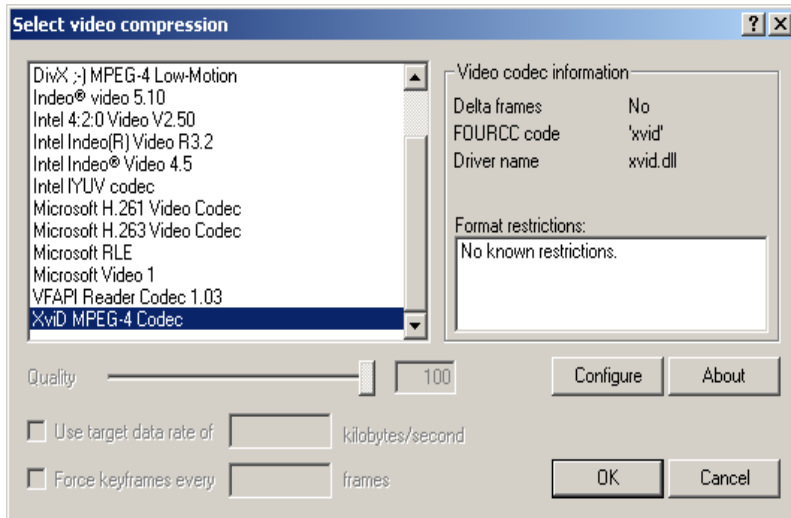


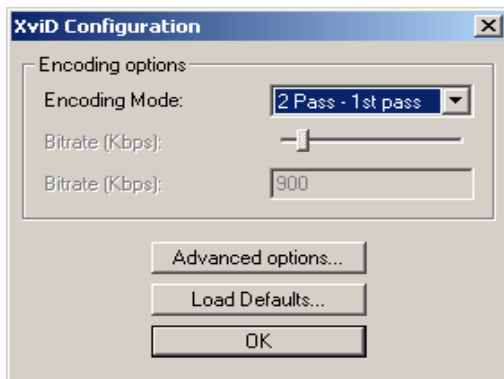
XVID TWO PASS ENCODING (Internal Linear Scaling)

Run VirtualDubMod (which can work with both Avisynth 2.0.7 and Avisynth 2.5 Alpha), go to “File” menu, choose “Open video file” and load your avs script. Then go to “Audio” menu and select “No audio”. After that, go to “Video” menu and select “Fast recompress”. Next, under the same menu, go to “Compression”, which brings up the “Select video compression” window.

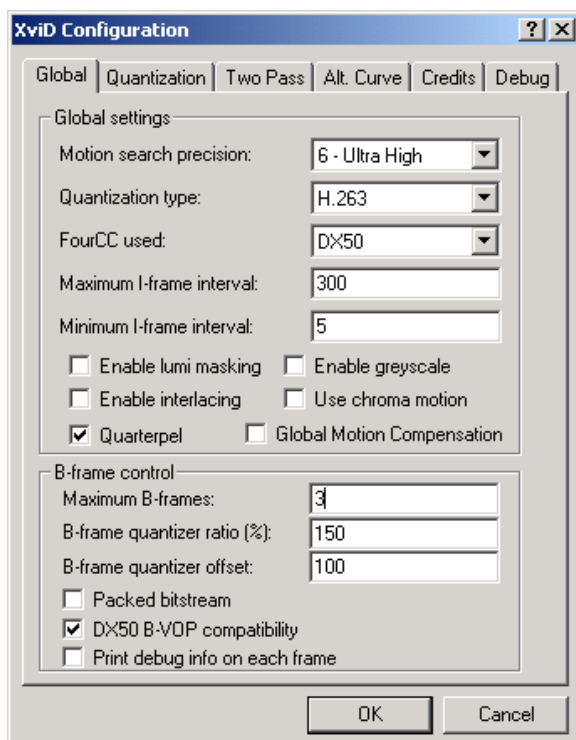
1st Pass:



Here, select “XviD MPEG-4 Codec” and click the “Configure” button, which brings the “XviD Configuration” window below.



Assuming you’re going to do a Two Pass encode to achieve the best results for your desired target size, select “2 Pass – 1st pass” for the first pass. Then click “Advanced options” button, which brings the “XviD Configuration” window below.



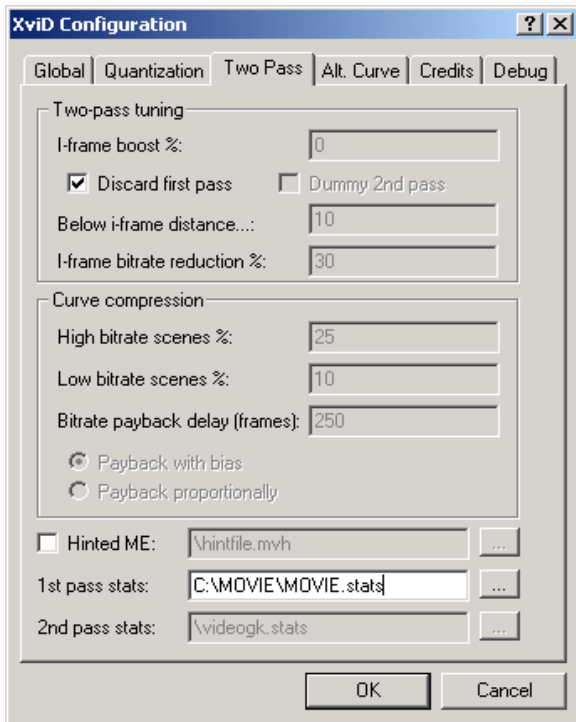
In the “Global” tab choose “6 – Ultra High” for “Motion search precision” to get the best quality (you can also tick “Use chroma motion” for even better motion estimation). As for quantization type, select either “MPEG” or “H.263” here for the first pass. Leave “Maximum I-frame interval” as is with the default value of 300. You can set a value of 5 for “Minimum I-frame interval” (default: 1) in order to prevent the use of too many consecutive I-frames.

If your source is interlaced and you want to keep it interlaced, you can check “Enable interlacing”. If you want to encode in greyscale, you can check the “Enable greyscale” option.

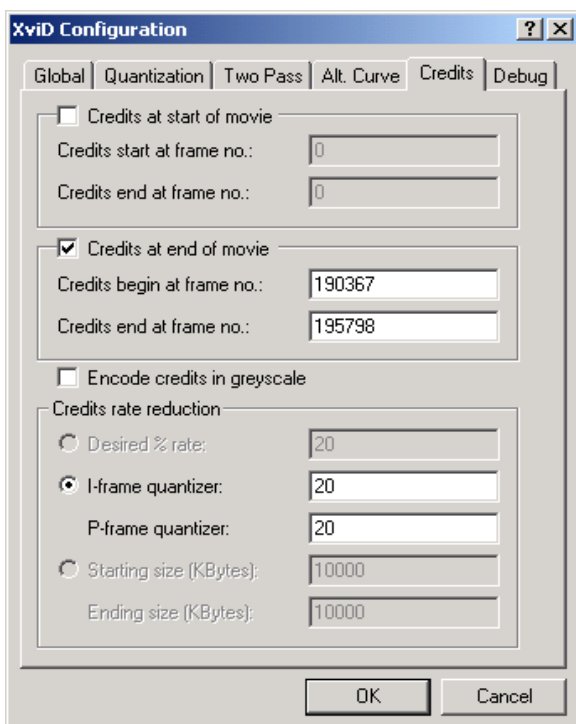
“B-frame control” section is not active in ‘stable builds’, but if you are using a ‘dev. build’ here you can choose the number of “Maximum B-frames” to be allowed in a row (i.e. 2, 3, 4, etc.) Default is -1 which disables the use of B-frames. You can enter the desired “B-frame quantizer ratio” (i.e. 100, 200, etc.), the default of which is 150. You can also enter the “B-frame quantizer offset” value here, the default of which is 100. If you move your mouse to the “B-frame quantizer ratio” box and wait a few seconds, the tip about how B-frame quantizers are calculated shows up. I find the default values of 150 for “B-frame quantizer ratio” and 100 for “B-frame quantizer offset” very suitable. As for the Maximum B-frames, I personally do not go higher than 4 and usually set it to 3. (In the example, “FourCC used” is set to DX50 and “DX50 B-VOP compatibility” is checked in order to prevent possible Audio/Video synch. problems due to B-frames when muxing the video and audio streams.)

Quarterpel problems (smearing effect, etc.) seem to have decreased considerably or even disappeared (at least I haven’t noticed any problems yet with the most recent builds ;-). It’s worth a try using Quarterpel either alone or together with B-frames. I haven’t used it alone yet, but it definitely gives even more compressibility gain when used together with B-frames.

The “Lumi Masking” option still does not seem stable enough for me and is likely to produce some artifacts, so I personally do not use it; but of course you can give it a go and decide yourself. Do NOT use “Global Motion Compensation”.



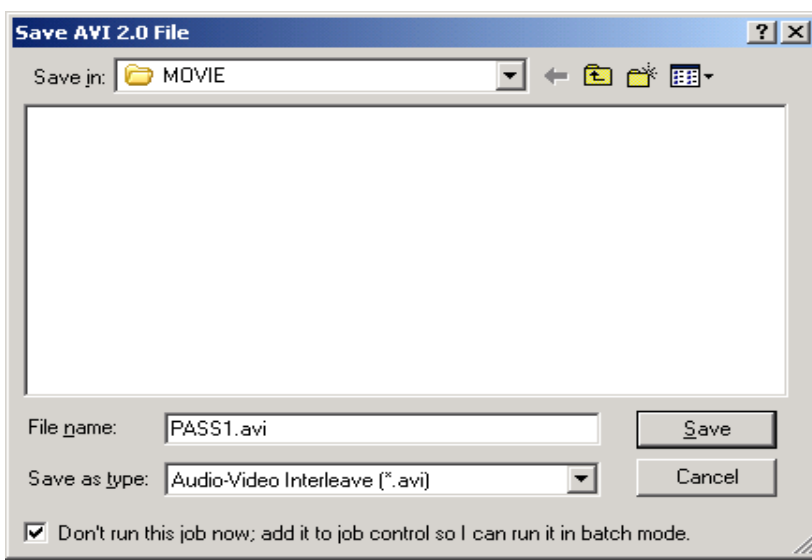
Options in “Quantization” tab are inactive for the first pass. Go to “Two Pass” tab and specify the name and location of your 1st pass stats file. Leave the rest as is and do NOT check Hinted ME. (If you want a complete avi file to be produced during the first pass, you can uncheck “Discard first pass”.)



Do NOT change anything in the “Alt. Curve” tab and go to “Credits” tab. Here you can type in the credits range (the start and the end of credits) for your movie and specify the quantizer values for encoding credits (“I-frame quantizer” and “P-frame quantizer”). You can go up to I-frame quantizer: 31 and P-frame quantizer: 31 here. In the example a quantizer of 20 is used for both.

(Do NOT change anything in the Debug tab.)

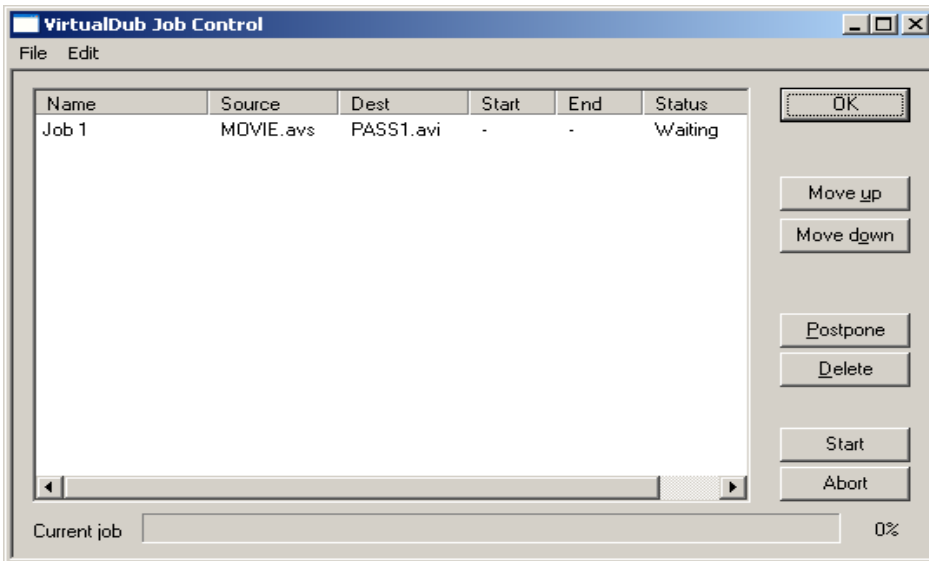
Click “OK” three times and go back to VirtualDubMod.



Press F7 in VirtualDubMod and this window appears: Here, select the folder and type in the name of the small avi file (if you have not unchecked “Discard first pass” in the “Two Pass” tab) to be produced during the first pass and check “Don’t run this job now; add it to job control so I can run it in batch mode”. Click “Save” and go back to VirtualDubMod.

If you want to run two passes together (without any interruption and second pass immediately after the first pass) you can jump to and go on with the **2nd Pass:** part of this document.

If you want to run only the first pass now and then analyze the stats file for compressibility and thus specify your target size, etc., click F4 which brings up the VirtualDub Job Control window.

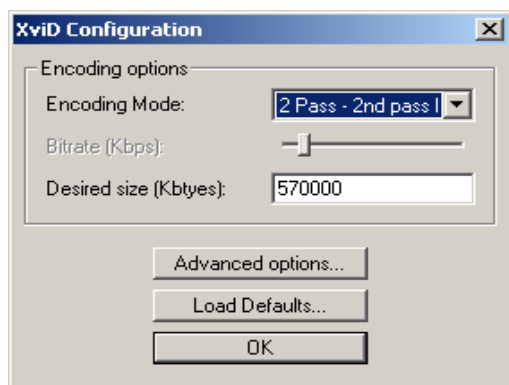


To start your first pass, click the “Start” button.

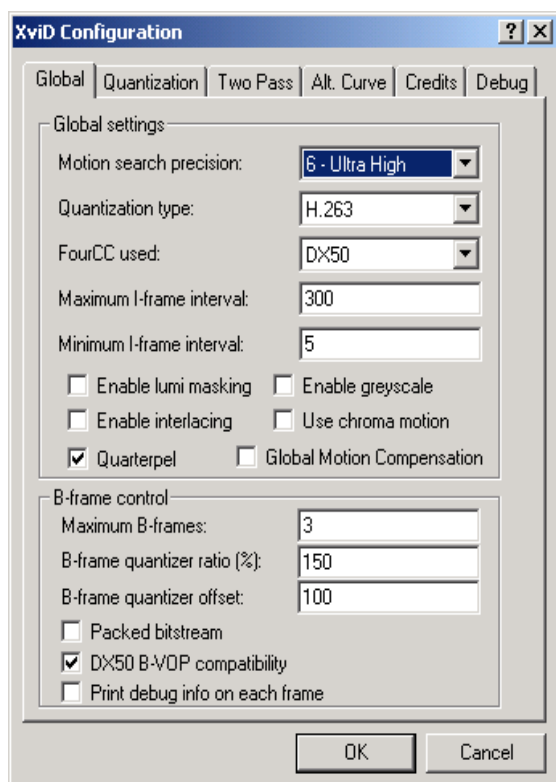
When your first pass is finished and you’re ready for the second pass, open your avs script in VirtualDubMod again; or if you haven’t closed VirtualDubMod and your script is already loaded, go on with the **2nd Pass:** part of this document.

2nd Pass:

Under “Video” menu, choose “Compression” again. Select “XviD MPEG-4 Codec” and click the “Configure” button.

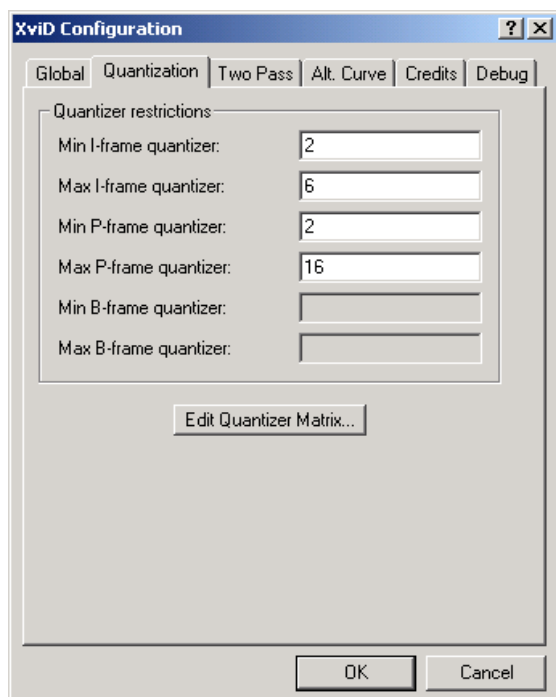


In “XviD Configuration” window, select “2 Pass – 2nd pass Int.” and enter your target file size (in Kbytes). Then click the “Advanced options” button, which brings the “XviD Configuration” window below.

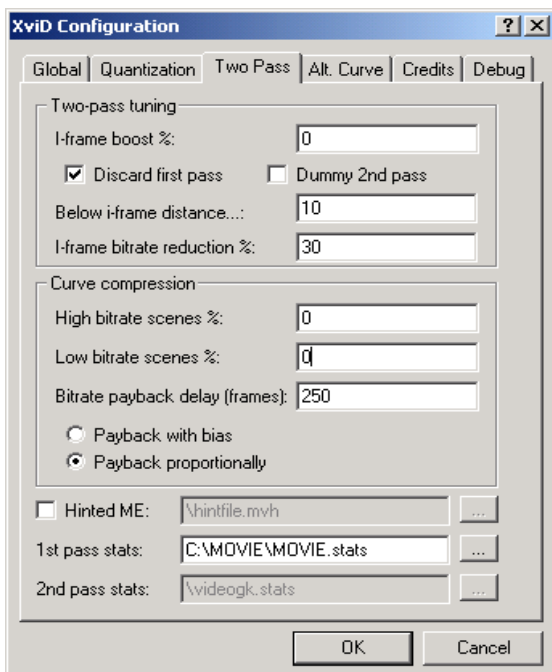


In the “Global” tab, do NOT change anything and leave everything as it was in the first pass.

With the recent builds, you can also choose “New Modulated HQ” as “Quantization type” here, for many users/testers report to have got pretty good results with it. If you choose “New Modulated HQ” for the second pass, H.263 quantization type will be used for quantizers ≤ 3 and MPEG quantization type will be used for quantizers ≥ 4 .

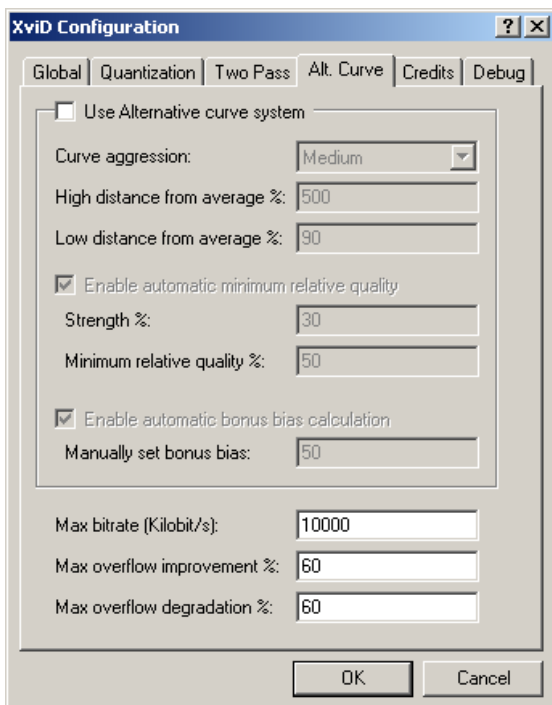


In the “Quantization” tab, cap the I-frame and P-frame quantizers as shown, which seem to be reasonable values for both 1CD and 2CD encodes:
Min – Max I-frame quantizer: 2 – 6 / Min – Max P-frame quantizer: 2 – 16

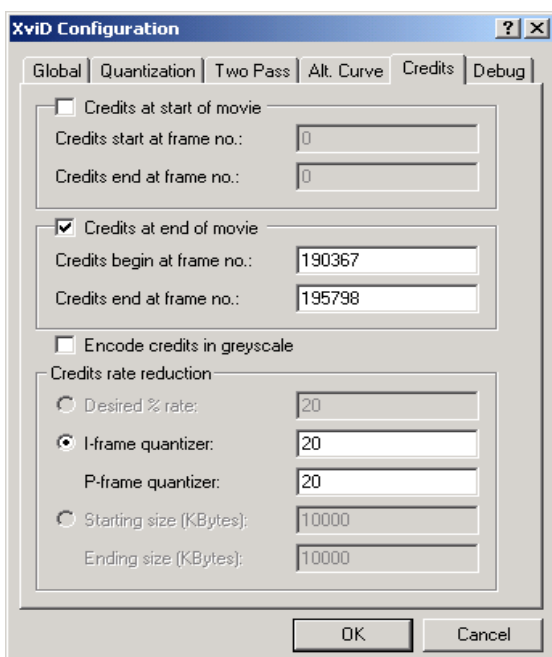


In the “Two Pass” tab, do NOT touch anything in “Two-pass tuning” area. In the “Curve compression” area, set both “High bitrate scenes %” and “Low bitrate scenes %” to 0 (to get a linear-scaled curve). For “Bitrate payback delay (frames)” default 250 is fine here. Also, you can choose either “Payback with bias” or “Payback proportionally”. I prefer to use “Payback proportionally”.

Leave the rest as is and again do NOT check Hinted ME.



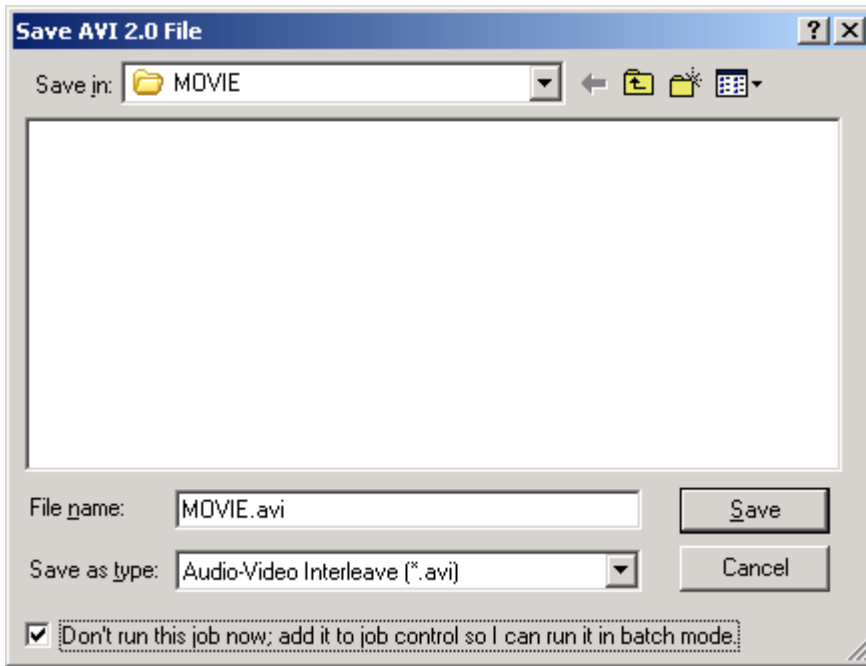
In the “Alt. Curve” tab, simply disable “Use Alternative curve system” and do NOT touch anything else.



In the “Credits” tab, leave everything as it was in the first pass.

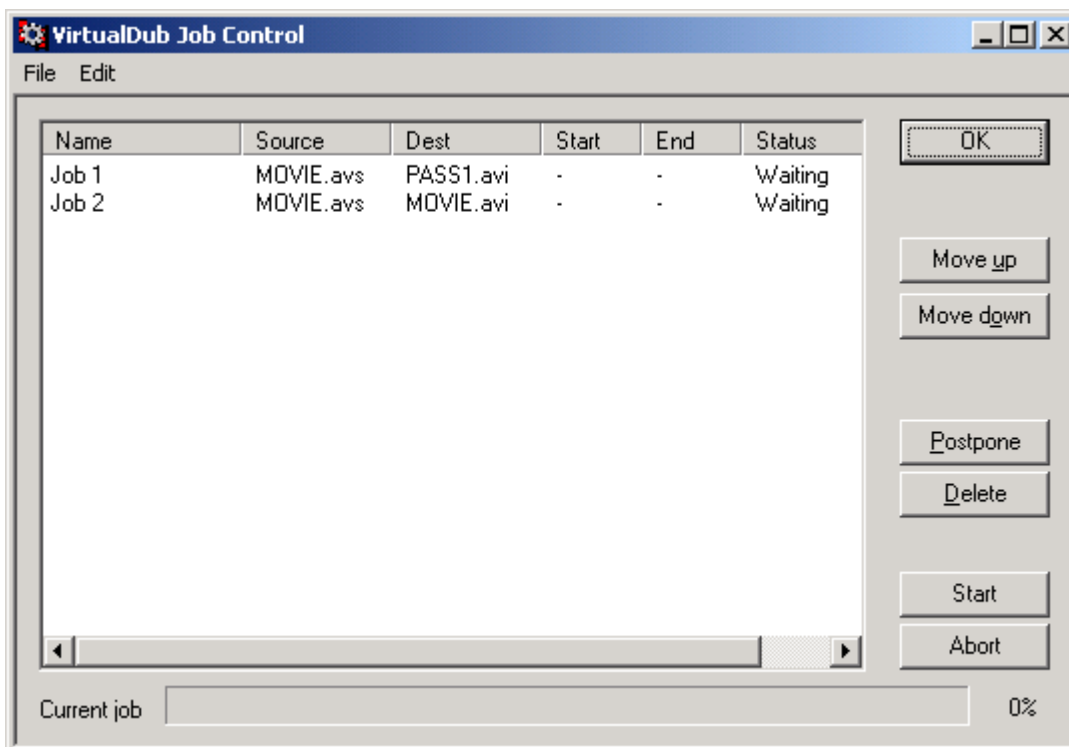
(Do NOT change anything in the Debug tab.)

Now, click “OK” three times and go back to VirtualDubMod. Then press F7, which brings the window below.



Here, type in the name of your video file and check “Don’t run this job now; add it to job control so I can run it in batch mode”. Click “Save” and go back to VirtualDubMod.

Press F4 to bring up the VirtualDub Job Control window (if you are doing two passes together without interruption, it will be like as below):



Press the “Start” button and go get some sleep until your encode is finished ;-).

04.12.2002
iago