Lesson 4:
Installing Your Operating System

Now that you've [put everything together](), you're past all the difficult stages—the rest is a cakewalk. Here's how to install your operating system and get everything up and running.

If you've never installed an OS before, it's remarkably easy. If you have, I'd still suggest reading through this guide to make sure you've got it all down. Installing Windows on a custom machine can take a few extra steps than installing it on a pre-built machine. For this guide, we're going to use Windows 7 as an example, but you can of course install Windows XP, Linux, or even Mac OS X, if you're building a Hackintosh. Refer to our [Getting Started with Linux series]() and [easy Hackintosh guide]() if you're using those OSes instead.

Step One: Edit your BIOS

When you first start up your computer, it'll tell you to press a key to enter setup, usually DEL. This takes you to the setup of your Basic Input/Output System, or BIOS. Here, you can configure some of the lowest-level aspects of your new machine. You may not actually need to edit any of these settings, but it's a good idea to go through, get acquainted with them, and make sure everything's in good order before moving on.

Note that the BIOS will be a little bit different on different brands of motherboard, so your screen may not look exactly like the images here, but it should be close.

First, we should make sure that everything's been installed correctly. If you have a System Information page in your BIOS, head there and make sure the amount of RAM listed is the same amount you put in. If it isn't detecting all of your RAM, some of it might not be seated correctly, so go back and fix that before continuing. If there isn't a System Information page in your BIOS, your motherboard probably lists the amount of RAM it detects on the POST screen, right after you press the power button.

Find the SATA configuration option, and make sure its configured as AHCI. If you're running Windows XP you'll need to change this to IDE, otherwise AHCI is probably what you want to go with.

Lastly, find the "Boot Order" or "Boot Priority" page. Make sure your DVD drive is the first drive on the list (or your USB drive if you're installing from a flash drive), and that the hard drive you'll be installing to is second. Note that some BIOS utilities split this up into two menus—one for setting the boot order for your different media (CD-ROM, hard disks, USB disks) and another that lets you choose the order of just the hard drives.
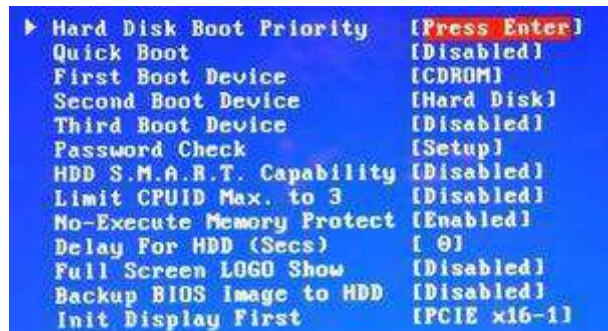
If you don't see your hard drive listed, it may not be plugged in correctly or it may be dead. Turn your computer off and re-check the connection if necessary.

These are the most crucial BIOS options you want to tweak, but there's a lot of other stuff going on in there. I encourage you to explore and look things up that you don't know, since it has some other useful settings. If you want to know more about your BIOS options, our friends at the How-To Geek have a nice rundown of useful tweaks, so check that out when you have some time. For now, we're going to get on with the installation process.
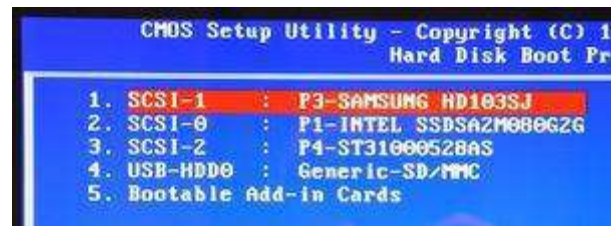
Step Two: Install Windows

Next, grab your Windows installation DVD (or flash drive, if that be the case) and pop it in. Start up your computer and it should automatically boot into the Windows installer. If you ever get a "Press any key to boot from CD" option, make sure to hit a key on your keyboard to continue.

Once the installer loads, hit the "Install Now" button, accept the terms of use, and choose "Custom (advanced)" when asked what type of installation you want. Find your primary hard drive (if you have more than one), click on the "Unallocated Space" partition, and hit Next. Windows should start installing.

If you aren't using a brand new drive, you may have to format it first. Click on the currently-used partition, click "Drive options (advanced)", and then hit "Format". It should format the drive to be Windows-compatible, after which you can hit next and let the installation run.
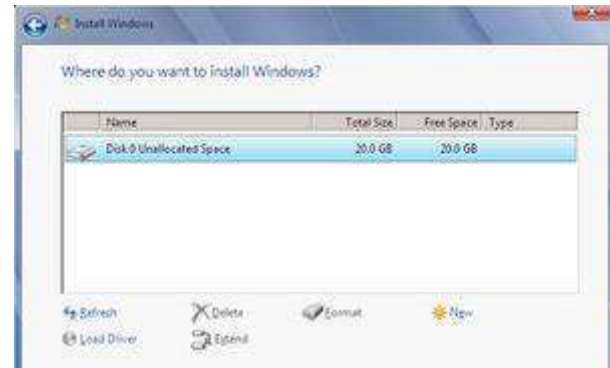

From there, the rest is just a waiting game. Leave your computer alone to do its thing. It'll copy all the necessary files to your disk and reboot a number of times in the process. You'll know you're done when you hear the familiar startup chime and boot into the default Windows 7 desktop.

Step Three: Install Your Drivers

The last thing you need to do before you actually *use* your computer is install your drivers. If your Ethernet or Wi-Fi works out-of-the-box, Windows may find most or all of your drivers for you. If not, you'll need to pop in the CD that came with your motherboard to install the Ethernet or Wi-Fi drivers you need to access the internet. Don't install any other drivers from that CD just yet.

Once you've got the internet up and running, Windows will install drivers for you. It might not catch everything though, so you'll have to install some manually. The CDs that came with your motherboard, video card, and other hardware are probably already out of date, so I don't recommend using these to install those drivers.

Instead, you'll want to download the drivers manually from the manufacturer's web site. Open up Device Manager by opening up the Start menu and searching for "Device Manager". Look for anything that has a question mark or an exclamation point next to it. Often, it'll tell you what the missing driver is for—say, SATA—and you can then head to your motherboard manufacturer's web site, go to their support page,

and download the drivers manually. If it's your video card that's missing a driver, you'll want to head to NVIDIA or ATI's web site instead.
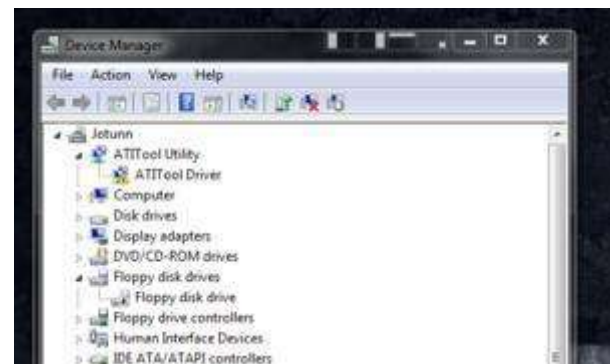
If it says "Unknown Device" next to the driver-less device, try inserting the CD that came with your motherboard and seeing if there are any drivers that *aren't* listed in the Device manager, and try installing those from the manufacturer's web site. Eventually, you should be able to get everything installed.

Step Four: Install Windows Updates

The last thing you'll want to do is get Windows up to date. Chances are, you've already gotten a notification from Windows Update at this point, but if not, head into your Start Menu, go to Programs, and hit Windows Update. Install all the updates it gives you, and reboot your computer. Check for updates again and it'll have a whole new slew of them for you. You'll have to do this quite a few times, but eventually it should stop serving you notifications and you'll be all up to date. When you are, you're ready to actually start using your computer.

This is also a good time to get some antivirus on your machine, as well as any other basic apps you want. Our Lifehacker Pack for Windows is a good place to start, and should get those "must have" apps installed in one fell swoop.

Congratulations! You've bought, built, and set up a working computer from start to finish! Don't be alarmed if you feel an overwhelming sense of pride; that's normal. Enjoy your new custom-built machine!