WebM

Plug-In for Premiere Pro

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About

WebM is a free-as-in-beer, free-as-in-speech video format developed by Google, based on technology they got when they acquired On2 Technologies. The now-free VP8/VP9 video codecs combine with the Vorbis and Opus audio codecs, wrapped up in the Matroska continer to make a high-quality royalty free format. It's really quite awesome.

Usage

When installed, you'll be able to import a .webm file into Premiere. Go to File > Export > Media and choose WebM as the format to encode WebM video. WebM should also appear as a supported format in Adobe Media Encoder.
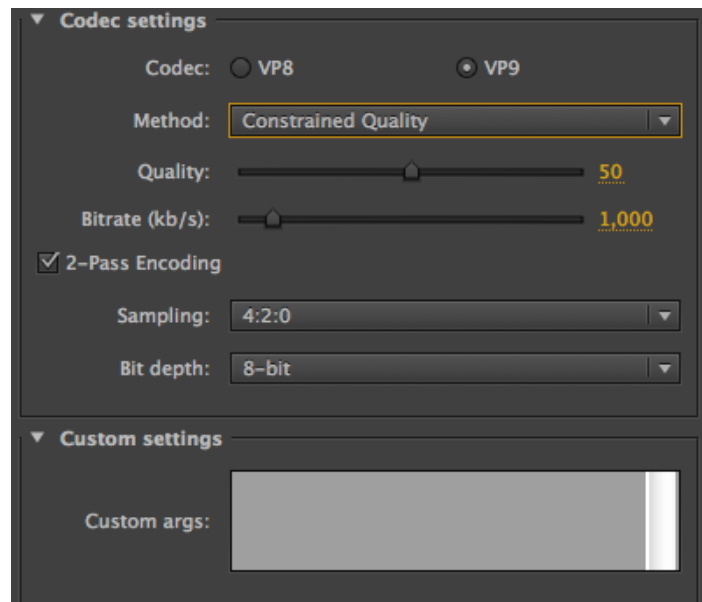
Most parameters should be pretty self-explanatory. For quality sliders, higher quality means higher image/audio quality and bigger files. (For some reason, FFmpeg uses a quality scale where 0 is the highest quality. Not this plug-in.)

Video Encoding Methods

- **Constant Quality** Compress frames to achieve a certain level of quality, regardless of file size. Bigger values for Quality mean better looking images and bigger files.

- **Constrained Quality** Like Constant Quality, but also lets you specify a bitrate target that the encoder will try to stay within.

- **Constant Bitrate** Compresses frames to a certain file size regardless of image content. Frames with a lot of detail may look worse than frames with less.

- **Variable Bitrate** Tries to achieve the indicated bitrate, but will allocate more bits to frames with a lot of detail, less to frames that don't need it as much.

Two-pass encoding can be used with any of the encoding methods, and should yield better results at the expense of the extra time it takes to complete the first pass. Two-pass is less necessary for the Constant Quality and Constant Bitrate methods, but recommended for the Variable Bitrate method.

The plug-in includes the VP9 codec, which is in active development at Google. VP9 takes quite a bit longer to encode than VP8, but should yield superior results for a given file size. VP9 encoded with 10/12-bits or 4:2:2/4:4:4 sampling may not be supported in all browsers. As always, test.

Custom Arguments

The VPX encoder supports many different options, far too many to include in Premiere's interface. There is a text field provided for entering additional options. So you might put something like "-t 4 --bias-pct=80" in there. Much more information here:

http://www.webmproject.org/docs/encoder-parameters

The flags are taken from the sample "vpxenc" utility that comes with libvpx. Here are the supported arguments printed right from vpxenc, many of which I have no clue what they do:

```
Options:
  -d <arg>, --deadline=<arg>            Deadline per frame (usec)
            --best                      Use Best Quality Deadline
            --good                      Use Good Quality Deadline
            --rt                        Use Realtime Quality Deadline

Encoder Global Options:
  -t <arg>, --threads=<arg>             Max number of threads to use
            --lag-in-frames=<arg>       Max number of frames to lag

Rate Control Options:
            --drop-frame=<arg>          Temporal resampling threshold (buf %)
            --resize-allowed=<arg>      Spatial resampling enabled (bool)
            --resize-up=<arg>           Upscale threshold (buf %)
            --resize-down=<arg>         Downscale threshold (buf %)
            --target-bitrate=<arg>      Bitrate (kbps)
            --min-q=<arg>               Minimum (best) quantizer
            --max-q=<arg>               Maximum (worst) quantizer
            --undershoot-pct=<arg>      Datarate undershoot (min) target (%)
            --overshoot-pct=<arg>       Datarate overshoot (max) target (%)
            --buf-sz=<arg>              Client buffer size (ms)
            --buf-initial-sz=<arg>      Client initial buffer size (ms)
            --buf-optimal-sz=<arg>      Client optimal buffer size (ms)
```

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Twopass Rate Control Options:
            --bias-pct=<arg>              CBR/VBR bias (0=CBR, 100=VBR)
            --minsection-pct=<arg>        GOP min bitrate (% of target)
            --maxsection-pct=<arg>        GOP max bitrate (% of target)


Keyframe Placement Options:
            --kf-min-dist=<arg>           Minimum keyframe interval (frames)
            --kf-max-dist=<arg>           Maximum keyframe interval (frames)
            --disable-kf                  Disable keyframe placement


VP8 Specific Options:
            --cpu-used=<arg>              CPU Used (-16..16)
            --auto-alt-ref=<arg>          Enable automatic alt reference frames
            --noise-sensitivity=<arg>     Noise sensitivity (frames to blur)
            --sharpness=<arg>             Filter sharpness (0-7)
            --static-thresh=<arg>         Motion detection threshold
            --token-parts=<arg>           Number of token partitions to use, log2
            --arnr-maxframes=<arg>        AltRef Max Frames
            --arnr-strength=<arg>         AltRef Strength
            --arnr-type=<arg>             AltRef Type
            --tune=<arg>                  Material to favor (psnr or ssim)
            --cq-level=<arg>              Constrained Quality Level
            --max-intra-rate=<arg>        Max I-frame bitrate (pct)
            --screen-content-mode=<arg>   Screen content mode


VP9 Specific Options:
            --cpu-used=<arg>              CPU Used (-16..16)
            --auto-alt-ref=<arg>          Enable automatic alt reference frames
            --noise-sensitivity=<arg>     Noise sensitivity (frames to blur)
            --sharpness=<arg>             Filter sharpness (0-7)
            --static-thresh=<arg>         Motion detection threshold
            --tile-columns=<arg>          Number of tile columns to use, log2
            --tile-rows=<arg>             Number of tile rows to use, log2
            --arnr-maxframes=<arg>        AltRef Max Frames
            --arnr-strength=<arg>         AltRef Strength
            --arnr-type=<arg>             AltRef Type
```

```
        --tune=<arg>                        Material to favor (psnr or ssim)
        --cq-level=<arg>                    Constrained Quality Level
        --max-intra-rate=<arg>              Max I-frame bitrate (pct)
        --lossless=<arg>                    Lossless mode
        --frame-parallel=<arg>              Enable frame parallel decodability features
        --aq-mode=<arg>                     Adaptive quantization mode (0: off (default), 1:
variance 2: complexity, 3: cyclic refresh)
        --frame_boost=<arg>                 Enable frame periodic boost (0: off (default), 1:
on)
```

When running VP9, the plug-in automatically applies --cpu-used=2, although you can override it with whichever value you like. The libvpx default --cpu-used=0 will take a lot longer to encode, but should eek out some better image quality.

Acknowledgements

Thanks to the many, many developers who have contributed to the codecs used in WebM. Their work makes up the vast majority of the code in this plug-in!

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History

1.0	13 April 2015	First official release
0.5b1	6 June 2013	First beta

Details

Open Source
Like WebM itself, this plug-in is open source. See the code and participate here:

http://github.com/fnordware/AdobeWebM

Support
For comments, feature requests, and insults, send email to WebM@fnordware.com or post comments at fnordware.blogspot.com. But since this software is free, there's no guarantee that anyone will write back to you or that you will receive any help.

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This plug-in relies on third party libraries libvpx, libwebm, libogg, libvorbis, and the opus software library. Here are their licenses:

libvpx:

libwebm:

libogg:

libvorbis:

opus:

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