

How to Rip and Encode to .avi using Gordian Knot version 0.28

written by DAPkucius

Note: Ripping and encoding is an art and not mathematics, there is no one way to do it. The instructions below will give you a guideline and we guarantee that the results will be good, but different movies may get better results using different settings, sometimes you can even correct problems that the original dvd has not corrected, especially in audio, shadows, minor imperfections, you can clean the files up, etc. But don't forget, the more "correcting" you do through filters, etc., the longer the encode time. So it's a personal choice. But the only way to figure out which settings are needed for that particular movie to be a GREAT encode is to set aside MANY hours, and experiment, experiment, experiment...

RIPPING PROCESS:

Start Gordian Knot, go to "Ripping," select "DVDDecrypter." (two windows open – the decrypter and a log window)

In DVDDecrypter:

Go to Mode

Make sure IFO 1 is selected. Your source should now show your dvd drive, and in the Input window on the right, you should have a list of VTS files and PGC (program chains). Select the PGC that matches the movie length in minutes. (If you are not sure of the movie length, check it with your dvd player. The reason there are more than one file available is due to the content of the dvd, if you are looking to rip the movie itself, you can select it by the time. The rest of the files will be extra features. If you would like to rip a trailer, documentary or extra feature of the dvd, you will have to do the same thing – play the dvd and look at the length in minutes of the section you want to rip – there is no other way to find the right file. Since ripping and encoding takes a long time, a good way to learn when you are ripping and encoding for the first time is to select one of the short extra features and practice using Gknot on it).

Go to Tools

Click on Settings, then click on "Defaults" at the bottom left-hand corner to make sure all of the settings are the default settings.

Optional, but better:

Go to Stream Processing at the right

Enable stream processing and uncheck other languages on audio tracks, leaving only English audio and video (or other language you desire).

Click on the folder next to Destination (center) and select where you want the file to be ripped to. **Make sure the drive that the destination folder is on has enough space** (usually about 5 GB).

Click on the green arrow to begin decrypting. The ripping process usually takes up to 40 minutes (depending on your dvd drive and hd).

When the Decrypter is finished ripping, click OK and close DVDDecrypter.

Note: When your file has been ripped, the resulting files will have .vob extensions.

PREPARING THE VOBS (separating the video and audio files in preparation for encoding)

In Gordian Knot on the bottom right hand corner click DVD2AVI, you get a window, click File, Open, (or press F3) and find the movie you ripped. Select the first vob, then click Open. It will automatically bring up the rest of the vobs. Click OK. (If you wish to encode only half the movie i.e. the file is too large and you do not have an avi splitter, click "del" on the files you do not want to do now – the files will NOT be deleted from the HD).

Now the DVD2AVI window should be open. **Press F5**, this will bring up a Statistics Window which checks the movie. Let it run for a few minutes. First of all, at the top you will see Aspect Ratio and Frame Rate. **Remember** these numbers for future reference (NTSC is approx. 29,9 frame rate, PAL is approx. 25). **IMPORTANT:** In Video Type, you will see the word FILM or NTSC or PAL. If these words have no percentage after it, press ESC. If it does have a percentage after it, let it run for a bit more if the percentage is anywhere near 90%. If the percentage goes to 95 % or greater, remember the percentage, as you will need to "force" the film. Press ESC and the stats will stop.

For films with Video Type with no percentage or under 95% (majority of films)

Click "Video," Field Operation," "None"

For films with Video Type 95% or over

Click "Video," Field Operation," "Forced FILM"

Go to Audio

Select Dolby Digital, then demux all tracks

Press F4 to Save (select directory and filename). This will take a few minutes.

You have now created your project file (with a .d2v extension). Close all DVD2AVI windows, leave only Gordian Knot open (or open it if you have closed it).

ENCODING TO .AVI

Click Open on bottom left corner of Gordian Knot. Find your project file (.d2v), select it and click Open (leave this window open in background).

In Gordian Knot:

Go to **Bitrate** tab

Make sure "Calculate Average Bitrate" is selected at the top left.

Choose Codec to the right (we prefer Divx5).

Total Size: (as a general rule, a film up to 2 hrs long will fit on one 700 MB CD). Select size of CD (we generally write 695 here as we've encountered GK to go slightly over 700 MB if 700 is chosen), and whether it will be 1 CD, 2CDs, etc. **Note**: Selecting 2 or 3 CDs will not split the film, it will just create a file twice or three times the size of 1 CD, **BUT** if you would like the film to be split, you need to check split final file into cds. **NOTE**: If you are encoding a shorter video, i.e. an episode of a series, etc. go to the right where it says Total File Size – you will have to decrease the size in MB, as this is the size that your file will ultimately be. I would say use an average of 150-200 MB for a 20-minute video.

At middle left under AudioA select bitrate_for audio. (For some reason GK does not seem to like the audio under 128, so 128 or 160 is preferred – remember, the higher the bitrate, the larger the file size).

Under Interleaving & AVI-Overhead in the middle on the right, select 1x vbr-mp3.

Go to **Resolution** tab

Under Input Resolution at top left, choose whether it is PAL or NTSC (this was determined during preparation of vobs, if your frame rate was approx. 29.9 it is NTSC, if it was approx. 25 it is PAL).

Under Input Pixel Aspect Ratio at the middle top, select the Aspect Ratio (which you should remember from vob preparation).

Go to Crop (before resize!) at the top right. You will notice in the Frame in the other window which should have your movie open, the picture will most likely have a black border around it, which is undesirable in viewing the movie, so this border will need to be cropped. First, select "Pixel," then adjust the 4 values to the right of Pixel (you simply have to play with these numbers, watching the movie frame change until you have no border remaining). Then select "Smart Crop All."

Under Output Resolution (this is the part that takes the most practice to encode a high quality film and may take some time to get it right), go to Width and Height. Begin adjusting the Width values (Height will be adjusted automatically) while watching the Bits/(Pixel*Frame) value underneath it. What you are generally looking for is to adjust the Width to a value which will make the Bits/(Pixel*Frame) value approx. 0.2 for 1CD and 0.27 for 2CDs. (Note: This is an average guide for setting resolution values, although some films are compressed differently and could be better quality at a higher or lower value, this is simply a general target. The best would be to encode a bit of the film, take a look at it, change the values slightly, encode a bit again and compare. i.e. it is all experimentation, and every film is different.)

Now go to movie window that you have open (with the Frame No. at the top)

Click Save & Encode, which opens up a Save .avs window.

Resizing should be: Selected Output Resolution

Resize Filter: we usually use Neutral Bicubic, but again, use what works for you

Field Operations **IMPORTANT**: should be Field Deinterlace (Many people do not deinterlace while encoding, and this causes many problems in the quality of the encode. This is because most digital encodes, i.e. dvds, etc., are interlaced for television, in effect that consists of two sets of frames which run parallel, giving a sharper picture. On a computer monitor, both sets of frames, if left, can overlap, giving a ghosting effect. By deinterlacing the film, you remove the extra frames, leaving just the 25 or 29 frames per second, optimal for computer viewing.)

Noise Filter: Again, this is a matter of taste. If it is an old movie and has interference on the screen you can choose some filters, we usually do Little Noise, but if it's a new movie you can even go with None. (Note: remember, the more filters you check, the longer the encode time...)

Subtitles should be before Resizing (default) – if you want to put subtitles on, you need to look elsewhere for instructions...

Extras: we don't select any

Compressibility Check: should be off because it's not accurate anyway (at least it wasn't in the 2.6 version).

Click Save & Encode at the bottom left.
Choose directory and click Save.

New window: DivX Encoding Control Panel

Go to DivX5 tab.

Make sure "Multi Passes" is selected at the top left. On the center right of the screen, select the number of passes you wish to do. (In order to have a high quality avi it is necessary to do 2 passes, if you have the time, do 3, but I usually stick to 2).

Click on First Pass to open the codec properties window.

Go to General Parameters.

Select Restore codec's defaults at the bottom right hand corner of the screen. (Once you have mastered using Gknot, you can play with these settings, but as a general guideline the default settings are best.)

Click on Nth Pass

Go to "Bitrate Control"

Next to "variable bitrate mode" select multipass, nth pass

On the "bitrate modulation" move the slider to suit the action on the film, i.e. fast motion, etc. (This may also take a bit of experimentation, if in doubt or not in the mood to experiment, leave the setting on "constant quality".)

Go to Profiles

Make sure "1-Choose your profile" is checked, then select one of the four profiles given, we use Home Theater.

Under "2-What is the resolution of your video?" fill in:

720 x 480 (for NTSC)

720 x 576 (for Pal)

Under "3-What is the frame rate of your video?" select:

30 fps (for NTSC)

25 fps (for Pal)

Click OK

In Gknot

Go to Audio1 tab in the middle

Click on "Select" to the right

Select the audio file (there will probably be only one, unless you didn't remove "others" in the stream processing" stage of ripping). Click Open.

Make sure Finally Mux and negative are selected (this will most likely be the default)

At the bottom right click on MP3, custom Parameters (Experts)

(Re-Calculate Video Bitrate and Delete Wav. should be automatically selected)

Go to Encoder tab

Under "Where Is Nandub.exe located" click Locate and select the Nandub.exe file and click Open (Note: It should be in C:\program files\Gordian knot\nandub)

Under "Where is VirtualDubMod.exe located" repeat as for Nandub. (should also be located in Gknot folder)

Now go back to the Divx5 tab

At the bottom right, click "Add Job to Encoding Queue"

Click Yes.

After the process is finished, if you're satisfied with your avi, don't forget to delete all the other things from your hd, vobs, project file, audio files, etc. They take up a LOT of space.

GOOD LUCK...