

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 free VP8/VP9 (and now AV1) video codecs combine with the Vorbis and Opus audio codecs, wrapped up in the Matroska container to make a high-quality, royalty-free movie format. It's really quite nifty.

Usage

Go to File > Export > Media and choose WebM as the format. WebM should also appear as a supported format in Adobe Media Encoder. You'll be able to import .webm files into each.

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 Codecs

Three video codecs are supported by WebM: VP8, its successor VP9, and the AV1 codec (which should be considered experimental at the moment). As you move up through the codecs, quality for a certain bitrate (i.e. coding efficiency) gets better, but the time to encode gets worse.

Encoders

Several different encoders are available. If you leave your encoder selection to “Auto”, the plugin will use a hardware-accelerated codec if one is available, and otherwise use the fastest software codec.

- **libvpx** The original reference encoder for VP8 and VP9. Reliable and supports all the codec features, but not too speedy.
- **Intel VPL** VP9 and (experimental) AV1 encoder using special hardware on some Intel chips for a big speed boost. Only available on Windows.
- **aom** Reference AV1 software encoder from the Alliance for Open Media. Full-featured, but pretty slow.
- **SVT-AV1** Software AV1 encoder originally developed by Intel and Netflix. It’s much faster than AOM.

The image shows a 'Codec settings' panel with the following options:

- Codec: VP9
- VP9 Encoder: Auto
- Method: Constant Quality
- Quality: 50 (indicated by a slider and a blue number)
- ☐ 2-Pass Encoding
- Max Keyframe Distance: 128 (indicated by a blue number)
- Sampling: 4:2:0
- Bit Depth: 8-bit
- Color Space: Rec. 709
- ☐ Include Alpha Channel

- **NVENC** Hardware-based encoder from Nvidia. AV1 is available on the RTX 4090 and later cards.

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 the libvpx and aom encoders, and should yield better results at the expense of the extra time it takes to complete the first pass.

Color Space

In this case, color space mostly refers to the coefficients used to convert from RGB to YUV (YCbCr) color formats. Rec. 601 was used traditionally, but Premiere and most video these days uses Rec. 709, the HDTV standard.

Alpha Channel

The plug-in can write (but not read) an alpha channel. Alpha channel support is [unofficial](#), but most [players](#) support it at this point. When using this option be careful to set a good value for Max Keyframe Distance, which will in fact become the locked keyframe interval.

Custom Arguments

Encoders support many different options, far too many to include in Premiere's interface. There is a text field provided for entering additional options, which you might uncover by looking at the plug-in's source. For example, if you go to the [GitLab repo](#) and look in the file `WebM_Premiere_libvpx.cpp` you'll see these lines:

```
else if(arg == "--kf-min-dist")
{ SetValue(config.kf_min_dist, val); i++; }
```

From this you can deduct that you might enter `-kf-min-dist 5` into the custom field to set a minimum keyframe distance of 5 frames (if you're using the libvpx encoder).

Audio Codecs

As with video, WebM supports two audio codecs: Vorbis and Opus. Opus is the newer of the two, and the default.

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!

Thanks to my friends at Adobe for being always being supportive of plug-ins like this one. Special thanks to Tom Nord who has been a great cheerleader within Adobe.

Thanks to Matt Frost and Yaowu Xu at Google for all their help.

Thanks to Dan Garcia and Brian Barsky at UC Berkeley for supporting my computer graphics habit early on.

History

1.5	17 July 2024	AV1 codec, multiple encoders
1.1	15 June 2017	Alpha channels, bit depths, sampling
1	13 April 2015	First official release
0.5b1	6 June 2013	First beta

Details

System Requirements

The WebM plug-in is built with the Premiere CC (2018) SDK and should work in any later version. Some encoders are only available on Windows and only if you have compatible hardware.

Open Source

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

<https://gitlab.com/fnordware/AdobeWebM>

Support

For comments, feature requests, and insults, send email to WebM@fnord.com or post comments on the [WebM discussion forum](#). 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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