



Clipstream

Playerless video and audio streaming

Clipstream™ Video 2.2 Technical Guide – Section 7 Encoder and Plugin Settings

Disclaimer: All content presented herein is subject to change without notice and is deemed as accurate as possible at time of publication. Please consult with Clipstream™ Video Support at <http://clipstream.com/help> for clarification if you encounter any erroneous or inconsistent material in this document.

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Encoder and Plugin Settings

General Settings

The following settings are available in the Premiere Plug-in General Settings window during the Video Export procedure:

File Type

“Clipstream Video Movie” should be displayed after loading one of the preset settings that are distributed with the plug-in. Your own presets can also have this display.

Work Area

Make this selection if you are working in a premiere project that has been edited and you only want to compress the selected part of the video. Otherwise select Entire Project.

Keyframe and Rendering

Clipstream Video does not use this dialog and its settings. Clipstream Video automatically ensures that a key frame is used at least every five seconds.

Special Processing

Two settings can be modified in the Special Processing dialogue:

Cropping

Premiere allows you to crop the visible dimensions using a preview window. This is useful for videos that contain unused black space (letter box), ‘talking heads’, and where the dimensions / aspect ratio of the source video and HTML location as specified in the applet code are different.

Special

‘Better Resize’ can be useful when the source dimensions and/or aspect ratio vary from the intended size.

Gamma Adjustment will lighten or darken a video as necessary (use the preview window). NOTE that Gamma adjustment can reduce the quality of the resulting video.

Deinterlace will reduce/eliminate interlacing effects that may be found in some high resolution files such as MPEG2 or DV.

Advanced

Links

This dialog contains links to useful pages and topics on the Clipstream.com website, such as the Code Key purchase page and the applet code generation page.

Secure ID

Enter your Secure ID here to apply Clipstream Video security to the video being encoded. This field is unnecessary for most users. More information about Secure IDs can be found in the section Clipstream Video Security.

Version Number

Although not editable, the version number of the plugin can be found here. This is useful information when requesting support from Clipstream Video and should be provided.

Video Settings

Accepted Video Input Formats

Video Clipstream will process all formats supported by Adobe Premiere when using the Premier Plug-in.

Choosing a Source Video

The properties of the source movie are important to consider when exporting to the Clipstream Video format. Take note of Frame Rate, Image Size, and Audio Compression.

- **Frame size** - try to match the ratio of the source frame size to keep the same aspect. ex. a movie trailer that was originally letterboxed will not look as good if it is rendered in 4:3 video frames. Keep in mind that the larger the size, the poorer the quality will have to be. Attempt to make the dimensions divisible by eight, as well. (ex. 96, 104, 128, 176, 288)
- **Audio Compressor** - if a source Quick Time file was encoded with QDesign Music 2 codec, the audio will come out jittery with 'double' sounds if additional steps aren't taken. The audio portion of the file must be extracted, down sampled, and replaced.
- **File Type** - *Quick Time* files are often encoded using QDesign Music 2 codec. Premiere does not handle the down-sampling of the audio well and therefore, the audio must be extracted and down-sampled manually. *.mpeg movies* are sometimes handled poorly by Premiere and may require being exported to *.avi* format before Clipstream Video conversion for best results. VCSEncoder will handle these files well.

Frame Size

- Try to match the ratio of the source frame size to keep the same aspect. Keep in mind that the larger the size, the poorer the quality will have to be.
- 4:3 aspect is consistent with standard television size / 16:9 aspect is common for films
- For larger frame dimensions, the quality and frame rate will need to be lowered for a quality stream.

- To avoid blocky artifacts in your *.vcs file, be sure to keep the dimensions divisible by eight; even if it doesn't *exactly* match the source file's aspect ratio.
- Frame sizes will vary depending on the application. The chart below is only a *general* guideline for reasonable frame sizes at different connection speeds:

Connection speed	28k	56k	100k	150k	200k	300k	500k
Frame size	160x120	176x136	200x152	240x176	288x216	304x224	320x240

Frame Rate

- For faster frame rates, the frame size and quality will need to be lowered for a quality stream. High frame rates can affect CPU usage and reduce playback quality on slower computers. We recommend a maximum frame rate of 10 fps.
- Playback quality is occasionally smoother if the encoded file matches a fraction of the source frame rate. For example, encode a 24FPS file at 12fps, 8fps, 6fps, or 3fps for best results. This is *not* essential.
- To select a frame rate that is not included in Premiere's default settings, go to Video Settings, click 'Configure' and select the desired setting in Frame Rate Adjustment. The specified frame rate can be altered by selecting every second, third, etc. frame. Example; to get a frame rate of 7.5fps, select 15fps and then Every Second Frame in Frame Rate Adjustment. [View a Screenshot](#)
- Some frame rate samples are found on the [Frame Rate Comparison Page](#). They may help determine what frame rate may be optimal for a project.
- Guidelines for reasonable frame rates for different connection speeds:

Connection speed	28k	56k	100k	150k	200k	300k	500k
Frame rate	.5 to 2	1 to 5	3 to 6	5 to 10	6 to 10	8 to 12	8 to 15

Quality

- Setting the quality too high can affect the streaming.
- Setting the quality below 20 is not recommended.
- The plug-in will attempt to meet the Quality setting that you select for the specified Data Rate. If the Quality setting cannot be met, the plug-in will lower the setting automatically by as much as one third. (the quality will generally fluctuate between your selected setting and one third of that; minimum 5)
- If the specified quality cannot be met at a certain data rate, the plug-in is forced to start skipping frames.
- Here is a *general* guideline for setting the quality:

Connection speed	28k	56k	100k	150k	200k	300k	500k
Quality	20	30	45	40 to 55	40 to 60	40-75	70-95

Data Rate

- The data rate must be limited with the viewers' anticipated speed in mind.
- - use this formula: Bit rate minus audio data rate divided by 8 equals data rate. Therefore, Data Rate and Audio Data Rate should coincide with each other (example: for a 56k (real speed ~40kbps) sample, if the audio data rate has been set at 16, the data rate should be set to 4)
- The following chart is a guide for data rates at different speeds:

Connection speed	28k	56k	100k	150k	200k	300k	500k
Data rate	2 or 1	4 or 5	10	16	22	37	58
Audio Data rate	8 or 12	16 or 8	20	20	20	20	32

Exporting a Still Frame for Clipstream Video

Clipstream Video movies generally use a .jpg or .gif as a default still frame 'Title Image' before the movie is played. The .jpg or .gif can be anything, as long as it is the same dimensions as the largest size video that will be streamed. This is also a useful way for the developer to encourage viewing of the movie by offering a preview frame from the movie (or frames, if an animated .gif is used).

Creating a Title Image with Premiere

1. With a movie or project open, select the desired title frame in the monitor view.
2. Go to File>Export(or Export Clip or Timeline)>Frame. Press the Settings tab.
3. Under General Settings, select the file format you'd like to use. It is advisable to capture a bitmap and use another application to export to .jpg or .gif.
4. Go to Video Settings and select the desired size. Click OK and Save.
5. Refer to the image file in your code at:
`<param name="VideoTitleImageURL" value="*.jpg">`

NOTE: if you use an image that is smaller than the largest size video, it will be scaled up to fill that space and may not look as good as when it was its original size.

Audio Settings

When creating a Clipstream Video movie, the audio settings must be selected with the video quality in mind. If the decision is to select better quality audio, the quality of the video will need to be adjusted accordingly. In general, the audio settings in the pre-set settings files (and in the table below) are appropriate for the related speeds.

- **Enhanced Rate Conversion;** Be sure to always select 'Best' from the pull down window. Otherwise, the result will be poor audio quality with a lot of ringing, hiss, etc. Also note: there is a bug in Premiere whereas it will not use

the new setting after a movie has already been exported without Best selected. Premiere must be restarted and the setting changed to 'Best' if something such as 'Good' was previously selected.

- After configuring advanced audio settings, Premiere 5.x will crash during the next usage due to a bug in the software unless the preference file **prem50.prf** is deleted before restarting. Remove the Preference file Prem50.prf before launching Premiere again to resolve the problem and avoid a crash. Default path: C:\program files\adobe\Prem50.prf}. *This problem has been resolved in Premiere 6.0. We strongly recommend that users of Premiere 5.xx upgrade to Premiere 6.0.*
- **Connection Speed minus audio data rate divided by 8 equals data rate.** Therefore, data rates should coincide with each other (example: for a 56k sample, if the audio data rate has been set at 16, the data rate should be set to 4)
- Here are some general guidelines for Audio settings at various speeds:

Audio Setting Chart

Connection speed	28k	56k	100k	150k	200k	300k	500k
Data rate	2 or 1	4 or 5	10	16	22	37 or 32	58
Audio Data rate	8 or 12	16 or 8	20	20	20	20 or 24	32
Optimization	music	music	voice	voice	voice	voice	voice
Emphasis	86	86	86	86	86	86	86

Audio Exporting in Premiere

The following is a step by step process for extracting/down sampling the audio with Premiere in preparation for Clipstream Video. Although not always essential, audio quality results may be better after down sampling. This process can also be performed with another audio program such as Syntrillium's Cool Edit.

As with all Clipstream Video encoding, take note of the source file properties. (right click on the opened movie in Premiere and select 'Get Properties') Upon seeing 'Compressor = QDesign Music 2', down sampling must be performed if you're using Premiere 5.xx. Take note of the sampling rate. (example: 44kHz, 16 bit stereo) Also, because of a bug in Premiere, if the Sampling rate is 48kHz down sampling prior to encoding is necessary.

1. Go to **File>Export>Audio**, click on the **Settings** tab.
2. Under **General Settings**, Select from the pull down menu, **File Type: Windows Wave Form**.
3. 'Open When Finished' is a default setting and will be useful in this case. The Range should be 'Entire Clip'.
4. Go to **Audio Settings**. **Rate** and **Format** should coincide with those listed in the source file Properties. (example: 44kHz, 16 bit stereo)

5. Click 'OK' and Save to a desired location.
6. **File>Open** the new wav file if 'Open When Finished' was not enabled.
7. Go to **File>Export>Audio** and click the **Settings** tab.
8. Go to Audio Settings and select 8kHz 16bit Mono
9. Click 'Okay' and save the new wav file with a new name.
10. **File>Open** the down sampled file. If the source movie isn't still opened, open it as well.
11. Go to **File>New->Project**. Click okay in the dialogue box. Go to Window/Timeline.
12. Drag the video into the timeline (Video 1A). Select Audio 1 and delete it from the project. Drag the new, downsampled audio into its place (Audio 1)
13. Ensure the Timeline is selected, Go to **File>Export/Movie** and carry on as per usual for Clipstream Video encoding.

Expert Premiere Plugin Settings

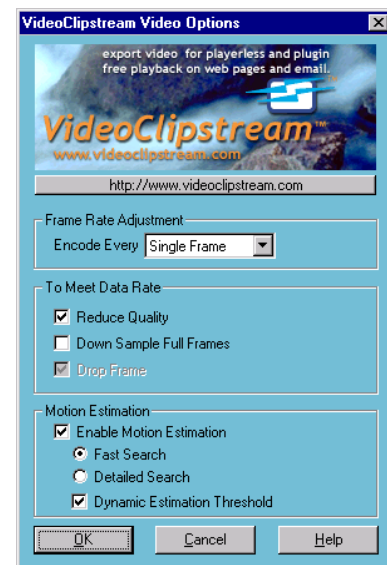
Expert settings in Premiere should only be adjusted if you fully understand the impact on the video output. There are both Audio and Video expert settings.

Expert Video Settings

This settings dialogue can be accessed by clicking 'Configure' in the premiere plug-in Video settings dialogue.

Frame Rate Adjustment

Because Premiere does not allow for the selecting of frame rates of any number (preset in Premiere), this feature was made available to allow the user to mathematically specify any frame rate. For example, Premiere does not inherently support a frame rate of 8 frames per second. To accomplish this, set the frame rate in the video settings to 24 and then choose 'Encode Every Third Frame' from the dropdown box and the Frame Rate Adjustment field. Now Premiere will encode 24 frames divided by 3 = 8 frames per second. Frame rates must be whole numbers.



Expert Video Settings Dialog

Meet Data Rate

When settings are asked of Premiere that require more data than the data rate can accommodate, the plug-in is forced to reduce some of your settings. The plug-in is defaulted to drop frames but you can additionally select to reduce the quality and/or down-sample full frames. Generally, the best strategy is to try to target your settings just higher than the data rate can meet and allow the plug-in to drop some frames and reduce quality as

necessary. If less is asked than the data rate can provide, the file will be smaller than the maximum and nothing will be reduced.

Motion Estimation

Motion Estimation should not be adjusted.

Expert Audio Settings

This settings dialogue can be accessed by clicking 'Advanced' in the Premiere plug-in Video settings dialogue.



Audio Options Settings Dialog

Audio Data Rate

The audio data rate is important for calculating the ultimate data rate (viewer's connection speed). The formula that dictates the connection speed is:

Connection Speed minus audio data rate divided by 8 equals data rate (found in Video settings).

Optimization

For an Audio Data rate of 32, which is intended for higher bit rates, select 'Voice'. This is also useful for vides that contain a lot of speaking.

Music/Low Bit-rate is to be used for audio data rates between 8-24 and disables the pitch detection.

Emphasize

This setting is generally left 'as is'. Users may want to try to optimize low bit rate audio with this setting but most valuable audio tweaking is done separate from Premiere in audio specific applications such as Cool Edit..