

# Windows XP Installation Guide



This **Windows XP Installation Guide** will take you from [blank hard drive](#) to [Ghost image](#): from [soup to nuts](#). Along the way, you will be served a tasty appetizer at [Doc's FDISK tutorial](#), where you'll be offered a generous helping of homemade [Partitioning Strategies](#). The goal here is NOT to leave you with [an aching belly](#), but rather a system that is deliciously [stable](#).

I tried to focus on the [philosophy](#) behind the sequence, so that the guide will apply to as many people as possible. I tried to avoid getting bogged down in trivial details, such as "[Click on the Next button](#)". Realize though, that everyone's system will be different, and it's difficult to craft a guide where one-size-fits-all. For example, [my PC](#) does not use [RAID](#). Therefore you will need to do your own homework if your system contains a [striped array](#).

This step-by-step guide is tailored to install [Microsoft Windows XP Professional](#), which I use and recommend. If you have a different version or operating system, such as [Microsoft Windows XP Home Edition](#) or [Windows 2000](#), simply adjust as necessary. For your [<hypertext>](#) convenience, this guide can be found at any of these fine Radified URLs:

- <http://windows.radified.com/>
- <http://windows.radified.com/windows.htm>
- <http://radified.com/windows/windows.htm>

I encourage you to compare notes with other Windows Install guides, such as [Black Viper's](#) (everything he does is good, also an ad-free site) and [Paul Thurrott's supersite](#). Rob sent [this link](#). Or you might like [Winstall](#) (pop-up). [ZolkNetwork](#) posted a shorty [here](#). Microsoft's own guides are [posted here](#). Actually, I prefer the down-home, backyard style of the one blogged at [MindHive](#) the best. Here is a [Google search](#) pre-configured for the terms: windows+xp+installation+guide. None of these other guides however, will "Radify" your system. 🤖

During the install, keep a pen and pad of paper handy. Write down any **questions** you might encounter, and also any **errors**. If you don't write them down, you will forget. It's easier to find a solution if you know (exactly) what the problem is. But you should not be getting errors. And if you have a question, it's likely someone else will have the same one. This means the guide may need to be clarified in certain parts.

There is a method to my madness. There are exceptions, but, in general, you want to install newer files after older ones. A [stable PC](#) is a beautiful thing. There's nothing so [digitally frustrating](#) as a computer that locks or crashes [at the wrong time](#).

Before we begin, I want to express my gratitude to everyone who wrote in to share their insights on the best way to install Windows (especially [Joshua](#), who sent several pages of insightful comments). My experience is limited. Comments from readers the world over are what make [these guides](#) so helpful. So, if I missed something, [let me know](#).

Instead of carrying on with a lengthy intro, about how the author of this guide, and its collaborators, combined, have installed Windows over **300** times, making every mistake known to man in the process, and thereby learning what \*not\* to do, let's jump right in and get started Next we'll download and burn all the **files** we need to install Windows XP. We'll also discuss initial **hardware** configuration, and how to configure our motherboard **BIOS**. We'll also take a look how to **partition** our hard drive. Ready? Let's do it.

## Files

Note that some of these links take you to files for [my particular system](#). Most likely however, the hardware contained in your system will be different. Where my components differ from yours, simply replace my files with yours. The concepts and strategies remain the same. Okay? **Download & burn** to CD (or DVD) the latest versions of the following files:

- Windows [Service Pack\(s\)](#)
- [Chipset drivers](#) \*1\*
- [DirectX drivers](#)
- [Network adapter drivers](#) \*2\*
- [Video card drivers](#)
- [Sound card drivers](#)
- Drivers for other hardware contained in your system
- [Messenger](#)
- Firewall of your choice: either [ZoneAlarm](#) or [Sygate](#)
- Your anti-virus software, such as [NOD32](#) or [Symantec](#) (any will do)
- [Motherboard Monitor](#)

Note \*1\* Joshua's comment: **Chipset drivers** can be tricky. Often chipset drivers are released by both the chipset manufacturer (such as [Intel](#), [Via](#) and [nVidia](#)) and the motherboard manufacturer (such as [Asus](#) and [Abit](#)). Drivers [from the motherboard manufacturer](#) are usually better. They are tested on that particular configuration. But drivers from the [chipset manufacturer](#) may offer new features and better compatibility. I recommend chipset drivers [from the motherboard manufacturer](#) over those from the chipset manufacturer.

Note \*1\* Rad's comment: I always use chipset drivers from Intel, and never had a problem. I figure they know the most about the chipset, since they are the people who designed it. But Joshua has a good point. Motherboard manufacturers take "reference" drivers from the chipset manufacturer and modify them to suit the specific design of their particular motherboard.

Note \*2\* If your network adapter is integrated into your motherboard, the drivers for your network adapter should be located on the CD that came with your motherboard. An updated version may be located at the manufacturer's web site, either the adapter manufacturer, or the motherboard manufacturer. Refer to Note \*1\* above when considering which drivers to use. Your onboard network adapter will not work until you install its drivers.

1. Download [Windows ME boot disk](#) (OEM version) and create a boot floppy with these files.
2. If your Windows XP CD is \*not\* bootable, download & create a set of [Windows XP boot diskettes](#). You'll need **6** blank, formatted floppies. I have made & tested these myself, and verified that they actually work. They let you install Windows XP from a non-bootable CD.
3. If you have a [RAID](#), [SCSI](#), or [SATA](#) controller that is not natively supported by the operating system, you will need to download the appropriate drivers from the manufacturer and create a floppy containing them, or add them to the CD (or both). You might already have a CD that contains these drivers. But check for updated versions anyway.

**SATA** is not supported by anything prior to WXP SP1. Alternately, you can ask Windows to look for updates during the install, which requires an Internet connection. But this takes quite a bit of time.

## Initial Hardware Configuration

Begin with the bare minimum hardware. We want to make it as easy for Windows as possible. This means only:

- Video card
- Monitor
- Keyboard
- Mouse

- Network card/adapter (but don't plug in the network cable)

No sound cards, printers or scanners. Install those one at a time after your system is up and running.

A short note on **IRQ-sharing**: Without delving too deeply into the world of hardware configuration (since this is a guide on how to install Windows), I want to mention the value of reviewing how your particular motherboard assigns IRQs.

Most modern motherboards will come with a manual that explains how IRQs are assigned and which ones are shared. It can pay dividends to review this section and install your PCI cards accordingly .. so that IRQ-sharing is kept to minimum .. since shared IRQs have the potential to generate nasty conflicts.

Some of the hardware components that normally use an IRQ (Interrupt **R**equ~~e~~st) can be \*disabled\* (either in the BIOS or in the Windows' [device manager](#)). If you know that you won't be using a particular feature (such as a serial port, or the printer port, or your Firewire controller, or a USB controller, etc.), you can disable that item and save an IRQ. Only you know what features will and won't be used.

In particular, you should strive to configure your hardware so that your SOUND CARD get its own IRQ, and doesn't have to share. Sound cards seem least tolerant of sharing IRQs. Some brands of sound cards are worse at this than others. USB ports also are not the most share-friendly. IRQs are \*designed\* to be shared, but you don't have to use computers for very long to know that things don't always work the way they should. 😞

## BIOS configuration

If you are totally clueless about BIOS configuration, head over to [Adrian's](#), and learn the "definitive" mojo. Otherwise, press the power button and fire up your badboy. Ah, the sweet sound of giga-hertz. Serenade me, Silicon girl. Enter the BIOS configuration utility. Most systems do this by holding down the <delete> key when booting. BIOS configuration utilities have come a long way. They are actually a joy to use these days.

You want to become comfortable with your BIOS, and have a feel for what the various setting do, especially knowing which ones can cause problems.

The manufacturer of your motherboard should periodically update the BIOS. Every **2** or **3** months seems the norm. These updates can enhance performance & stability, or add features, such as the ability to use newer and faster [CPUs](#) that were not available when you purchased your system/motherboard. You can [download](#) these updated BIOS versions from your manufacturer's web site, along with a nifty [flash-update utility](#).

You do not not necessarily HAVE TO update your BIOS, but it's a good idea to know how, just in case you ever want to. [The procedure](#) is becoming [more common](#) to mainstream users and is really rather simple. Many sites have posted [detailed guides](#). More than likely, the manufacturer of your motherboard has also published [its own guide](#).

I have done it many times and never had a problem. The procedure is best done from (true) DOS, with a boot floppy. Less chance of other things interfering and causing problems. After the first time you do it, it's a piece of cake. The most common reason for flashing your BIOS would be if you want to upgrade to a faster [CPU](#) .. that your old/current BIOS doesn't support. But enough about flashing your BIOS. You can look into that later.

When you get into the BIOS configuration utility, first load BIOS **default settings**, then **Save**, exit and reboot. Re-enter the BIOS and **disable** the following items:

- **Plug-n-Play Operating System** (no). I know that Windows \*is\* a PnP O/S, but enabling this setting has been known to generate problems.
- **Legacy USB** support (unless you have a USB mouse or keyboard, then enable this setting). I have had nothing but problems with USB mice & keyboards, and therefore do not recommend them. But YMMV.
- **Speech Post Reporter**
- **Boot virus protection**

1. Set **Primary video adapter** to **AGP** (if you have an AGP card, of course)
2. Set **boot order**: Floppy > CD/DVD > Hard drive
3. Save changes and exit. Reboot.
4. Upon the subsequent reboot, return to the BIOS and **ensure** your settings were properly saved.
5. Disable **Fast boot** and **Boot screen**. POST messages can be helpful during set-up. [POST = **Power On Self Test**] You can re-enable these two after you are done installing Windows and your [software programs](#).

## Hard Drive Partitioning

I prefer to use **FDISK** to partition my hard drives. I have always done it this way and never had a problem. You can also partition from within the Set-up utility contained on the Windows XP CD. Either way is fine. If you use the Windows XP partitioning utility, format as NTFS and \*never\* use QUICK format. **FDISK** will ask for **MB's**. If you need to convert **GB's** to **MB's**, a good place to calculate the conversion is at [Online Conversion](#).

If you need some insights into **how** to partition your [new hard drive](#), see my [Partitioning Strategies](#). For a partitioning tutorial on how to use FDISK, none is better than [Doc's FDISK guide](#) (from Germany).

Personally, I prefer to format the first partition, and only the first partition, as **FAT32**. FAT32 is compatible with **DOS**, and you never know when you might need to load a DOS utility. NTFS is not compatible with DOS. I usually make this first partition **4-GB**. You will still be able to use this partition just like any NTFS partition from Windows, so the space is not wasted.

The idea is to anticipate problems and leave yourself options down the road. More options are better than less options. Having a FAT32 partition on your system will give you more options. For [security reasons](#), I do not install Windows to my **C** drive, which is the default install location.

I recommend you leave one partition (NTFS) dedicated for [Windows Longhorn](#), Microsoft's next-generation operating system. **4** gigs is plenty. You'll probably get an [opportunity to play](#) with this new operating system in the not-too-distant future.

I also recommend you leave one partition to play with **Linux**. I prefer [Mandrake](#) myself (free download) for its ease-of-use, but any [distro](#) will do. [Redhat](#) is probably the most popular. Again, the idea is to anticipate future needs and leave ourselves options down the road by beginning with a flexible design.

Linux likes the **EXT3** file system. I use [Partition Magic](#) to create and format my Linux partition(s). If you are new to Linux, see [here](#) for Deepak's PowerPoint intro (from India). The Linux train is gaining momentum. Might as well jump onboard now. It's fun to play with.

1. Remove the FDISK boot floppy and insert your Windows CD. Reboot. If you cannot get the Windows CD to boot, use the [boot floppies](#). If you have the opportunity (and space) to copy the entire Windows CD to your hard drive, I recommend doing so. Windows will install faster, and you won't have to dig up the CD when you need to install new system components. Windows will remember where the original source files are stored/located.

You would simply create (for example) a folder named "**WXP**" on a partition/drive that is designated for file storage, and copy the entire contents of your CD to that directory. Then remove the CD and execute the file **Setup.exe** from there. This is the normal method if you already have an operating system installed and are planning to [dual-](#) or [multi-boot](#). If you are hell-bent on "upgrading" a previous install, at least [create a Ghost image](#) first, so you can go back if you have problems.

2. The first screen you see says *Welcome to Windows Setup*. In the window beside the words *Installation Type*, you will see the words *Upgrade (Recommended)* if you have an operating system already installed. Contrary to Microsoft's advice, I do not (ever) recommend *upgrading* Windows. No one with a brain does. Clean installs (also called "New Installs") are always better. For this reason, I suggest you click the little drop-down arrow and select: **New Installation (Advanced)**. Hit the **Next** button.

Side note: If you currently have an operating system installed, such as [Windows 2000](#) or [Windows Me](#), and you want to KEEP that O/S installed, I suggest you [dual-](#) or [multi-boot](#) instead of upgrading it. Dual-booting is simple. Windows does all the work for you, configuring the dual-boot automatically. Just make sure you select a **different partition** than the one that currently contains an operating system.

3. Accept the License agreement and enter your product key. If you make one little mistake, it won't work. So enter carefully and double-check.
4. At the top of the next screen, click on the button labeled **Advanced Options**. At the bottom of the next screen put a check-mark in the box labeled *I want to choose the installation drive letter and partition during Setup*. Your system will reboot.
5. If you are using a RAID, [SCSI](#) or SATA controller that is NOT natively supported by Windows, have your floppy ready that contains the appropriate drivers and press **F6** when prompted to load the appropriate drivers. The manufacturer of your particular controller will know if your controller has native WinXP support.

If you don't load the appropriate drivers, you won't be able to see/use/access drives connected to those controllers. Pop in the floppy that contains the appropriate drivers. You only have a few seconds, so pay attention with your finger hovering over the **F6** key.

6. Highlight and select the partition where you want to install Windows. Format this partition if not already formatted. I recommend the **NTFS** file system for Windows XP. As mentioned earlier, do *not* use QUICK FORMAT. Only format the partition where you want to install Windows. We will format the other partitions once Windows is installed.

Note: For [security reasons](#), I recommend *against* installing Windows to the **C** partition, which (by default) will be the first partition on your [primary-master](#) hard drive. The **C** drive is the default installation location. [Hackers](#) know this and target the **C** drive. This is a minor point, and certainly won't preclude you from ever getting hacked. But it is simply one more strategy to thwart an attack (.. along with a firewall, [anti-viral software](#) & a [trojan scanner](#)). Windows XP will work fine from *any* drive letter.

7. Windows will start to install. This will take a while. You should see no errors. Some average install times (compliments of [Joshua](#)) with IDE hard drives:

- Athlon 64 FX: **27** minutes
- Athlon 64 FX-51: **25** minutes
- Pentium 4 3.2GHz: **26** minutes
- Pentium 4 2.0GHz: **36** minutes
- Pentium 3 1.0GHz: **54** minutes

[These are times from my lab and not official. All installs were done directly from CD using a 32X CD-ROM.] When it's done, and after rebooting a few times, you'll arrive at a beautiful, clean [desktop](#).

8. Here Windows will walk you through its initial configuration, including your geographic region & language, your name & organization, naming your computer (e.g. Radz-Beast) & selecting an administrator password, date, time & time zone. You might also be prompted here to enter your **25**-character product key, if you didn't enter it earlier.

Your **computer name** is easy for other computers (and people) to see. So I recommend *against* using anything that is telling, such as your name. For your name, I recommend using a pet name (such as Rad, Spanky or Doc). Most important here is selecting a good administrator password/phrase. Much has been written on the subject. [Diceware](#) offers what I consider the best method. Their FAQ is [posted here](#). The casual user may find the info tedious, but it's worth skimming.

In short, they recommend against single-word passwords (such as: **password\_#01**), but rather **4-word pass-phrases**, such as **Radz 911 goez fa\$t!**. Windows XP supports passwords/phrases up to **127**-characters. Words not found in the dictionary are better. Use at least one capital letter, and at least one number. Always use at least one special character: [~`!@#\$%^&\*()\_+={}|~\|:;'"<>.,.?/].

This is because programs such as [LC4](#), by L0pht Crack, are able to 'crack' most passwords in a matter of minutes. I [downloaded](#) the demo, thinking I had created a good password. [LC4](#) cracked it in under **5** minutes (using [brute force](#) method, similar to [RC5](#)). It was not able to crack my new diceware pass-phrase.

The [XP Survival Guide: Surviving the First Day](#) (1.2-MB PDF, 13 pages, worth reading, published by the [Internet Storm Center](#), link compliments of Jeff Wilson), instructs you to enter the **Custom Network Settings** at this point and **unselect**:

- Client for Microsoft Networks
- File and Printer Sharing for Microsoft Networks

If needed, you can re-select these items later, after you have downloaded and installed all [Windows Updates](#). I also **unselect** *QoS Packet Scheduler* here.

If you are the only person using your computer, and your PC is located in an area you consider secure (your home), you can later (after you're done with this guide) configure Windows to enter your pass-phrase for you automatically when it boots, by using [Tweak UI](#) (< for Professional edition, see [here](#) for Home edition). Simply open Tweak UI and select Logon > Autologon. Click the *Set Password* button and enter your password. Then put a check in the box labeled *Log on automatically at system start up*.

9. Personally, I hate the new XP interface. It's too candy-cane for me. So the first thing I do is to select the "**Windows Classic style**" from the *Appearance* tab under *Display Properties* (right-click on the desktop). But this is admittedly personal preference. Many folks like the new interface.
10. Windows default folder views are annoying. Open the Control Panel, go to **Folder Options**, click on the "VIEW" tab and do the following:
  - Check *Display the content of system folders*
  - Check *Show hidden file and folders*
  - Uncheck *Hide extensions for known file types*
  - Uncheck *Hide protected operating system files (Recommended)*
11. Go into your *Device Manager* and select *IDE ATA/ATAPI controllers*. Verify that they say *DMA if Available* for both primary & secondary controllers. They should be already.
12. Start > Settings > Control Panel > Administrative Tools > Computer Management > Disk Management. Right click on any unformatted drive and format it. I recommend NTFS. Do the same thing to all unformatted drives.

Give them distinctive names, such as **E\_drive**, etc. Some people like to name the partitions according to what they will be used for, such as [MP3s](#) and [Back-up](#). Do not change any drive letters, especially not the one where Windows is installed.

13. Load the CD we made at the very beginning and copy its contents to a partition or directory you have designated for file storage. I named this folder **install\_cd**. [I prefer to use underscores instead of blank spaces to name file and directories.]
14. Click on the *Messenger* icon in the system tray. Cancel out of the Passport sign-up registration. Click on: Tools > Options > Preferences tab. Remove check from box labeled *Run this Program when Windows Starts*.

If you prefer to REMOVE Windows Messenger from Windows XP Professional:

Click Start > Run and enter the following command:

**RunDll32 advpack.dll,LaunchINFSection %windir%\inf\msmsgs.inf,BLC.Remove**

- This will prevent a long delay when opening Outlook Express if you have the *Contacts* pane enabled.

To prevent this, click Start > Run and enter REGEDIT

Go to: HKEY\_LOCAL\_MACHINE\Software\Microsoft\Outlook Express

Right-click in the right pane and select New, Dword value.

Give it the name *Hide Messenger*

Double click this new entry and set its value to **2**.

15. From its/their location on the hard drive, install the Service Pack(s). When it asks if you want to create a back-up, I suggest answering "No". It will just waste space and take more time.

Joshua suggests that you answer "Yes" and \*do\* have the Service pack make a back-up. If there is an error, the installer is SUPPOSED to revert to the back-up data. His way is safer. So, you've gotta ask yourself a question: [Do I feel lucky?](#) Well, do ya? 🤪

In the future, after your system is up and running for a while, and Microsoft releases a new service pack, you should always [ask around](#) before installing new service packs, and always create a [Ghost image](#) before doing so. This way you can always go back if you encounter problems. Service packs are major upgrades, and some of them have been problematic in the past. You don't want to be the first on your block with a new service pack.

16. I disable **System Restore** here because I periodically create back-up [Ghost images](#). It's one less thing that can interfere and cause problems. If you don't use Norton Ghost, or some other imaging utility, you would want to leave SR enabled. Right-click on *My Computer* and click on the *System Restore* tab. There is a box labeled *Turn off System Restore on all drives*. Do as you see fit.

17. Reboot and do nothing but update your **chipset drivers**. (Open no other programs first.)

- Joshua's comment: **Chipset drivers** can be tricky. Often chipset drivers are released by both the chipset manufacturer (such as [Intel](#), [Via](#) and [nVidia](#)) and the motherboard manufacturer (such as [Asus](#) and [Abit](#)). Drivers [from the motherboard manufacturer](#) are usually better. They are tested on that particular configuration. But drivers from the [chipset manufacturer](#) may offer new features and better compatibility. I recommend chipset drivers [from the motherboard manufacturer](#) over those from the chipset manufacturer.

- Rad's comment: I always use chipset drivers from Intel, and never had a problem. I figure they know the most about the chipset, since they designed it. But Joshua has a good point. Motherboard manufacturers take "reference" drivers from the chipset manufacturer and modify them to suite their particular motherboard.

18. After rebooting, go into your device manager and click on your Universal Serial Bus Controller. Double-click on the controller to get into the Properties, and select the Driver tab. Click on the button labeled **Update Driver** with radio button in *Install Software Automatically*. Reboot.

19. Install **DirectX**.

- Joshua's comment: I usually install DirectX after other critical updates and after the video card drivers. I read somewhere a long time ago that it was better to install DirectX after the video card drivers were installed. I think it's an old wives tale, but I have never had a DirectX issue doing them in this order.

- Rad's comment: I have read some of the instructions that come with video card drivers and they sometimes (not always) specify a particular DirectX version/upgrade PRIOR to installing.

20. Install drivers for your network card/adapter. If your motherboard has an onboard network adapter, you should find these drivers on the CD that came with your motherboard. Install only the drivers. Nothing else. No special LAN utilities.

There is a chance (small chance) that you can be [hacked](#) while setting up your system, before you install your firewall and anti-viral software. If you don't connect your network cable, no one can connect to you. For this reason, some people recommend installing your firewall immediately after you install the drivers for your network adapter (here).

21. Plug in the network cable and open Internet Explorer. If you \*can't\* connect, close everything, reboot, and re-open IE. It should work. If it doesn't, you have some trouble-shooting to do. Make sure you see no yellow exclamation points for your Network adapter in your device manager.

22. Now we're cooking with plutonium. Go to [Windows Update](#) and download all **critical updates** first. Then update everything you deem necessary. Reboot as necessary. Some of the big updates make you select only that one. This will take a while.

Note: some people prefer to install their **firewall** before downloading these updates. They worry about being [hacked](#) while they're online without [protection](#). This is certainly a valid concern, although I am not that paranoid. I don't install my firewall until a few more steps, because i don't want anything to interfere with these critical updates. Installing your firewall first (here) would not be wrong. Merely personal preference.

23. Update your **video card drivers** and set the resolution to your liking. For my **19**-inch monitor, I prefer 1280x1024 with 32-bit color. Check out [Digital Blasphemy](#) for cool desktop wallpaper. How about those [glowing blue mushrooms](#)? They look great if you change the color of your desktop to black. Or how about the [Moon of Thetis](#)?
24. Shut down your computer and install your sound card. Install drivers upon subsequent reboot.
25. Update **Messenger** and re-configure it so that it doesn't run when Windows starts (refer to step #14 above).
26. Activate Windows.
27. Download and install a **firewall** of your choice. I prefer [Zone Alarm](#), but [Sygate](#) also makes a good one. Both companies offer [freeware](#) versions.
28. Install your **anti-virus** of choice. I prefer [NOD32](#), but [Symantec](#) and others are also good.
29. Install your defragger of choice. I prefer [Diskeeper](#), but others are also good.
30. Install [Norton Ghost](#) and reboot.
31. Install and configure Motherboard Monitor (compliments of Alex Van Kaam, from the Netherlands). I configure my copy to display the following items in my system tray:



- CPU usage (reading **100**)
- CPU temperature (reading **122**)
- Motherboard/Case temperature (**82**)

If you have a [Hyper-Threaded](#) Pentium 4 CPU, you should see \*two\* instances of the CPU-usage indicator in your system tray. If you have trouble with its configuration, click the little "?" (question mark) in the upper right-hand corner for a comprehensive Help file. Alternately, for more specific question, Alex's forums are [located here](#).

32. Defrag your Windows partition and reboot.
33. Do nothing but create a [Ghost image](#). (Open no other programs first.) This is your initial\_install Ghost image. You should never delete it and never defrag it.

## Stability Testing

See here for info on how to test the **stability** of your system: [PC Stability Testing](#).

**THE END.** If all went well, have a beer and celebrate. Joshua's note: I think future revisions should include configuring [IIS](#) for Remote Desktop (one of WXP's best features).

[\[Radified Home\]](#)