Delivery Effects Processing

34

Delivery Effects Processing

Delivery Effects Processing

When you're outputting to tape, how effects are rendered depends on whether you're rendering individual source clips or as a single clip.

When Rendering a Single Clip or When Outputting to Tape

Whether you're rendering a QuickTime or MXF master of your project as a single clip, rendering a DPX image sequence for film output, or outputting directly to tape, all supported compositing, speed, and transform effects are rendered by Resolve and "baked" into the output media. Unsupported effects are completely ignored, cannot be seen, and have no effect on media that's rendered and output.

When Rendering Individual Source Clips for Round-Trip Workflows

In workflows where you're rendering individual media files to send a project back to an NLE or finishing application for final finishing (adding titles and other effects before final delivery), Resolve handles different types of effects in different ways.

Unsupported effects do not appear in Resolve. However, this effects data is internally preserved, and when you export an XML or AAF file to send back to your NLE of choice, these effects reappear, applied to the color corrected media that you rendered out of DaVinci Resolve and sent back.

Effects that DaVinci Resolve does support such as composite modes, opacity settings, speed effects, and transitions are handled differently. Even though these effects are visible in Resolve while you work, they're not "baked" into the final media that you render in preparation for sending back to your NLE or finishing application. Instead, the portion of each media clip that's used in your project is rendered as an individual file, and the XML file that you export from Resolve contains all of the effects information necessary to reassemble the rendered media into a timeline that uses Final Cut Pro effects applied to Resolve-graded media.

	EDL	FCP 7	FCP X	Premiere Pro	Media Composer*
Color Corrections	N/A	N/A	Rendered	N/A	N/A
Composite Modes	N/A	Sent Back	Sent Back	Sent Back	Rendered
Alpha Channels	N/A	Optionally Rendered	Optionally Rendered	Optionally Rendered	Optionally Rendered
Transitions	Sent Back	Sent Back	Sent Back	Sent Back	Sent Back
Opacity Settings	N/A	Sent Back	Sent Back	Sent Back	Sent Back
Position, Scale, Rotation	N/A	Conditional	Conditional	Conditional	Conditional

	EDL	FCP 7	FCP X	Premiere Pro	Media Composer*
Linear Speed Effects	Sent Back	Sent Back	Sent Back	Sent Back	Sent Back
Variable Speed Effects	N/A	Sent Back	Sent Back	Sent Back	Sent Back
Long Duration Still Images	N/A	N/A	N/A	N/A	N/A
Freeze Frames	N/A	N/A	N/A	N/A	Rendered

The chart shows which effects are rendered by DaVinci Resolve, and which effects are passed back in different round trip workflows.

* These effects are only sent back in AAF round trips when you're updating an existing AAF file, rather then generating a new AAF file.

After you've reimported your project back into your NLE or finishing application, you're free to readjust these effects while completing your program, without the need to re-render individual clips in Resolve.

Important: One exception to the preservation of media and effects in round-trip workflows is that nested sequences from Final Cut Pro 7 and Media Composer are not compatible with Resolve; XML and AAF files containing nested sequences cannot be imported. On the other hand, Final Cut Pro X projects containing compound clips can be imported.

More About Rendering Speed Effects

If you're rendering a project with speed effects, you should be aware that Resolve can optionally render speed effects using Optical Flow processing, resulting in high-quality slow motion and fast motion effects delivered straight out of Resolve. If you're satisfied with Optical Flow processing in Resolve, there may be no need for you to do a round-trip export if the main reason you were doing so was to send the processing of slow motion clips to another application for rendering, and rendering the Timeline in Single clip mode will "bake" the speed effects in using whatever settings you've selected for the project, or for each clip if you've selected individual Retime Process settings for different clips.

However, if you want to send unrendered speed effects to another application, rendering your project in Individual source clips mode guarantees that the full range of each original clip of media will be rendered, with the speed effect itself exported within the XML, AAF, or EDL file that's exported.

NOTE: Resolve adds three frame handles to clips with speed changes applied to them, and to rendered clips that don't match the project's frame rate. This is done to facilitate reconform in NLEs that require handles beyond the actual length of each of these clips.

Determining the Rendered Output Resolution of Clips in Mixed Timelines

Ordinarily, rendering individual source clips results in each clip being rendered at either the project resolution or the Resolution pop-up in the Render Settings (which overrides the project resolution), with clips that don't match the project resolution being resized or not according to the settings you've chosen in the Image Scaling panel of the Project Settings.

However, if you're rendering dailies for projects containing clips with mixed resolutions, you can choose to render each clip at its original resolution by turning on the "Render at source resolution" checkbox in the Video group of controls. This option is only available in the Intermediate and Advanced groups of Render Settings.

Rendering Edit and Input Sizing Adjustments

Whether or not sizing is rendered into your final media depends on the "Disable edit and input sizing" checkbox in the File options of the Deliver page.

- If "Disable edit and input sizing" is turned off: Input Sizing and Edit page transform Pan/Tilt/Zoom/Rotate adjustments are "baked" into the final rendered media using the optical-quality sizing algorithms available to Resolve. This is best if your sizing adjustments are approved and final, and you want to "bake" sizing adjustments into the final media your delivering.
- If "Disable edit and input sizing" is turned on: Input Sizing and Edit page Pan/Tilt/Zoom/Rotate adjustments are not rendered, and each clip will be rendered at its original resolution. However, the Input and Edit sizing adjustments you've made will be exported as part of the XML or AAF file that you're exporting. This is best for workflows where the editor wants to continue adjusting sizing after you've handed off the graded project relative to the original size of the clips.

Keep in mind that if you want to render Input Sizing adjustments into the media you're outputting, the "Force sizing to highest quality" checkbox guarantees that Resolve will use the highest-quality sizing setting, even if you've temporarily chosen a faster-processing option for a slower computer.

Rendering Mixed Frame Rate Timelines

Mixed frame rates are supported by DaVinci Resolve when any option other then none is selected in the "Mixed Frame Rate format" pop-up menu, either in the Conform Options of the Master Project Settings panel, or in the Import AAF or XML dialog. When you choose the appropriate option that corresponds to the application you're exchanging projects with (or Resolve if you're working entirely within DaVinci Resolve), then Resolve conforms and processes all clips in the Timeline to play at whichever frame rate is selected in the "Timeline frame rate" pop-up menu. For example, 23.98, 29.97, 30, 50, 59.94 and 60 fps clips will all play at 24 fps if that's what "Timeline frame rate" is set to in the Master Project Settings.

How clips in mixed framerate timelines are rendered out depends on whether the Render Settings are set to render Individual source clips or a Single clip.

- Individual source clips: All clips are rendered individually at their original frame rate.
- Single clip: All clips are converted to the "Timecode calculated at" frame rate and rendered as a single media file. Clips are converted using whatever method is selected in the Retime process pop-up of the Editing panel in the Project Settings, or in the individual Retime process setting found in the Video inspector of each clip that overrides the project-wide setting. You can choose Optical Flow processing for the highest quality conversion that's available in Resolve.

Export Alpha Channels

Starting in version 12.5, you have the option to turn on the Export Alpha checkbox in the Video panel of the render settings whenever you render individual source clips. When you do so, DaVinci Resolve renders clips with alpha channels in either of two cases:

- Whenever there is an alpha channel embedded in the source media for that clip, the embedded alpha channel will be copied to the rendered version of that clip.
- Whenever a clip's grade has a key connected to an alpha output, the alpha output will be rendered as an alpha channel for that clip.

In either case, you may only render alpha channels out when you render individual source clips to an RGBA format such as OpenEXR, ProRes 4444, ProRes 4444 XQ, or DNxHR 444.