

MPEG Creation

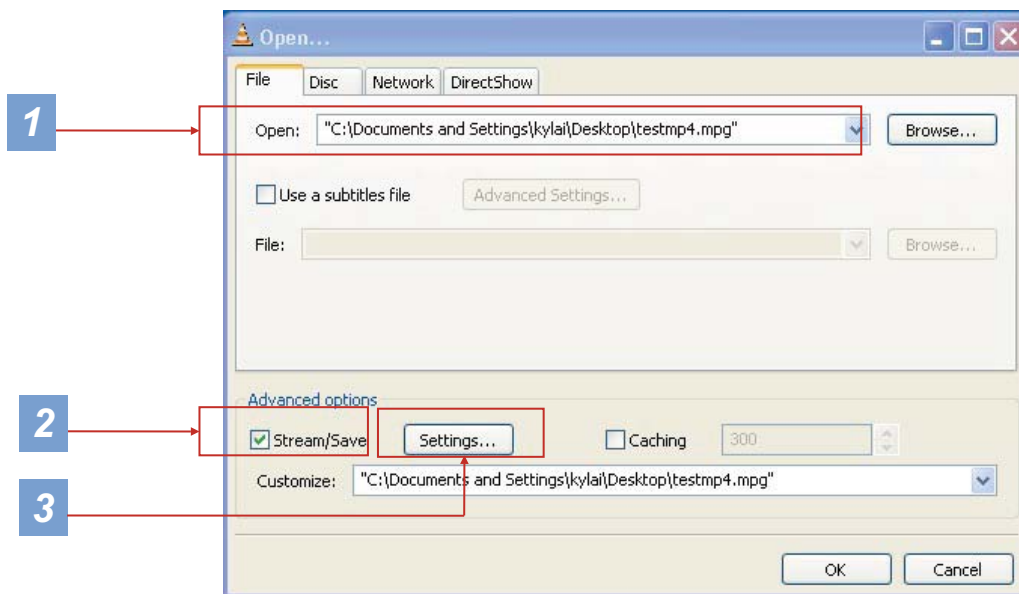


Why use MPEG2-TS?

- MPEG-2 is the most common video compression format.
- There are more tools available for MPEG-2 encoding/transcoding than other MPEG versions
- Users are more familiar with MPEG-2 codecs
- MPEG-2 supports both standard and high definition
- MPEG-2 is the common DVD format
- H.264 codec is providing good video quality at substantially lower bit rates.

VLC: Encoding to MPEG2-TS

- **Step 1:** Open the file you need to encode into MPEG-2
- **Step 2:** Check “Stream/Save” check-box
- **Step 3:** Click “Settings”



- **Encoding** is the process of transforming information from one format into another.

VLC: Encoding to MPEG2-TS

▪ **Step 4:** Check the **file** check box

▪ **Step 5:** Specify file name

▪ **Step 6:** Check the **video codec** check box

▪ **Step 7:** Choose **mp2v** from the drop-down menu

▪ **Step 8:** Choose the **bitrate:**

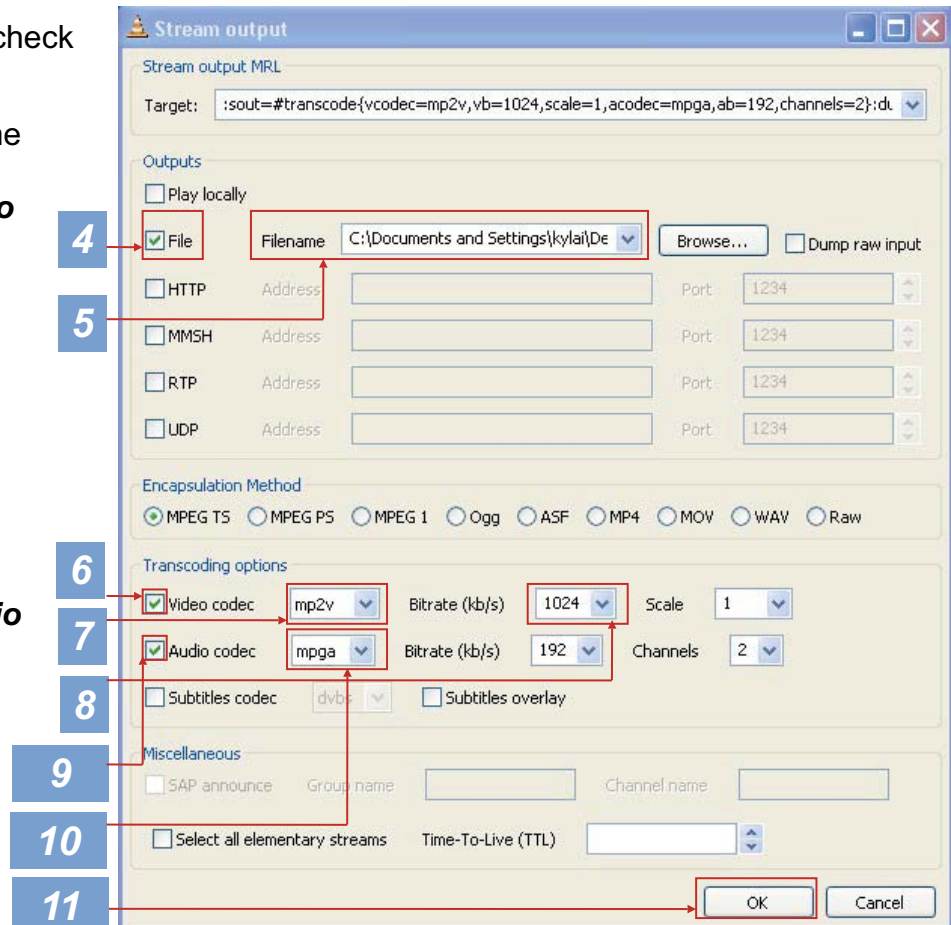
▪ for HD: 12-15 Mbit/sec

▪ for SD: 5-8 Mbit/sec

▪ **Step 9:** Check the **audio codec** check box

▪ **Step 10:** Choose **mpga** from the drop-down menu

▪ **Step 11:** Hit **OK**



Adobe Premiere: MPEG-2 Creation

- In Adobe Premiere, it's best to use existing presets for this project:

When you open a new project, please choose Adobe HDV 720p 30.

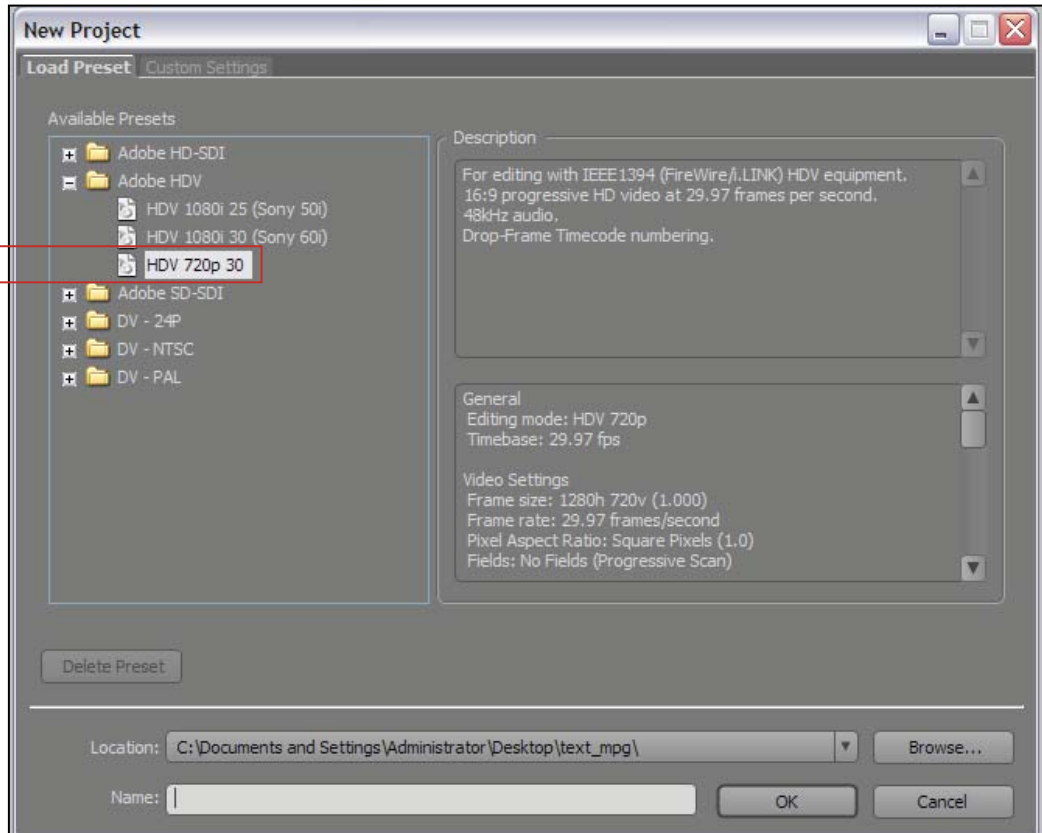
And then, in Export Adobe Media Encoder please choose MPEG2 for format, Range: render entire sequence, Preset:Custom; Video Codec :MainConcept MPEG Video;

- Quality: Best; TV standard: NTSC;
- Frame Width for this project: 1280px;
- Frame Height: 720px;
- Frame rate: 29.97 drop frame;
- Field Order: None (progressive)
- Pixel aspect ratio: Standard 4:3
- Profile: Main
- Level: High level
- Bitrate Encoding : CBR, or VBR optional (for VBR numbers should not exceed Max bitrates specified below)
- Bitrate for HD: 10 Mbit/sec - 15 Mbit/sec (Max)
- Bitrate for SD: 3 Mbit/sec - 5 Mbit/sec (Max)
- Multiplexing: TS (transport stream)

Adobe Premiere: MPEG-2 Creation

▪ Step 1: define project presets

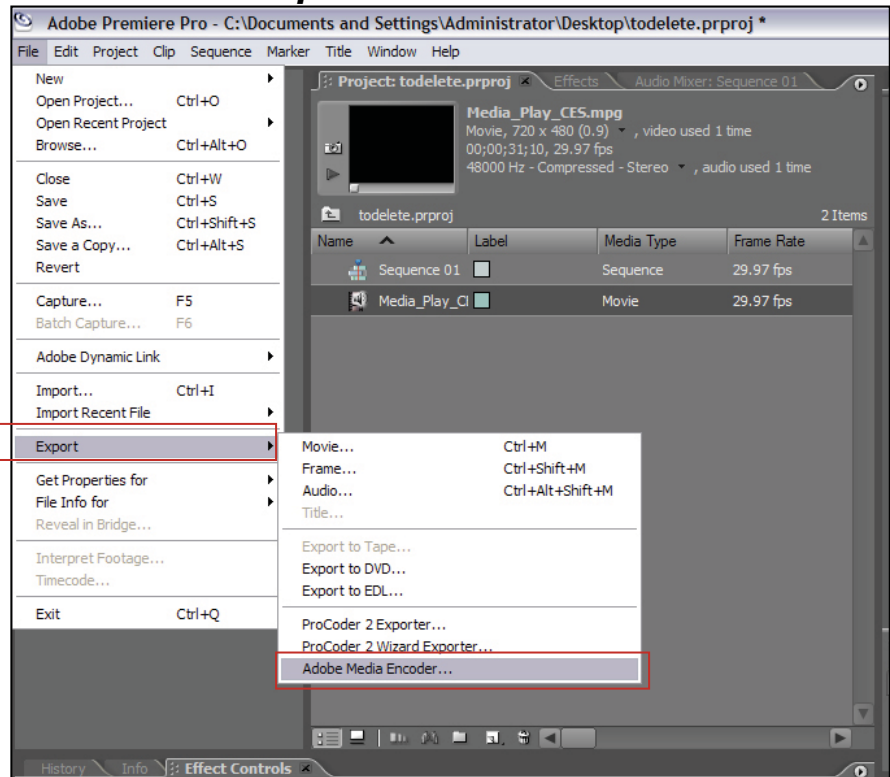
1



Adobe Premiere: MPEG-2 Creation

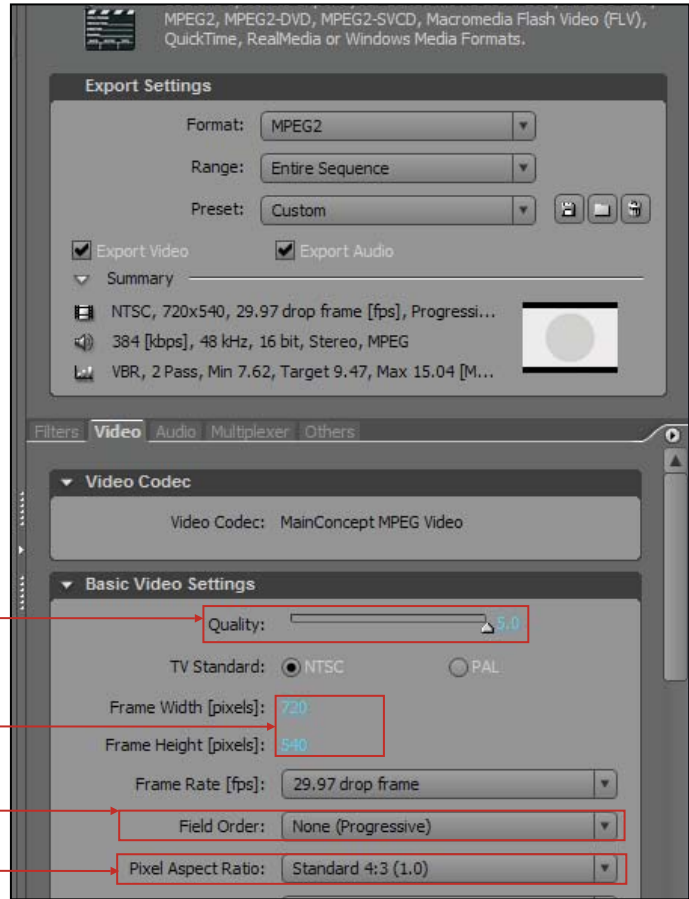
- **Step 2:** create your movie
- **Step 3:** from **File menu** choose **Export** → **Adobe Media Encoder**

2



Adobe Premiere: MPEG-2 Creation

Step 4: Video settings



Set quality

Choose movie size

Progressive scan

Specify aspect ratio

Adobe Premiere: MPEG-2 Creation

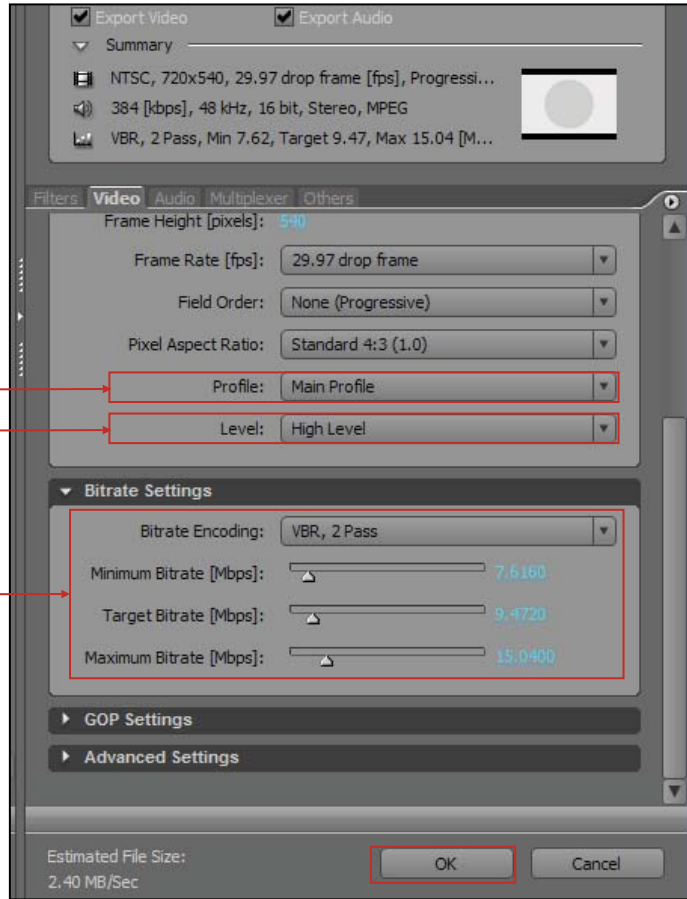
Step 4: Video settings

Choose Main Profile

Choose High Level

Choose bitrate:

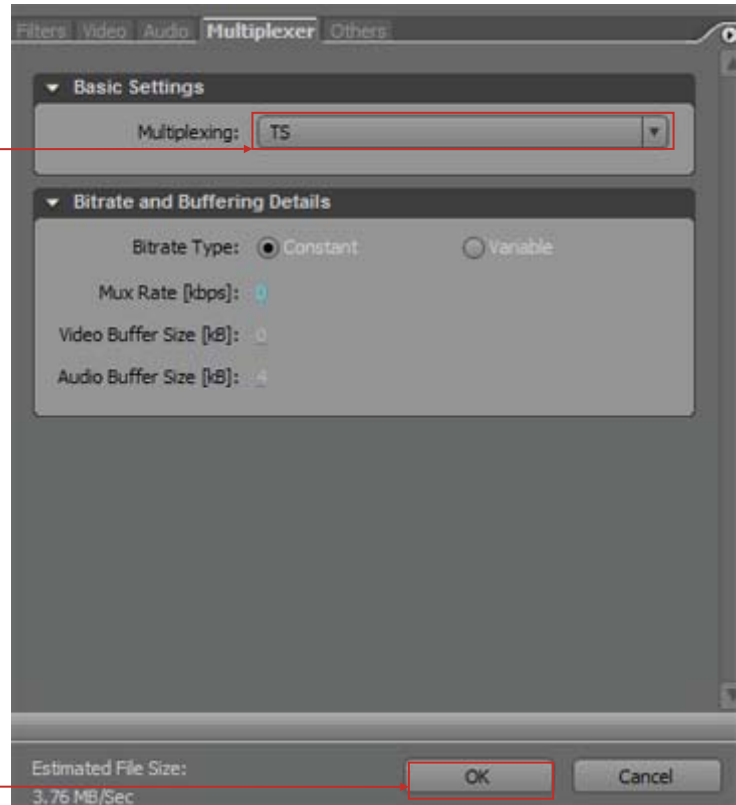
HD: 12 Mbit/sec - 15 Mbit/sec
SD: 05 Mbit/sec - 08 Mbit/sec



Adobe Premiere: MPEG-2 Creation

▪ Step 5: Multiplexing

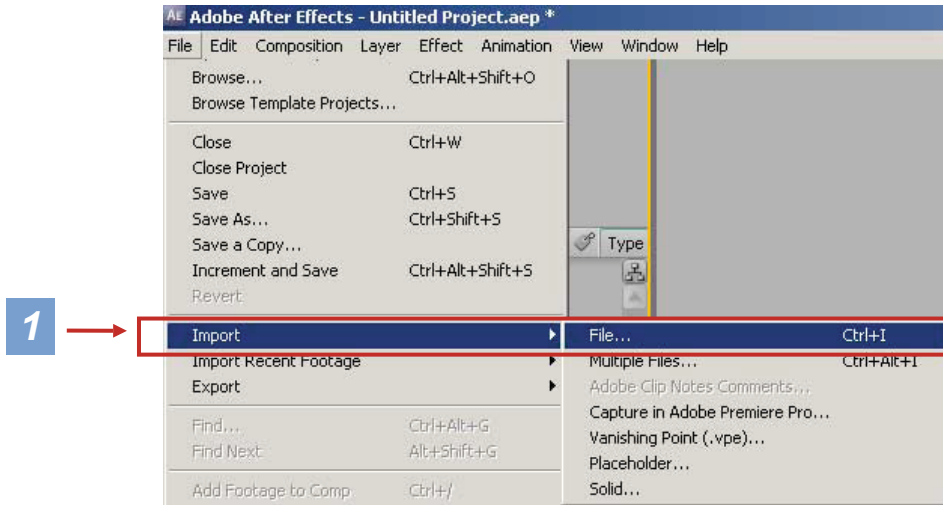
Choose TS



▪ Step 6: Hit OK

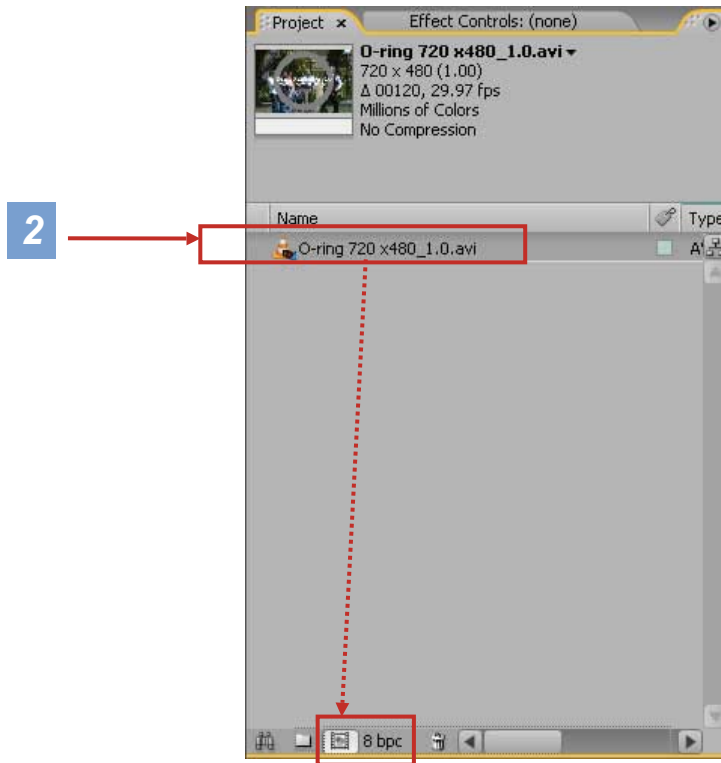
After Effects: MPEG-2 Rendering

- **Step 1: File** → **Import file:** to load footage into Project Bin



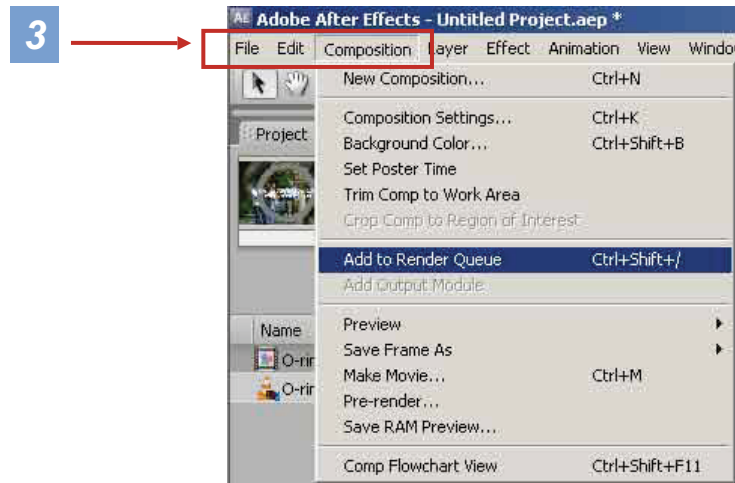
After Effects: MPEG-2 Rendering

- **Step 2: create** your composite by dragging file onto comp button



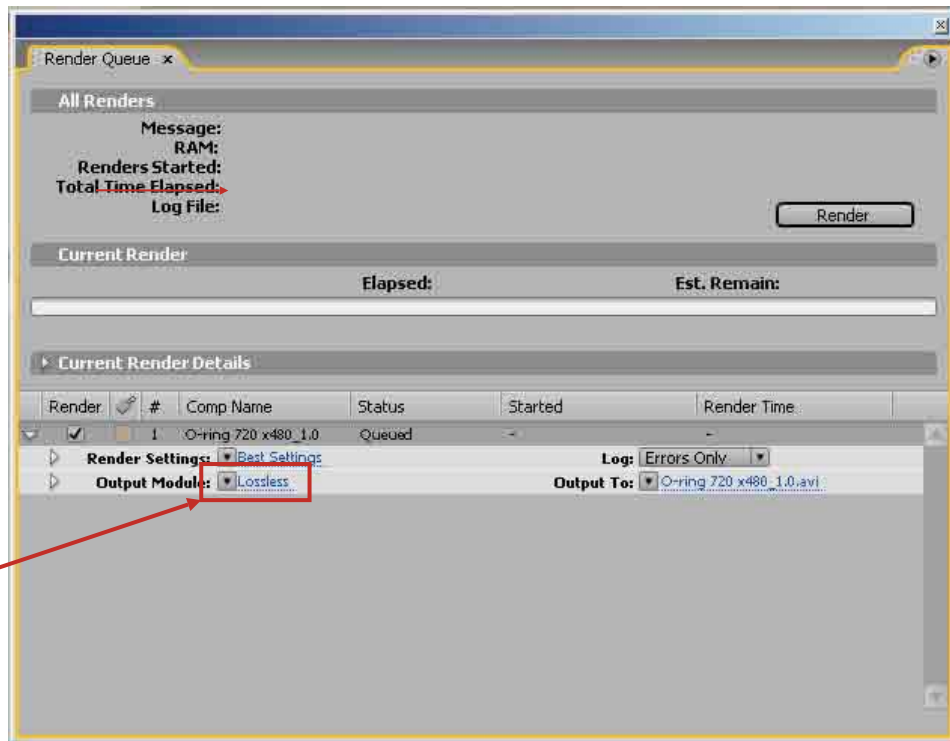
After Effects: MPEG-2 Rendering

- **Step 3:** Menu Bar: select Composition → Add to Render Queue



After Effects: MPEG-2 Rendering

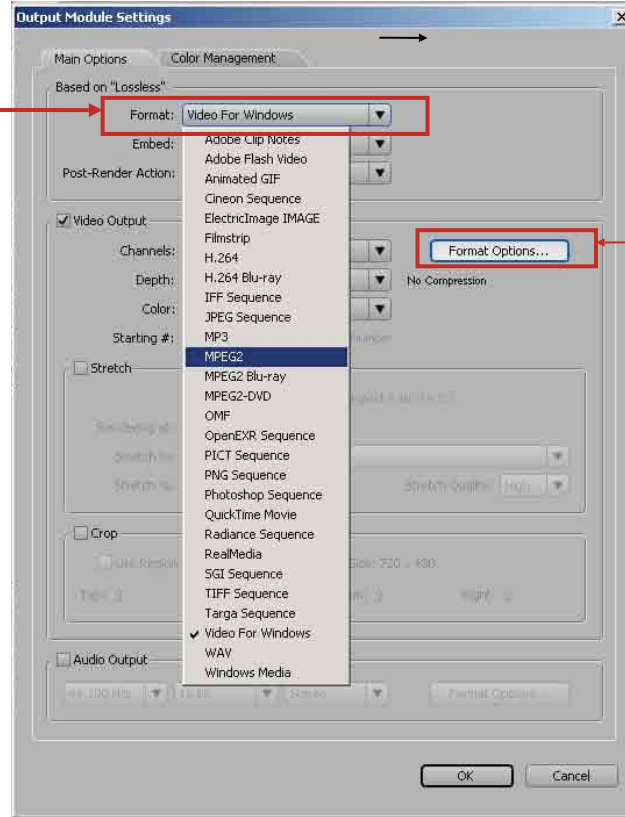
- **Step 4: Launch** the Output Module by clicking “Lossless”



After Effects: MPEG-2 Rendering

Steps 5 & 6:

- Step 5: Select MPEG2 in the drop-down menu.



- Step 6: Click the "Format Options" button to launch a dialogue box.

After Effects: MPEG-2 Rendering

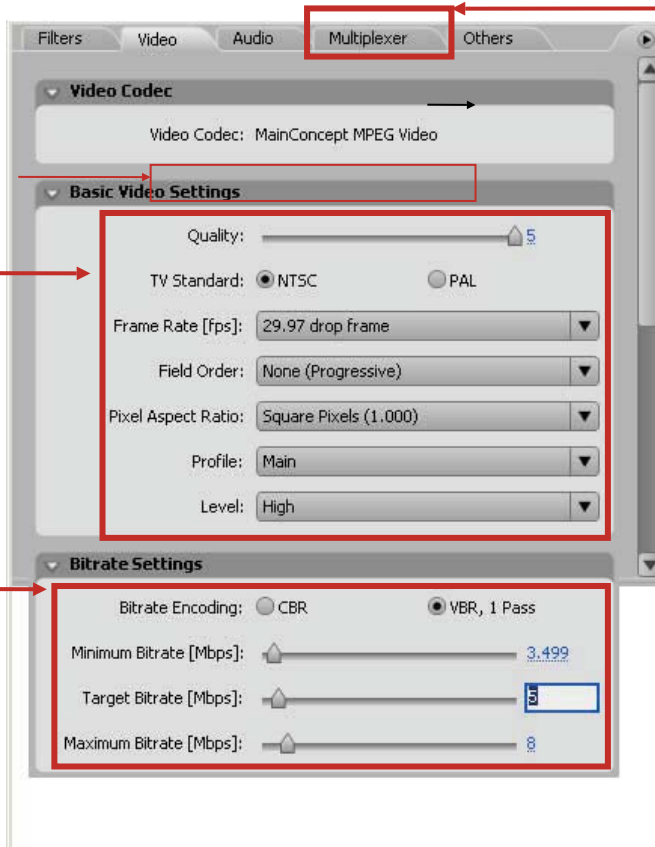
■ Steps 7, 8 & 9:

■ Step 7: Within *Basic Video Settings* match:

■ Step 8: Set *“Bitrate Settings”*

720x480: target=5 / Max8

1280x720: target=12 / Max15

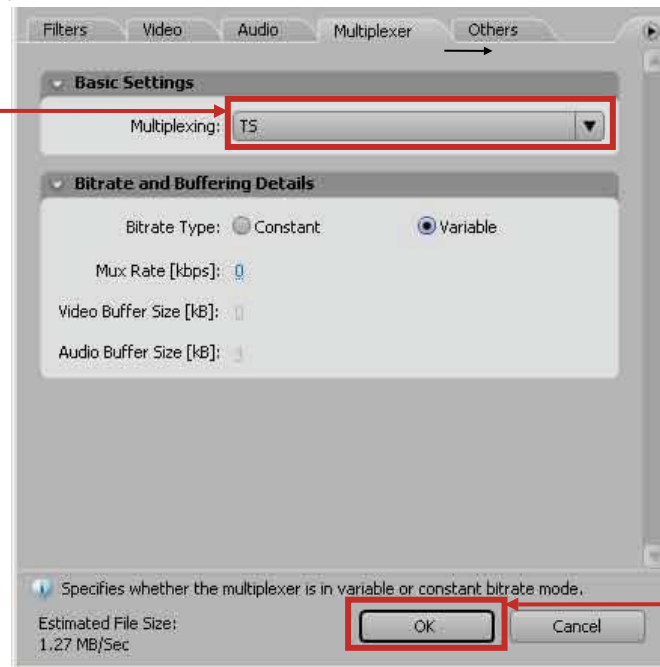


■ Step 9: Click the *“Multiplexer”* tab to reveal the next option set.

After Effects: MPEG-2 Rendering

Steps 10, 11, & 12:

- Step 10: Select *TS* in the *Multiplexing* drop-down panel



- Step 11: Select *Variable* for the Bitrate Type.

- Step 12: Click, **OK**.

After Effects: MPEG-2 Rendering

Steps 13,14:

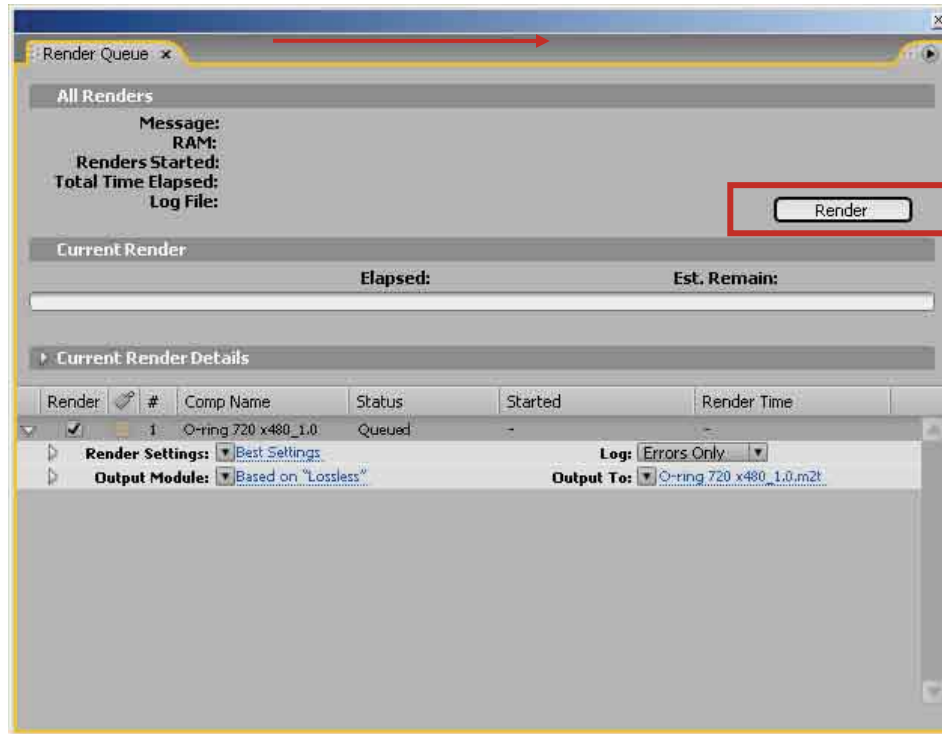
▪ **Step 13:**
Select the *Output* to file name.

*Notice the file name change:
m2t = MPEG2-TS*

▪ **Step 14:**
Click, **Save**.
Note: This "Save" means "Save file to"

After Effects: MPEG-2 Rendering

■ Steps 15: Generating your MPEG2-TS file.

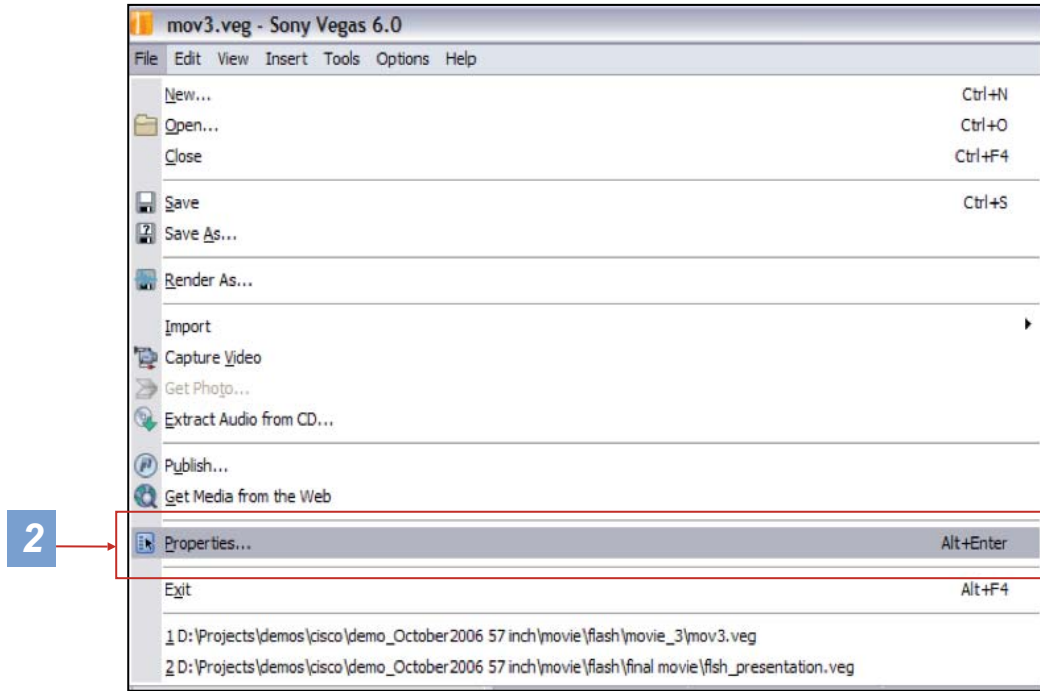


■ **Step 15:**
Click, **Render**.
*This will create
an MPEG2-TS file*

■ **(optional)** To
save on file size
you may also use
the VLC player to
transcode the
“mp2v” codec to
an h.264 codec.
See “MPEG2 in VLC” above.

Sony Vegas: MPEG-2 Rendering

- **Step 1:** Import the file you need to encode into MPEG2
- **Step 2:** Choose **File** → **Properties**



Sony Vegas: MPEG-2 Rendering

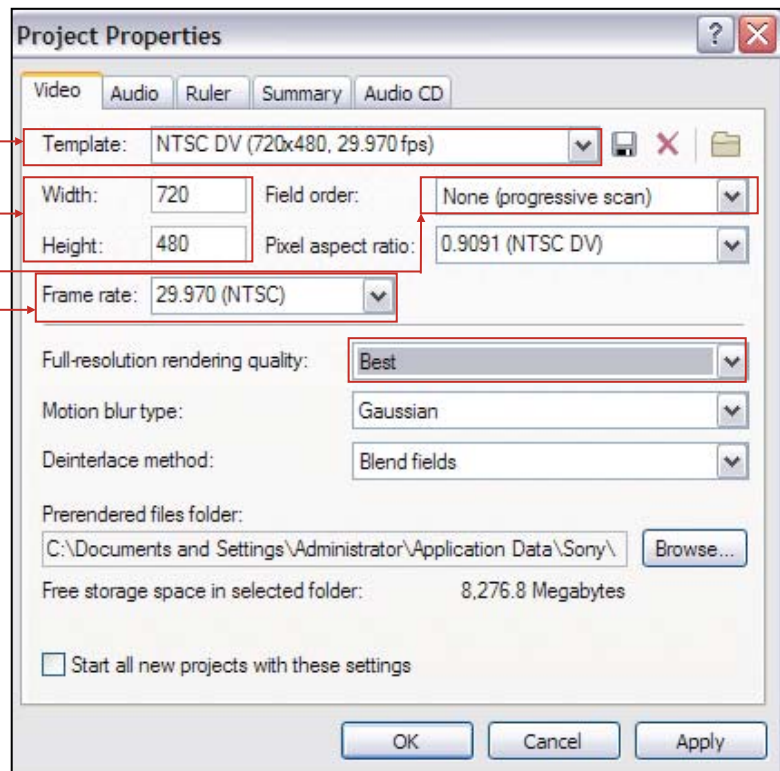
- **Step 3:** Choose properties: choose a template you want to use from the drop-down menu (NTSC DV may be replaced with HDV 720-30p for example); specify width, height, etc.

Choose a Template.

Specify movie size.

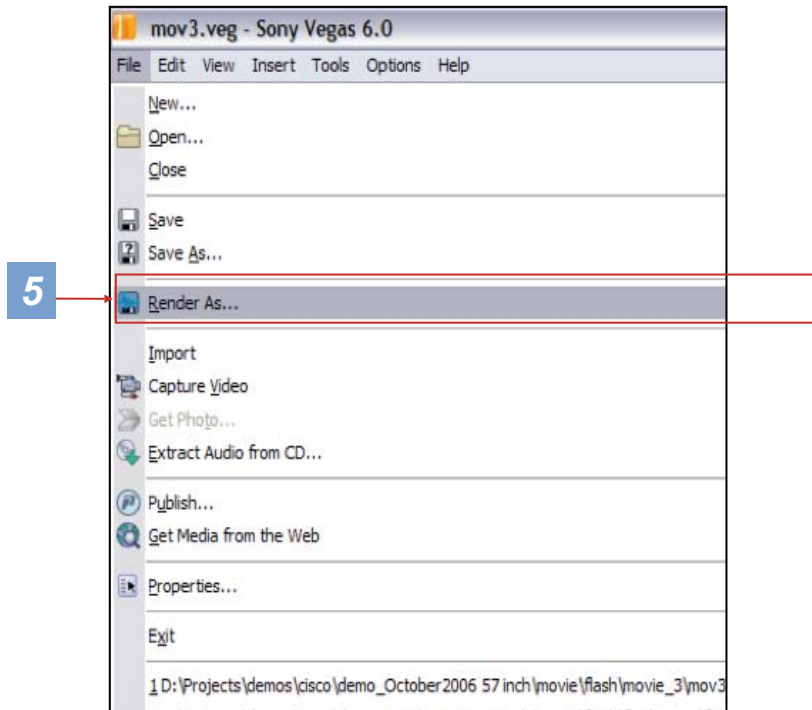
Specify scan.

Specify frame rate.



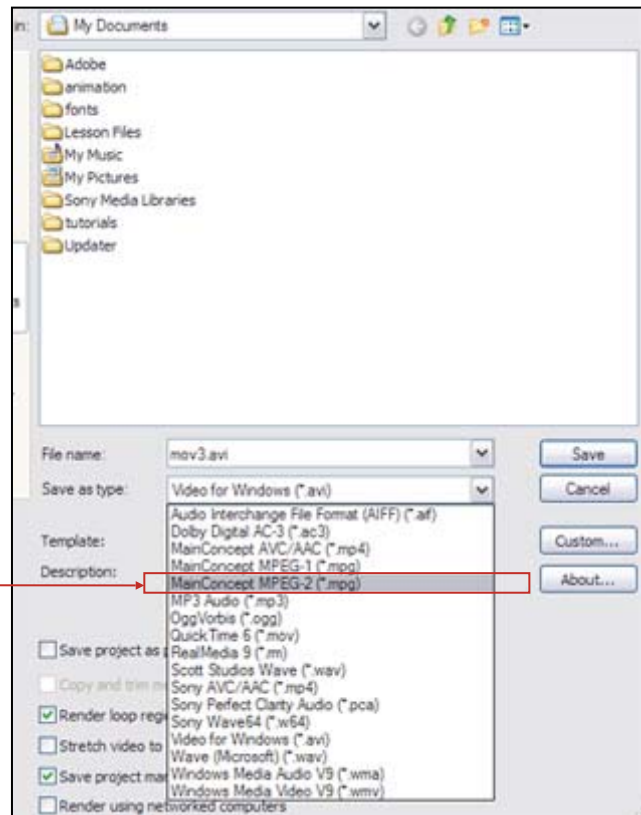
Sony Vegas: MPEG-2 Rendering

- **Step 4:** Create your movie
- **Step 5:** From **file** menu choose “**render as**” to save the movie



Sony Vegas: MPEG-2 Rendering

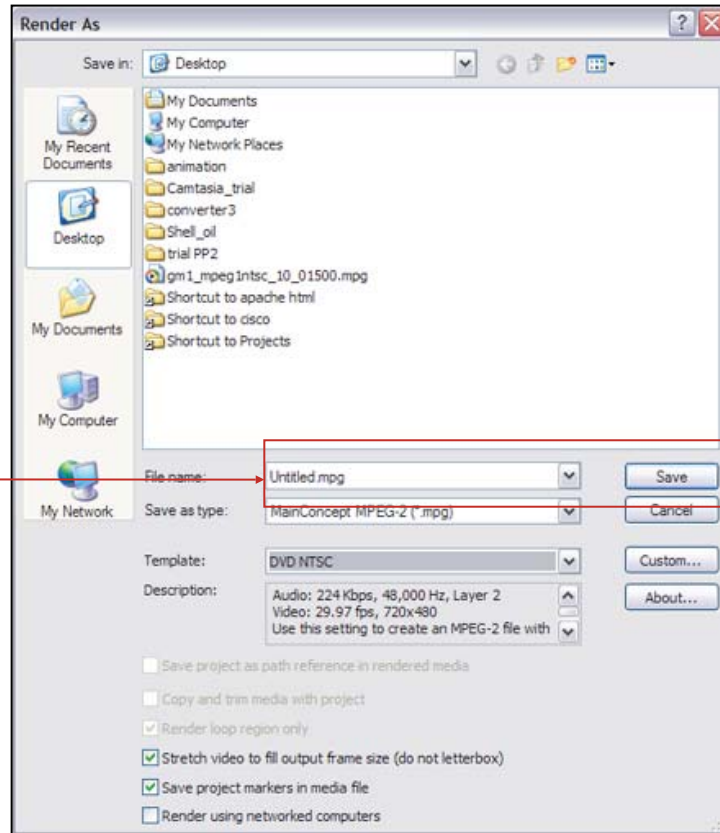
- **Step 6:** Choose *MainConcept MPEG2* from the drop-down menu



Sony Vegas: MPEG-2 Rendering

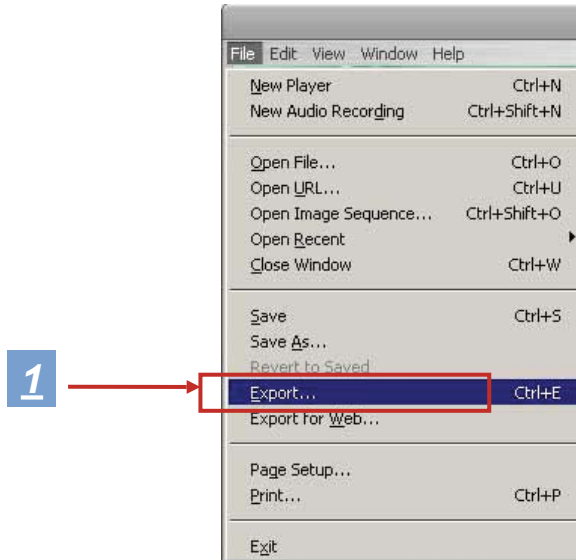
▪ Step 7: Name the video file and save

7



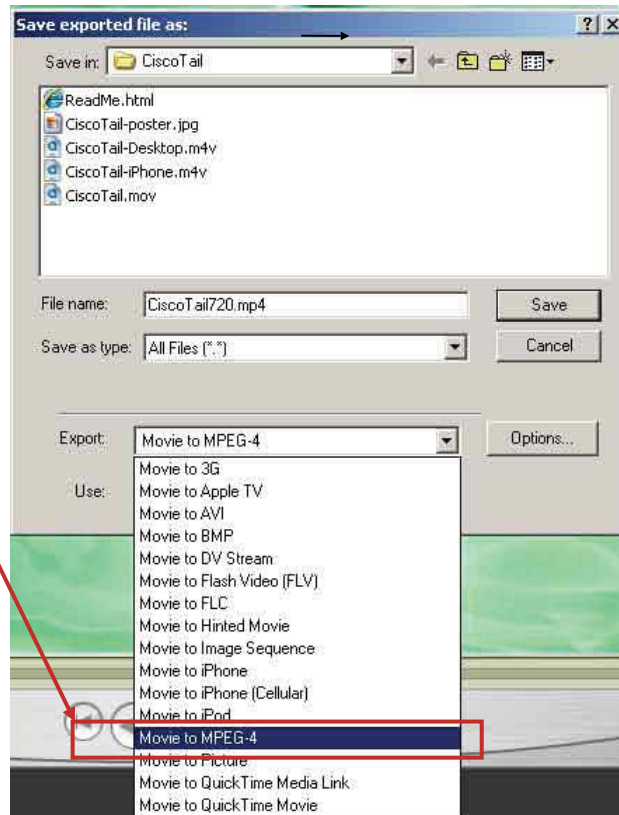
Quicktime Pro: MPEG-4 Export

Step 1: After opening a desired video file, select **File>Export...**



Quicktime Pro: MPEG-4 Export

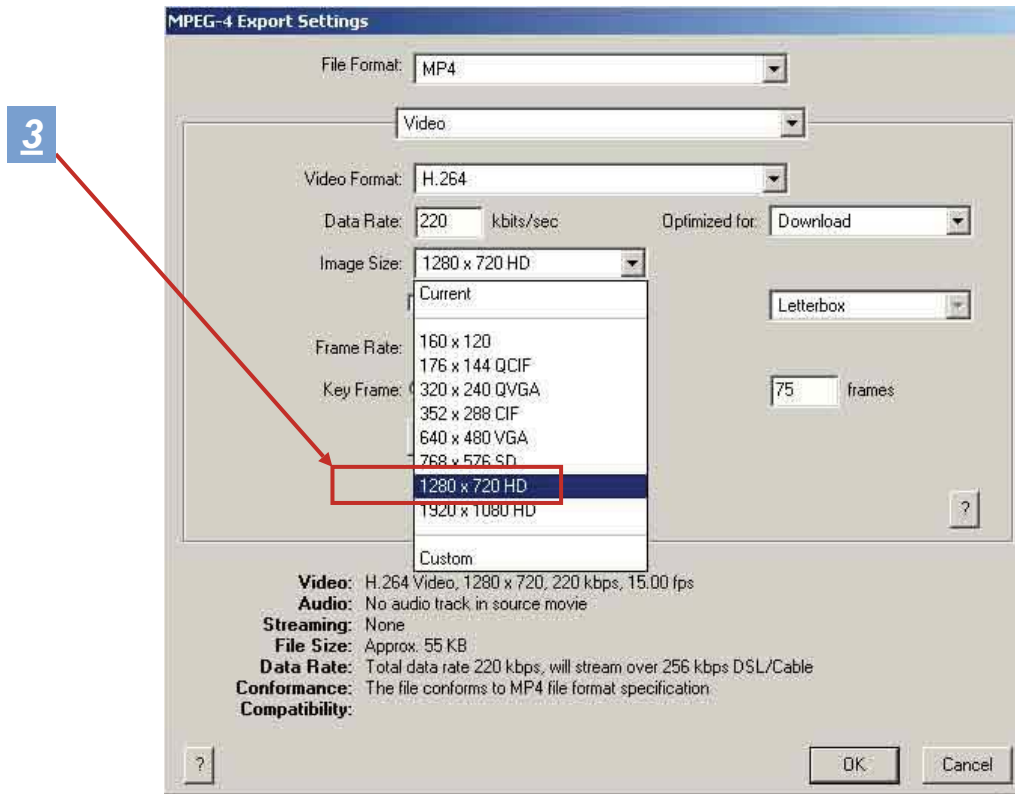
Step 2: From the Export menu select: “Movie to MPEG-4”



Note: The use of the VLC player to wrap the .mp4v file into the MPEG2-TS format will be necessary; however, transcoding is not a necessary procedure.

Quicktime Pro: MPEG-4 Export

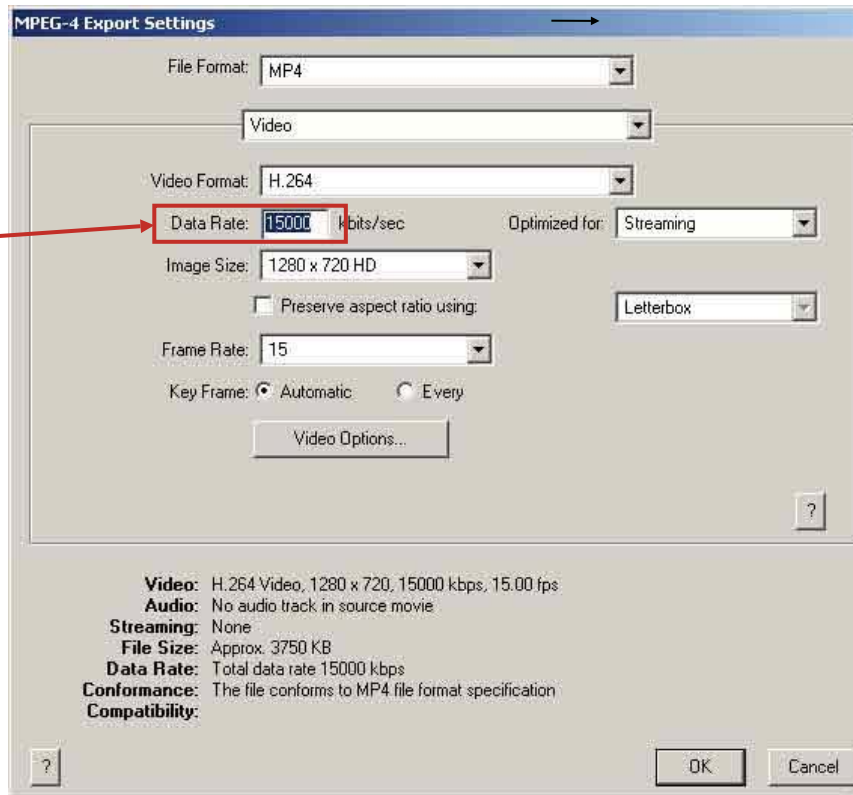
Step 3: Set Image Size to 720p or 1080p.



Quicktime Pro: MPEG-4 Export

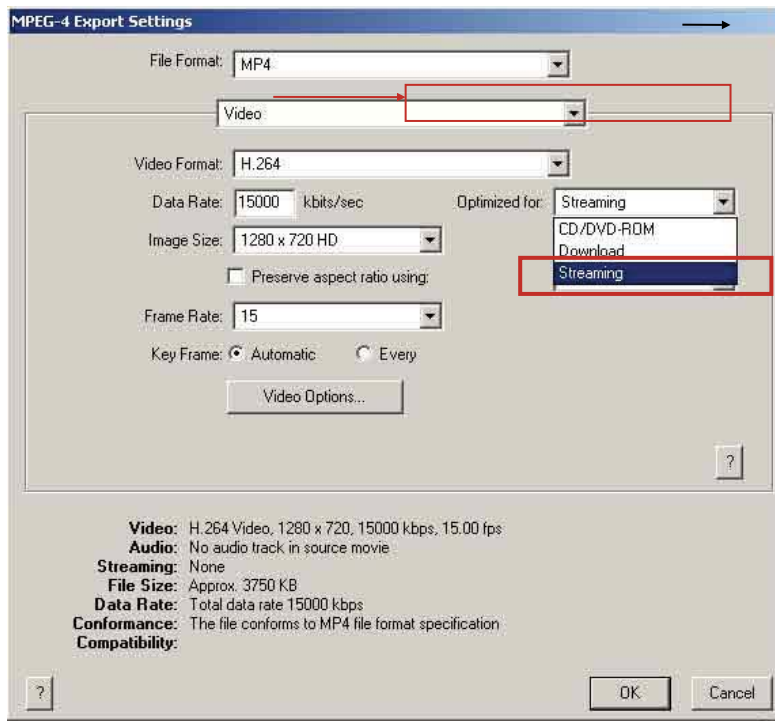
Step 4: Select an appropriate data rate from 12 to 15Mbps.

4



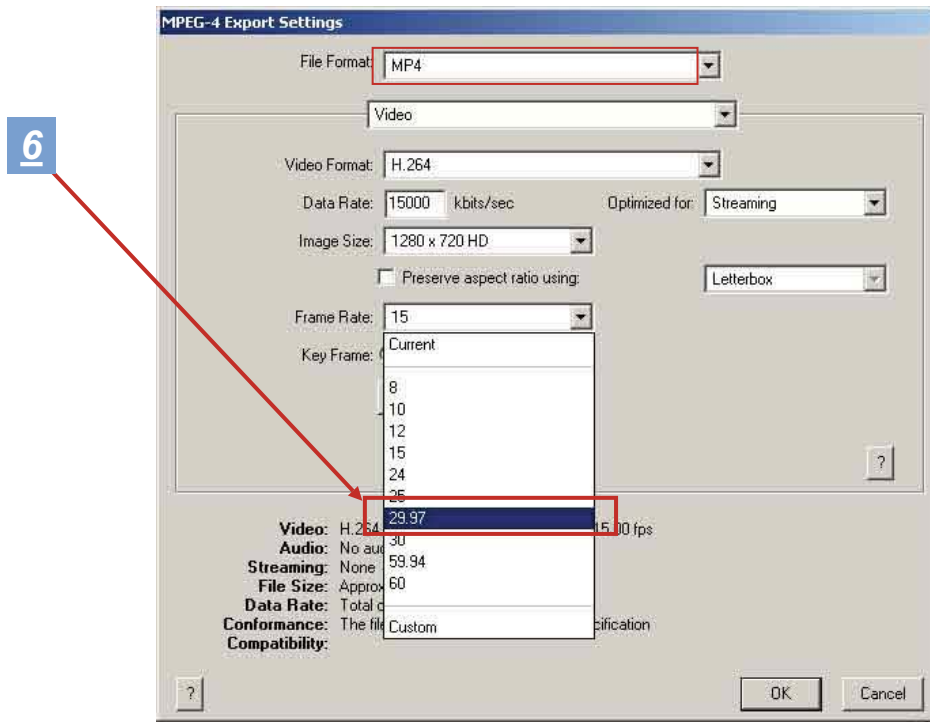
Quicktime Pro: MPEG-4 Export

Step 5: Select an appropriate data rate from 12 to 15Mbps.



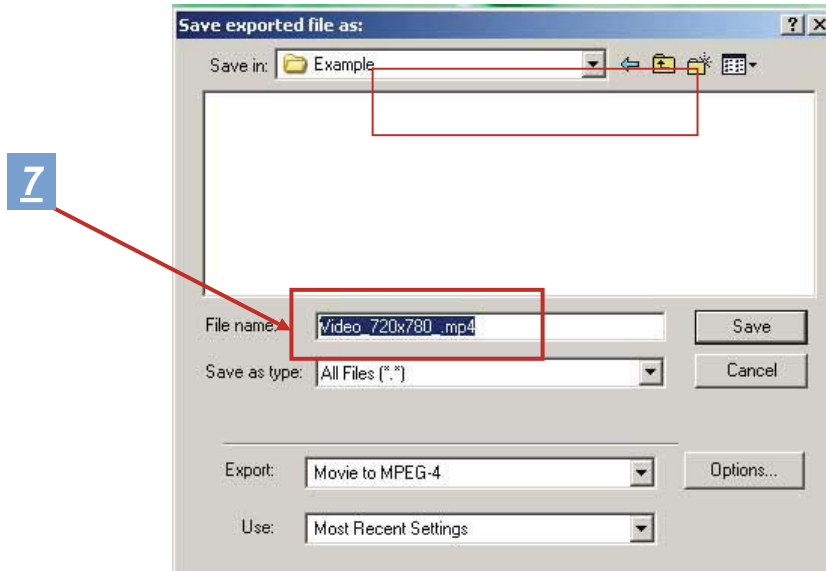
Quicktime Pro: MPEG-4 Export

Step 6: Select an appropriate video frame rate.



Quicktime Pro: MPEG-4 Export

Step 7: Enter a filename, then click “Save”.

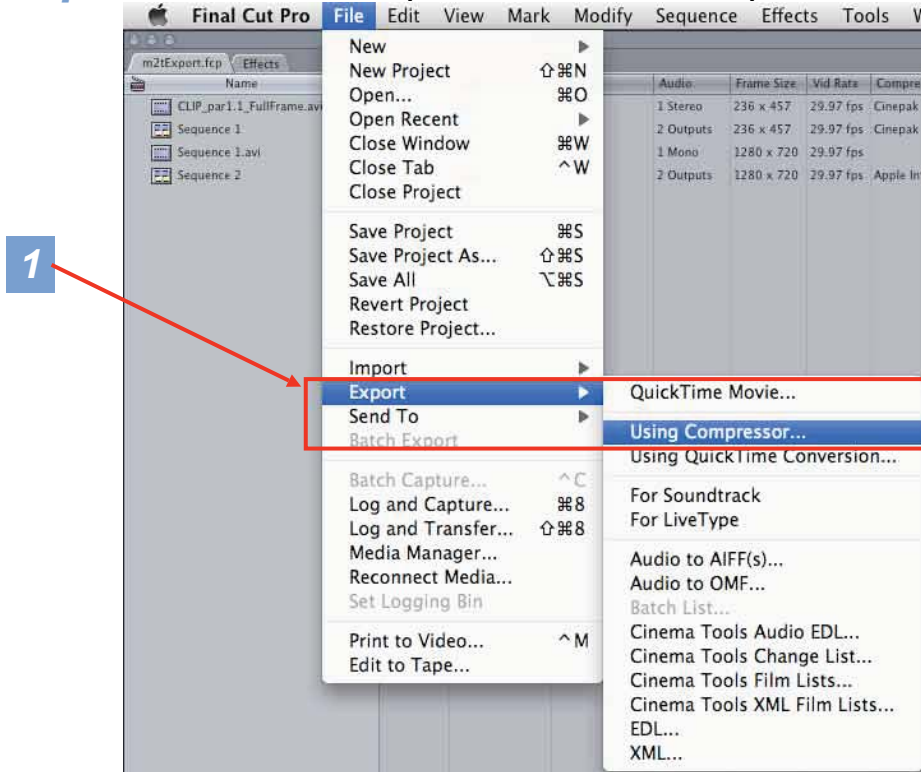


Step 8: The use of the VLC player to wrap the .mp4v file into the DMP recognized MPEG2-TS format will be necessary; however, transcoding is not a required procedure.

Please read “Reformat: MPEG4 to MPEG2 -TS” below.

Final Cut Pro: MPEG2 Rendering

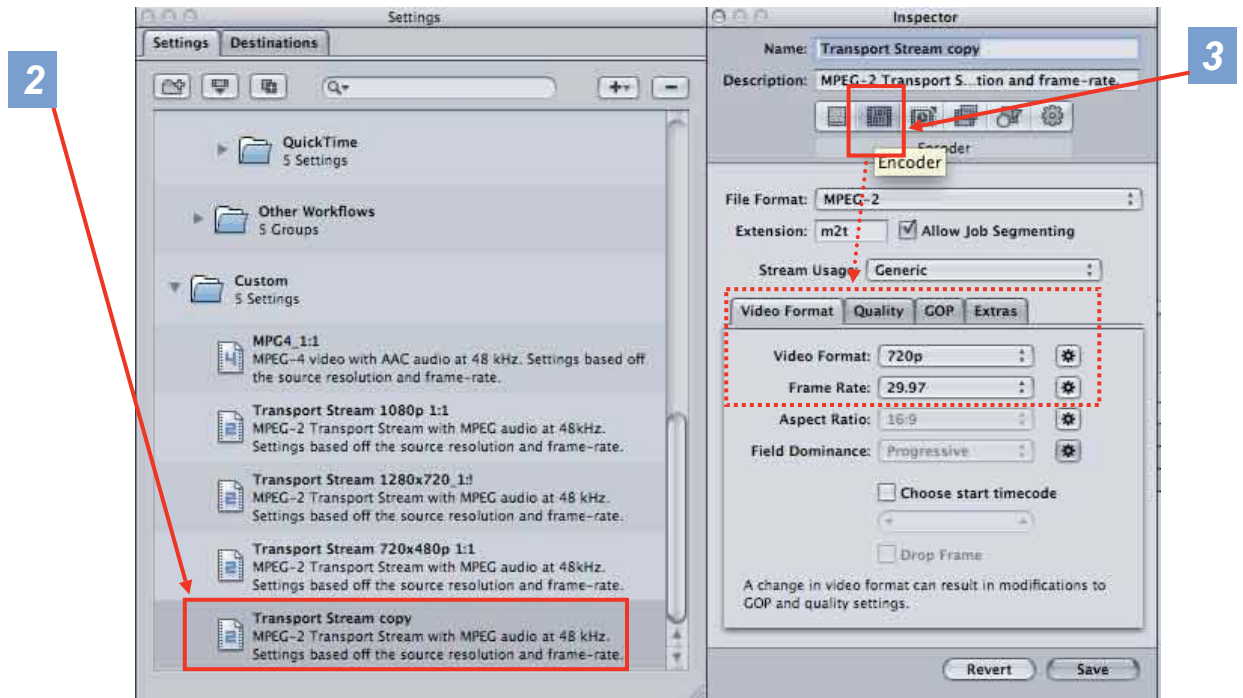
- **Step 1: Launch** Compressor via File>Export>Using Compressor



Final Cut Pro: MPEG2 Rendering

▪ **Step 2: Duplicate** the Mpeg-2 preset for modification.

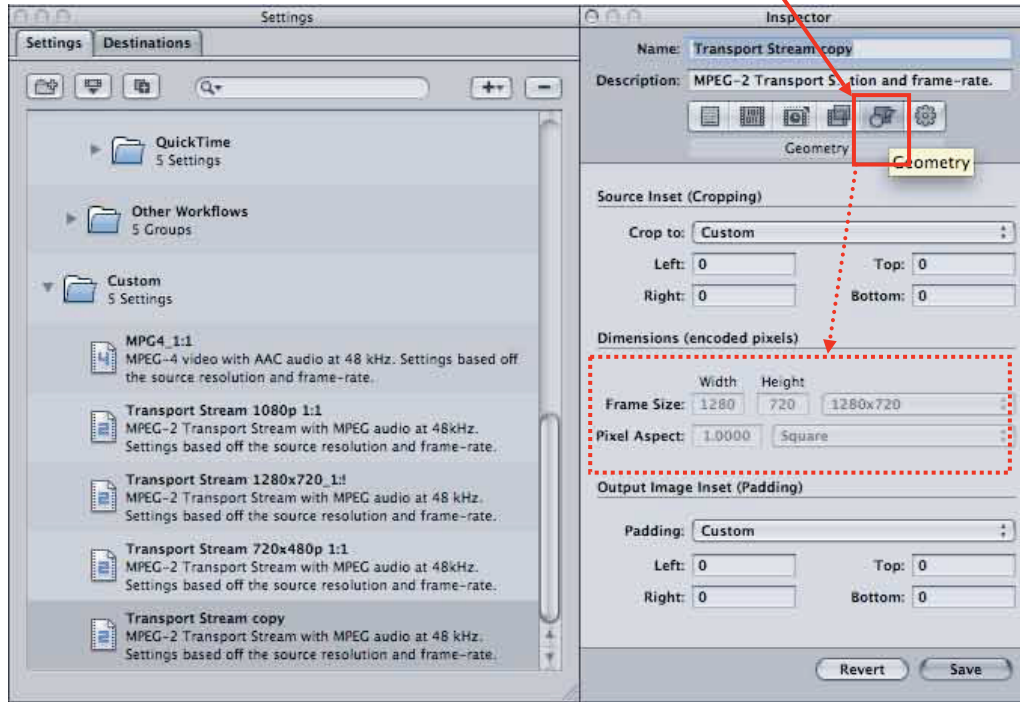
▪ **Step 3: Select** the “Encoder” button and match the settings.



Final Cut Pro: MPEG2 Rendering

- **Step 4: Select** the “Geometry” button and verify the settings.

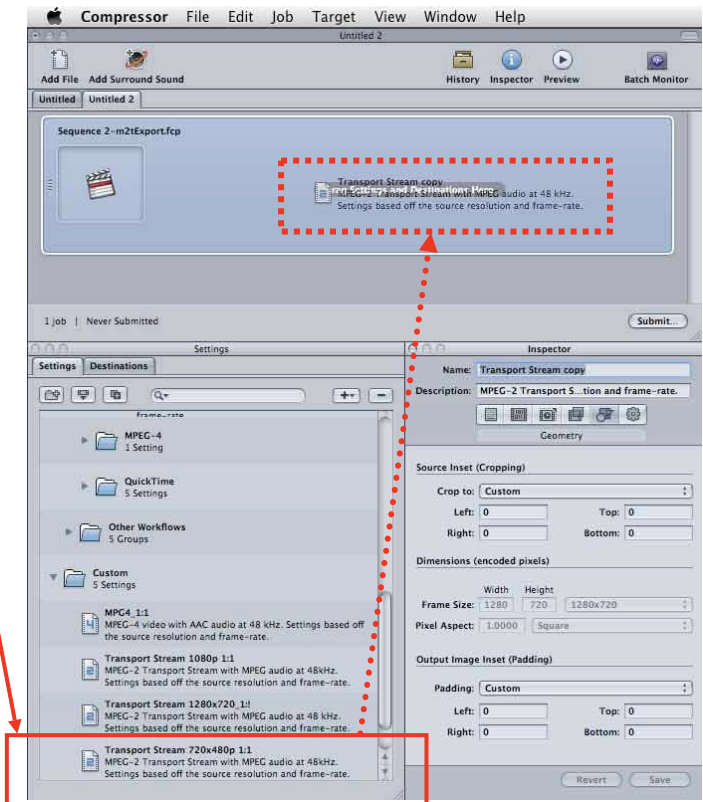
4



Final Cut Pro: MPEG2 Rendering

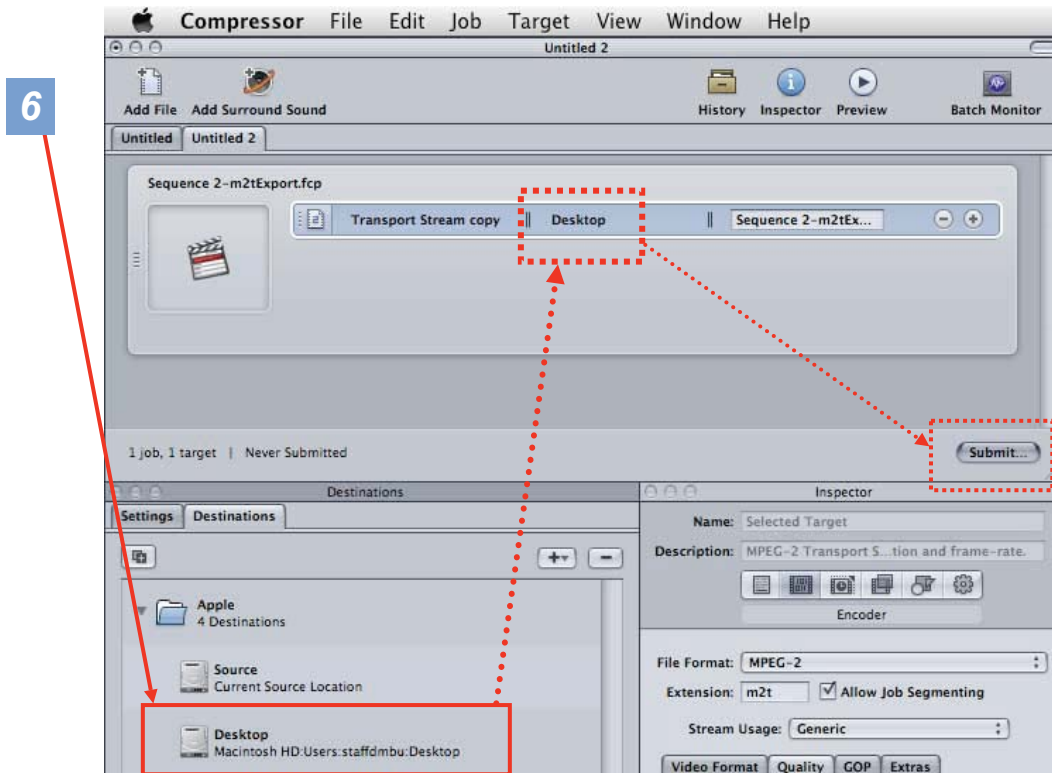
- **Step 5: Drag** the customized set to the clip.

5



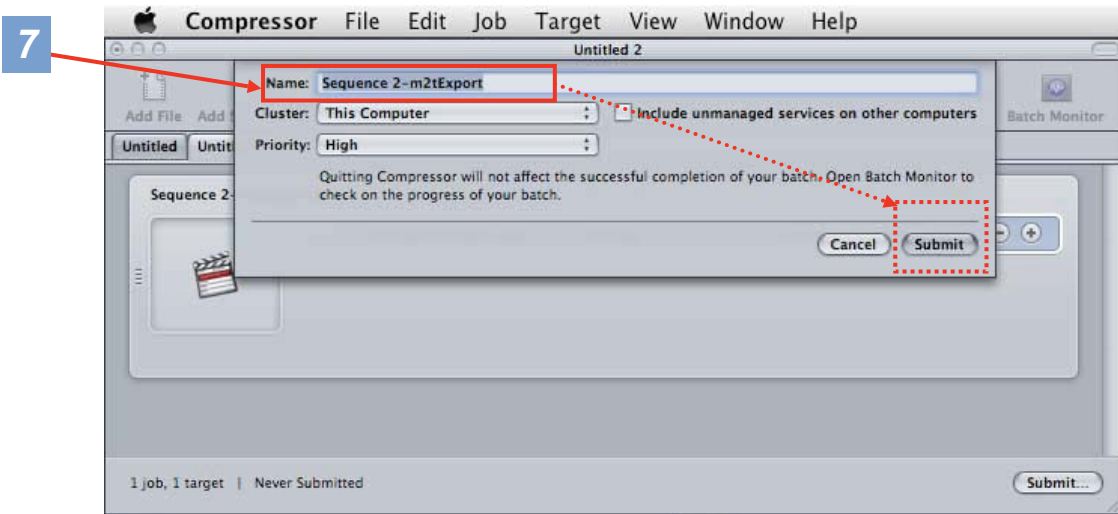
Final Cut Pro: MPEG2 Rendering

- **Step 6: Drag** a “Destination” set to the clip. Then click “Submit”.



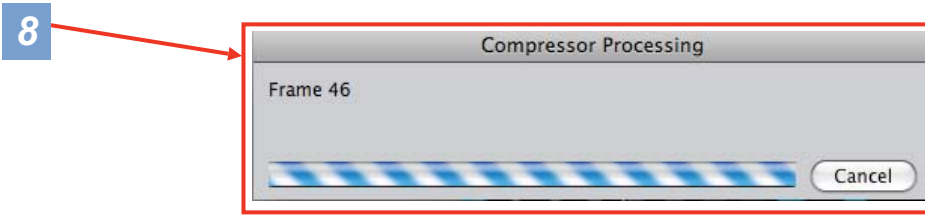
Final Cut Pro: MPEG2 Rendering

- **Step 7: Enter** a name, adding the “m2t” extension. Click “Submit”.



Final Cut Pro: MPEG2 Rendering

- **Step 8:** *The* dialogue box will disappear when done.



Why h.264 codec in MPEG-2 container?

- The free VLC player from Main Concept is a recommended tool to transcode and/or “wrap” video files in the DMP preferred MPEG2 –TS format.
- There are more tools available for MPEG-2 encoding/transcoding than other MPEG versions.
- MPEG-2 supports both standard and high definition video and is the industry DVD format.
- ***Transcoding is the direct digital-to-digital conversion from one codec to another.*** VLC streamlines the conversion process.
- The h.264 codec can provide good video quality at substantially lower bit rates.

MPEG2-TS/h.264 file size sampling Adobe

(After Effects CS3 Professional>Output module: MPEG2)

<u>Uncompressed file size</u>	<u>Compression Bitrates</u>	<u>Mpeg2-TS Compression</u>	<u>Transcoded to .h.264</u>
720x480p 610,965kb (596MB)	01Mbps	[03.6MB]	[3.3MB]
	03Mbps	[13.4MB]	[3.3MB]
	05Mbps	[13.4MB]	[3.3MB]
	08Mbps	[20.9MB]	[3.3MB]
	10Mbps	[25.9MB]	[3.3MB]
1280x760p 1,623,465kb (1.54GB)	08Mbps	[20.9MB]	[3.2MB]
	10Mbps	[26.0MB]	[3.2MB]
	15Mbps	[38.5MB]	[3.2MB]
	18Mbps	[46.0MB]	[3.2MB]
	20Mbps	[51.0MB]	[3.2MB]
1920x1080p 3,648,366kb (3.47GB)	08Mbps	[20.9MB]	[3.4MB]
	10Mbps	[25.9MB]	[3.4MB]
	15Mbps	[38.4MB]	[3.4MB]
	18Mbps	[46.0MB]	[3.5MB]
	20Mbps	[51.0MB]	[3.4MB]

MPEG2-TS/h.264 file size sampling Adobe

(Premiere Pro CS3 > Adobe Media Encoder: H.264 format)

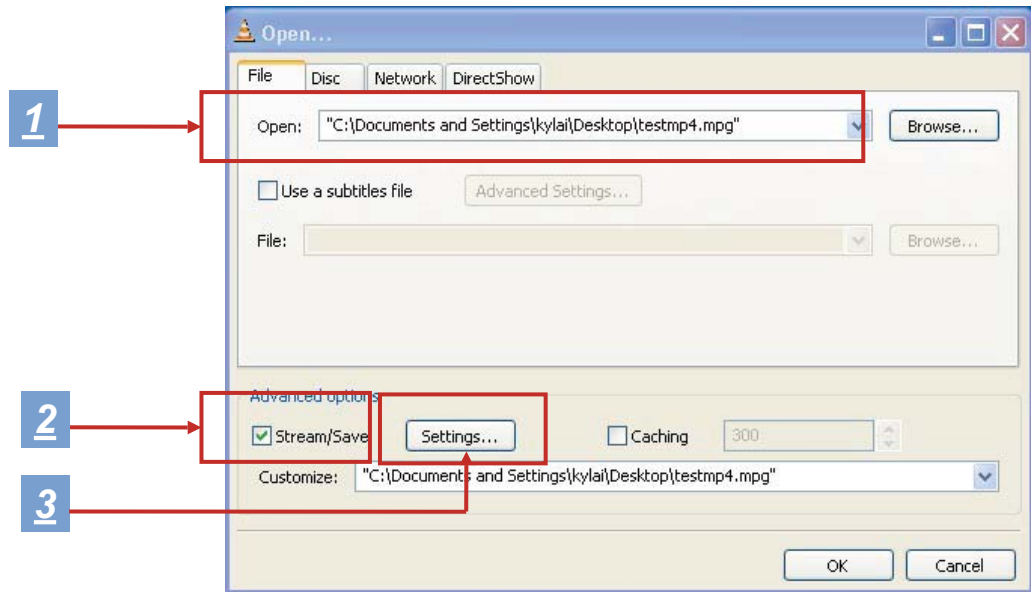
<u>Uncompressed file size</u>	<u>Compression Bitrates</u>	<u>H.264 Compression</u>	<u>Transcoded to .h.264</u>
720x480p 610,965kb (596MB)	01Mbps	[03.0MB]	[3.2MB]
	03Mbps	[07.4MB]	[3.1MB]
	05Mbps	[10.7MB]	[3.1MB]
	08Mbps	[15.4MB]	[3.1MB]
	10Mbps	[18.7MB]	[3.1MB]
1280x760p 1,623,465kb (1.54GB)	08Mbps	[16.2MB]	[3.1MB]
	10Mbps	[19.2MB]	[3.1MB]
	15Mbps	[28.3MB]	[3.1MB]
	18Mbps	[30.6MB]	[3.1MB]
	20Mbps	[37.3MB]	[3.1MB]
1920x1080p 3,648,366kb (3.47GB)	08Mbps	[16.6MB]	[3.3MB]
	10Mbps	[18.8MB]	[3.3MB]
	15Mbps	[28.0MB]	[3.3MB]
	18Mbps	[30.9MB]	[3.3MB]
	20Mbps	[32.6MB]	[3.2MB]

VLC: MPEG2-TS/h.264 transcoding

Step 1: Open the file you need to encode into MPEG2

Step 2: Check “Stream/Save” check-box

Step 3: Click “Settings”



- **Transcoding** is the direct digital-to-digital conversion from one codec to another
- In our case we convert codec from **the original codec** to **h.264**

VLC: MPEG2-TS/h.264 transcoding

▪ **Step 4:** Check the **file** check box

▪ **Step 5:** Specify file name

▪ **Step 6:** Check the **video codec** check box

▪ **Step 7:** Choose **h.264** from the drop-down menu

▪ **Step 8:** Choose the **bitrate** for:

▪ HD>12 -15 Mbit/sec

▪ HD>5-8 Mbit/sec

▪ **Step 9:** Check the **audio codec** check box

▪ **Step 10:** Choose **mpga** from the drop-down menu

▪ **Step 11:** Hit **OK**

