

## Detailed Instructions for Reformatting and Reinstalling Windows

*Print out this page, if possible*

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1. Disconnect from all networks.
2. Back up all data you want to save. **Remember, reformatting your hard drive will erase all data on your computer.** If you don't back it up, you will lose it!
3. Complete Preparation Steps such as patch the system, to obtain patches externally, for locations see the SOS guides page.
4. Reformat your hard drive and reinstall your operating system. The specific steps for completing this process will be unique to the brand and model of computer you own.
5. Create passwords
6. Install firewalls
7. Automate live antivirus updates
8. Review the Security Guidelines and Checklist on website to safeguard your system from further attacks

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### **Step 1: Disconnect from all networks (Unplug the network cable from the wall jack or your computer)**

Every version of Windows is vulnerable to remote attackers in it's "out-of-the-box" state. An un-patched Windows computer will probably not even last 30 minutes on the Internet before it is compromised. Before you even begin to install such an insecure version of Windows, make sure it can't connect to any other computers.

If you are on campus and your computer is infected with a virus or worm, your network connection may have already been involuntarily disabled for you by ITS. You should still take steps to disconnect any network cables, or connections on your end just to be certain, though.

First, unplug the PCs network cable(s), next remove any wireless network adapters if you are near a wireless access point that allows automatic connections without any configuration by the user. If the wireless adapter is built-in, you are most likely using a laptop. Take the PC somewhere out of range of the wireless network.

### **Step 2: Back up your files**

This may or may not be possible. If you are unable to launch Windows, for example, you will not be able to run any backup tools or manually copy files. There are other things you can do in this situation, but that is beyond the scope of this page. In this case you may wish to solicit extra help from a computer professional.

First, consider the files that you need to keep. Make copies of the files that are unique to you or irreplaceable. *For example, you will want to have copies of any Word documents you have written, school projects, e-mail (if you keep it stored on your local computer, rather than on the server), MP3s, pictures, favorites/bookmarks, etc.* You do not need to back up applications like Microsoft Office or WinAmp because these can be reinstalled later from CD or downloaded again from a web site.

Some things might be trickier to back up. For example, if you keep e-mail on your computer and want to back it up, you will have to discover what files your e-mail application stores its messages in and then back those up. For any program such as this that stores files in a not-too-obvious place, consult the software's manufacturer to see what needs to be backed up.

You can use any method that's available to you to back up your files. You can use an actual back up program, or you can manually copy the files. Either way, you will need to get the files to a location other than the drive where you plan to install Windows. Some examples:

- Another hard drive installed in the PC or connected to it via USB or FireWire
- One or more CDs or DVDs
- Another computer, via the network
- Zip disks, Jaz disks, SuperDrive, etc.

### **Step 3: Preparation Steps**

The first thing you should do when you are able to start Windows and log in for the first time is to install updates from Microsoft. The easiest way to install Windows patches is to download them, but in order to do that, you need to be connected to a network. If you paid attention to Step 2, you know that it is not safe to connect your PC to a network right now, so what to do? There are a couple of ways to get connected without exposing yourself to too much risk of compromise from other systems on the network.

The most highly recommended service packs and patches can be found on the SOS guides page. It is not a comprehensive list of all the patches that exist. ALWAYS check the applicable operating system website (i.e., [Microsoft](#)) to get the latest patches for your computer. Many applications that are running on your system also have patches and hotfixes, and these updates will also need to be downloaded and applied prior to placing your computer on the Internet for the first time.

## Step 4: Reformat your Hard drive & Reinstall Windows (Sample Instructions for Windows XP)

1. Insert your Windows CD.
2. Reboot the computer. It should either boot from the CD automatically or ask if you would like to boot from the CD. *If it does not do either, you may need to change some boot settings in your BIOS. Consult your PC or motherboard's manufacturer if you need help with this step.*
3. Wait for the installation menu to come up. Choose "Install Windows XP" then it will go into a new screen that lists a bunch of steps.
4. From the from the pull-down menu choose "New Installation (Advanced)" and let the software do the rest.
5. When asked if you want to set up or repair, hit `Enter` to set up Windows.
6. Read the license agreement and hit `F8` if you agree.
7. If the setup program detects an existing installation of Windows and asks if you want to repair it, hit `Esc` to skip the repair.
8. The setup program will ask you where to install Windows. Highlight the existing "C: Partition1" partition and hit `D` to delete it. Hit `L` to confirm.
9. Next, hit `Enter` to install Windows on the "Unpartitioned Space".
10. Format the space as NTFS and continue the installation.
11. The installation will prompt you to set a password. When you have to set a password for the machine, **do not leave this blank** and **do not use an easily guessable password**. A secure password contains a combination of letters, numbers, and symbols and is important because many new worms can spread via Windows sharing if an account has a weak or nonexistent password. If it does not ask you to set a password, when the computer restarts, you will need to set passwords in the "User Accounts" control panel. Also see the [passwords page](#) for instructions.

## Step 5: Create passwords

Occasionally, intruders attempt to gain access to shared computer systems through the accounts of others. Their motives vary from curiosity to criminal malice. It is part of your responsibility as a computer user to create a strong password for both your Penn State access account and all operating system accounts on your computer. It is your privacy, your reputation, your files, and your computing resources that are all at risk. For detailed instructions on how to create a good password go to the [SOS passwords page](#).

## Step 6: Install Firewalls

### Option 1 (Windows XP only): Enable Windows' built-in firewall

1. Click the Start button and open the Control Panel
2. Open "Network and Internet Connections"
3. Open "Network Connections" (icon on the bottom-right)
4. Right-click the Local Area Connection and choose **Properties**

5. Go to the **Advanced** tab
6. Check the box next to "Protect my computer and network..."
7. Click OK
8. Connect your PC to the local network and configure it as needed  
**NOTE:** XP's built-in firewall is not active immediately when the computer is starting up. If you need to reboot for any reason before all patches are installed, you should disconnect from the network again until the boot process is complete.

**Option 2 (Any Windows OS): Download a free firewall (only licensed to download on personal computers)**

[http://www.zonelabs.com/store/content/company/products/znaml/freeDownload.jsp?lid=zaskulist\\_download](http://www.zonelabs.com/store/content/company/products/znaml/freeDownload.jsp?lid=zaskulist_download)

### **Step 7: Automate live antivirus updates**

New viruses are written and released on a daily basis. Many of the more common viruses "morph" or change frequently to make them more difficult to detect. Viruses spread rapidly and by many different ways (for example, via e-mail attachments; infected document files; Web sites that contain hostile code that can infect your computer through vulnerable browsers; and unprotected file shares). Using Symantec AntiVirus ([FREE for Penn State students, faculty, and staff](#)) and configuring it to update virus definitions automatically with the directions below will help keep your computer protected.

Help Desk link to Live Update Windows
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<a href="http://helpdesk.psu.edu/virus/liveupdpc.html">http://helpdesk.psu.edu/virus/liveupdpc.html</a>
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### **Step 8: Review the Security Guidelines and Checklist**

The documents on the SOS website contain only suggested guidelines for rebuilding and securing your machines to safeguard your system from further attacks. Because the process is different for every computer manufacturer, these guides are written at a high level. Any questions you have about this process should be directed to the [Help Desk](#), area [RESCOM](#), or faculty/staff IT contact.