

SYBEX Tutorial

Final Cut Pro 3 and the Art of Filmmaking

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Tutorial: Creating a Compression Template with Discreet Cleaner

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TUTORIAL

Creating a Compression Template with Discreet Cleaner

Discreet Cleaner is the industry-standard compression software, used by practically every new-media shop and producer out there. Chapter 20 of *Final Cut Pro 3 and the Art of Filmmaking* shows how to use Discreet Cleaner's Settings Wizard to compress a Final Cut Pro movie and export it for the Windows Media format. For first-time users, the Settings Wizard can be a good way to introduce yourself to the program and learn about how it works. However, the real power of Discreet Cleaner comes in its manual interface, where you can program very detailed functions for QuickTime, Real, Windows Media, and other formats.

One of the key selling points of Discreet Cleaner is that the templates you create can be permanently stored as files, and so you can use them again and again. To acquaint you with the depth of control that Discreet Cleaner provides for media compression, we're going to

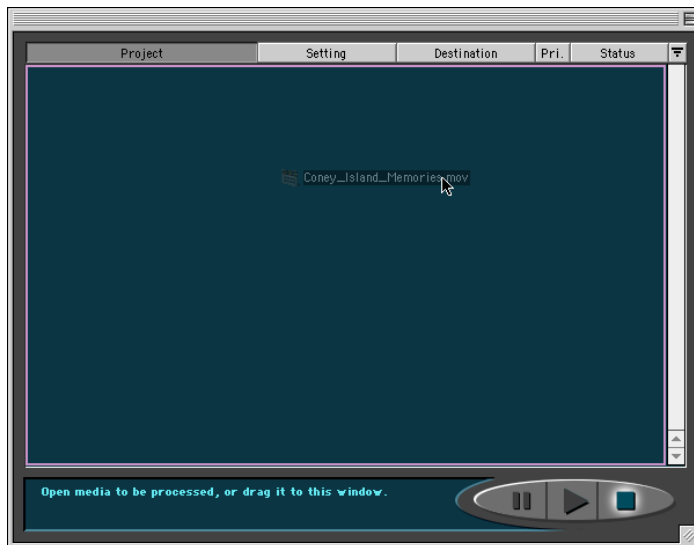
show you how to design a basic compression template for a downloadable QuickTime movie (compatible with version 5 only) for a broadband audience. We will be using this template to compress 720×480 NTSC DV footage. If you don't have any such material, you may wish to reuse the Chapter 17 sequence provided on the book's DVD as described in Chapter 20.

The following steps provide a basic map only, and you should consult Discreet Cleaner's technical manual for performing these and similar functions in other formats. Before using the manual settings, it's a good idea to select Edit > Preferences in Discreet Cleaner and make sure your data rate units are set to Bits, the standard unit used by modems for measuring data transfer rates, instead of Bytes. Finally, note that although Discreet Cleaner includes a basic version of the Sorensen 3 Video codec, you can achieve even further control over compression

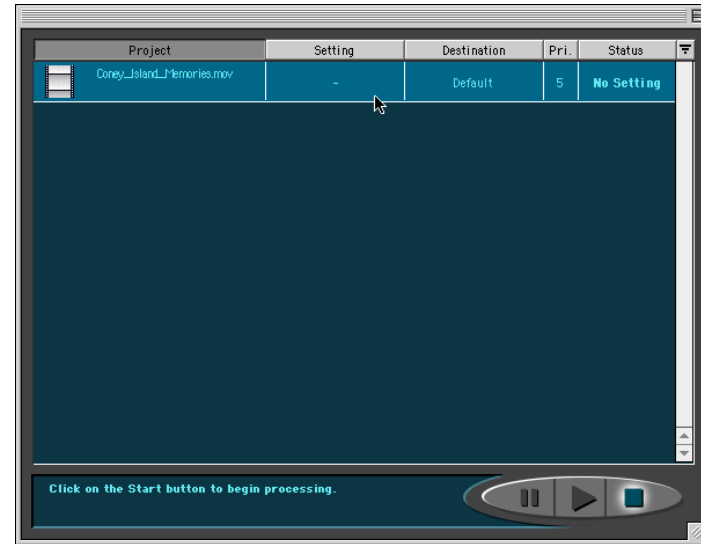
by using the Professional Edition, which is sold separately. Some of the options described below are available only with the Professional Edition.

1. In Final Cut Pro, once you are ready to export your file, choose File > Export and select Final Cut Pro Movie. In the window that appears, name your file and select its destination. Leave all the default settings intact. (However, if Discreet Cleaner is on the same computer where you're using FCP, you can turn off the Save As Self-Contained option to speed up the process.) Click Save. When the file has finished exporting, close out of FCP.

2. Open Discreet Cleaner. To begin compressing your media clip, either drag your Final Cut Pro movie onto the interface or select File > Open and use the Finder to select your movie.



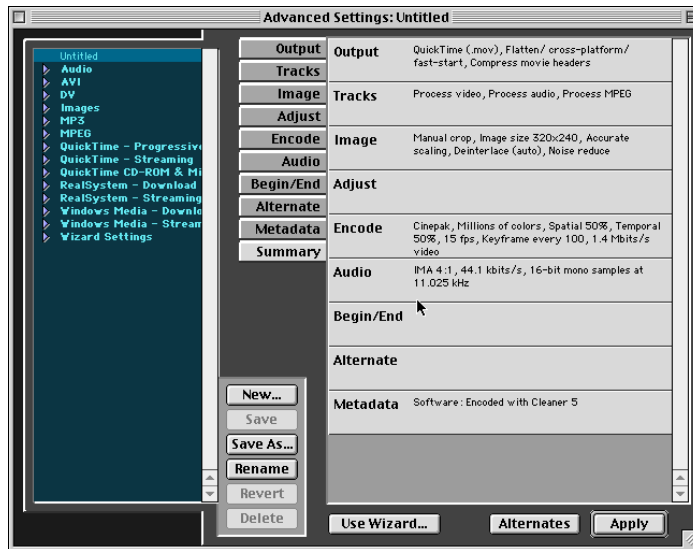
3. When you have successfully brought in your file, it will appear in the Discreet Cleaner interface.



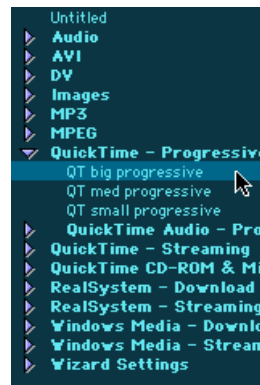
4. To design a compression template, double-click the file when it appears in the window. A Settings Wizard window will appear, along with a Project window behind it that displays technical information about your FCP movie. Click the Advanced Settings button at the bottom of the window. The Advanced Settings window will appear.

Advanced Settings...

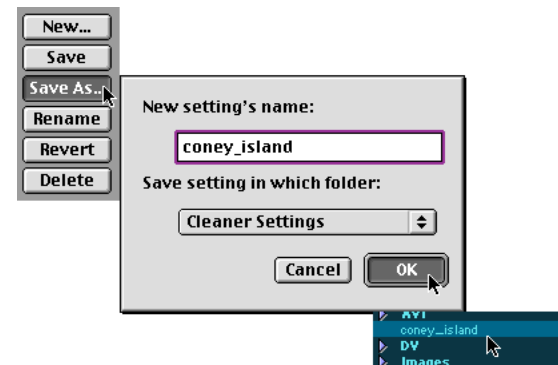
5. The Advanced Settings window has three panes: a list of Presets on the left, the Settings pane on the right, and a set of buttons for common operations. This is the place where finely tuned aspects to media compression can be set manually.



6. You will notice a variety of folders in the Presets pane, including QuickTime, Real, Windows Media, and others. For our purposes, choose QuickTime Progressive. (This is the downloadable format.) From within this subdirectory, click QT Big Progressive.

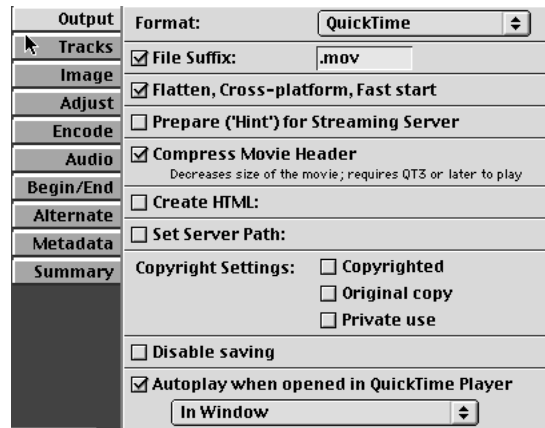


7. Click the Save As button. A window will pop up, allowing you to rename your file. This way, the changes we are about to make won't alter the original default template. Notice that it is saved into the Presets window alphabetically, and that it is automatically highlighted. This means it is the setting that can be altered.

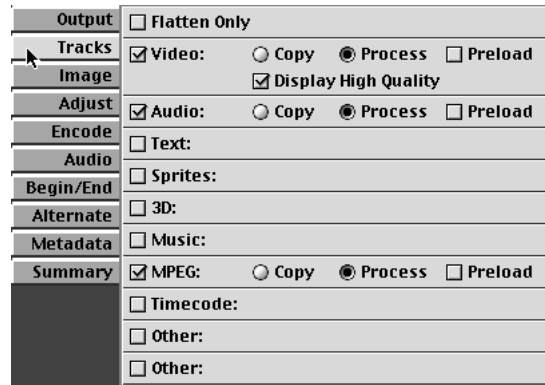


8. Now, look at the Settings window. You'll note a variety of tabs with particular functions. Start with the Output tab and leave all of the default settings as they are. The Flatten, Cross-Platform, Fast Start option is essential for QuickTime movies that will be played on Windows PCs as well as Macs, so definitely leave this one on. You may also wish to add the Autoplay function so that when people download your movie, it will play automatically on

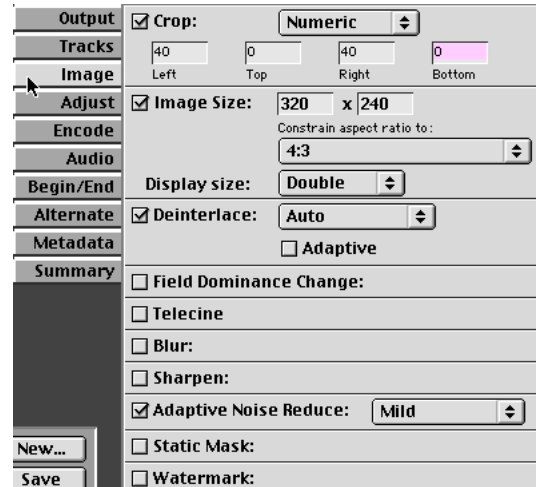
their machine, either in the QuickTime window or as a full-screen document.



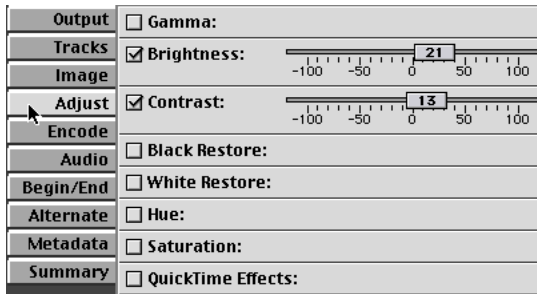
9. Next click the Tracks tab. Leave all of these default settings as they are. For Video, Audio, and MPEG, the Process setting means that the final QuickTime movies are to be played as they are downloaded. For people surfing on broadband, you may wish to enable the Display High Quality function.



10. The Image tab is where you can perform accurate scaling via manual cropping. In the Crop box, pull down the menu to Numeric. Remember that we're working with 720×480 material, so that to get the material to 640×480 , we must shave 80 pixels off the width of our source material. To do this evenly, type 40 in both the Left and Right boxes. Leave the Top and Bottom at 0. Change your Image Size to 320×240 —which accurately scales down your Final Cut Pro Movie to a 4:3 aspect ratio. Remember that the quality of compressed video is higher with a smaller image size. Leave the constrained aspect ratio at 4:3. Next, set your display size to Double. This function will blow up a regular 320×240 back to 640×480 when the compression is complete. Leave all of the defaults as they are. If you are working with film that has been transferred to video, check the box to turn on the Telecine function. To set a watermark in your video, turn on the Watermark function and use Set to choose a graphic file on your computer. If you have purchased the professional edition of the Sorenson codec, you will probably want to use the Watermark function in the Encode section, which allows for deeper functionality than the version supplied with Discreet Cleaner.

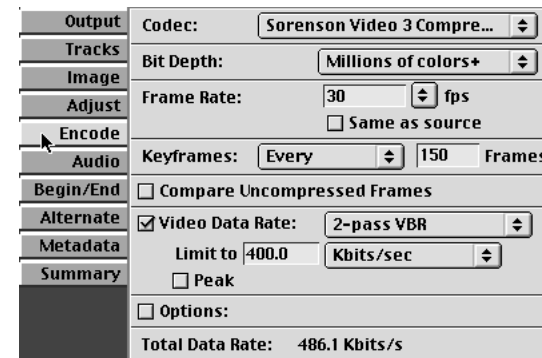


11. Next, select the Adjust tab. Generally, these controls are not nearly as effective as their equivalents in Final Cut Pro. However, because most computer monitors are darker than NTSC or PAL monitors, you may wish to increase your Contrast and Brightness to compensate for this difference.



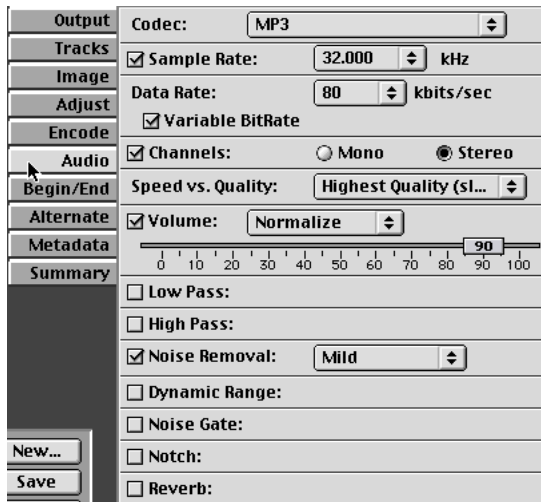
12. Now select the Encode tab. Since we are targeting QuickTime 5 users, we can change our codec to Sorenson Video 3 Compressor. If you have the professional edition of this codec, you will have access to much more functionality than with the basic edition that comes with Discreet Cleaner. Change your Bit Depth to Millions of Colors+ for better color accuracy. Leave your Spatial Quality at 50. Bump up your Frame Rate to 30 fps, and leave your Keyframes at 150. If you have the professional edition of Sorenson Video 3, go to the Video Data Rate box, pull down the menu and change the setting from Basic to 2-pass VBR (Variable Bit Rate). As explained in Chapter 20 of *Final Cut Pro 3 and the Art of Filmmaking*, variable bit rate allows the highest-quality compression; Sorenson will allocate more compression power to high action

sequences and less to slower motion sequences. Leave your data rate at 400 (and note at the bottom that the Total Data Rate is 486.1 Kbps, including your audio file), which is the target broadband connection. For more sophisticated functionality with the Sorenson 3 Professional Edition codec, select Options and Set. A Sorenson pop-up window will launch. The functions here of note are Image Smoothing (particularly effective for clips that will be downloaded via low-bandwidth connections), and inserting a watermark in your video—in the Playback and Watermark tabs respectively.



13. Next, turn to the Audio tab. Change the codec from IMA to MP3 to provide more control over how the audio is compressed. Because MP3 compresses in a more sophisticated way than IMA, the Total Data Rate will shrink, leaving you more space to improve the quality of the compression. Change the sample rate to 44.100 kHz. Most MP3 compressors automatically compress at a Data Rate of 160 Kbps, but because even broadband has connection restrictions, you should only increase this setting to 80 Kbps.

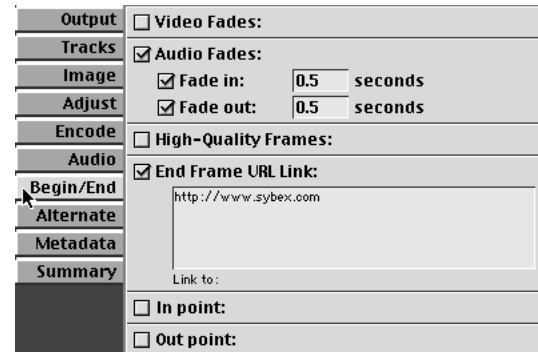
(This will leave approximately the same Total Data Rate as before it was switched to MP3.) Turn on the Variable Bit Rate function to perform a qualitative compress on your audio. Leave the channel setting at Stereo, and change the Speed vs. Quality setting to Highest Quality. (This delivers a better audio compression at the expense of a slower compression process.) The rest of the functions are not as effective for audio correction as they are in Final Cut Pro, but you may wish to select Volume to further normalize it. You may also wish to perform an additional Noise Removal.



14. In the Begin/End tab, you may wish to add Audio and Video fades to your clip, if you haven't already done so with Final Cut Pro. If you were creating this compression template for use with a low-bandwidth connection, it might also make sense to

add High-Quality Frames to the beginning of your clip. Web surfers who have to wait for your clip to begin may be more impressed with a high-quality image than with a pixelated one.

Another great function in the Begin/End tab is End Frame URL Link. This inserts a “hidden link” at the end of the movie to the web address you want your web surfers to visit. (If you plan to use this function, you'll first want to set up your movie for it in Final Cut Pro, by making sure that the last frame contains text or a graphic telling the viewer that clicking the frame will link them to your web site. See Chapter 9 of *Final Cut Pro 3 and the Art of Filmmaking* for information about adding titles.)



15. The Alternate tab is a very sophisticated function that prevents users from accessing your file in particular ways. Generally speaking, this function is to be used when you are creating multiple QuickTime versions of your movie for different connection speeds. Unless you know how to use this functionality, you should turn all of the options off. However, because we are compressing our video with Sorenson 3, we should restrict users from

QuickTime versions lower than 5. Change the QuickTime Version pull-down menu to QuickTime 5.

Output	<input type="checkbox"/> Connection:
Tracks	<input type="checkbox"/> Language:
Image	<input type="checkbox"/> Platform:
Adjust	<input type="checkbox"/> Quality:
Encode	<input type="checkbox"/> Computer Power:
Audio	<input checked="" type="checkbox"/> QuickTime Version: QuickTime 5
Begin/End	Server Path:
Alternate	Movie has relative link to Master movie
Metadata	<input type="checkbox"/> Use this movie as the fallback
Summary	

16. The Metadata is information that users can see when they download your movie with QuickTime Pro. You may wish to input necessary information appropriate to your QuickTime movie.

Output	<input checked="" type="checkbox"/> Title: Coney Island Memories
Tracks	<input checked="" type="checkbox"/> Author: Jason Cranford-Teague & David
Image	<input checked="" type="checkbox"/> Copyright: 2001
Adjust	<input type="checkbox"/> Album:
Encode	<input checked="" type="checkbox"/> Software: Encoded with Cleaner 5
Audio	
Begin/End	<input type="checkbox"/> Other:
Alternate	<input type="checkbox"/> Other:
Metadata	<input type="checkbox"/> Other:
Summary	<input type="checkbox"/> Other:
	<input type="checkbox"/> Other:

17. The Summary tab displays a comprehensive list of all the manual configurations you have performed. (You may also want to go back to the Encode tab to check the Total Data Rate

one last time.) If everything looks good, click Save. (Notice that once your template is saved, the Save button is grayed out, meaning that your compression template has been added permanently to the collection.) Finally, click Apply to apply your settings to your clip.

Output	Output	QuickTime (.mov), Flatten/ cross-platform/ fast-start, Compress movie headers, Autoplay-in window
Tracks	Tracks	Process video (display high quality), Process audio, Process MPEG
Image	Image	Numeric crop, Image size 320x240 (display doubled), Accurate scaling, Deinterlace (auto), Noise reduce
Adjust	Adjust	Brightness 21, Contrast 13
Encode	Encode	Sorenson Video 3 Compressor, Millions of colors+, 30 fps, Keyframe every 150, 400.0 Kbits/s video, VBR
Audio	Audio	80.0 kbits/s, CBR, 32.000 kHz, stereo, Higher quality (slower encode), normalize volume to 90%, noise removal
Begin/End	Begin/End	audio fade in 0.5s/out 0.5s, URL Link
Alternate	Alternate	QuickTime 5
Metadata	Metadata	Title: Coney Island Memories, Author: Jason Cranford-Teague & David Teague, Copyright: 2001. Software: Encoded with Cleaner 5
Summary		

New... Save Save As... Rename Revert Delete Use Wizard... Alternates Apply

18. When you have entered all of the appropriate information, either click the Play button, select Batch > Encode, or press ⌘+E. The Output window will launch, showing you the encoding process. (Note that since you are compressing only one movie, the program will ask you to specify where the destination should be one more time.)

19. If you need to either pause or completely stop the compression process, click the Pause or Stop button respectively.

20. Notice that as your video compresses, an icon of a wrench appears. When your Final Cut movie has been fully converted into a downloadable QuickTime, your computer will beep.



21. Go to where the compressed movie was saved. You will find it named with a .mov extension—signifying that it is a QuickTime movie.

22. Now that your broadband QuickTime movie is compressed, launch it in the QuickTime Player. In the Movie Info window, notice the differences between the Normal and Current Size. This functionality was implemented in the Image tab, and is further described in the *Manual QuickTime Pro Scaling* section in Chapter 20 of *Final Cut Pro 3 and the Art of Filmmaking*. Also notice that the title and related information are what you entered in the Meta-data tab.

