

Chapter 7b - Selecting Compression Parameters

This chapter is broken into part A and part B. Part A details the Video settings of the Advanced Settings. Part B details the other settings (Audio, Compress, Fades, Movie).

Audio Settings

The audio settings box displays:

- Sample rate (kHz)
- Sample size (bits)
- Channels (mono/stereo) to be used
- Audio compression used

- No Audio Option

Sample Rate: Sample rate is the number of samples per second used for audio. Higher sample rates give higher quality audio, but the resulting audio takes more of the movie's limited bandwidth. 11.025 kHz is a common choice for CD-ROM content.

Sample Size: Sample size is the accuracy with which a sound sample is recorded. Generally, sample size is 8-bit or 16-bit. The latter is more accurate and provides more dynamic range, but takes up more space.

Mono vs. Stereo: The channel options are mono or stereo. Unless the source movie has stereo sound, there is no reason to use stereo. Stereo also takes twice the bandwidth of mono sound, and so it is rarely used for CD-ROM videos.

Audio Compression: You may create IMA compressed soundtracks with your movies by selecting "IMA" from the compression pop-up. IMA is a 4:1 "lossy" audio compression technique that works with 16 bit sound. See Chapter 10- Audio Handling for more details. 22.050 kHz, 16-bit IMA audio is a good setting for most projects.

Audio Interleave Factor: Movie Cleaner automatically handles audio interleave.

NOTE: Under QuickTime 2.1, all flattened movies are automatically set to an interleave of 1 second - QuickTime 2.1 will override any other interleave factor, so Movie Cleaner defaults to 1 second interleave.

No Audio: You may create a movie with no soundtrack by checking the "No Audio" checkbox. See Chapter 10 - Audio Handling for more details on this feature.

Compress Settings

he video compression settings box displays:

- Video codec to be used

- Number of colors desired

- Video quality

- Frame-rate (fps)

- Frequency of key frames

- Data-rate (kps)

Codec Choice: The video codec you select determines how the video will be compressed. Generally, Cinepak or Indeo produce the best results for CD-ROMs. The other codecs are best for specialized applications. If you are unsure which codec to use, it is suggested that you go through an interview with the Movie Expert to see what is best for your movie. It's important to remember that the Cinepak codec is built into QuickTime - the Indeo codec must be manually added to your extensions folder before you can compress or play back Indeo video.

Number of Colors: The number of colors pop-up allows you to select the final movie's color depth. The options available depend on the codec you select. If you create a 256-color movie, it is highly recommended that you attach a palette to the movie before you compress it — you can set the palette in the Movie section of the Advanced Settings window. Please

see Chapter 13 - Tips and Suggestions for more details on 8-Bit Cinepak. Generally, this setting is left at "Millions" or "Best" for CD-ROM video.

Video Quality Slider: The "Quality" slider changes different things with different codecs. For CinePak, the "Quality" slider controls the quality ratio of key-frames vs. delta frames. The higher the number, the higher the quality of the key frames, but the delta frames become lower quality to compensate for the fact you have only a fixed bandwidth. For most CinePak movies, 50% usually produces the best result. It is often helpful to experiment with this setting, as there is no objective way to determine the "best" setting.

Some codecs, such as Indeo 3.x, ignore the "Quality" slider entirely. Other codecs, such as JPEG, depend entirely on this slider to set the quality (and data-rate) of the video.

Frame-rate: Frame-rate is the number of frames per second that your movie will play back at. QuickTime movies for CD-ROMs often have a frame-rate of 12 or 15 frames per second, with 15 usually preferred. Macintoshes can handle higher frame-rates than Windows compatible machines. Generally, higher frame-rates give you smoother movies with lower image quality.

You may also specify a decimal framerate - this is useful if you are working from a PAL source, because you can easily set the frame-rate to 12.5, which is a half the 25 fps of PAL. This gives you a smoother movie than if you set the framerate to 12, because it simply uses every other frame.

Keyframe Frequency: Some codecs let you set the keyframe frequency, which is a minimum number of how often you want a keyframe inserted in the movie. Movies that have a lot of transitions or motion in them should have higher keyframe-rates (every 3 - 5 frames) than normal video (every 15-30 frames). If you are not sure what keyframe-rate to use, we suggest you go through an interview with the Movie Expert to see what it recommends. Experimentation is also sometimes the only way to "fine-tune" your movie's key frame-rate.

Data-rate: The data-rate is the total number of kilobytes per second of your finished movie, including the audio. For example, if you are using a total data-rate of 170 kps, and using 22.050 khz sound, your video data-rate is about 150 kps, and your audio data-rate is about 20 kps. By making this setting your total data-rate, you do not have to do these calculations - what you type is the total data-rate you get.

Only data-rate limited codecs such as Cinepak and Indeo offer this as an option. Sometimes these codecs do not hit the desired data-rate exactly. You may need to falsely inflate or lower your target data-rate to get your desired rate. Remember that if you are close to a safe data-rate, a little over or under is acceptable. For example, if you wanted 170 kps and got 165 kps or 175 kps, that rate is fine.

Generally for CD-ROMs, a total data-rate of 170 - 200 kps is safe for cross-platform 2x speed titles. A Macintosh only product can usually be set to about 220 - 250 kps.

Fades Settings

he fades settings box displays:

- Time for video fade in and fade out

- Starting/ending color for video fade in and fade out

- Time for audio fade in and fade out

- Hold times for the first and last frames

Fade Times: To create a video fade, check the box next to the option you want (in and/or out) then type in a time in the duration box. Fades can be whole numbers or decimals.

Fade Colors: Fade colors are set with the fades pop-up. Selecting Color Fades will bring up the standard Apple Color Picker.

Audio Fades: Audio fade in causes the audio to start at silence and smoothly increase until it is the normal volume for your movie. Audio fade out does the reverse at the end of a movie. It is often best to have audio fades accompany video fades. Audio fades also prevent the speaker from "popping" at the beginning and end of a movie that has a loud soundtrack.

Hold Times for First/Last Frames: Setting a hold time for the first and/or last frame makes the movie play the first and/or last frame of the movie for a longer time than normal. This is very useful in applications such as Director, which have a hard time starting video smoothly. A first frame hold of one second lets the program "come up to speed" before the real video starts, which helps prevent the movie from "jerking" when it is played. Like fades, holds can be whole numbers or decimals.

Movie Settings

The Movie settings box displays:

- Flatten movie option (for cross-platform movies)
- Compare compressed frames option
- Palette for the movie

Flattening Movies: To flatten a movie and make it ready for cross-platform playback, check the box next to the flatten option. Flattening puts all the movie data into its correct order, and removes edits and references to other movies. Movie Cleaner also flattens multiple video and audio tracks into single video and audio tracks for cross-platform playback

(Windows machines currently can't handle more than one audio or video track). Finally, flattening a movie places the information contained in the resource fork into the data fork so that Windows machines can read the movie (Windows machines also can't see resource forks). The flatten and make cross-platform option is normally left on as a default — there is normally no advantage to turning it off.

Comparing Compressed Frames:

The compare compressed frames option determines whether the compressor looks at the previous uncompressed or previous compressed frame to generate its difference frames. For normal movies, this feature should be checked, which causes the compressor to compare the current frame with the previous compressed frame. This usually generates the best compression.

You should turn off this option when you are compressing video that has truly static zones in it, such as freeze frames, or titles that hold, etc. You should always turn this feature off when you are using the "Talking Heads" filter. Turning off this feature will remove random pixel movement in truly static zones.

Turning off Compare Compressed Frames may also improve the quality of computer generated graphics and animations.

Custom Palettes: You can set a custom palette to be associated with your movie with the Set Movie Palette feature. To do this, press the Set button, then indicate a PICT file that has the palette you would like to use for your movie. If the image you indicate does not have a palette already, Movie Cleaner will create a custom palette from it. To remove the palette, press the Clear button.

For more information on palettes and QuickTime movies, check out the Tips and Tricks section on our web site at <http://www.Terran-Int.com>.