

Exporting H.264 MP4 Video for Playback in DIVA

DIVA supports a wide variety of video formats and will automatically convert them into the supported Flash video format. While very convenient, in some cases the user may want more control over the conversion processes. For this reason, the DIVA Team has begun incorporating support for MPEG-4 video using the H.264 codec.

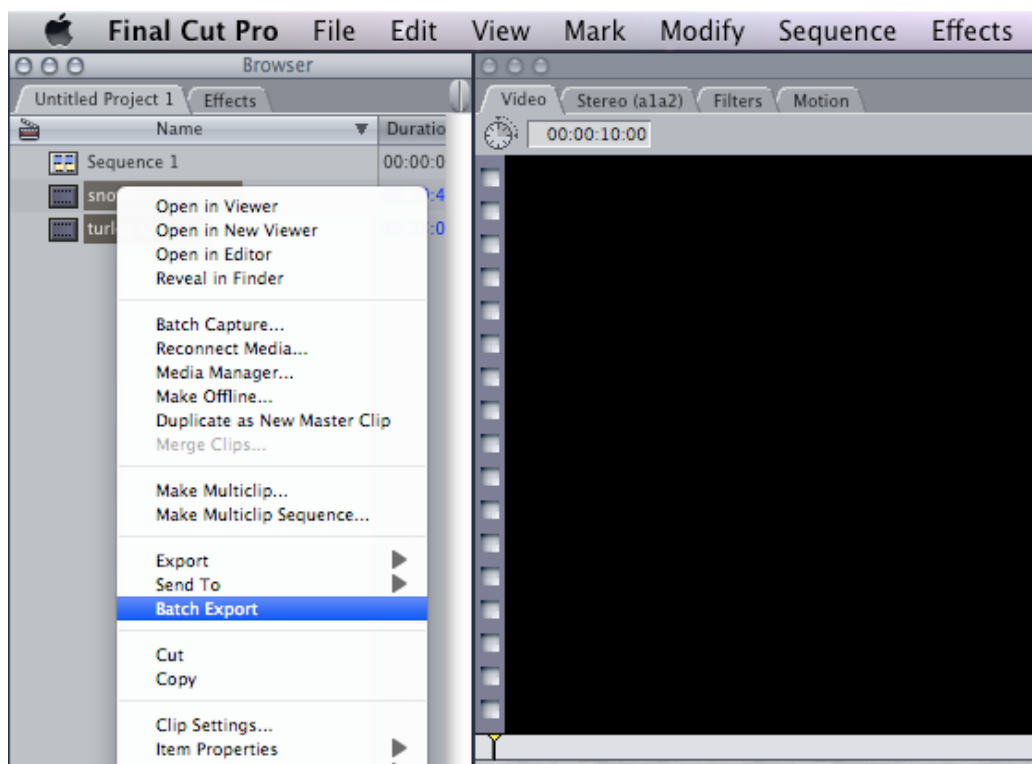
H.264, also known as MPEG-4 Part 10, has recently come to prominence as a powerful standard for digital video, especially when that video is distributed digitally. It is supported by a number of devices, including Apple's iPod, and allows for crisp and clean visuals with concise file sizes. Encoding your videos into this format prior to upload allows DIVA to play the file without any further conversion required, thus granting high quality video for display on DIVA.

We recommend using the H.264 codec when the clarity of the image is crucial to your project. DIVA's pre-existing encoding process results in video that most feel is sufficiently clear and crisp, but using H.264 allows for more control of the encoding process on your end. The extra control means more advanced options like control over the visual resolution your video is displayed in and support for widescreen formatted video.

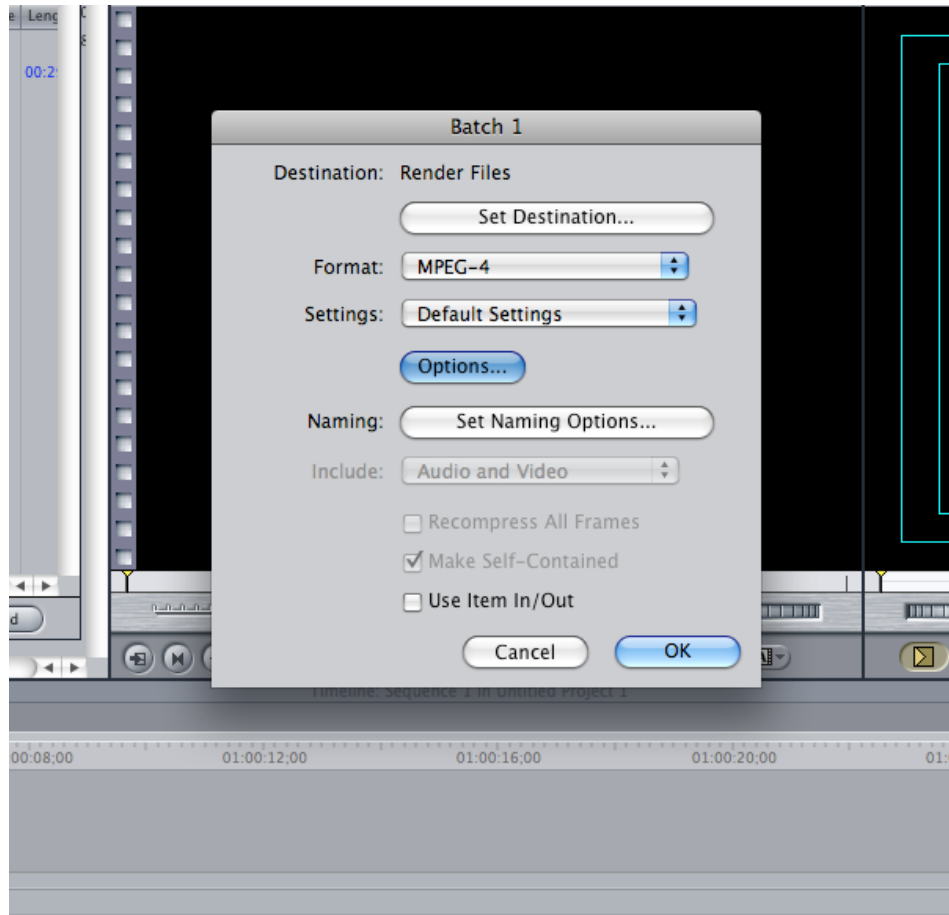
There are a number of programs that will allow your video to be converted to this format automatically. The more prominent video editing programs such as Apple Final Cut Pro Studio and Adobe Premiere Pro allow you to easily export your video out into this format. There are a number of free or open source packages that also support H.264. This document will explain the process of exporting a series of videos from Final Cut Pro in a batch and then go into detail over the recommended specifications and options used when preparing H.264 video for DIVA.

Batch Exporting H.264 Video in Final Cut Pro

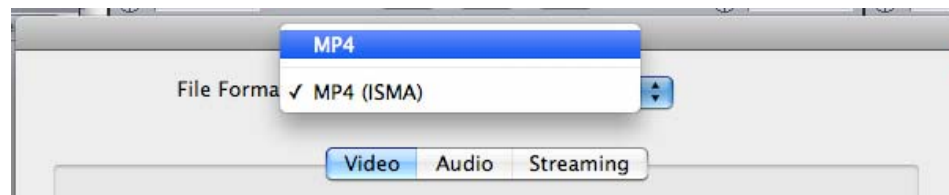
The first step is to gather your video files. Either import them from digital camcorders or take the files from your computer and place them all into one Final Cut project. As long as they are in a format that Final Cut Pro can read, we can export them into any format we like. Now select all the files and Ctrl-Click and select **Batch Export** from the resulting context menu.



This will load all the selected files into the **Batch Export** window. If you need to add more videos, make sure you do this now as once we start the export process, it won't be over until each video has been encoded, which will take some time. At the bottom of the **Batch Export** window select the **Settings** button. This is where we'll set all the properties we want Final Cut Pro to use when exporting our video. First, select the destination where you want to save all of our videos (we recommend you use a new folder that is placed somewhere that you'll be able to find it again easily, such as your desktop). Then use the **Format** dropdown box to select **MPEG-4**, set the **Settings** dropdown box to **Default Settings**, and click the **Options** button.

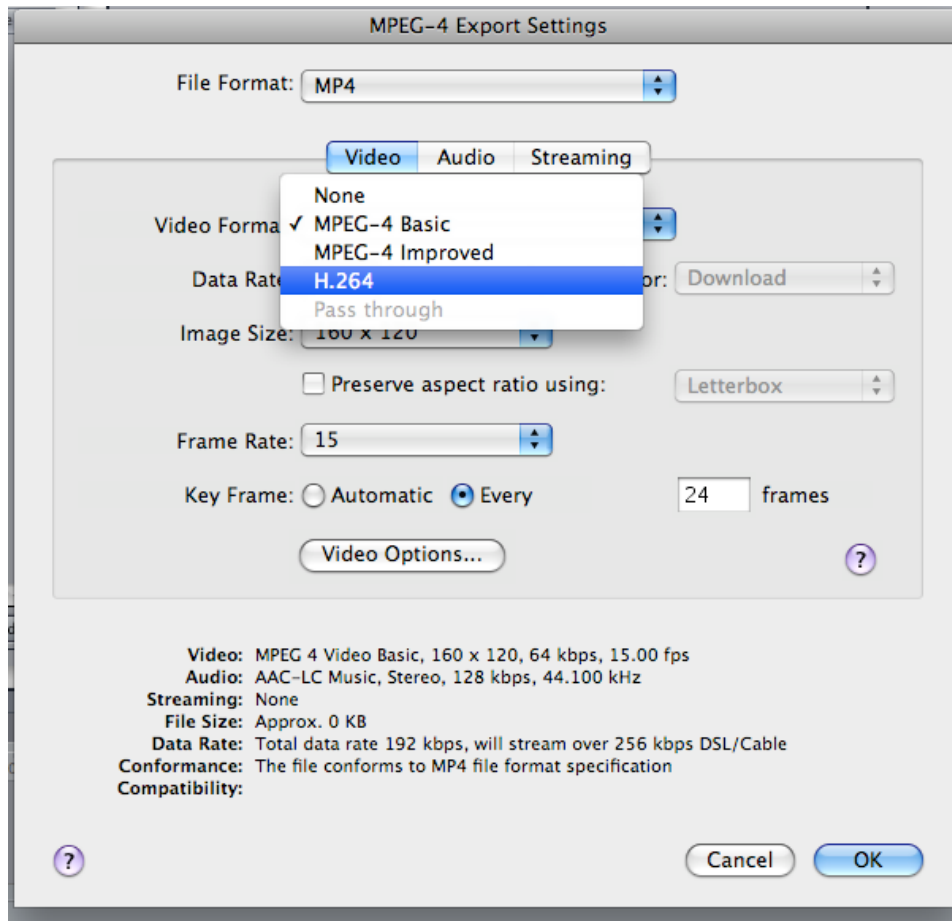


Now we have to select the H.264 codec and configure it for optimum web play in DIVA. On the dropdown for **File Format**, select **MP4** [not MP4(ISMA)!]

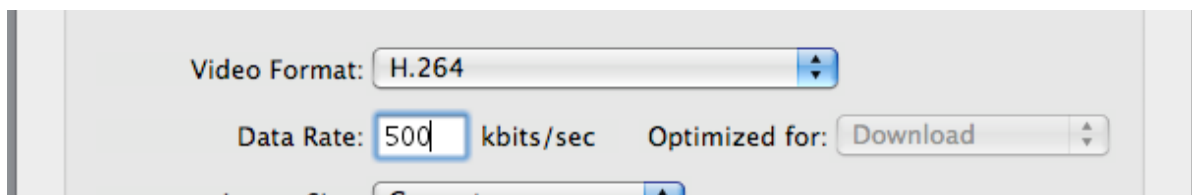


With **MP4** standard now selected we can access the H.264 codec.

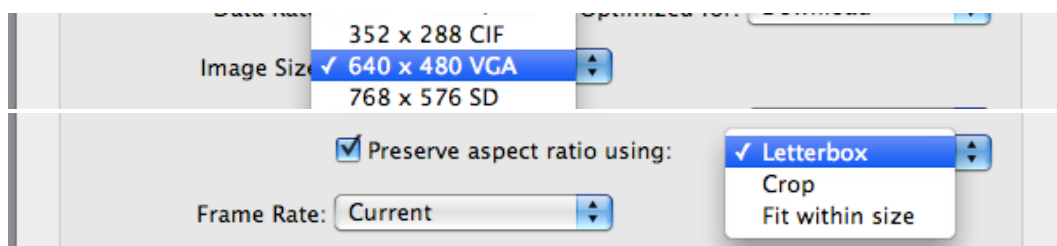
Under the **Video** tab, change the **Video Format** to H.264



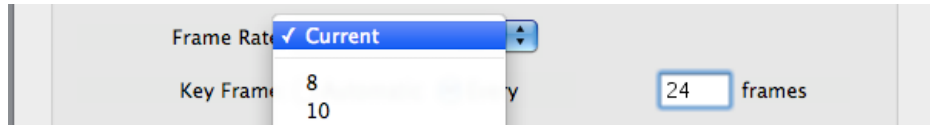
Next, we should select the **Data Rate**. This determines the maximum kilobytes per second your video will encode at. We recommend **500kbs**, but some projects may require more or less depending. If you have any questions on what size would be good for your project, email the DIVA Team at divateam@sfsu.edu. You can further optimize the quality and size of the video by using the **Optimized for** dropdown to select **Download** or **Streaming**. The default is **Download** which will work fine with DIVA, but in some cases **Streaming** may result in videos that load faster within the browser.



Next, we select the image size. The video player within DIVA displays images in a 4:3 ratio, with letterboxing if the video does not fit. To increase the quality of how your video is played in DIVA, it's recommended that you go ahead and convert it to **640x480 VGA** with **Keep Aspect Ratio** activated and set to **Letterboxing**. If you intend to maintain the resolution of your video, keep in mind that larger resolutions will be larger files that your users will have to let finish downloading. Also, if your videos are smaller than 640x480, raising the resolution will stretch out the image. If you wish to remain at your previous resolution, select **Current**.

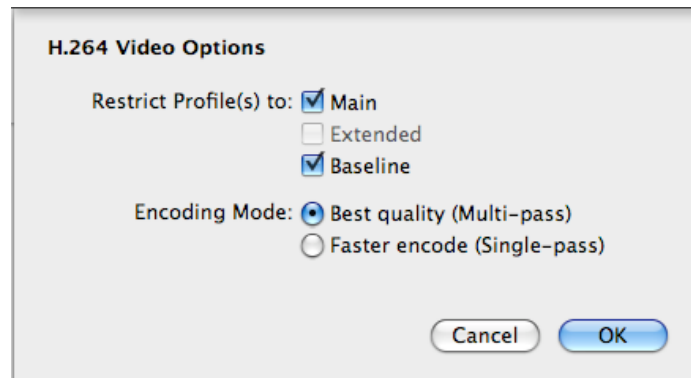


It is possible to adjust the frame rate your video as well, though we recommend you select **Current** to retain the original frame rate your video was shot in.

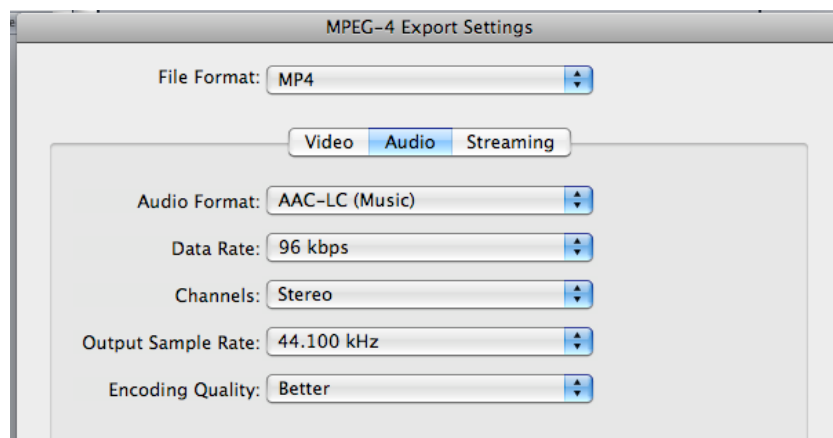


Keyframes determine how smooth your film will be, but the more you add the larger your file will be. We recommend you either select **Automatic** or select a number below your frame rate (**24** or **15** are generally sufficient).

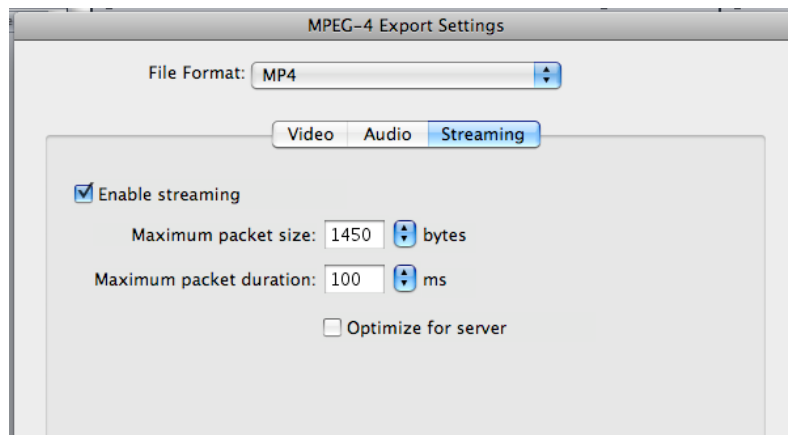
The last video settings we'll configure are in the **Video Options** prompt, which are activated by clicking the **Video Options** button near the bottom of the window. You will want to Restrict Profiles to **Main** and **Baseline** and then select **Best quality (Multi-pass)**. These settings are option, so if you'd prefer faster encoding instead of higher quality, feel free to choose appropriately.



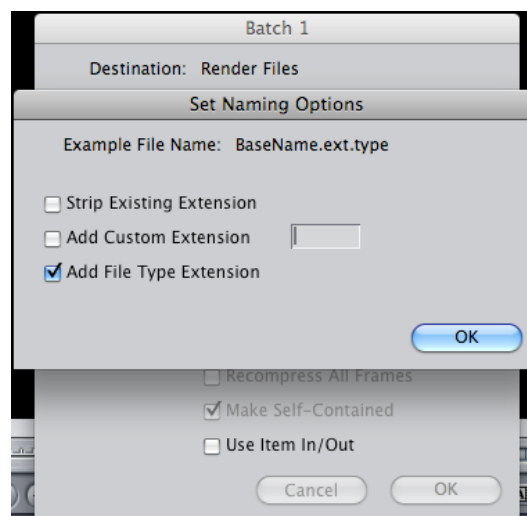
The next step is the **Audio** tab. The supported codec for DIVA is AAC-LC and we recommend you use a **Data Rate** of **96kbps** for videos with primarily speech and **128kbps** for primarily music. **Stereo** sound at a **Sample Rate** of **44.100 kHz** with an **Encoding Quality** of **Better**, should suffice for most projects.



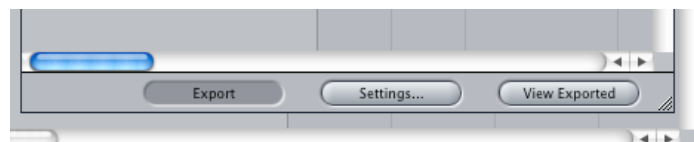
Streaming adds properties to your film that allow it to play easily from DIVA's web player, without having fully downloaded. We recommend you activate streaming and use the default settings of **1450** for **Maximum packet size** and **100 ms** for **Maximum packet duration**.



Once you're finished with the **Streaming** settings, you can click **OK** and return to the **Batch Settings** window. To finish up, we need to make sure the files have the proper Extension so that DIVA can interpret them properly. Click **Set Naming Options** and select **Add File Type Extension** which appends ".mp4" to the end of the file.



Your batch should now be ready for export, so click **OK** to return to the **Batch Export** window and click **Export** to begin converting the videos and copying them to your desktop.



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