

HOW TO Use Microsoft Expression Encoder

Microsoft Expression Encoder is a free tool for converting video files such as MPG, MP4, and AVI files to Windows Media Video (WMV) format for use in AdQue. It can also be used to convert a large WMV file to a smaller one, or to convert between widescreen and standard screen resolutions.

This document provides information on how to download, install, and use the Encoder software.

Downloading Microsoft Expression Encoder 4

There are two versions of the encoder: Expression Encoder 4 and Expression Encoder 4 Pro. The Pro version costs about \$200, but its extra features are not needed for AdQue videos. You can compare features at this Web site:

http://www.microsoft.com/expression/products/EncoderPro_CompareFeatures.aspx

Download the free version of the Encoder here:

<http://www.microsoft.com/expression/try-it/#ProductInfo>

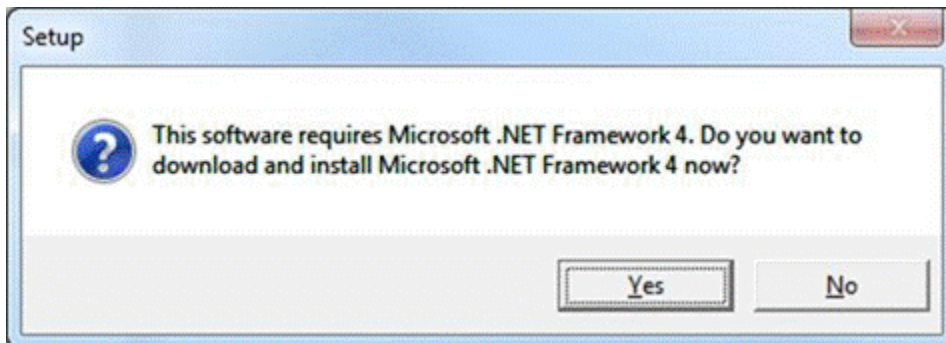
Look in the lower left area of the page for the Expression Encoder 4 product with a **Download Now** button. Click the button.

A new page opens at the Microsoft Downloads site. Click the **Download** button. Download the EXE file to a convenient location. You may also be interested in some of the links on the **About your download** page, such as the forums.

Installing Microsoft Expression Encoder 4

To install the Encoder 4 product, do the following.

1. Browse to the folder where the **Encoder_en.exe** file was saved.
2. Double-click the EXE file. You may need to go through an **Open File - Security Warning** window. Verify that the Publisher is *Microsoft Corporation*, then click the **Run** button.
3. If you do not have Microsoft .NET Framework 4, you will see a window that asks if you want to install it.



Click **Yes**. You will need an Internet connection, and you will be sent to the Microsoft Download Center.

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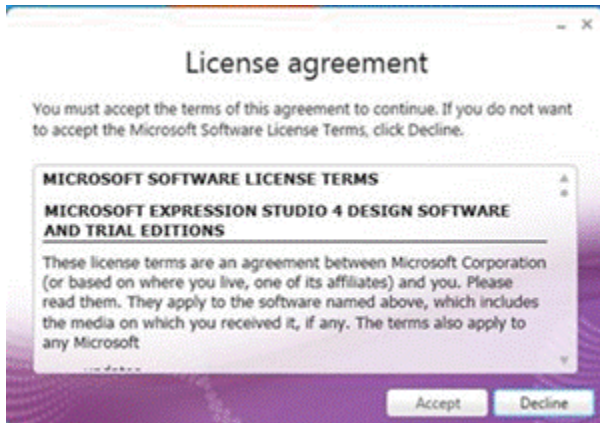
187 GRAYLYNN DRIVE | NASHVILLE, TN 37214 | 615.251.6200 | 877.246.7587 | www.adque.com

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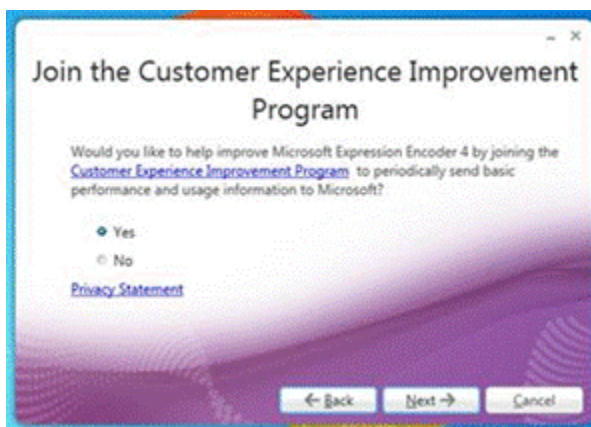
HOW TO Use Expressions Encoder_4.docx



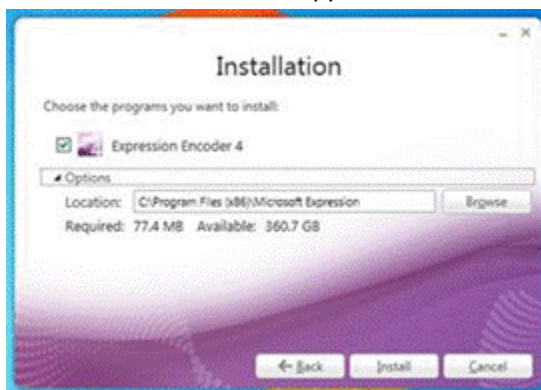
- Click **Download**, then click the **Run** button to begin the installation of .NET Framework 4. You will probably have to interact with more windows. Note that the main .NET Framework 4 Setup window may be hidden behind other open windows, so if nothing is happening, close or minimize windows to find it.
- In the Microsoft .NET Framework 4 Setup window, check the box for **I have read and accept the license terms**, then click the **Install** button.
- When the .NET Framework 4 installation is complete, a window appears that requires you to click **Finish**. You will now need to restart the installation of Microsoft Expression Encoder 4. Browse to the **Encoder_en.exe** file and double-click it.
- Read through the license agreement if you want to, then click the **Accept** button.



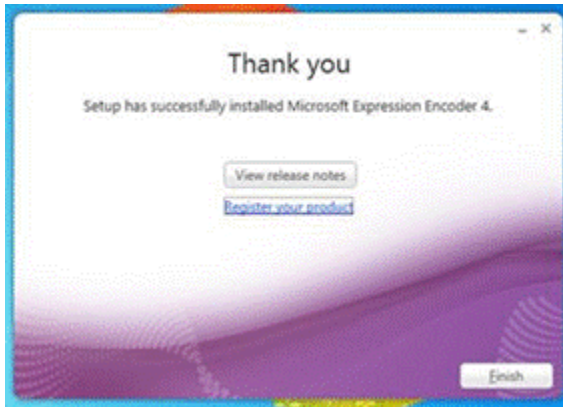
- The next window asks if you want to join the **Customer Experience Improvement Program**. Choose Yes or No, and then click the **Next** button.



- The Installation window appears. Leave the one checkbox checked, and click the **Install** button.



10. The installation will show what files are being installed, and finally a **Thank You** window appears. Note that it has a **Register your product** link, but this link is only for purchased versions of Microsoft Expression. There is nothing to register for the free encoder program. If interested, you can click the **View Release Notes** button to open a page that welcomes you to Expression Studio 4. There, you can select to view the release notes for the encoder. If you have problems opening a QuickTime MOV file, you can find a work-around in the release notes.

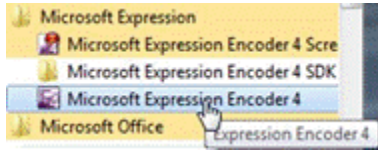


11. Click the **Finish** button to close the installer.

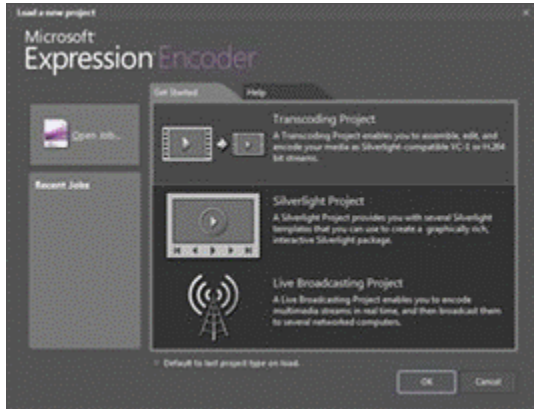
Using the Microsoft Expression Encoder Software

This **How To** document is concerned with transcoding videos – converting one video file to another video file. Therefore, only Transcoding will be discussed.

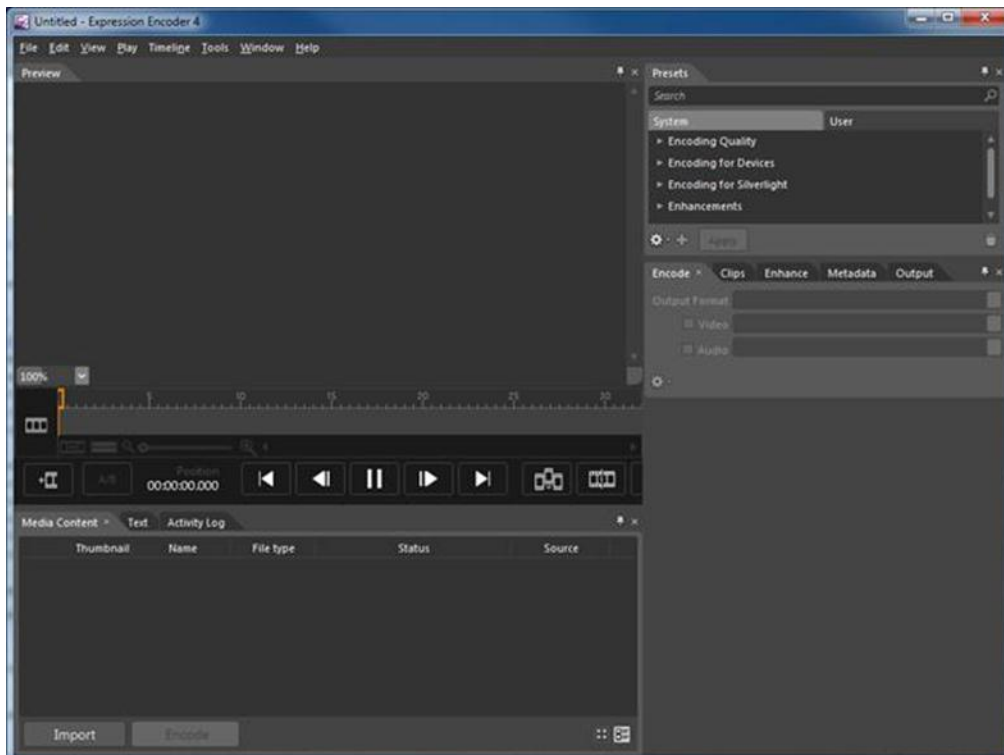
Start the Expression Encoder by opening the Start menu, All Programs, and navigating to the **Microsoft Expression** folder. Click the folder to expose its contents, then select the **Microsoft Expression Encoder 4** option.



The Microsoft Expression Encoder window opens with **Transcoding Project** highlighted. Click the **OK** button at the lower right. (Note that you can also open a saved job that appears in the **Recent Jobs** column on the left by clicking on it.)



The main window for transcoding appears, as shown below.



Encoder Workflow Overview

Regardless of the video you plan to convert, you will usually use the following sequence of steps in the Expression Encoder.

1. Chose the **Transcoding Project** type (or open an existing Transcoding Project).
2. Import the source video.
3. Modify the source video (e.g., trim or add leaders and trailers) (optional).
4. Set preview and encoding options.
5. Choose an output format (WMV) and file location.
6. Encode the video.
7. Review the encoded video. Make changes to the settings and re-encode, if necessary.

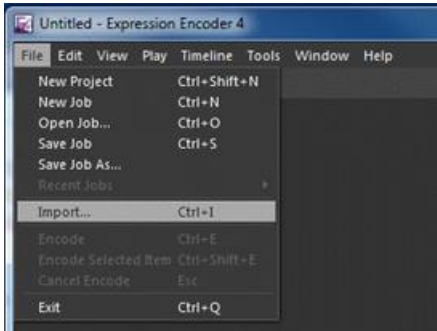
Common Encoder Settings

Recommended encoding options for output format, and for Video and Audio, are presented below. These options are found in the right column of the Expression Encoder interface. By default, some options are not visible until you expand the section.

You can also add metadata, such as the title and author of the clip, a copyright name and date, and credits. These entries do not appear in the video itself, but they will appear as scrolling text in the bottom of a Windows Media Player interface. Note that they will not appear within AdQue when a video plays on an AdQue display.

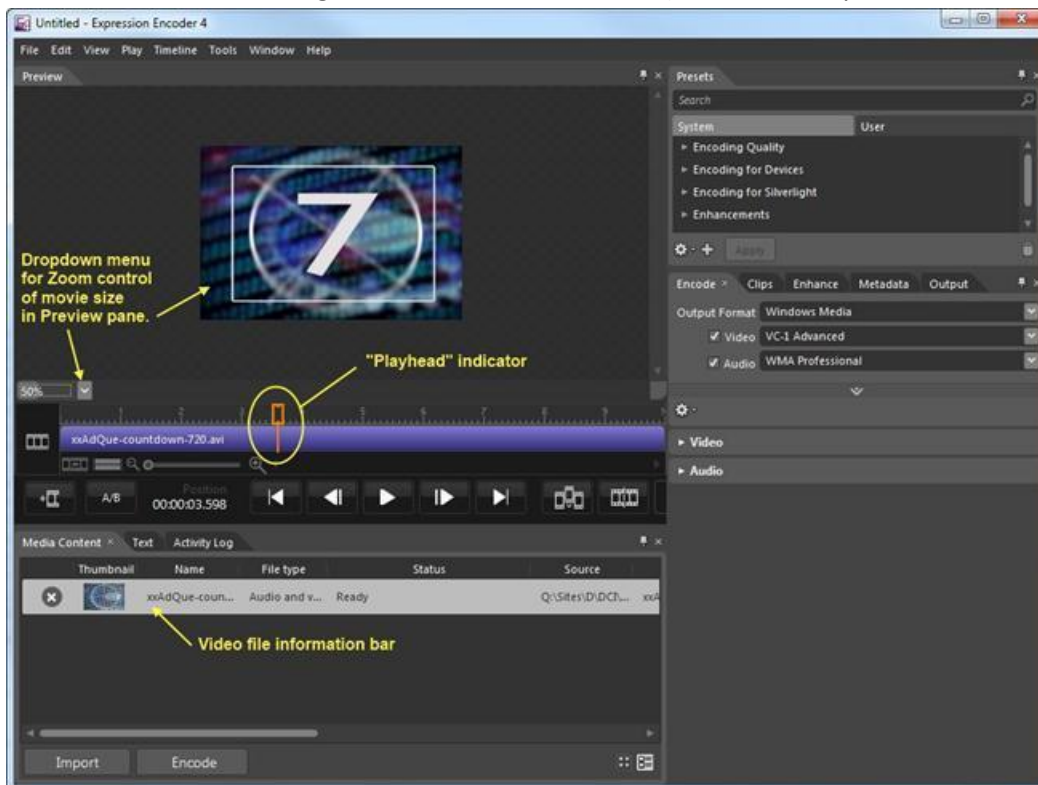
Procedure to Convert a Video File to WMV Format.

1. Use one of the following methods to put the video into the Encoder interface.
 - a. Use Windows Explorer to browse to the AVI file on your local or network drive. Click on the file and drag it into the Preview pane in Expression Encoder.
 - b. In Encoder, click the **File** menu and select **Import....**



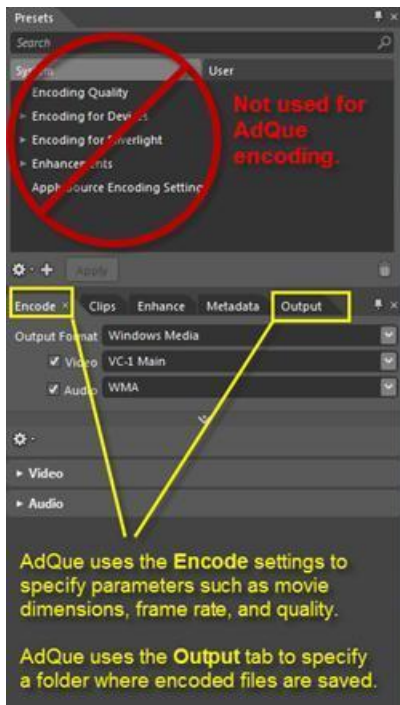
Browse to the target file and click on it, then click **Open**.



- c. Note that large files or files with a high data rate should be placed on your local drive to avoid limitations of data transfer over the network.
2. The video clip's first frame appears in the **Preview** window. You can move the playhead indicator along the timeline to see any frame, as shown below. The file will also appear in the timeline below the Preview window. There are various controls and edit tools below the Preview window that allow you to change the image size of the video clip in the Preview, add clips at the beginning, middle, and end of the movie, and more. This example is only for converting from AVI to WMV, so the editing features are not discussed. (Feel free to experiment with the features and tools.)



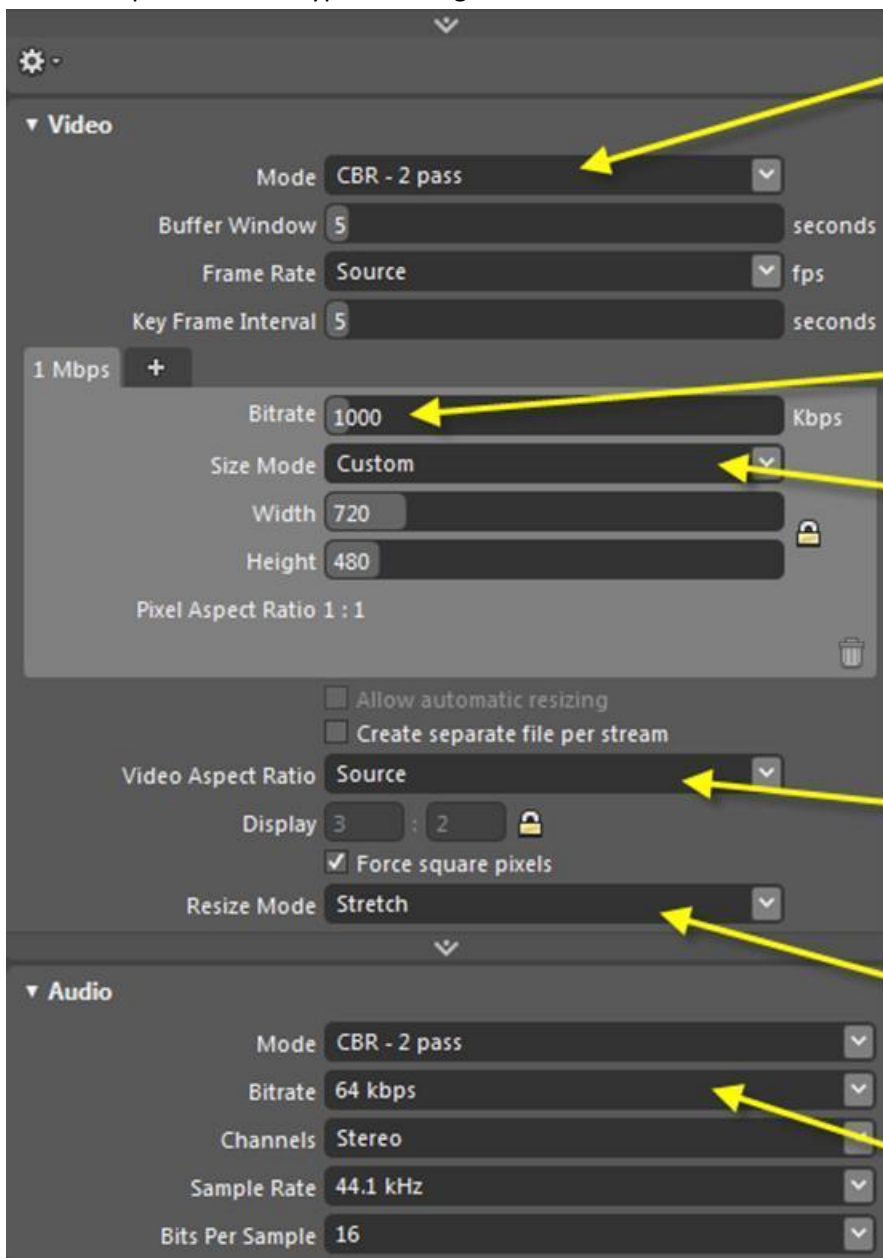
NOTE: This example assumes that you want to use the entire clip from start to finish. (If you only want a portion of the entire clip, the Encoder has tools that can trim unwanted frames from either end.) See Appendix 1.

3. The following settings are recommended for general usage, but you are encouraged to experiment. We will be working in the right pane's option panel.



4. In the **Encode** options, the following settings are suggested:
- Output Format = Windows Media**
 - Video = VC-1 Main**
 - Audio = WMA**
5. Click the ► **Video** bar to open the Video Options menu. The following settings are suggested:
- Mode = CBR-2 pass**
 - Buffer Window = 5**
 - Frame Rate = Source**
 - Key Frame Interval = 5**
 - Bitrate = 500** (if quality is low, then increase bitrate by approx.. 300 and try again. Keep increasing until satisfied.)
 - Size Mode = Source** (or select **Custom** to enter a different width and height. When the lock is open  you can use any values. When the lock is locked  the height and width ratio is fixed. Experiment with these settings.)
 - Video Aspect Ratio = 16:9** (widescreen) or **4:3** (standard) or **Source** (same ratio as the original file you are converting)
Custom ratios are also available if you open the lock.
 - Force Square pixels = checked** (normally checked because a computer monitor has square pixels)
Note that when the Video Aspect Ratio or the Size Mode values are changed, or if the Force square pixels box is changed, the image in the preview window will change to reflect the new settings.
 - Resize Mode = Stretch** (selecting the **Letterbox** option will put black bars on the left and right, or the top and bottom, if the original aspect ratio does not match the new aspect ratio.)
6. Click the ► **Audio** bar to open the Audio Options menu. The following settings are suggested:
- Mode=CBR- 2pass**
 - Bitrate = 64 kbps** (higher bitrate will give better audio quality, but you won't hear the improvement above 128 kbps.)
 - Channels = Stereo**
 - Sample Rate = 44.1 kHz**
 - Bits Per Sample = 16**

7. Below is a picture of the typical settings.



The screenshot shows the Expression Encoder settings window. The Video tab is selected, showing settings for Mode (CBR - 2 pass), Buffer Window (5 seconds), Frame Rate (Source), Key Frame Interval (5 seconds), Bitrate (1000 Kbps), Size Mode (Custom), Width (720), Height (480), Pixel Aspect Ratio (1:1), Video Aspect Ratio (Source), Display (3:2), Force square pixels (checked), and Resize Mode (Stretch). The Audio tab is also visible, showing settings for Mode (CBR - 2 pass), Bitrate (64 kbps), Channels (Stereo), Sample Rate (44.1 kHz), and Bits Per Sample (16). Yellow arrows point from the annotations to the corresponding settings in the interface.

CBR - 2 pass gives good quality but keeps the file size small.

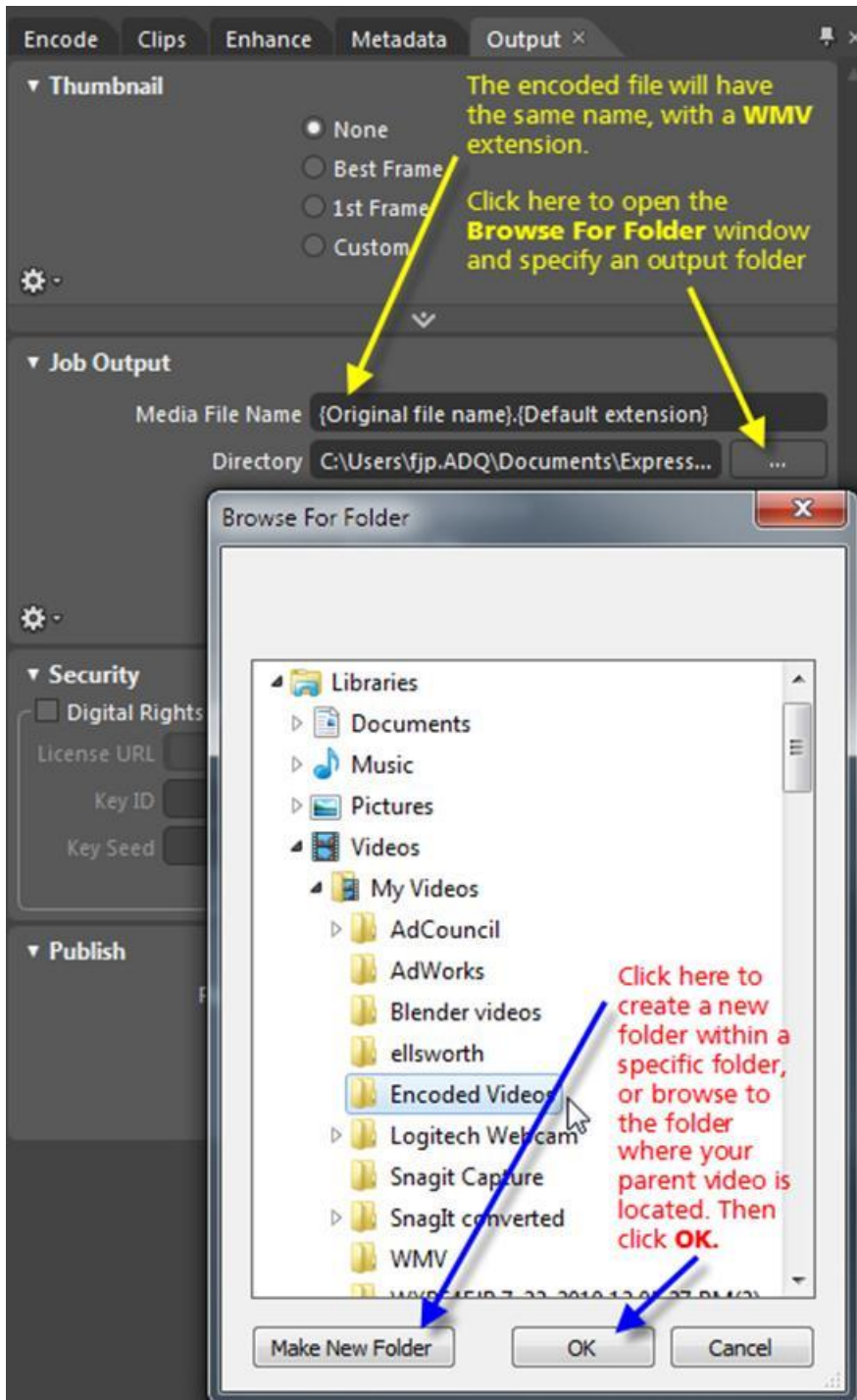
A lower bitrate works for movies without much movement. A higher bitrate improves transition quality, but causes a larger file size. Try these. You can always re-encode.
500 for first try.
800
1250
1500

Use **Source** to match your output to the source size.
Use **Custom** to specify your size.
If creating for a widescreen, use one of the following sizes:
848 (W) x 480 (H)
1280 (W) x 720 (H)
Do not encode to larger sizes. Image quality won't improve, and file size gets huge.

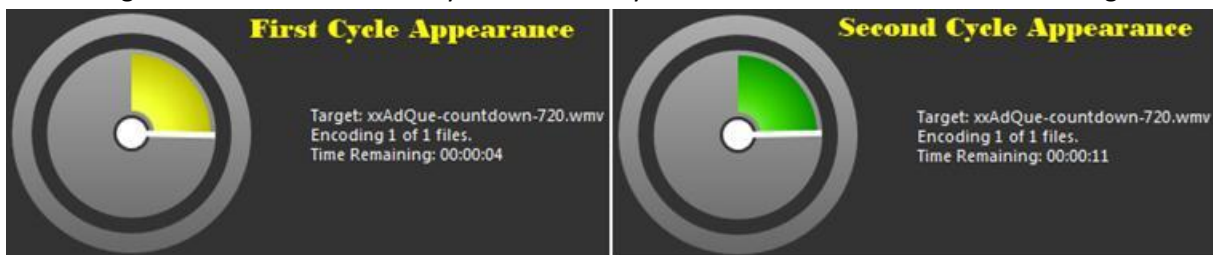
Source will keep your output ratio the same as the original.
4:3 will force the output to a "standard" screen ratio.
16:9 will force the output to a widescreen ratio.
If the source is a 4:3 ratio and your encoded version is set to 16:9, you should probably select **Stretch** for the Resize Mode.

Bitrates between **64 - 128 kbps** will usually give good audio quality. Lower bitrate gives smaller file sizes.

8. Before you start the encoding process, you should specify an output file location. The default location is in **My Documents\Expression\Expression Encoder\Output**. You can put the output file anywhere you want, though. One location would be the same folder as where the parent file is located. Normally, Expression Encoder will create a sub-folder within the parent folder. Do the following to specify your output:
- In the right column of the Encoder interface, click the **Output** tab. A **Browse For Folder** window opens.
 - Browse to the desired folder (e.g., where the parent file is located, or to a location in the **Libraries\Videos** folder. Note that you can browse to a folder and then create a new folder by clicking the **Make New Folder** button in the interface.
 - Click the **OK** button. Your specified location is now listed in the **Directory** textbox under **Job Output**.
 - See the image following this description for a graphic illustration.



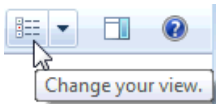
- Once your configuration is finished and you have specified an output folder, click the **Encode** button to create your new WMV file. If you are using the **CBR – 2 pass** mode, you will see a round icon that shows the encoding progress. A sweep hand will go around twice. The first cycle will have a yellow color and the second will have a green color.



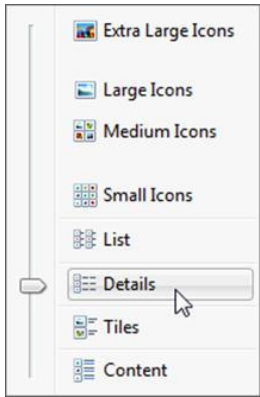
Procedure to Convert a DVD video to WMV Format.

DVD movies can be converted to Windows Media Video (WMV) format for use on AdQue Systems. Here are some special considerations and tips for the process.

- 1. Before encoding, copy the desired video files off the DVD into a folder on your computer. The data transfer rate of a DVD player is significantly slower than the transfer rate from your computer’s hard drive. The encoder can encounter errors if it tries to pull data from the player faster than the player can deliver.
- 2. To copy the desired video files, do the following:
 - a. Put the DVD disc into the player. Close any windows that appear automatically (such as a **Play DVD** window.)
 - b. Open Windows Explorer and browse to the DVD drive. In Windows Explorer, click on the **View** icon in the upper right corner (see below)



and select **Details** (see below).



(Screenshots are from Windows 7. Windows XP has a slightly different appearance.)

You should see a structure such as this in the right pane:

Name	Date modified	Type	Size
Files Currently on the Disc (2)			
AUDIO_TS	8/14/2007 9:53 AM	File folder	
VIDEO_TS	8/14/2007 9:54 AM	File folder	

- c. All files of interest are located in the **VIDEO_TS** folder. Open the **VIDEO_TS** folder. You will see a set of files such as shown below. (Your window may show different icons than those that appear below.)

Name	Date modified	Type	Size
Files Currently on the Disc (7)			
VIDEO_TS.BUP	8/14/2007 9:54 AM	BUP File	14 KB
VIDEO_TS.IFO	8/14/2007 9:54 AM	VLC media file (.ifo)	14 KB
VIDEO_TS.VOB	8/14/2007 9:54 AM	Windows Media Player	114 KB
VTS_01_0.BUP	8/14/2007 9:54 AM	BUP File	28 KB
VTS_01_0.IFO	8/14/2007 9:54 AM	VLC media file (.ifo)	28 KB
VTS_01_0.VOB	8/14/2007 9:54 AM	Windows Media Player	45,486 KB
VTS_01_1.VOB	8/14/2007 9:54 AM	Windows Media Player	586,972 KB

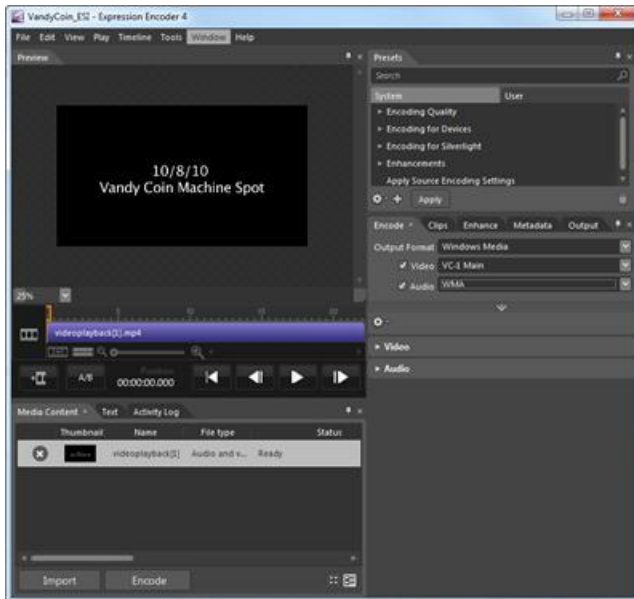
- 3. The files of interest have file name extensions of **.VOB**. Normally, we want only the large VOB files, which use the following naming convention: **VTS_01_0.VOB**, **VTS_01_01.VOB**, and so on.

4. Select the desired VOB files and copy them to a convenient folder on your computer. If you are using Windows XP, you might want to create a video folder (**My Videos**) within **My Documents**. If you are using Windows 7, you can use the built-in **Videos** library folder.
In either case, you should create individual subfolders for each project. That way, you can keep track of your video files and avoid overwriting VOB files. Remember, each DVD will have a video named **VTS_01_1.VOB**.
5. Once you have copied the VOB files of interest to your project folder, start Expressions Encoder and put the first file into the Encoder interface, as described previously.

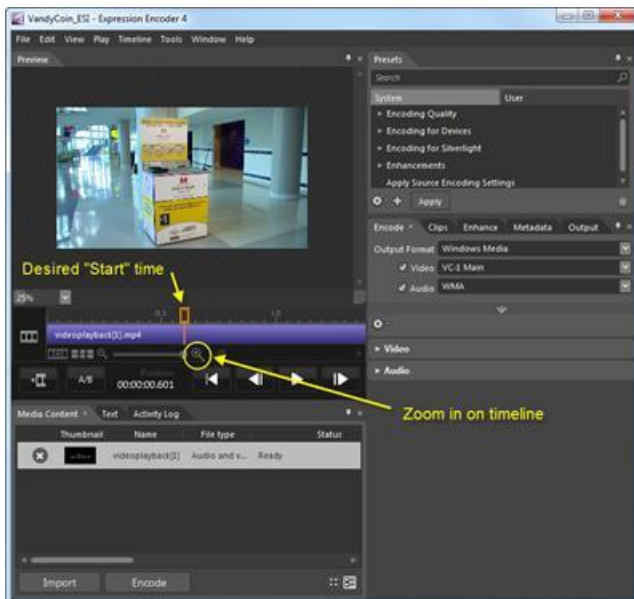
Appendix 1. Using Mark In and Mark Out to Select a Portion of a Video for Encoding.

Some videos will have portions at the beginning or end (or both) that you want to eliminate from the final product. Expression Encoder provides a way to remove the portions that you don't want. Here is how:

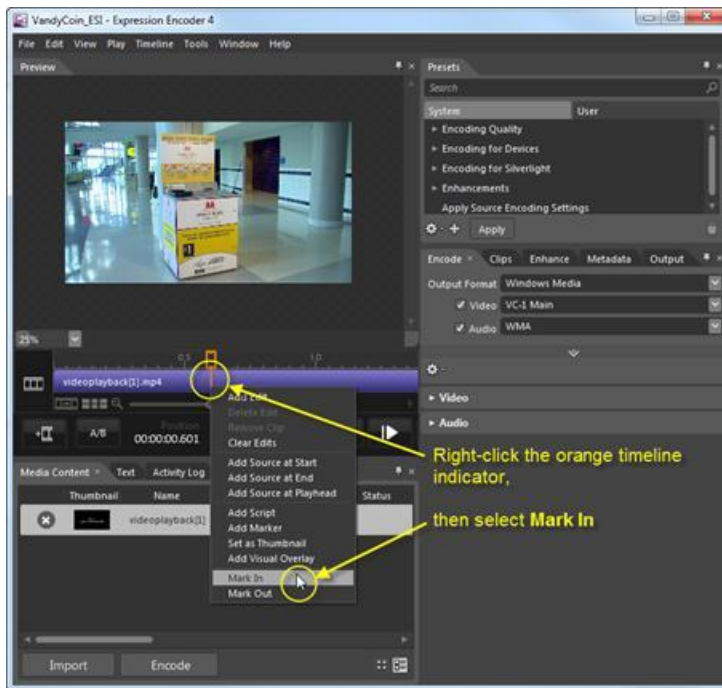
1. Open Expression Encoder and put the starting video in the **Preview** window. You can either drag and drop the video from Windows Explorer, or you can select **Import** from the **File** menu, then browse to the video. (You can also open the **Import** window with the hot-key combination **CTRL+I**.)
2. In the example below, the clip opens with a 0.6-second white-text-on-black-box "title" for the clip that we do not want in the final clip.



3. To remove this portion of the video, move the orange timeline indicator to the point where you want your encoded video to begin. (You can use the magnifying glass to zoom in on the timeline for precision.)



4. Right-click on the orange timeline indicator and then select **Mark In** from the drop-down menu.



5. The initial section of the video immediately disappears and “Time Zero” now starts at the desired frame.
6. A similar procedure at the end of the video will remove the end of the clip. Place the timeline indicator on the last frame that you want to include, then right-click and select **Mark Out**. The end portion of the video will disappear.

* Note that you have not actually removed portions of the parent video.

* Note that you can right-click anywhere on the purple video timeline and select **Clear Edits** to restore the full video to the timeline.

Appendix 2. Comparison of Source Video to Output Video at Different Video Aspect Ratios

The following pictures show what happens when various Video Aspect Ratio values are entered on the **Encode** tab at the bottom of the **Video** section. Expression Encoder 4 will create square pixels by default. The Source video shown in these examples was originally created to play on a standard TV set. Although its width is 720, a standard TV does not have square pixels, so during playback, the effective screen resolution is 640x480.

1. **Source Video = 720x480** Notice that the white circle around the number 5 is slightly stretched horizontally because the pixels in the output video are square.



Output video = 852x480 (16:9 ratio) with **Resize Mode = Stretch**

[Note: this mode can be manually entered or selected as a preset]



Output video = 640x480 (4:3 ratio) with **Resize Mode = Stretch**. The shape around the 5 is circular, as it should be.

[Note: this mode can be manually entered or selected as a preset]

