HANDBRAKE

INTRODUCTION
1. Handbrake

1. HANDBRAKE

Handbrake is designed to do one thing very well - to **transcode** non-encrypted **DVD**s to a file ready for Internet sharing.

Handbrake has a very easy to use interface, and the default settings normally work very well. This has meant it has become very popular with **Mac OSX** users (the original platform that Handbrake was made available on)
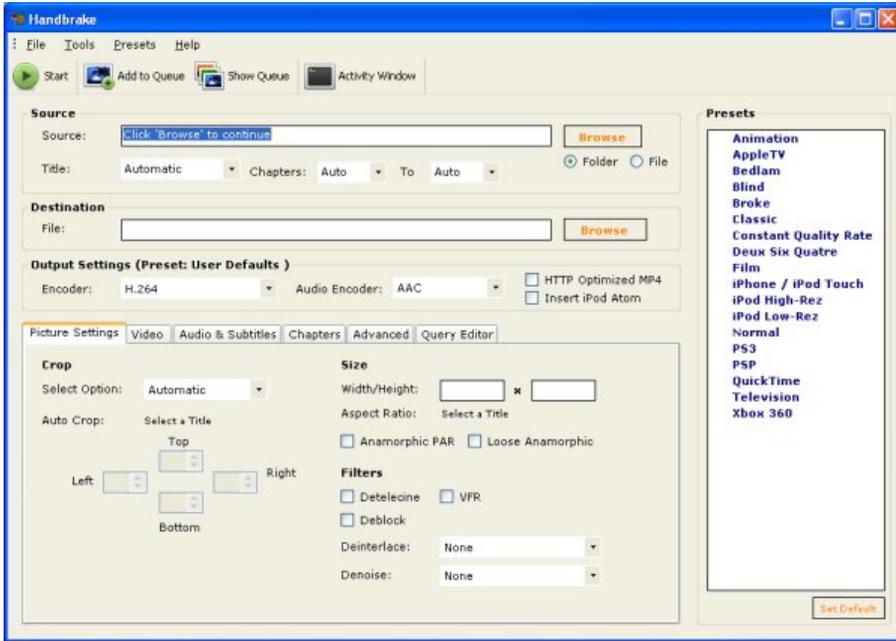
Above you see a screenshot of the main screen of Handbrake. The software works on **Mac OSX**, **Windows** and **Linux**.

INSTALLING
2. Installing on Windows
3. Installing on Ubuntu

2. INSTALLING ON WINDOWS

Software name : Handbrake
Homepage : http://handbrake.fr/
Software version used for this installation : 0.9.2
Operating System use for this installation : Microsoft Windows (XP)

To get the latest version of **Handbrake** go to http://handbrake.fr/?article=download

Click on the "Download" link next to the "Windows GUI" option. A download window will appear :
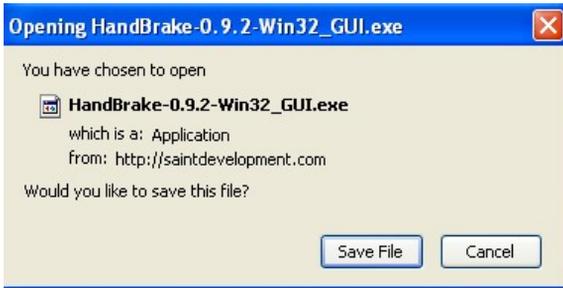
Save the file to your **Desktop**. When the installer has been downloaded you should see it file on your Desktop. The installer name has the version number included. The higher the number sequence the more recent the installer. The file I downloaded is named "Handbrake-0.9.2-Win32-GUI.exe" so it is version 0.9.2. If your version is newer the number will be different.

Find the file on your Desktop and double-click on it.

START THE INSTALL

Now you should see a screen like this :

All the screens for the installation can just be left with the default settings but I will look at them one by one.

If you press "**Next >**" you will see this:
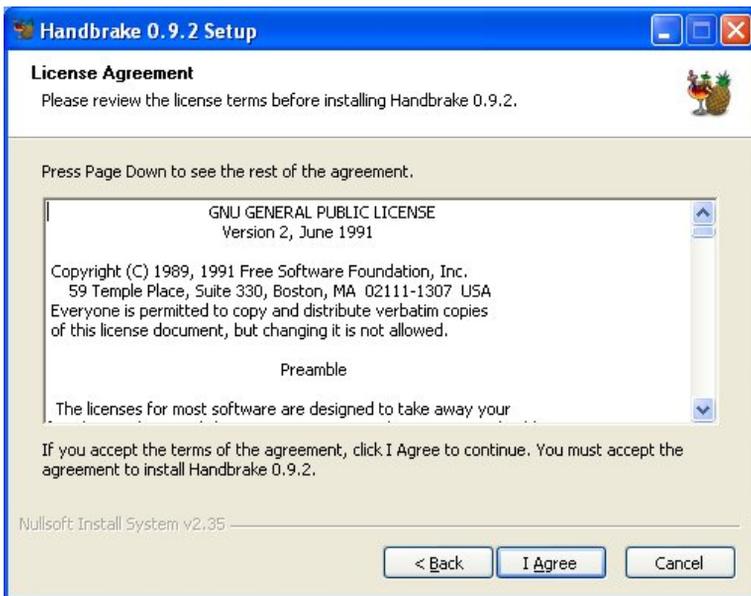
This is the license agreement. If you do not accept the agreement then the installation process will quit without installing the software. So, it is best to click on "I accept the agreement" and then **"Next >"**.
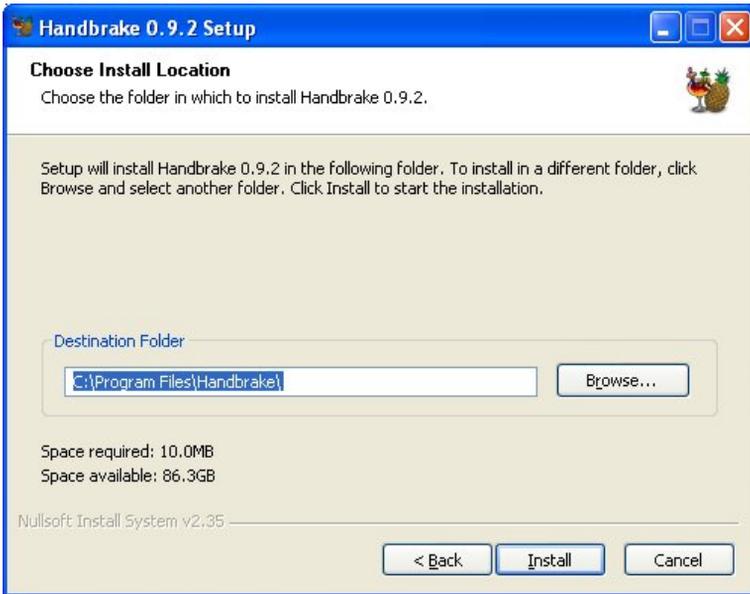
The above screen shows where the software will be installed. Do not change this setting unless you have good cause to do so. Press **"Next >"** and you will see the following:

When the process is complete click on "**Finish**" to start using Handrabke. You should see Handbrake appear as below.
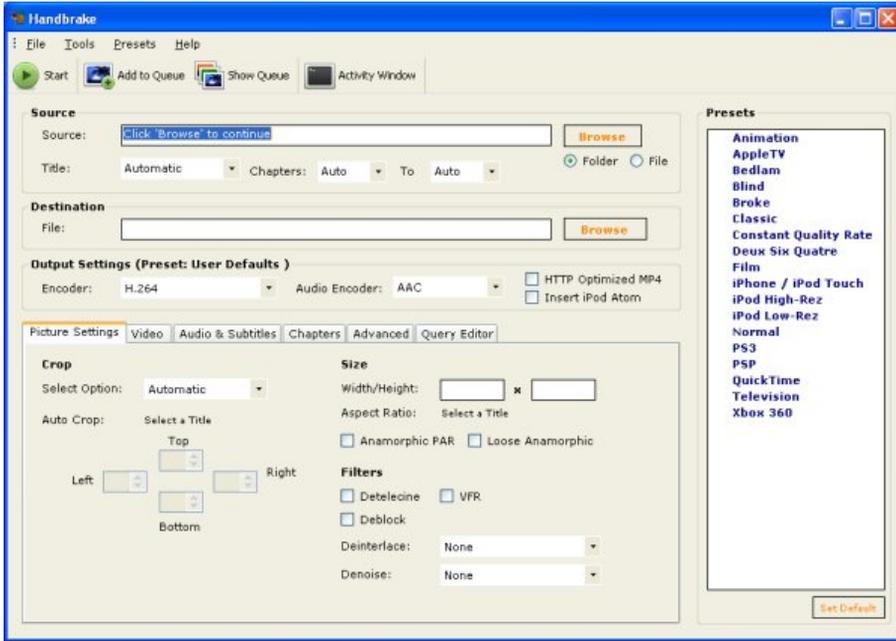
You may want to investigate basic use of Handbrake to continue.

3. INSTALLING ON UBUNTU

Software name : Handbrake
Homepage : http://handbrake.fr
Software version used for this installation : 0.9.3
Operating System use for this installation : Ubuntu 9.04
Recommended Hardware : 400 Mhz processor (CPU) minimum, internet connection

There is a trick to installing **Handbrake** on **Ubuntu**...Either you do it the hard way - using a **terminal**...or you do it the easy way - mostly within **Firefox**...we will do it the easy way.

Before you start you must check that you have **sudo** access. This means that you have to have the privileges to implement **superuser** or **root** actions. If you are working on your own computer then you will have this access. If you are working on a shared machine that someone else set up then you might not have this level of access and so you should ask the person that owns or administrates the computer to give you **sudo access**.

DOWNLOAD THE FILE

This method uses the Firefox browser, so make sure you follow these setps using Firefox. Firefox is the default browser for Ubuntu. First we must download the **binary** - a 'binary' is another word for 'executable'. Both these terms are really another word for 'program' or 'software'.

For command line programs we usually refer to 'binaries' because it sounds geekier.

To download this binary visit the Handbrake download home page : http://handbrake.fr/?article=download

Choose the "Command Line Interface (i386 Binary)" download link.

Linux			
	Command Line Interface (i386 Binary)	(2.1 MB)	Download
Source Code			
	Source Code (Solaris, FreeBSD, *Nix, Windows, OS X)	(1.6 MB)	Download
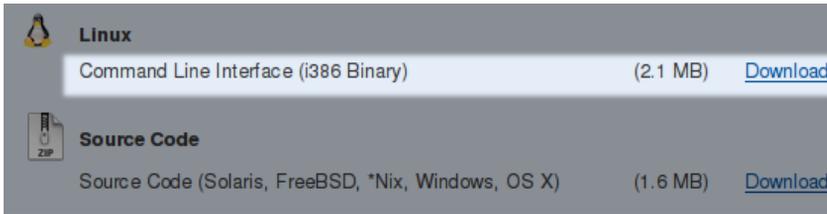
This will start the download process :

You have chosen to open

HandBrake-0.9.2_i386.tar.gz

which is a: tar archive

from: http://saintdevelopment.com

What should Firefox do with this file?

○ Open with Archive Manager (default)

● Save File

☐ Do this automatically for files like this from now on.

❌ Cancel   ↵ OK
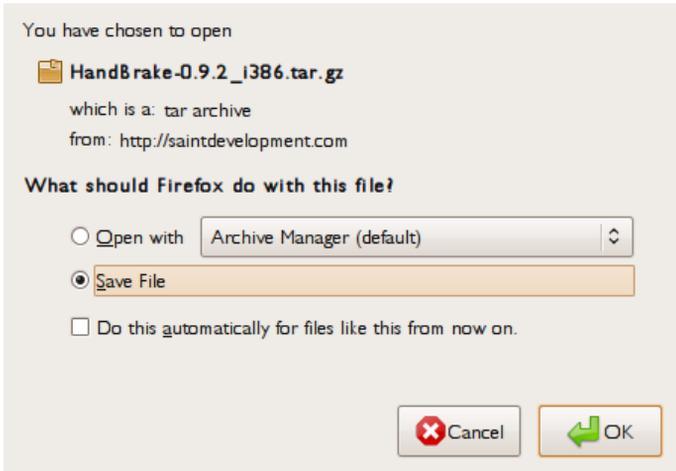
Just press 'OK' and the file file will download. If you want to change the download location for the files you need to do this through the preference settings in your browser.While it is downloading you will be presented with a nice progress bar :

HandBrake-0.9.2.tar.gz

7 seconds remaining — 779 KB of 1.6 MB (120 KB/sec)

If you can't find the window showing this information then look in the panel that shows all the different softwares that are currently open. By default this panel in Ubuntu is at the bottom of the screen. You are looking for the" Firefox Download Window" :

Downloads

When you find this, click on it and the download window will appear.

Now the file has downloaded the progress bar will disappear :

HandBrake-0.9.2.tar.gz   10:38

1.6 MB — handbrake.fr

EXTRACT THE FILE

You have downloaded the installer but it is in the form of an **archive**. An archive is a container of files that have been **compressed** to make the total file size smaller. Often files are compressed like this to ensure speedy downloading. We need to **decompress** the archive. Normally in Linux this is done using the 'terminal' - this is fast and efficient if you know how. If you don't know how then it can be confusing. So we will look at a far simpler way to do this which is just as quick.

To decompress the Handbrake installer you must only double-click on the file name displayed in the download window. The contents of the archive are then displayed :
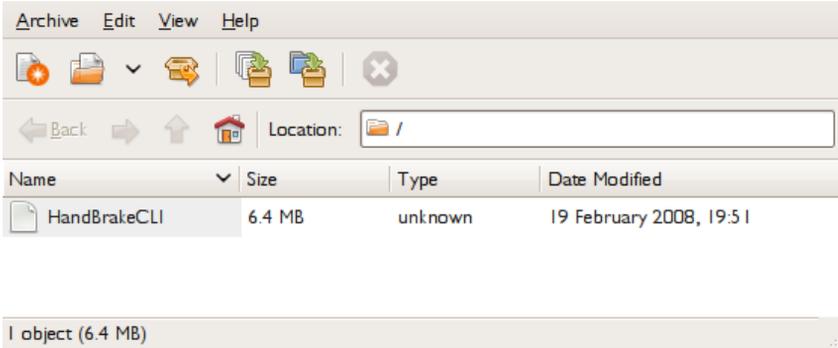
The above window is actually an archive manager program that Ubuntu uses called **File Roller**. Firefox can automatically open File Roller like this when the downloaded file is a type of archive.

The list of folders and directories you will see displayed (in this case, just one file) is a list of items *inside* the archive. We still need to decompress the files we want. In this case we just want the one file displayed so we right-click on this flie :
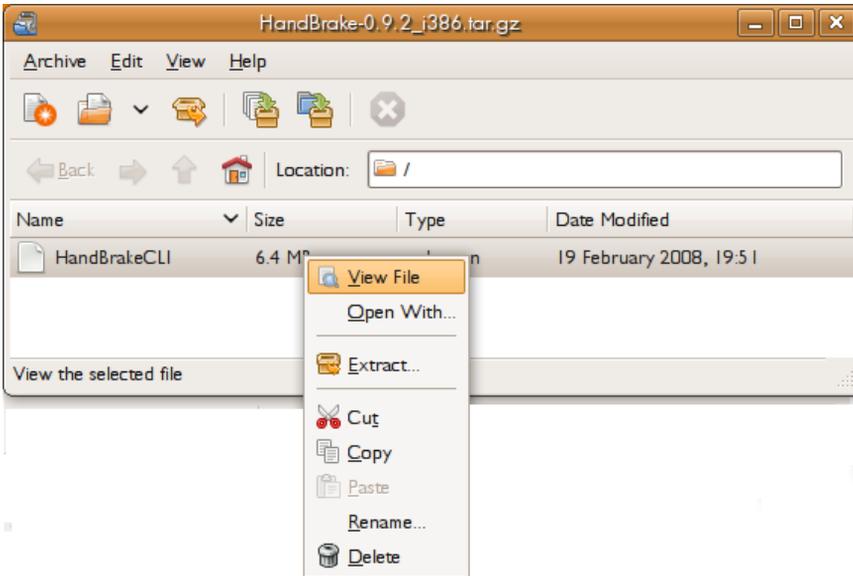
Now choose the "Extract..." option and a file browser will appear :
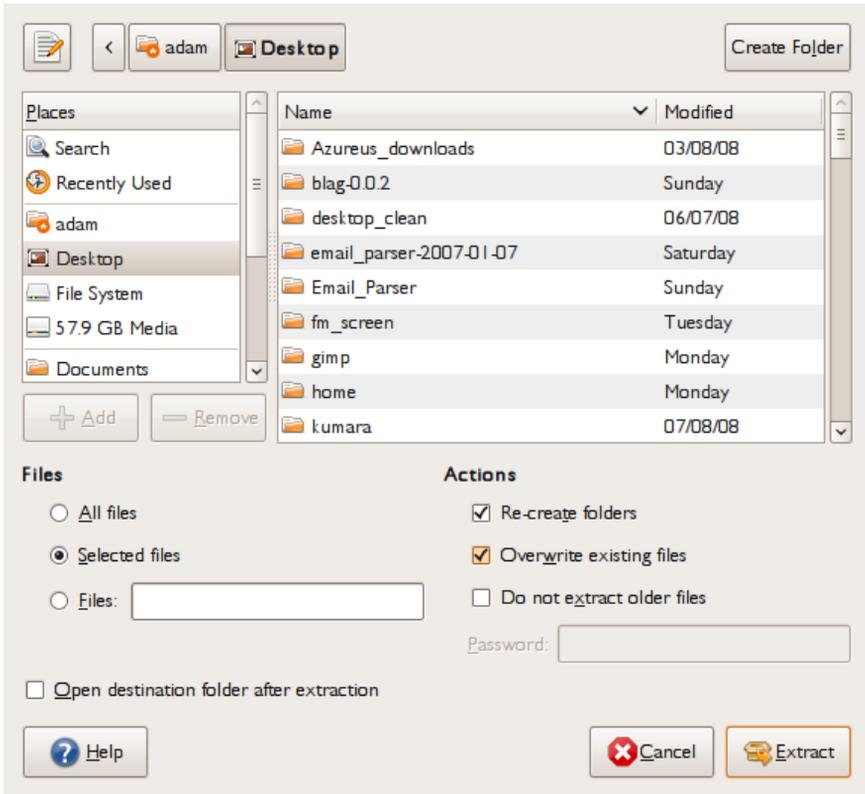
Choose where you wish to **extract** the file - do tis by clicking on the folders in the file browser to find the location for the file and then press "Extract".

I have extracted my file to the Desktop. Now we need to copy this file to the place where all the binaries are stored on your operating system. To do this you must first open a terminal.

STARTING A TERMINAL

Now...starting a shell...what is a 'terminal' you might ask. Well, inorder to issue commands we have to use an application called a terminal. It can also be referred to as a 'shell' or simply a 'command line'. Ubuntu refers to it as a 'terminal' so we will stick to that terminology. The terminal is a very powerful application. From it you are pretty much master of the Linux Universe. Want to make a new folder? Its easy from tusing commands in the terminal...want to whipe out your entire Operating System?...no problems, one short command will do it (but for your own safety I aren't going to tell you which).

You can just about do anything with a terminal and a few commands. Before you do that however you need to open the terminal. Assuming you have the standard Ubuntu installed you will see at the top of the screen there is a navigation bar with a menu including three items: 'Applications'. Places', and 'System' :

Now click on 'Applications', then slide across to 'Accessories', and then 'Terminal':
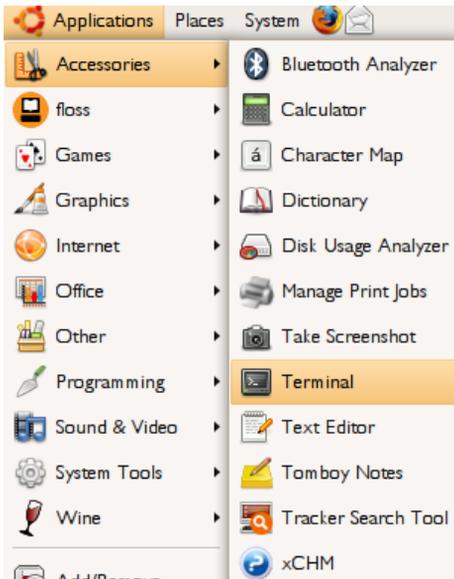
Now we are cooking. The terminal should pop up:
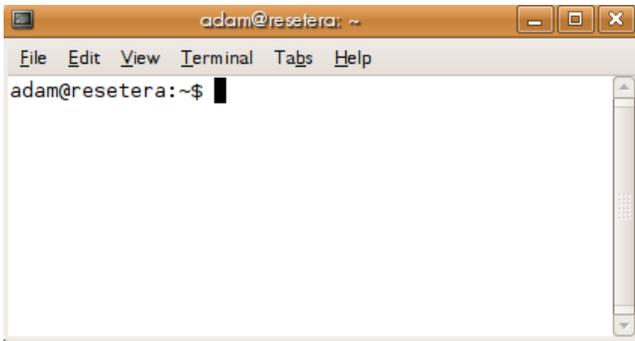
Yours may look a little different. Don't worry, as long as it almost looks the same you are ok. Now, you are located in your 'home' directory. When you start a terminal it is always in the home directory. By this I mean that any command you will now issue will be enacted 'from' the home directory. Don't dwell on this too much, if you don't understand it then the understanding will come after using the terminal a little.

COPY BINARY TO BIN

All binary files are stored in one of two places : the 'bin directory and the 'sbin' directory. The later is for storing binaries that are used by the **root user** (also know as the **superuser**). We wish to use the 'bin' directory.

With the terminal you have to change directories to the location of the Handbrake binary. For this we use the **cd command**. I already know that Handbrake has been extracted to the Desktop, and my terminal opened immediately in my home directory. So I only need to type the following :

```
cd Desktop
```

This will take me to the location of the Handbrake binary. I could also have used a fullpath to my Desktop which would mean typing the following :

```
cd /home/adam/Desktop
```

You must work through the possiblities of finding the binary on your computer. You may wish to read more about the Linux file system and the cd command to be able to do this.

I am now 'in the Desktop' and I can copy Hanbrake to the 'bin' directory with a simple command. I will use the **cp** command. This is used to copy any file or files from one place to another. The binary is called 'HandBrakeCLI' and I must copy it to '/usr/bin' so the command I use is this:

```
cp HandBrakeCLI /usr/bin
```

Except...a normal user can not copy files to the 'bin' directory. So you must use the **sudo** command. A 'sudo' commad can preceed any other command and it merely means 'execute this action as the superuser'. Superuers *can* copy files to 'bin', so we type this in the terminal :

```
sudo cp HandBrakeCLI /usr/bin
```

You will then be asked for a password. Type in your own user account password (the password you used to log in) and press return. If you have the correct rights to execute commands as sudo the file will be copied to bin. If you do not have the right access priviledges you need to ask your local Ubuntu guru how to get them.

To test if Handbrake now works type this in the terminal :

```
HandBrakeCLI --help
```

You should see a whole lot of information appear telling you how to use Handbrake on the command line.

BASICS
4. Basic Use
5. Presets

4. BASIC USE

When you start **Handbrake** you should see the screen below.
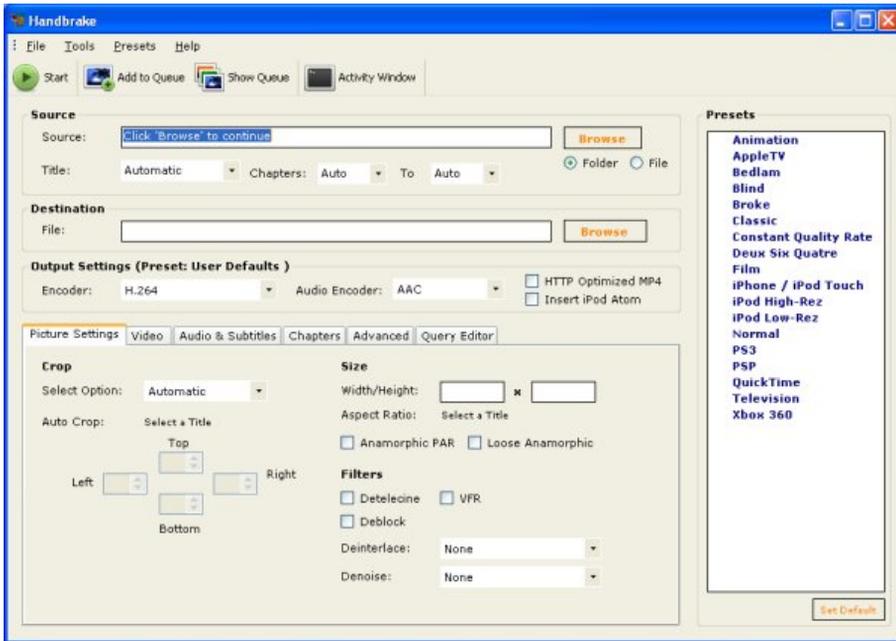
Now I will talk you through the most basic use of Handbrake -using Handbrake to convert a **DVD** into an Internet distributable **mp4** file.

Firstly you should insert a DVD disk into your computer.

Then you should click on the Browse button next to the part of the screen that says "Source".
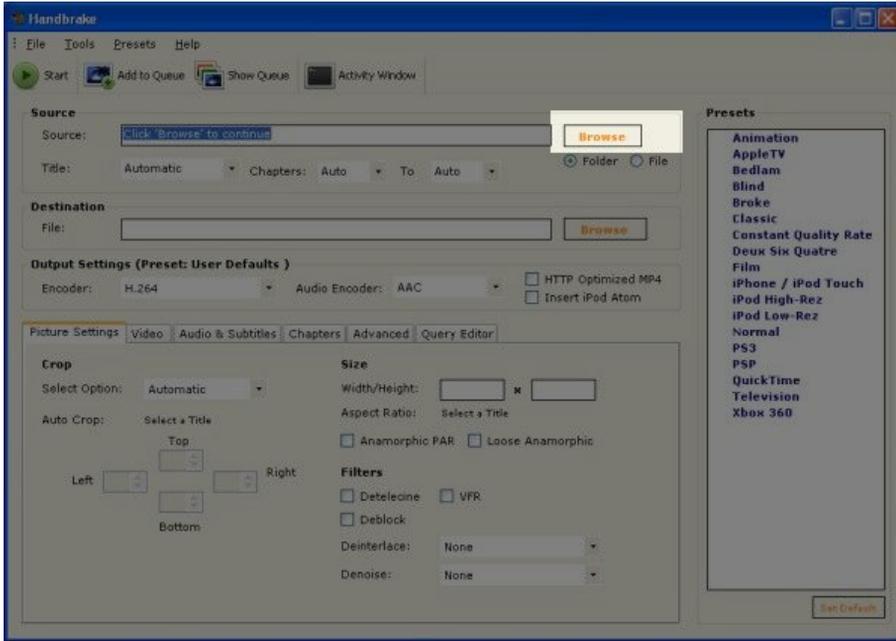
After clicking this button a window should appear as below.

Scroll down to locate the DVD in this list and click on the plus button next to it :

You will now see the files within the DVD. This may not make much sense to you if you have never opened a DVD this way before. We don't need to know much about the file structure of DVDs to use Handbrake. All you need to know at this point is that the VIDEO_TS directory contains the video file information. So just select the "VIDEO_TS" directory (do not double-click, just highlight this folder) and click "OK". The followingwindow will appear :

The above window make take a little time to disappear as Handbrake analyses the structure of the DVD.

You may notice a section under the source window that lists the "Title:" and "Chapters:" If you want you can leave this section untouched, as the default. This will encode all the information on the DVD disk.

SELECTING TITLES CHAPTERS

You may want to choose only one 'Title' (usually a self contained film on the DVD) or select only certain 'Chapters' (normally a section of a film created to make DVD navigation easier).

If this is the case you can select **Titles** and **Chapters** in the "Source" section of the default Handbrake window.
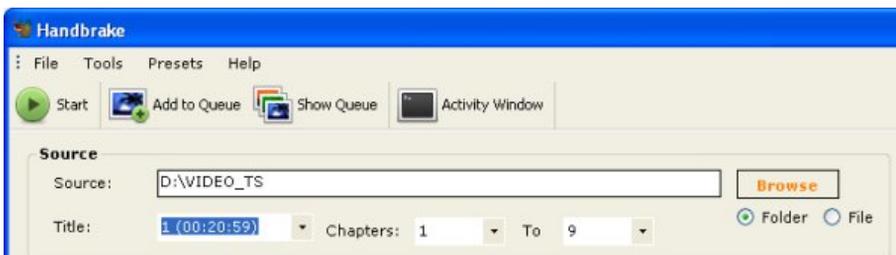
You can see the length of the different titles (film) so you can identify which one you want to select.

SETTING OUTPUT FILE AND FORMAT

Firstly we need to set the output directory for the file we will create. Click on the "Browse" button in the Destination section of the window:
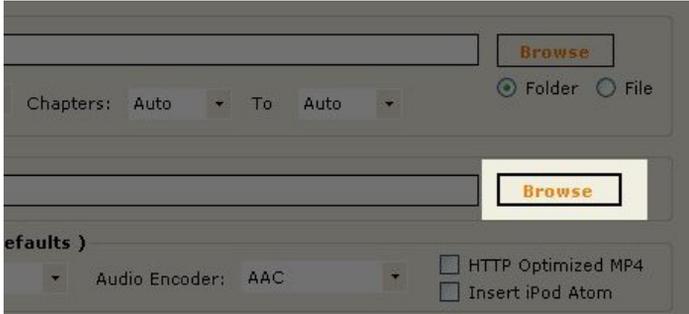
Now we will see a file browser.
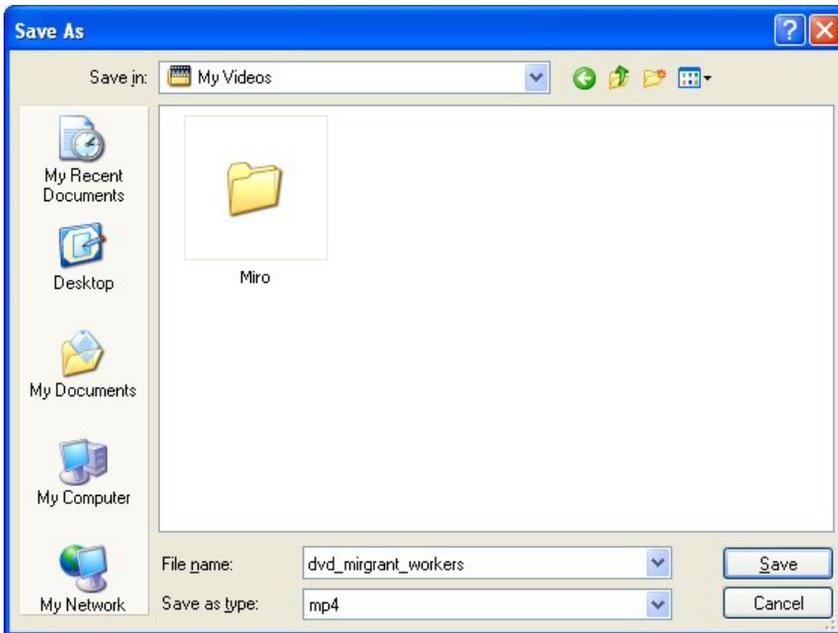
Select a directory on your computer that where the mp4 will be created and stored. Give the file name in the 'File Name' box and leave the default setting of mp4 in the 'Save as Type' box. You can change this to another file format if you want to, but for this basic introduction to Handbrake we will leave it at mp4.

Then you can start the process of encoding the DVD to Mp4 file by clicking on the big "Start" button at the top left of the screen, shown below.
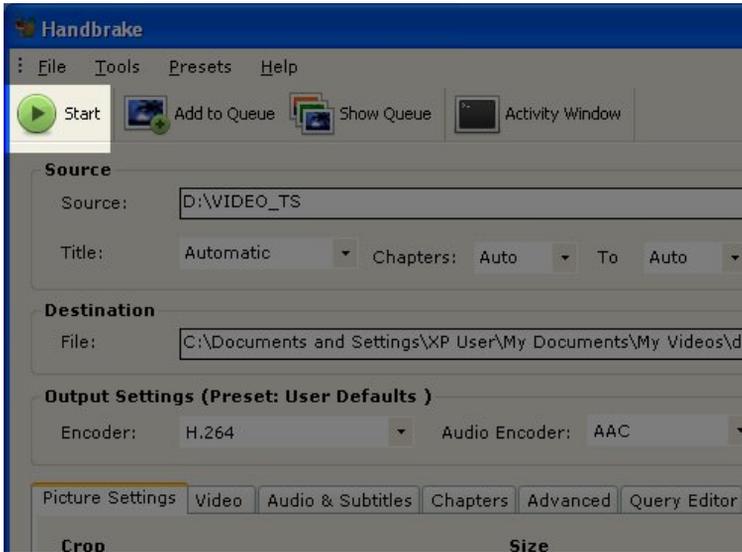
When the encoding process is happening you should see a black screen telling you the process is happening and how long it will take.
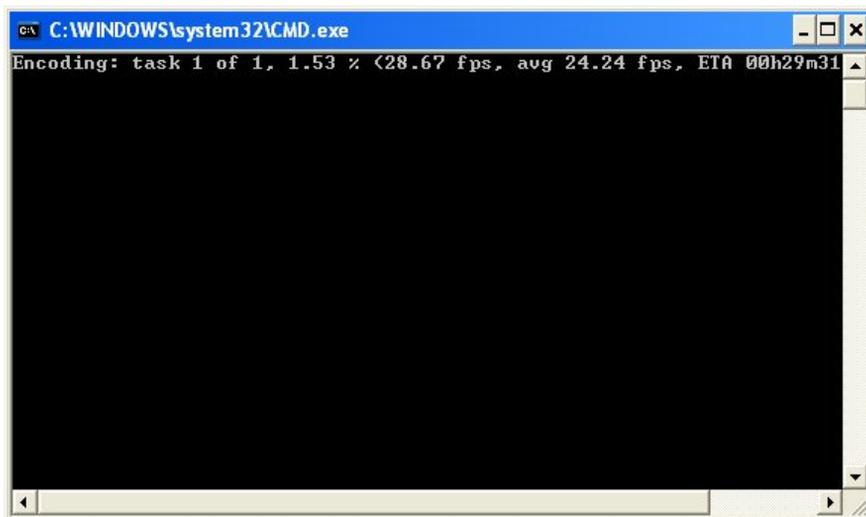
If you haven't seen this kind of window before it is know as the DOS Window or command line.

When the process has finished you should use a programme like VLC player to test the file you have created. You may wish to upload it to the Internet to a video sharing service like **Archive.org** or **Blip.tv**.

5. PRESETS

Handbrake has some presets for video and audio settings which are useful for encoding for specific devices or for specific types of video.

To test this out, after you have selected your source and destination file, select the "iPodLowRez" setting from the right of the default screen.
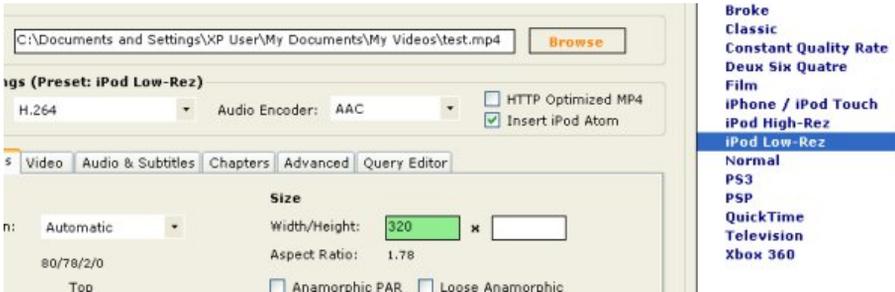
You will see that this sets a size automatically and if we click on to the video tab we'll see that a default bitrate of **700 kps** is applied too.
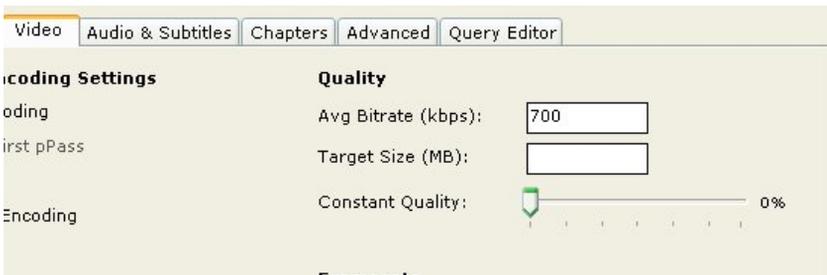
These presets are useful for preparing video for an ipod.
ADVANCED SETTINGS
6. Picture Settings
7. Video Settings

6. PICTURE SETTINGS

When using **Handbrake** you can set a
Source Disk and an **output filename** and click "Start" and Handbrake will automatically create a suitable file of abut 10 MB per minute. This is te default. However you may want to change the **Picture Settings** to specify more acurately what kind of file you would like to create.
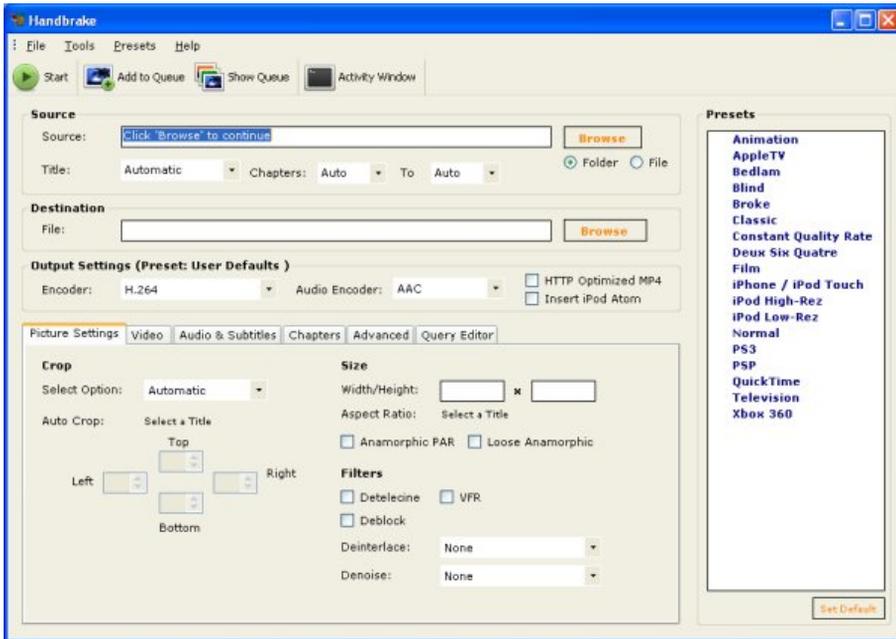
The picture settings section is at the bottom of the default screen of Handbrake. You should be able to see it by default when you open up the application. However if you have altered other settings then you will need to click on the Picture Settings tab as show below.
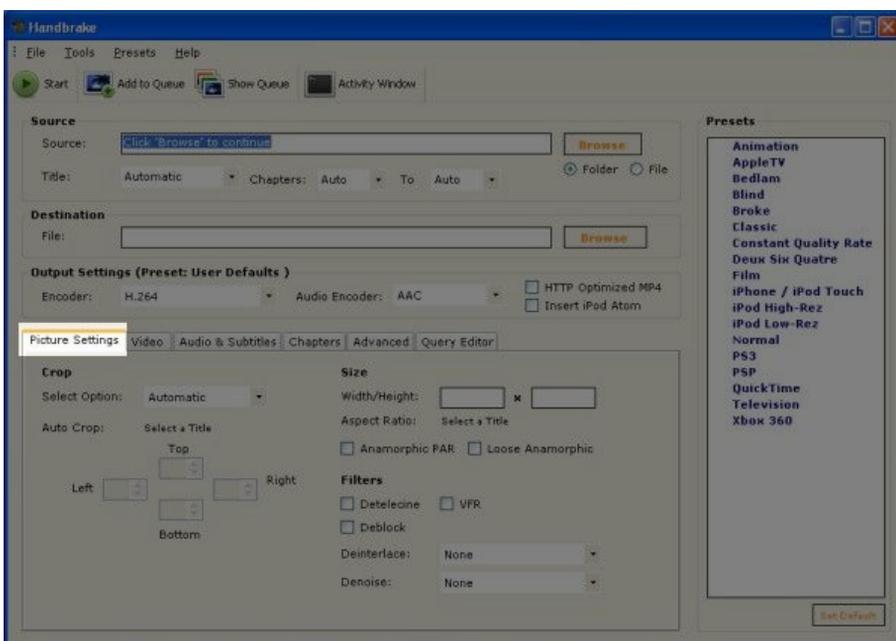
IMAGE SIZE AND SHAPE

If you don't enter a size for Picture Settings then Handbrake will try to work out the most appropriate size. I would reccomend not changing the size here as doing so creates unpredictable results.

If you do enter a size then only enter the **width** that you want the video to be, and let Handbrake work out the appropriate height - this will save you having to calculate this manually.
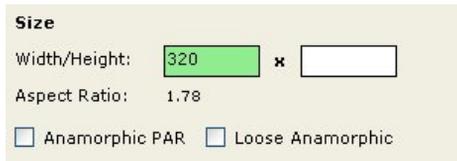
Handbrake recognises the shape of the **DVD** and it illustrates this in the **Size** section below the width and height. The shape is know as the **Apsect Ratio**. In the above example it shows ('1.78' which is also known as 16:9 and is a kind of 'wide screen'. 1:33 also known as 4:3 is normal old TV shape.

In the Size section there are some more detailed settings for **Anamophic** or **Widescreen**. You may want to specify the exact size of the target file that you create and define the way that your video file is encoded. If do this you may get a better quality playback image. If this is something that you want to find out more about have a look at the resources here.
http://trac.handbrake.fr/wiki/AnamorphicGuide

ADDING A DEINTERLACE FILTER

Adding a **deinterlace**
filter is often one of the most overlooked steps when encoding video for the internet. Getting it wrong leads to badly encoded video files. If you have created the DVD yourself then it is likely that your video will be interlaced. If you are not sure what that means then you should look at the next image.

You can see jagged lines on the screen where ever there is motion. These lines are caused by interlacing. If we don't add a **filter** then the file we create will be much more blurry than it needs to be.

In the **Picture Settings** tab of Handbrake add a deinterlace filter by selecting "Fast" from the drop down menu in the **Deinterlace** section :
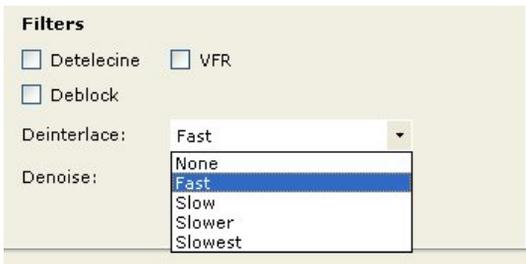
You can then adjust the other Handbrake settings to your needs before clicking on "Start" to encode your video.

7. VIDEO SETTINGS

You may want to change the **Video
Settings** to have a file of a more exact output type.

QUALITY

The Video Settings section is at the bottom of the default screen of Handbrake. You should be able to see it by clicking on the Video settings tab as show below.
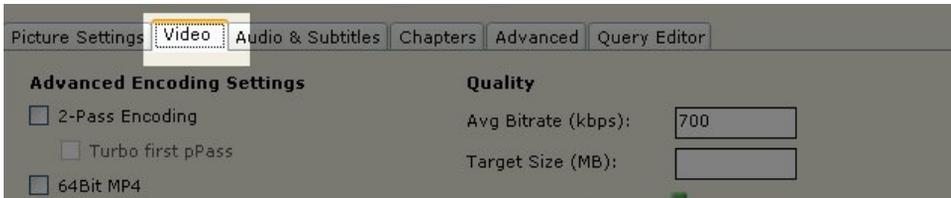
You can then make some alterations to the video encoding options.

For example you can set at **Target Size** for a video in **Megabytes** or as **kilobits per second (kbps)**.

For a 10 minute video you may want to set a limit of 100M. You would do this by entering '10' in the 'Target Size' field :
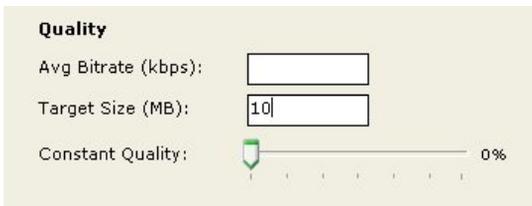
2 PASS ENCODING

This process of **2 pass encoding** takes longer but produces a better result. The first pass will analyse the video data and the second pass will do the actual work of encoding. Choose this if ou are not pushed for time by clicking in te '2-Pass Encoding' box :
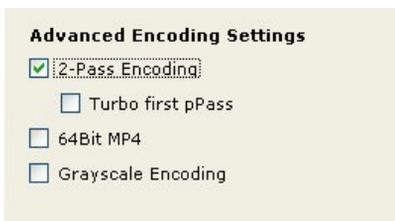
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