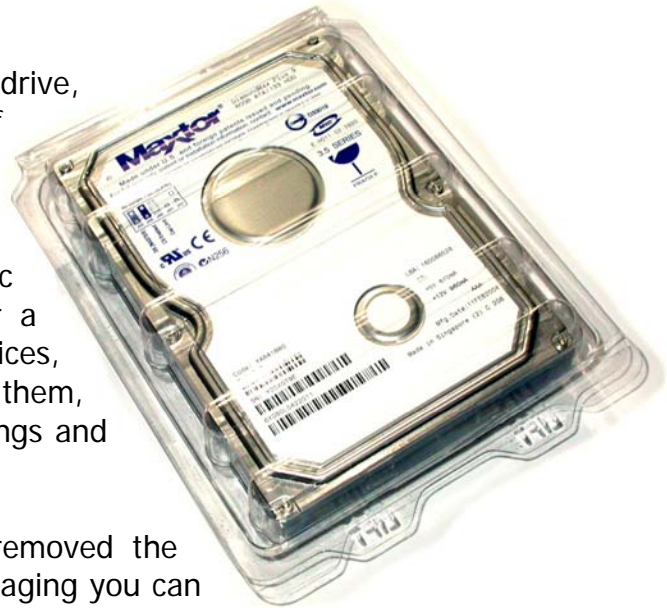


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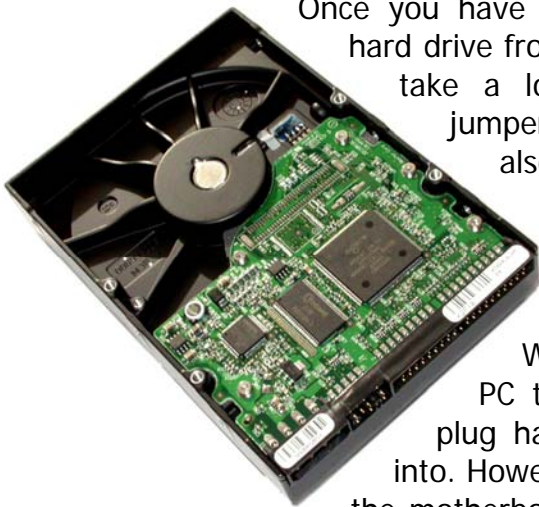
How to install a hard drive

People often say that adding a new hard drive into a system is a very quick and easy task; I say that it can be, if you have a bit of knowledge before hand! With this guide I'll start by explaining how to actually set the hard drive up, physically installing it, and then configuring the drive so that the operating system can see and use the drive.

When you purchase a new hard disk drive, you will receive it in some kind of packaging. Many drives are shipped in a kind of plastic clamshell such as this drive on the right, while others may be sealed in an antistatic bag. They are shipped like this for a reason, these are very sensitive devices, so be very careful when handling them, and don't give them unnecessary bangs and bumps!

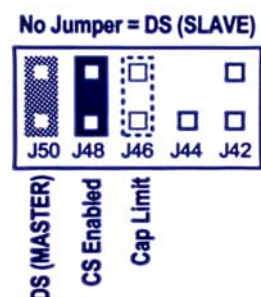


Once you have carefully removed the hard drive from its packaging you can take a look and see where the jumpers, interface and power connectors are located, and also read the information on the top of the drive as it will tell you how large the drive is, what model it is and how to set up the hard drive to be recognised as a Master or Slave device.



What do Master and Slave refer to? In the average PC there are two IDE channels; that is two ports to plug hard disk drives, CDROM drives, DVD Burners etc. into. However, by using a cable with three connectors, one to the motherboard, the other two to IDE devices, you can install two devices per channel. This means on the majority of PCs you can install up to 4 IDE devices. However, this isn't as easy as just plugging extra devices into spare connectors; you must first tell the device whether it is going to be a Master or a Slave.

All hard disk drives will have a key that is visible somewhere on the drive, and this corresponds to jumpers on the back of the drive, next to the interface and power connectors. On the Maxtor that I'll be using for this guide, it is located on the top just below the Maxtor logo. This drive can be set up as Master (J50), Slave (No jumper) or Cable Select (J48).



Cable Select allows the motherboard and hard drive to decide whether the drive is acting as Master or Slave, depending on what connector (on the IDE cable) the drive is plugged into. This doesn't always work, so it is useful to know how to set Master and Slave manually.

Once this has been done, you can think about the physical installation of the hard drive into your PC. This should be pretty self explanatory, although there are many different styles of computer case on the market. All you need to look for are the right size of drive cage (the bit of case that actually holds the hard disk drive) and the right size of screws, and make sure you screw in the drive from both sides (if possible) and that the connectors are facing into the case, to allow connection to the power supply and motherboard.

Then it's just a case of plugging everything together! You'll need to find a spare power connector (the connectors with a red, two black and a yellow wire) and a connector on an IDE ribbon cable. Many computers today have two optical drives and a hard drive already installed, so for this example we'll need to plug the new hard drive in with the existing hard drive, as a slave. Find the IDE cable that is already going to the existing hard drive, and have a look at it, if it has an extra connector about a third of the way along it, then use that to plug in the new hard drive, if not, then you'll probably need to change the cable to one that has three connectors in total instead of two. Connecting both the power and IDE cables should be relatively easy, don't force them; they are keyed so that they cannot be installed the wrong way round.

Software

Most motherboards should automatically detect the new hard disk drive, some, however, may need the BIOS configuring. You should look in your motherboard manual to see how to do this. If the computer doesn't find any hard disks at all (even the original drive) then you may have wrongly set the jumpers on the back of the drive. On modern motherboards the BIOS screen is sometimes only displayed for a second, so don't worry if you can't actually tell if the hard drive has been detected or not, just see if Windows will still boot, and if it does, then see if the next part occurs...!

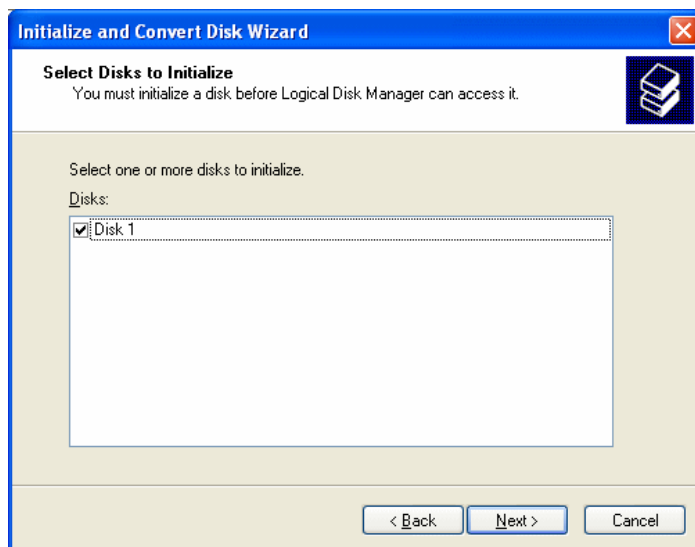
As the majority of computer users are now using Windows XP, this guide will be written around this operating system. The basic principles of adding a new drive into an older Windows ME or Windows 98 system are quite different, as you must manually partition the hard drive using something like FDISK, and then format the partition(s) using FORMAT. With Windows XP however, you can have the new hard drive up and running in just a couple of minutes, all from within Windows itself. Once Windows has booted, you'll see a little balloon appear from the system tray, showing that Windows has found new hardware and is installing drivers for it. This



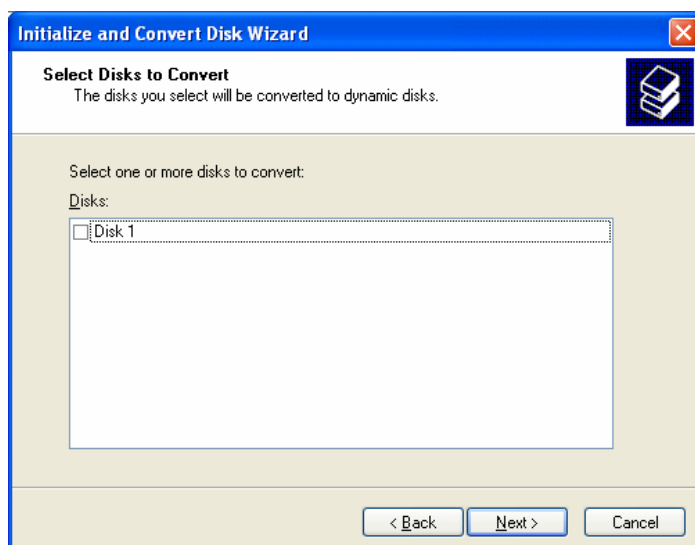
should finish quite quickly, and requires no user input at all. Once the new hardware balloon disappears, you can begin to setup a partition on the drive.



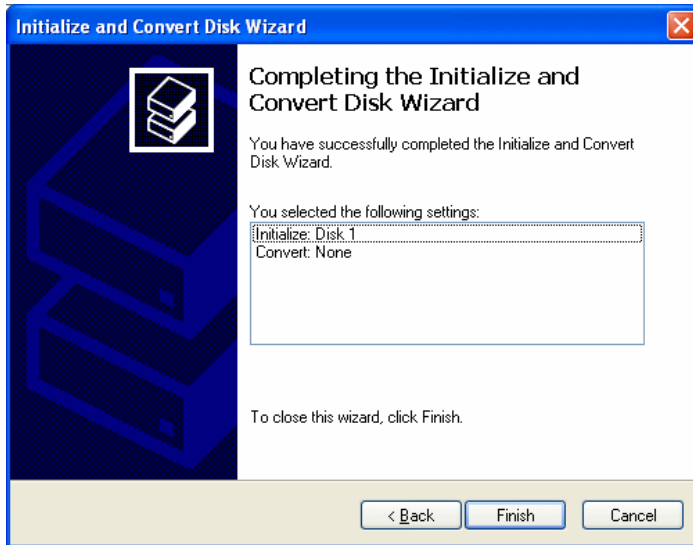
For this you will need to navigate to your Control Panel, then Administrative Tools, then Computer Management, and finally on the resulting window, at the bottom left click 'Disk Management'. The moment that you click Disk Management, you should have a box appear much like the one on the left. Click Next.



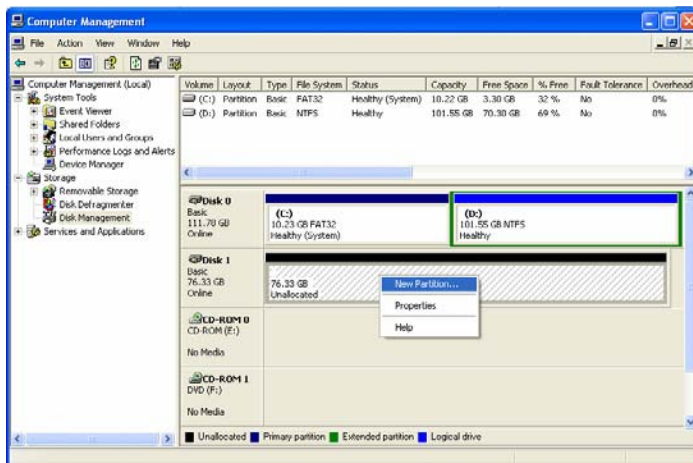
This screen selects the disk that you want to be initialised, there should be only one listed, so leave it ticked, and click Next.



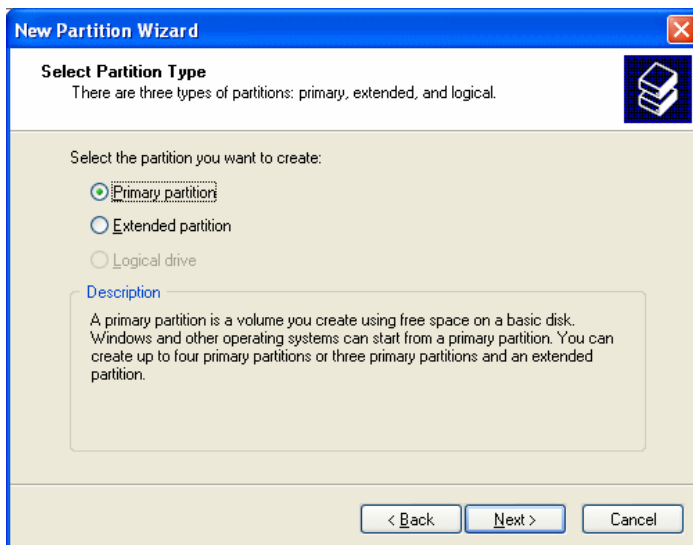
I would suggest steering clear of dynamic disks, which is a feature of Windows 2000/XP/2003. So leave this check box unticked, and click Next.



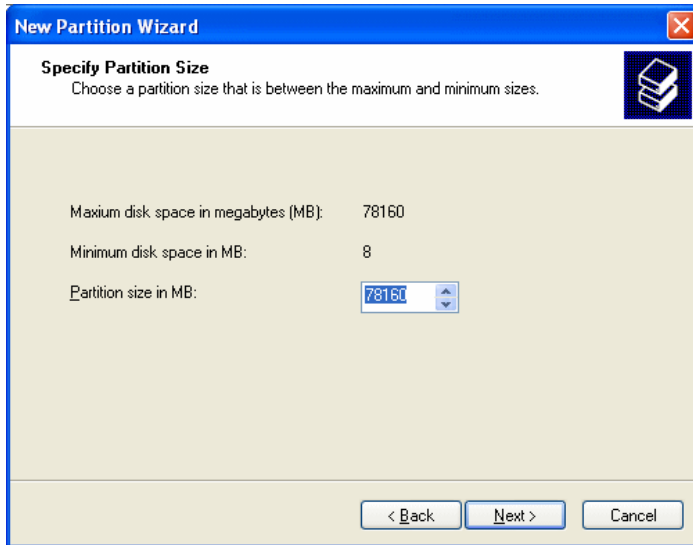
This is the last screen from this wizard, so click Finish and then we can get on to partitioning.



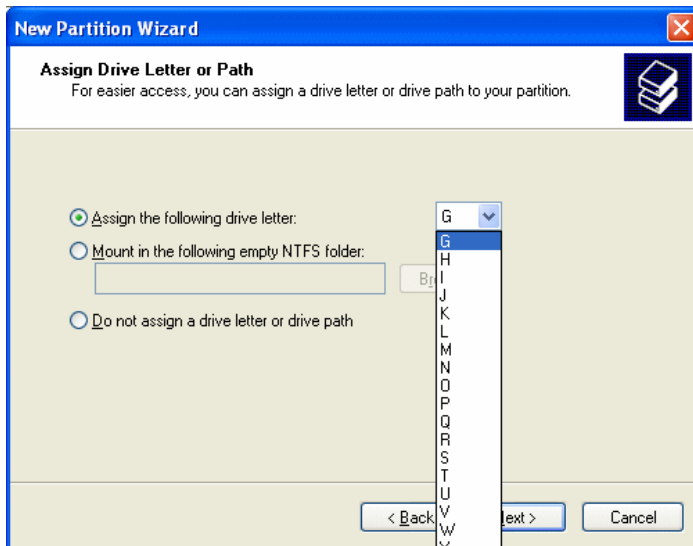
The main disk management screen will show that the new hard drive is completely 'unallocated', meaning there is no partition and thus you cannot use it to save files on. You must right click on the unallocated space, and then click 'New Partition...'



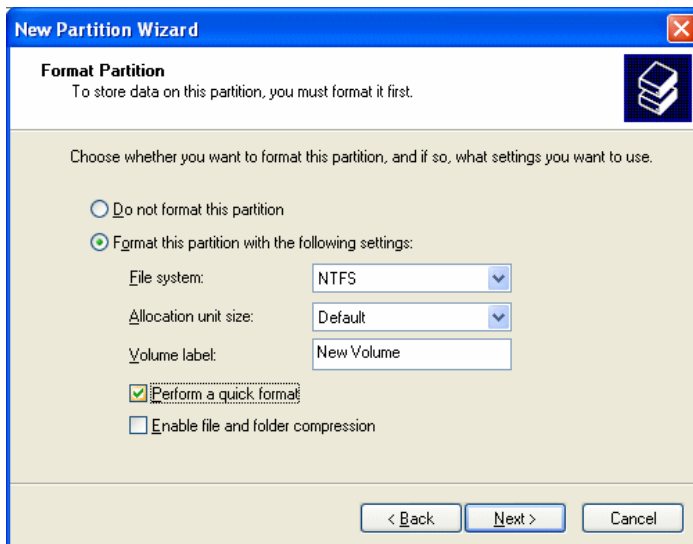
After the welcoming screen which you just click Next on, you'll see this screen. Unless you want to do anything more complicated that simply use the whole of the disk space as one large partition, I suggest you leave this as is. So click Next again.



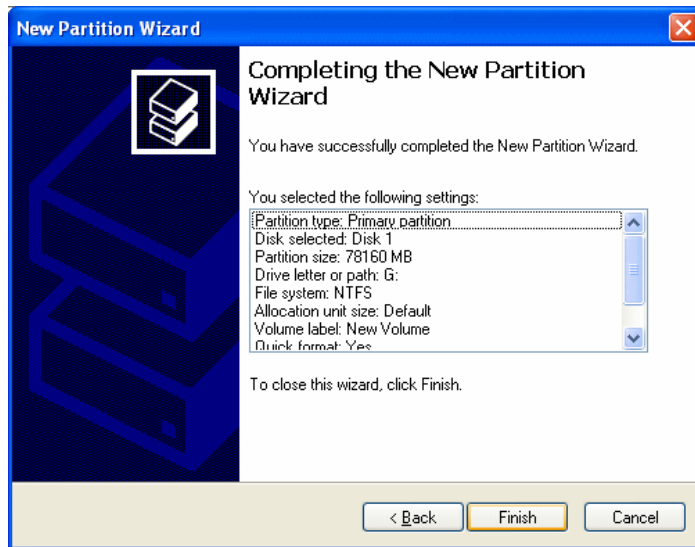
Again, leave this as is, as this sets how much space to allocate to the partition. You want the maximum space allowed, so just leave it at what was already filled in. Click Next.



What drive letter do you want to give the new hard drive? This screen allows you to choose from all the letters that have not yet been taken. We'll use G. Click Next.



The only things worth changing on this screen are the Volume label (which shows up in My Computer) and 'Perform a quick format' which will complete the formatting process in seconds rather than hours. Once these have been checked, click Next.



The last screen gives confirmation of all your previous choices. If everything looks ok, click Finish, and your new hard disk will be ready for use in about 10 seconds!

Once this has completed, you can close the Computer Management window, and have a look in My Computer where you should find your new G: 😊

Unfortunately with a topic such as this, one guide is never going to cover all bases, as every PC is different. However, this should cover the majority of Windows XP users, and represents all the basic points that need to be completed before using the new hard drive.

This guide was brought to you by [Chillblast](http://www.chillblast.com) – Specialists in overclocking and the finest PC components!

Disclaimer: This is only a general guide and shouldn't be taken as the be all and end all of hard drive installations. If you don't know what any of the terms in this guide mean, then don't try it, we won't be taken responsible for causing damage to your PC! Find someone who knows and ask them for advice before doing anything silly...