a new computer. If all you do is check your email, surf the web and write the occasional letter, adding a little more RAM to the system might be all that is required. You have to judge whether or not you are getting what you want out of your system.

And in Closing

This is just the tip of the iceberg for tuning up a computer. You can get into your computer to delete certain kinds of backup files and help files. You can also do things like shut down a lot of the fancier graphic options on your computer to improve performance.

If there is time in this session, we will look into these other options.

If not, simply Google “tune up my computer”, and like people who tinker with their cars at home, you will find hundreds of ways to adjust your computer. However, also keep in mind that some of the methods are best done by advanced users. There’s no need to turn a pickup truck into a drag racer.

Most importantly, keep in mind that if you want to experiment with some of the more “in-depth” methods of increasing your computer’s performance, make sure to back up your data and set a restore point. Although one person may have made tweaks to their system which make it run faster than the speed of light, you might find that the same changes turn your computer into a paperweight.

In the end, the basic skills outline in this handout should keep your computer running well, and if you combine it with a yearly tune-up from a certified technician, you can get good mileage out of your computer.