

DaVinci Resolve 18.5





Welcome

Welcome to DaVinci Resolve for Mac, Linux and Windows!

DaVinci is the world's most trusted name in color and has been used to grade more Hollywood films, TV shows, and commercials than anything else. With DaVinci Resolve, you get a complete set of editing, advanced color correction, professional Fairlight audio post production tools and Fusion visual effects combined in one application so you can edit, compose, grade, mix and master deliverables from start to finish, all in a single tool!

DaVinci Resolve has the features professional editors, colorists, audio engineers and VFX artists need, and is built on completely modern technology with advanced audio, color and image processing that goes far beyond what any other system can do. With this release, we hope to inspire creativity by letting you work in a comfortable, familiar way, while also giving you an entirely new creative toolset that will help you cut and finish projects at higher quality than ever before!

We hope you enjoy reading this manual. With its customizable interface and keyboard shortcuts, DaVinci Resolve is easy to learn, especially if you're switching from another editor, and has all of the tools you need to create breathtaking, high end work!

The DaVinci Resolve Engineering Team

A handwritten signature in black ink that reads "Grant Petty". The signature is written in a cursive, flowing style.

Grant Petty

CEO Blackmagic Design

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MEDIA

CUT

EDIT

FUSION

COLOR

FAIRLIGHT

RESOLVE FX

GENERAL

DaVinci Resolve 18.5 Beta

Getting Started

When you install DaVinci Resolve and then open it for the first time, there are a few things you're going to want to know before you begin learning how to work.

Automatic DaVinci Resolve Updates

To make it easier to ensure you're using the latest version of DaVinci Resolve, you can now choose DaVinci Resolve > Check For Updates to notify you of new versions and download them when available.

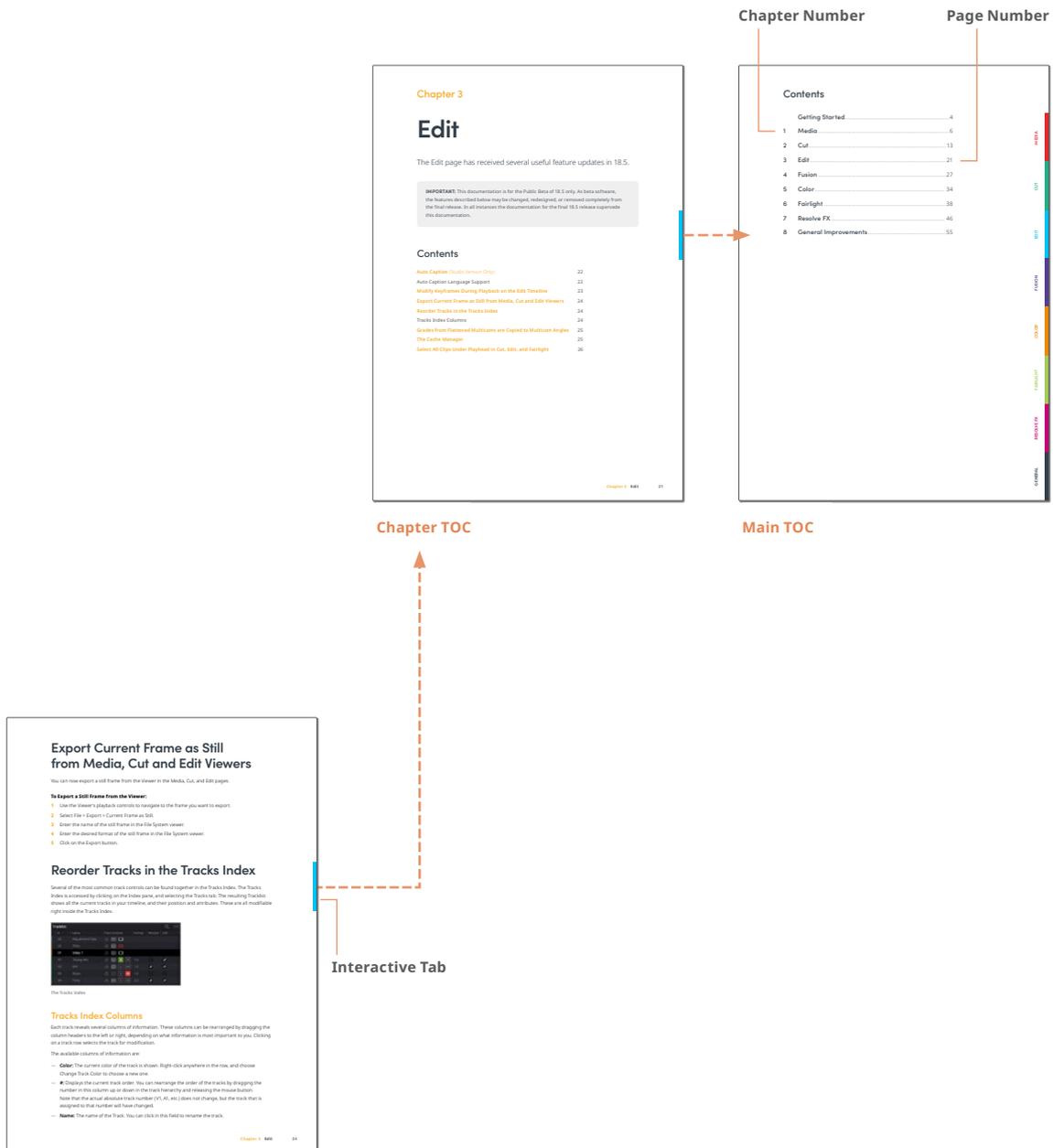


Over the years, DaVinci Resolve has evolved to encompass professional editing, compositing, and audio mixing tools and workflows in addition to the grading tools that were the original core of DaVinci Resolve. Each one of these domains of functionality is incredibly deep. Consequently, the documentation has grown with each new page, tool, and parameter that's been added, to make life easier and to solve the countless problems that can emerge during the postproduction process.

While it is regretted that this user manual contains such a staggeringly overwhelming amount of information, our emphasis has always been to ensure that (hopefully) every control and workflow you encounter in DaVinci Resolve is explained somewhere within the contents of these pages. Consequently, we hope that you find the hyperlinked table of contents (TOC) and search functionality of your preferred PDF browser helpful in finding the information you need, along with context and tips to help you get the most out of the tools provided.

Navigation Guide

For ease of use navigating this manual, each table of contents (TOC) listed on this manual are hyperlinked, and by clicking on each title or page number, you will be taken to the appropriate part of the manual. On the right hand side of each page includes an interactive tab. As you hover the pointer over the tab and by clicking on the tab you will be taken to one of the TOC page.



Chapter 1

Media

DaVinci Resolve 18.5 includes a variety of new features designed to expand the functionality of the Media page.

IMPORTANT: This documentation is for the Public Beta of 18.5 only. As beta software, the features described below may be changed, redesigned, or removed completely from the final release. In all instances the documentation for the final 18.5 release supersedes this documentation.

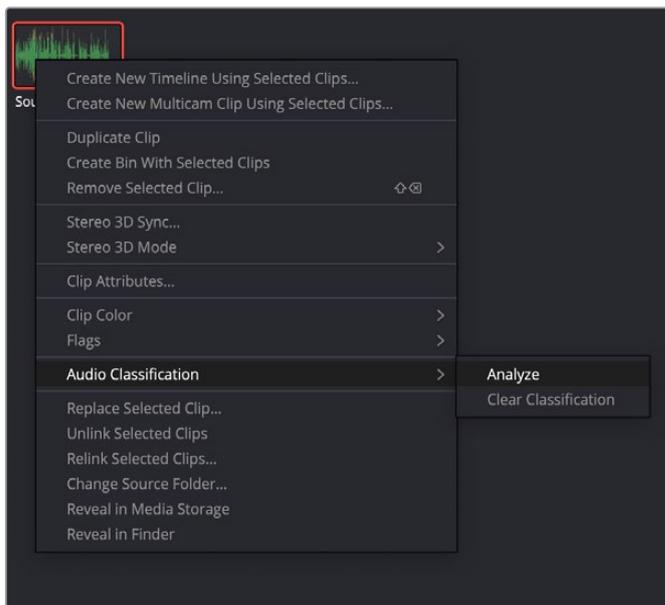
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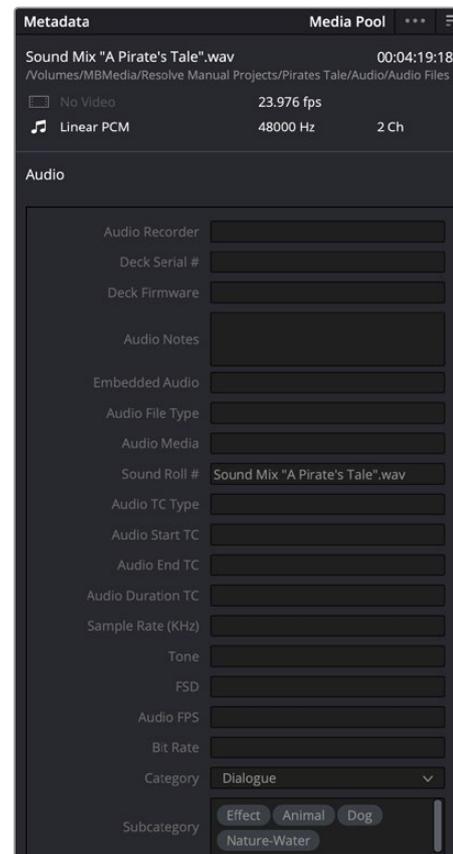
DaVinci Neural Engine Based Audio Classification for Clips (Studio Version Only)

You can have DaVinci Resolve's Neural Engine analyze the audio for any clip in the Media Pool and then automatically assign it a Category and add keywords about its contents in the clip's Subcategory audio metadata. This lets you categorize and organize large amounts of audio clips extremely efficiently by letting the computer do the tedious work of listening to all the media and assigning it metadata for you. Of course, you can then modify or change any metadata necessary in the Metadata Editor in case the computer had mis-categorized it.

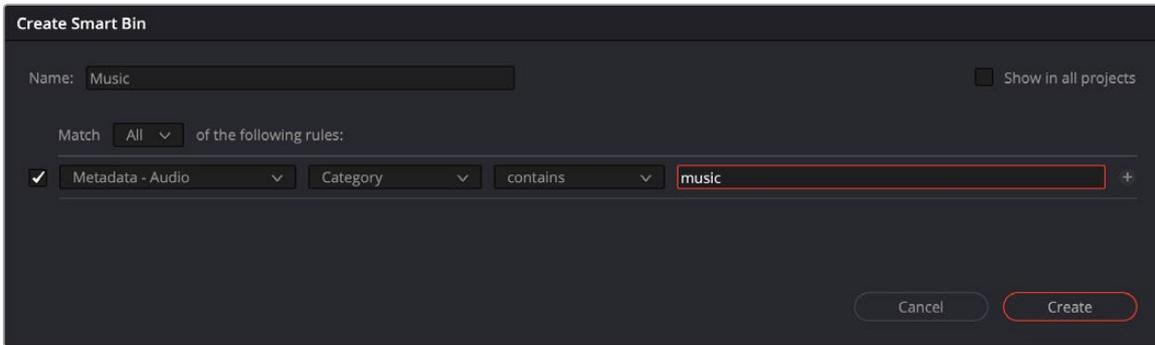
Each clip analyzed gets Audio Category and Subcategory metadata applied to it. Audio Categories are types of audio commonly used in post-production; as of this writing the available choices are Dialogue, Effect, Music, Silence, and Uncategorized. Subcategories are more detailed keywords that are assigned based on what sounds the Neural Engine can recognize in the clip. Subcategories can be anything like sirens, water, dogs, etc. Audio Category and Subcategory are available as Smart Bin filters that let you quickly organize persistent folders for whatever combination of Categories and Subcategories you desire. For example, you could create a Smart Bin that contains all clips that have both Dialogue (category) and sirens and dogs (subcategories) in them.



Analyzing an Audio Clip



The results of the analysis in Category and Subcategory



Creating a new Smart Bin, based off an analyzed category

To Automatically Classify an Audio Clip:

- 1 Select the clip or clips in the Media Pool you want to classify the audio for.
- 2 Right-click on any of the selected clips and select Audio Classification > Analyze from the contextual menu. DaVinci Resolve will work its way through analyzing all the selected clips and will automatically add the metadata to the Audio Metadata for each clip.
- 3 Optionally you can then review the Audio Metadata for each clip and correct, delete, or add additional metadata manually.

To Remove Classification Metadata from an Audio Clip:

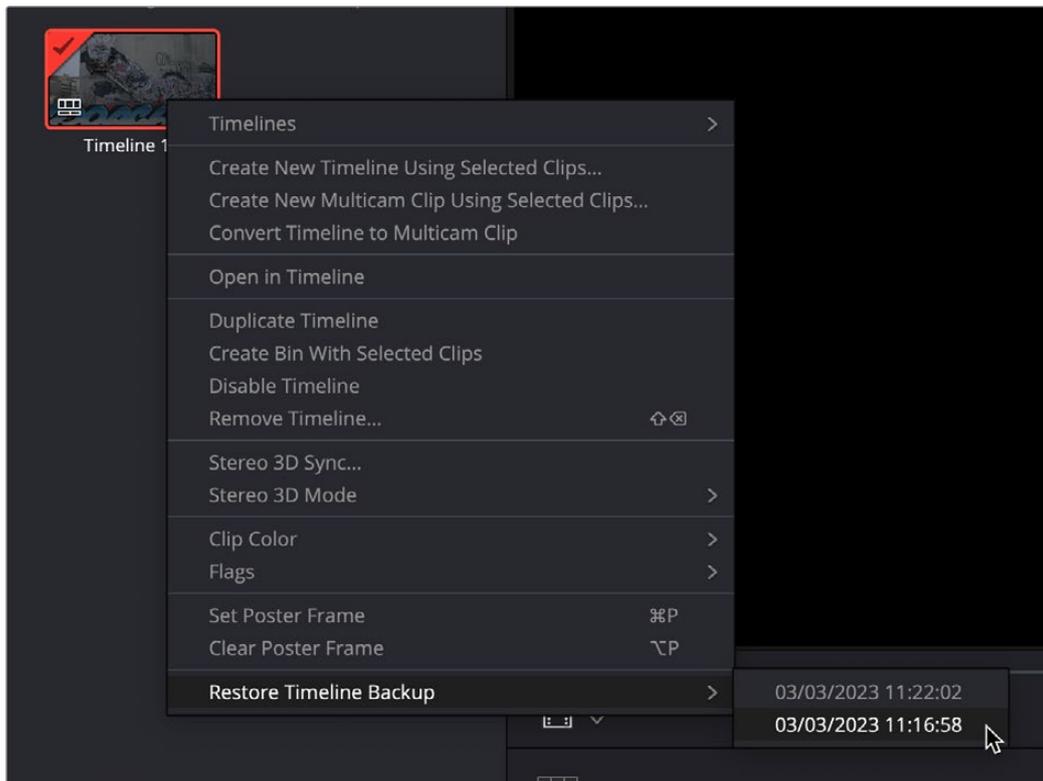
- 1 Select the clip or clips that have Category and Subcategory metadata that you want to remove.
- 2 Right-click on any of the selected clips and select Audio Classification > Clear Classification from the contextual menu. Then click on Remove in the warning dialog box that appears. There is no undo for this feature.

Fast Per-Timeline Backups

Turning on the Timeline Backups checkbox in the Project Save and Load panel of the User Preferences enables DaVinci Resolve to save multiple backups of a timeline at periodic intervals, using a method that's analogous to a GFS (grandfather father son) backup scheme. This can be done regardless of whether or not Live Save is turned on.

If you want to revert to a previous backup of a timeline, simply right-click on the Timeline in the Media Pool, select Restore Timeline Backup from the contextual menu, and choose the backup from the list of options. Backups are organized by date and time, making it easy to find the specific timeline you want to restore.

Restoring a timeline backup does not overwrite your current timeline. Instead the selected backup will be brought into the Media Pool as a new timeline, with the name "Backup" appended to it.



Restoring a timeline backup in the Media Pool

Timeline backups are only saved when changes have been made to a project. If DaVinci Resolve sits idle for any period of time, such as when your smart watch tells you to go outside and walk around the block, no additional project backups are saved, preventing DaVinci Resolve from overwriting useful backups with unnecessary ones.

Three fields let you specify how often to save a new backup, while the fourth lets you choose where the backups will be saved. These settings apply to both Project and Timeline backups.

- **Perform backups every X minutes:** The first field specifies how often to save a new backup within the last hour you've worked. By default, a new backup is saved every 10 minutes, resulting in six backups within the last hour. Once an hour of working has passed, an hourly backup is saved and the per-minute backups begin to be discarded on a first in, first out basis. By default, this means that you'll only ever have six backups at a time that represent the last hour's worth of work.
- **Hourly backups for the past X hours:** The second field specifies how many hourly project backups you want to save. By default, two hourly backups will be saved for the current day. Past that number, hourly backups will begin to be discarded on a first in, first out basis.
- **Daily backups for the past X days:** The third field specifies for how many days you want to save backups. The very last backup saved on any given day is preserved as the daily backup for that day, and by default, daily backups are only saved for two days. Past that number, daily backups will begin to be discarded on a first in, first out basis. If you're working on a project over a longer stretch of time, you can always raise this number.
- **Project backup location:** Click the Browse button to choose a location for these backups to be saved. By default they're saved to a "ProjectBackup" directory on your scratch disk, although you could change this to a volume that better fits into your data backup methodology. This folder contains both Project and Timeline backups.

Import and Export Timelines Using the OpenTimelineIO (.otio, .otioz) Format

DaVinci Resolve 18.5 now supports the Open Timeline IO (.otio) format for importing and exporting timelines between applications. OTIO is an open source media and timeline interchange format created by the Academy Software Foundation. It's designed to be application and platform agnostic, allowing you to pass your timeline and its media assets between programs with more compatibility than AAF or XML.

There are two different OTIO formats supported by DaVinci Resolve

- **.otio:** These files contain just the metadata about the timeline and no associated media. They are small, portable, and require the end user to link the timeline to their own copies of the media.
- **.otioz:** These bundle files contain both the timeline metadata and all of the timeline's media assets zipped together into one file. This file can be very large, as it contains the full length media files of all assets used in the timeline. However, it assures that whoever imports the file has all the media needed and is linked automatically to replicate the timeline on their machine.

To Import an OpenTimelineIO (.otio, .otioz) file:

- 1 Select File > Import > Timeline (Shift-Command-I).
- 2 Select the .otio or .otioz file in the File Browser and click Open.
- 3 Set any of the import parameters you wish in the Load OTIO window, and click OK.

If an .otioz file was selected for import, the media assets will unzip themselves into a folder at the same level as the .otioz file and automatically link themselves. If an .otio file was selected, you will have to relink to your own copy of the media if it's not in the same location as the original media.

To Export an OpenTimelineIO (.otio, .otioz) file:

- 1 Select File > Export > Timeline (Shift-Command-O).
- 2 Type in a name for the timeline file.
- 3 In the file browser select either .otio files or .otioz bundle files in the format selector.
- 4 Click Save.

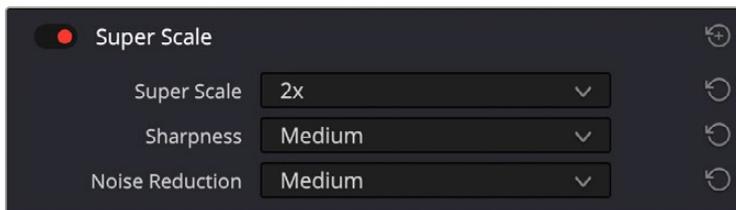
If you selected .otioz bundle files, an additional step of creating the OTIO bundle will occur as it adds each complete media file from all clips in the timeline to the final bundled file.

As of now, the most reliable way to pass DaVinci Resolve timelines between applications is as follows:

- **From DaVinci Resolve to/from another DaVinci Resolve workstation:** Export/Import a DaVinci Resolve Timeline file (.drt).
- **From DaVinci Resolve to/from another application:** Export/Import an OpenTimelineIO file (.otio, .otioz) if supported. If not supported, fall back to using XML or AAF files instead.

2x Enhanced Super Scale Algorithm

New to DaVinci Resolve 18.5 is a 2x Enhanced Super Scale setting that lets you dial in the exact amount of Sharpness and Noise reduction that you desire. For instances when you need higher-quality upscaling than the standard Resize Filters allow, you can now enable one of the “Super Scale” options in the Inspector, or the Video panel of the Clip Attributes window, for one or more selected clips. Unlike using one of the numerous scaling options in the Edit, Fusion, or Color pages, Super Scale actually increases the source resolution of the clip being processed, which means that clip will have more pixels than it did before and will be more processor-intensive to work with than before, unless you optimize the clip (which bakes the Super Scale effect into the optimized media) or cache the clip in some way.



Super Scale options in the Video panel of the Clip Attributes

The Super Scale drop-down menu provides the options of 2x, 2x Enhanced, 3x, and 4x, as well as Sharpness and Noise Reduction options to tune the quality of the scaled result. Note that for most of the Super Scale parameters, they are in fixed increments. The 2x Enhanced mode lets you apply Super Scale in variable amounts. Selecting one of these options enables DaVinci Resolve to use advanced algorithms to improve the appearance of image detail when enlarging clips by a significant amount, such as when editing SD archival media into a UHD timeline, or when you find it necessary to enlarge a clip past its native resolution in order to create a closeup.

Super Scale Settings for Media in the Inspector

The Super Scale settings for a clip can now be adjusted directly in the Video Inspector, rather than having to go into the clip attributes.

Metadata Panel Support for Marker Subclips

The Metadata panel now works for marker subclips in the Media Pool. Select a marker subclip in the Media Pool to edit name, notes, keywords, and color in the media Metadata panel.

Clear In-Out Ranges for Multiple Clips

It's now possible to clear previously set in-out ranges on multiple clips at the same time in the Media Pool. Simply select multiple clips that have In and Out points set, either by lassoing or command clicking them, and then select Mark > Clear In and Out (Option-X).

Change the Starting Timecode for Multiple Timeline Selections

You can now change the starting timecode for multiple timelines at the same time. Simply select the timelines whose timecode you want to modify, right-click on one of the selected timelines and choose Timelines > Starting Timecode from the contextual menu. Enter the new timecode in the Time Start field, and click OK.

Clear Recent Media History in the Source Viewer

If you find too many irrelevant entries in the Media History drop-down at the top of the Source Viewer in the Media and Edit pages, you can remove those entries and start a new queue by clicking on the Viewer's Option menu and selecting Clear Recently Viewed Clips.

Custom Pixel Aspect Ratios in Clip Attributes

You can change the Pixel Aspect Ratio to a manual value now in Clip Attributes to adjust and compensate for various motion picture capture technologies. Select Custom from the Pixel Aspect Ratio menu, and then enter a numeric value in the box below. The value is the X in the 1:X ratio. For example, you would type in 1.6 to get a pixel aspect ratio of 1:1.6.

Chapter 2

Cut

The Cut page in DaVinci Resolve 18.5 had a major overhaul in terms of performance and functionality.

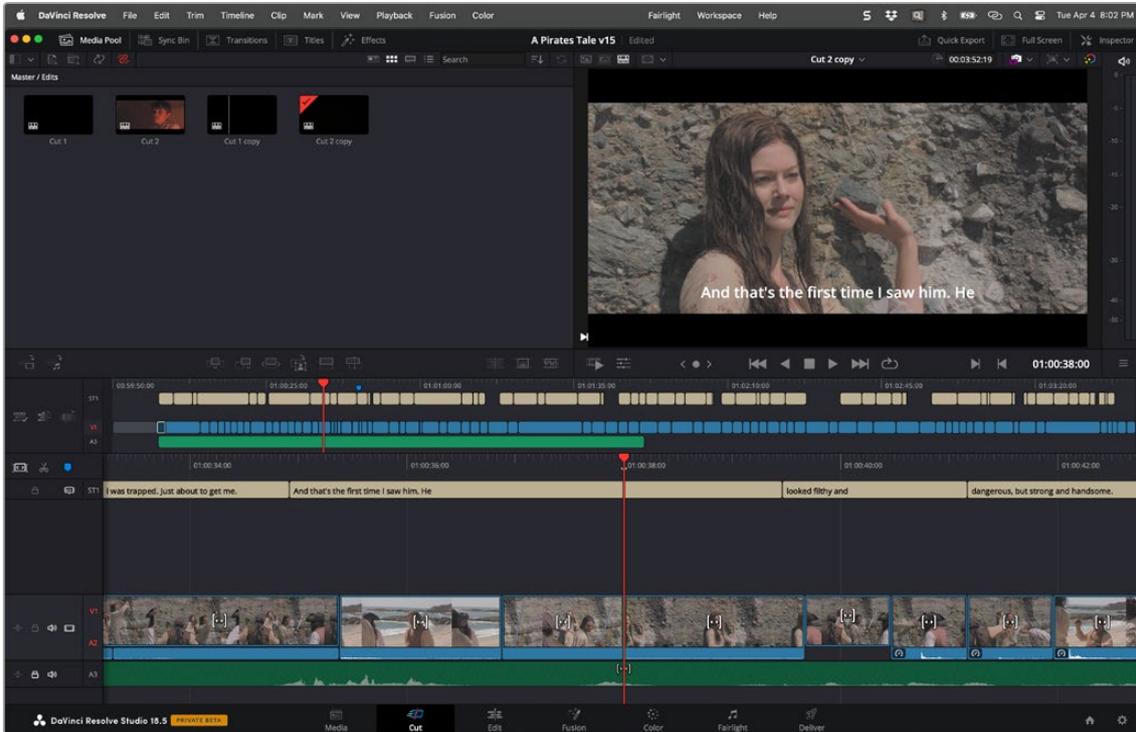
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The New Toolbar Layout

The Cut page has had a major overhaul in its looks and functionality in the 18.5 release. Probably the most noticeable change is the reorganized toolbar. Several related functions have been gathered together under new Action and Option menu icons in the toolbar area.



The new Cut page layout in DaVinci Resolve 18.5

The new menu icons are:



Timeline Options: The tools under this icon deal with how the clips and timeline are displayed, and certain modes and tools that apply to the whole timeline.



Timeline Actions: The tools under this icon are generally used to add new items to the timeline.



Edit Actions: The tools under this icon are used to adjust clips on the timeline.

The new features and functions of these icons are described below:

Timeline Options

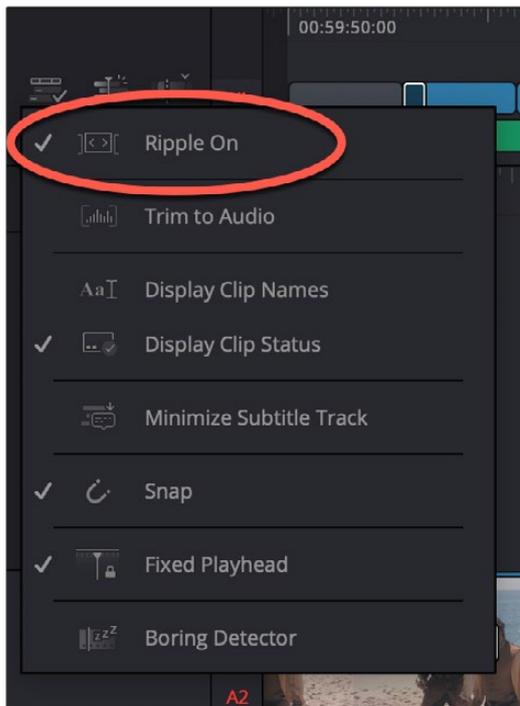
The Cut page has received several new display enhancements that make working in complicated timelines clearer and easier to navigate. Most of the original Cut page toolbar commands can be found here; only the new commands are described below:

Ripple on Main Track Option to Disable Ripple Trims

When trimming on the main track (track 1) in the Cut page, you can now disable the automatic rippling of the clips on that track. This lets you have the option to make simple trim adjustments without the other clips in the Timeline moving up and down the Timeline.

To Enable or Disable Rippling on a Cut Page Timeline:

- Click on the Timeline Options icon and select Ripple On in the contextual menu, or click directly on the Ripple On icon to the left of the timeline ruler. Click it again to toggle Rippling on or off.
- Alternatively, you can hold down the Option key while trimming with the mouse on the main track to temporarily disable rippling.



The Ripple On control toggles rippling on the main track.

Display Clip Names and Status in the Timeline

You can now see clip names and clip status icons directly on your clips in the Timeline.

To Display Clip Names for Clips in the Cut Timeline:

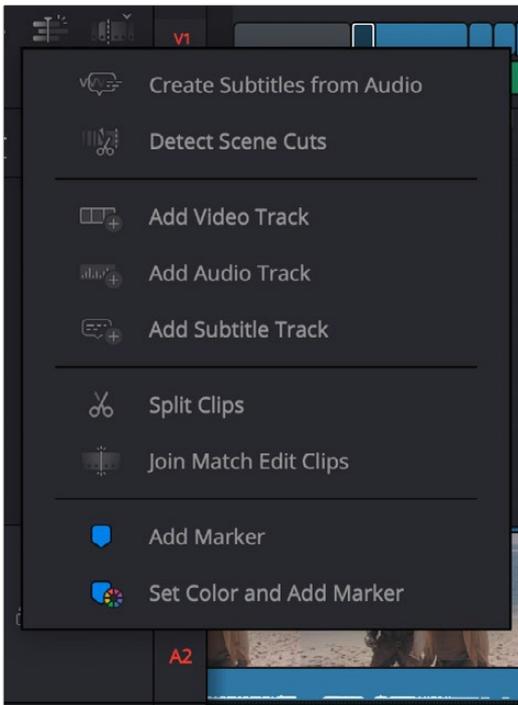
- Click on the Timeline Options icon.
- Select Display Clip Names from the drop-down menu.

To Display Clip Status Icons for Clips in the Cut Timeline:

- Click on the Timeline Options icon.
- Select Display Clip Status from the drop-down menu.

Timeline Actions

The Timeline Actions menu is generally used to add new items to the Timeline.



The Timeline Actions menu

Automatically Detect and Create Captions from Timeline Audio

You can automatically create subtitles and captions from your timeline's audio tracks, as described in the Auto Caption section of the Edit chapter later in this manual.

To Automatically Detect and Create Captions from Timeline Audio:

- Open the Timeline with the video and audio clips you want to caption.
- Select the Timeline Actions icon and choose Create Subtitles from Audio from the drop-down menu.

Perform DaVinci Neural Engine Scene Cuts in the Cut Timeline

You can now use the Scene Cut functionality directly in a Cut timeline. For more information on using Scene Cut Detection, see Chapter 23, “Using Scene Detection,” in the DaVinci Resolve Reference Manual.

To use Scene Cut Detection on a Cut Page Timeline:

- Open the Timeline with the video clips you want to split into multiple cuts.
- Select the Timeline Actions icon and choose Detect Scene Cuts from the drop-down menu.

Add Audio, Video and Subtitle Tracks

Audio, Video, and Subtitle tracks can now be added directly from the Timeline Actions icon.

Split and Join Adjacent Clips

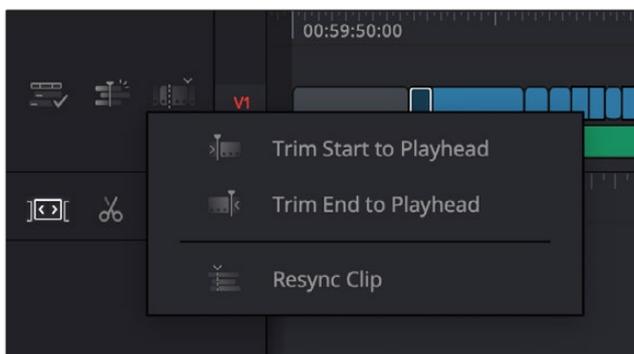
The Split and Join Clips commands can now be added directly from the Timeline Actions icon.

Add Markers and Set Default Marker Color

The ability to add Markers and set the default Marker color can now be accessed directly from the Timeline Actions icon.

Edit Actions

The controls in the Edit Actions menu let you manipulate clips on the Timeline.



The Edit Actions menu

Trim or Extend Edit Clip to Playhead

You can easily trim or extend a clip to a specific length by positioning the playhead on the Timeline exactly where you want the video to start or end and then select the appropriate operation by clicking on the Timeline Actions icon.

To Trim or Extend and Edit on a Cut Page Timeline:

- Place the playhead at the point that you wish to either extend the clip to, or cut the clip off.
- Click on the Timeline Actions icon
- Select Trim Start to Playhead from the contextual menu to cut or extend the left side of the clip to the playhead position.
- Select Trim End to Playhead from the contextual menu to cut or extend the right side of the clip to the playhead position.

Resync Misaligned Synced Clips

While editing with synced Multicam clips, if your shot accidentally goes out of sync with the timeline, it will be indicated by a warning icon in the lower left of the clip. You can easily bring this clip back into sync again with the timeline by clicking on the Timeline Actions icon, and selecting Resync Clip from the contextual menu.



If a clip accidentally slips sync in Multicam footage, a red sync warning indicator will now appear in the lower left of the clip.

General Improvements

Outside of the new Toolbar icons, there have been some major features added to the Cut page in general.

Roll and Trim Audio Edit Points to Add Split Edits

You can now independently trim the audio channel of a video clip in the Cut page. This allows you to do a split edit (L-cut or J-cut) where the audio of one video clip is extended under the video of a different clip. This lets you manipulate the flow and rhythm of a scene in terms of reaction shots and more natural sounding dialogue.

To Trim Audio Only and Perform a Split Edit on a Cut Page Timeline:

- Expand the video track on the Cut page by clicking on the Track Sizing icon on the left side of the track header. This is not strictly necessary but makes it easier to find the correct trigger point for the tool and to see the audio waveform as you're trimming it.
- Hover the pointer over the edit point in the lower audio portion of the track. When the trim icon shows a musical note to the right, you can then slide that edit point back and forth and only the audio portion of the clip will be expanded forwards or backwards.



Placing the pointer in the audio part of the track triggers the trim indicator with the musical note icon. This allows you to drag just the audio part of the track back and forth in the Timeline.

Subtitles in the Cut Timeline

The Cut page now has the same subtitle support as the Edit page, including the new Auto Caption feature described in the Edit page section of this manual. For more information on how to use subtitles, see Chapter 52, “Subtitles and Closed Captioning,” in the DaVinci Resolve Reference Manual.

To Add a Subtitle Track in the Cut Timeline:

- Click on the Timeline Actions icon.
- Select Add Subtitle Track from the drop-down menu.

Enlarge a Track by Clicking on Icon in the Track Header

Tracks can now be enlarged and minimized by clicking on the Track Sizing icon on the left side of the track header. An expanded video track shows a full size video and audio track, if attached. This makes it easier to select just the track you want to focus on, without having to manually resize them all by dragging. Only one track can be expanded at a time.



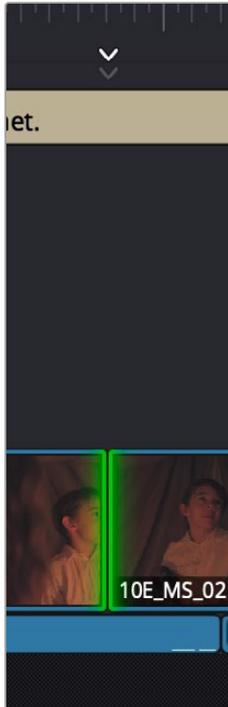
Clicking on the Track Sizing icon expands the track to show the full audio track of the clip.

Accessing Favorite Transitions on the Toolbar

Any transitions you've marked as favorites can be accessed directly in the toolbar by right-clicking the Smooth Cut icon, and selecting your transition from the drop-down menu.

Improved Smart Indicator and Edit Point Display

To make the edit points easier to identify on the Timeline, after a few seconds, the Smart Indicator will move up and down on the Timeline Ruler, while the actual edit point will strobe green.



The Smart Indicator now moves up and down, and the edit point strobes green.

Out of Sync Indicators for Edited Sync Clips

If you're editing Multicam footage that's synced, either in the Sync Bin or using Source Overwrite, and a clip is either accidentally or intentionally moved out of sync with the rest of the program, a warning icon will now appear in the lower left of the clip.

Chapter 3

Edit

The Edit page has received several useful feature updates in 18.5.

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Auto Caption (Studio Version Only)

Due to recent advances in AI and expert system technologies, it's become possible to get remarkably accurate and perfectly timed subtitles of spoken text using DaVinci Resolve's Auto Caption function. Auto Caption will analyze the speech in a timeline and automatically create a subtitle track with all the spoken dialog converted into text subtitle clips.

Auto Caption just doesn't directly translate phonetic speech to text. It will also correctly analyze the context of that speech and translate that into proper punctuation and grammar for the subtitle. For example, Auto Caption will pick out proper names and capitalize them, it will add a question mark to the end of sentence if your subject is asking a question, it will add quotation marks in the correct locations if your subject is quoting something, if it detects music in the background, it will add a [Music Playing] subtitle. It handles accents and knows when there are multiple people speaking in the same scene. You may find it surprising just how accurate the Auto Caption tool can be.

To Auto Caption a timeline:

- 1 Open the Timeline you want to Auto Caption in the Edit page.
- 2 Select an In-Out range for the subtitles on the Timeline, or leave blank to Auto Caption the entire Timeline.
- 3 Select Timeline > Auto Caption.
- 4 In the Auto Caption Dialog, select the following options:
 - **Language:** The language of the spoken text.
 - **Caption Preset:** The Caption Preset style you wish the subtitles to be formatted to.
 - **Max Characters per Line:** The maximum number of characters per line in the subtitle. Larger numbers create longer lines of text on the screen. Smaller numbers create shorter lines of text.
- 5 Click the Start button.

Auto Caption will then start to transcribe the spoken text, and a dialog box will show you its progress. When it's finished, the resulting subtitles will be added to the Subtitle track. If there is no Subtitle track on your Timeline, it will automatically make one for you. If there is more than one subtitle track on your Timeline, Auto Caption will always use the highest track to write to.

The one area where the Auto Caption tool will still commonly fail is having overlapping dialog clips across multiple tracks. To work around this, you can mute any audio track on the Timeline you don't want used in the subtitle analysis.

Once the Auto Caption is complete, you can manually edit the captions to fix any minor errors.

Auto Caption Language Support

Currently Auto Caption supports the following languages:

- English

Modify Keyframes During Playback on the Edit Timeline

Simple keyframing can be done directly on clips in the timeline. You can add and delete keyframes to a clip using keyboard shortcuts, and DaVinci Resolve will try to intelligently predict the context of the clip to set the appropriate key frame.

This method allows you to quickly and precisely add retime and audio gain Keyframes during playback, and then come back and manipulate the points you specified.

To Add a Keyframe to a Clip in the Timeline:

- Put the playhead over the frame of the clip where you want to add the keyframe. This can also be set live during playback of the clip.
- Choose Mark > Add Keyframe (Command-[]).

To Delete a Keyframe to a Clip in the Timeline:

- Select the keyframe or keyframes you want to delete from the clip.
- Choose Mark > Delete Keyframe (Option-]).

While adding a keyframe on the timeline clip is a simple keyboard press, how does DaVinci Resolve know what specific parameter from all the options available in the Inspector you wanted to keyframe? Essentially, the keyframes are now context aware, meaning which keyframable attribute is selected depends largely on the last item you manipulated, or falling back to the most commonly used.

The keyframe selection hierarchy in DaVinci Resolve runs through the keyframable options from top to bottom. If no keyframe makes sense in the context of the top entry, it automatically chooses the next one down the list, and so on.

The DaVinci Resolve Keyframe Selection Order:

- The Retime Controls (if already active).
- The active effect curve in the Keyframe Editor (if already open).
- The last Inspector control that was manipulated.
- Audio Gain.

For example, if you previously adjusted the Zoom parameter on a clip, then added a new keyframe to the clip by pressing Option-[, it would bypass the Retime Controls, the Effect Curves, and add a new Zoom keyframe, as that was the last tool manipulated. This also means that when you add a keyframe to a basic clip on a timeline with no modifications, it adds an Audio Gain Keyframe.

If you want to do more complex keyframing, or DaVinci Resolve is not picking up on the context correctly, you can use the Keyframe Editor.

Export Current Frame as Still from Media, Cut and Edit Viewers

You can now export a still frame from the Viewer in the Media, Cut, and Edit pages.

To Export a Still Frame from the Viewer:

- 1 Use the Viewer's playback controls to navigate to the frame you want to export.
- 2 Select File > Export > Current Frame as Still.
- 3 Enter the name of the still frame in the File System viewer.
- 4 Enter the desired format of the still frame in the File System viewer.
- 5 Click on the Export button.

Reorder Tracks in the Tracks Index

Several of the most common track controls can be found together in the Tracks Index. The Tracks Index is accessed by clicking on the Index pane, and selecting the Tracks tab. The resulting Tracklist shows all the current tracks in your timeline, and their position and attributes. These are all modifiable right inside the Tracks Index.



#	Name	Track Controls	Format	Monitor	ADC
V3	Adjustment Clips	[Icons]			
V2	Titles	[Icons]			
V1	Video 1	[Icons]			
A1	Dialog Mix	[Icons]	1.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A2	SFX	[Icons]	1.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A3	Music	[Icons]	1.0	<input type="checkbox"/>	<input type="checkbox"/>
A4	Foley	[Icons]	2.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The Tracks Index

Tracks Index Columns

Each track reveals several columns of information. These columns can be rearranged by dragging the column headers to the left or right, depending on what information is most important to you. Clicking on a track row selects the track for modification.

The available columns of information are:

- **Color:** The current color of the track is shown. Right-click anywhere in the row, and choose Change Track Color to choose a new one.
- **#:** Displays the current track order. You can rearrange the order of the tracks by dragging the number in this column up or down in the track hierarchy and releasing the mouse button. Note that the actual absolute track number (V1, A1, etc.) does not change, but the track that is assigned to that number will have changed.
- **Name:** The name of the Track. You can click in this field to rename the track.

- **Track Controls:** The same track controls that are found in the Track Header in the Timeline can also be accessed here: Lock/Unlock, Auto Track Select, Disable/Enable Video Track, Solo, and Mute.
- **Format (audio track only):** Shows the current format of the audio track. You can change this format to any other by right-clicking anywhere in the row of an audio track and choosing Change Track Type to, and then selecting a new format from the contextual menu.
- **Monitor (audio track only):** Selects which tracks can be selected in the monitor drop-down menu in the upper right of the Edit Timeline or Fairlight page windows.
- **ADC (audio track only):** Checking this box turns on Automatic Delay Compensation (ADC) for the track.

Clicking on the Tracks Index's option menu lets you include or exclude track types (video, audio, subtitle) from the Tracklist.

Grades from Flattened Multicams are Copied to Multicam Angles

When flattening a multicam clip, color grades applied to the multicam are automatically applied to the underlying angles, preserving changes to color grades and effects.

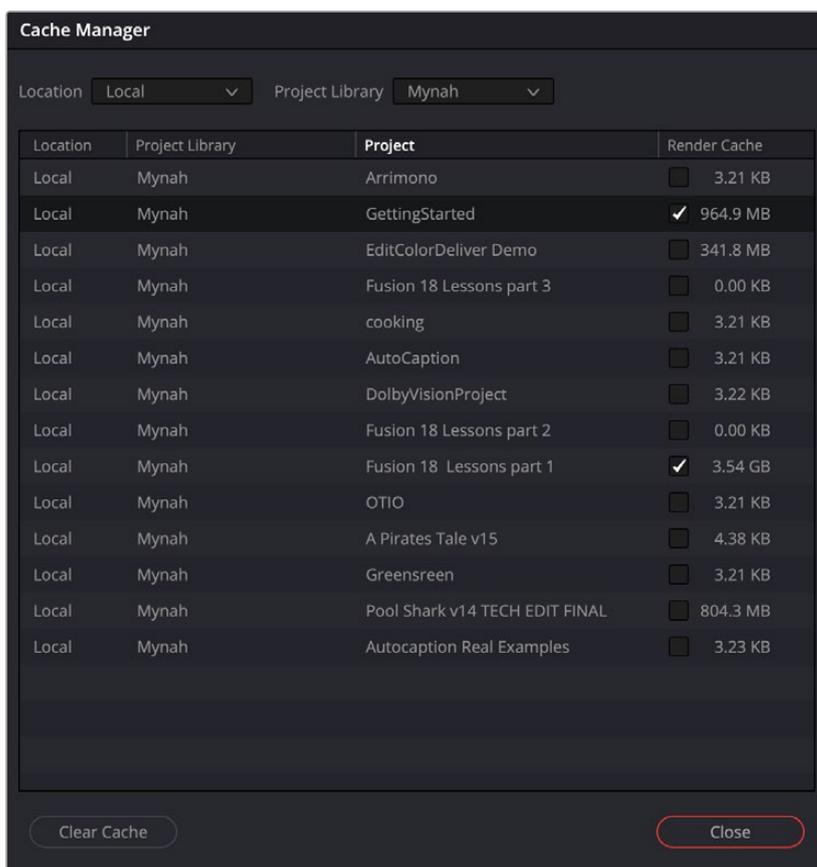
The Cache Manager

There is a new Render Cache management window to help you easily see the size and manage your cache data for various projects across all your project libraries. This cache manager can be accessed from Playback > Delete Render Cache > Manage Cache Data.

The Cache Manager window ties in with the Project Manager, letting you select cached media from any library accessible from your system, not just the current project library.

The functions of the Cache Manager are:

- **Location:** This drop-down menu lets you choose the type of project library to connect to. Options are: Local, Network, Cloud, and All.
- **Project Library:** This drop-down menu lets you choose the project library whose projects you want to manage. This lists all the project libraries in the selected Location, and you can select one for management. You can also select All to reveal all project libraries in that Location.
- **Project:** The main window shows all the projects in the Project Libraries selected above. It is categorized into sortable columns by Location, Project Library, Project Name, and Render Cache. Check the box in the Render Cache column to select any projects you want to delete the cache of.
- **Clear Cache:** Click this button to delete the Cache for all the selected projects. As of this writing there is no warning dialog or undo for this function, so double check that you've selected the correct caches for deletion.
- **Close:** Closes the Cache Manager.



The Cache Manager

Select All Clips Under Playhead in Cut, Edit, and Fairlight

You can now select all the clips under the playhead at once, regardless of how many tracks they are spread across by selecting Trim > Select All Clips Under Playhead (Option-Shift-V).

Chapter 4

Fusion

The Fusion page has received several new features in 18.5, making it easier to organize complicated node trees, as well as added support for Universal Scene Descriptor files.

IMPORTANT: This documentation is for the Public Beta of 18.5 only. As beta software, the features described below may be changed, redesigned, or removed completely from the final release. In all instances the documentation for the final 18.5 release supersede this documentation.

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Support for Importing Universal Scene Descriptor (USD) Files

The Universal Scene Descriptor USD framework is a set of open standards for interacting, describing, saving, and interpreting 3D scene info in a single common format (including USD and zipped USDZ file formats) that allows VFX teams to collaborate between tools easily. It further defines standard plug-in, renderer (including its own in-the-box Storm GPU renderer), and other framework host/client interfaces.

DaVinci Resolve and Fusion can import USD (.usdc, .usdz, .usda) 3D information including geometry, lighting, cameras, materials, and animation. A new collection of USD tools has been added to Fusion, allowing users to manipulate, re-light, and render these USD files.

To Import a USD file:

- 1 Add a uLoader tool to your Fusion Composition.
- 2 Select the USD file you want to load in the File Browser. If you wish to change this file in the future, you can do so in the uLoader Inspector without disrupting your node tree.
- 3 Connect the output of the uLoader to a uMerge tool.
- 4 Connect any other USD tools, like uCamera or any of the uLights, to manipulate the scene.
- 5 Connect the output of the uMerge tool to a uRenderer.
- 6 Connect the output of the uRenderer to the MediaOut tool.



A very simple USD import node tree

USD Toolset for Managing USD Assets

To supplement its USD support, DaVinci Resolve 18.5 comes with a series of USD-focused tools to use in your compositions. These tools are currently a work in progress.

- **uLoader:** Used to import USD files.
- **uMerge:** Used for combining USD tools into a single scene. Additionally, native 3D tools (such as Text3D) can be connected to a uMerge.

- **uTransform:** Provides controls for manipulating position, scale, and rotation of an object or scene.
- **uLights:** Provide users with various types of lights, which can be used to relight a USD object or scene. The light types are:
 - uCylinder Light
 - uDisk Light
 - uDistant Light
 - uDome Light
 - uRectangle Light
 - uSphere Light
- **uImage Plane:** Generates preset USD geometry planes.
- **uShape:** Generates preset USD geometry, such as cubes, cylinders, and spheres.
- **uCamera:** A specifically designed virtual camera to be used within a USD scene.
- **uRenderer:** Responsible for rendering the USD scene into a 2D image.

Multi Merge



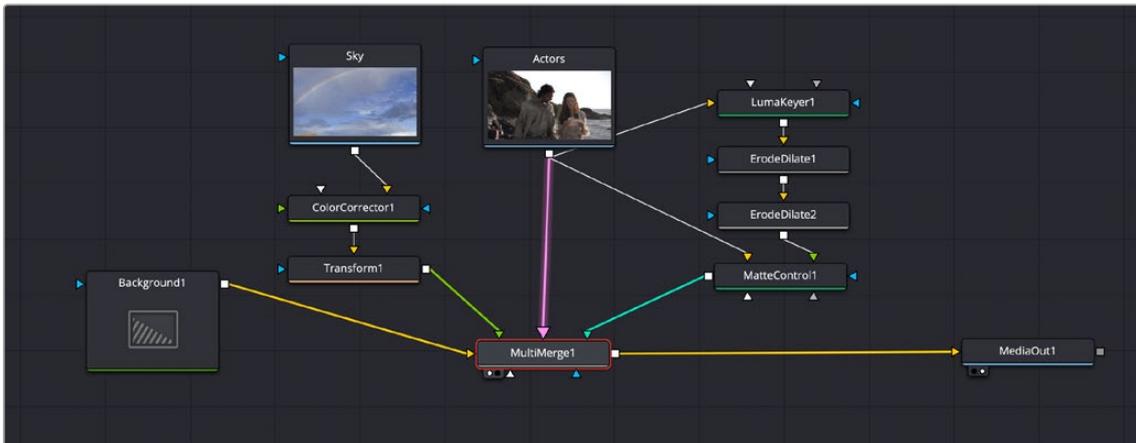
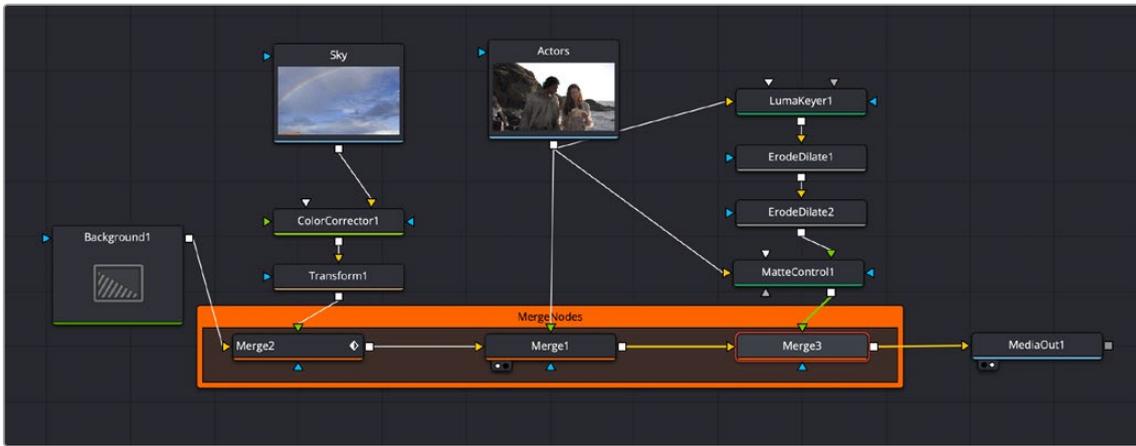
The Multi Merge node

Multi Merge Node Introduction

The Multi Merge node allows you to combine several sources together in a layer-based structure. Unlike the standard Merge tool, which only accepts one foreground input, Multi Merge creates a new consecutive foreground input each time a new source is dragged to the tool.

These inputs are added to the Layer List in the Inspector and are displayed in a hierarchy from top to bottom as a stack. The layers are arranged so the layer closest to the foreground is at the top of the list, and the one closest to the background is at the bottom. Each layer has its own separate and independent Merge controls that appear in the lower half of the Inspector, allowing you to individually adjust the position, size, composite modes, etc. for each source input.

As your composite increases in complexity, you can end up with a large amount of standard Merge nodes scattered throughout the node tree. Multi Merge can be used to combine these Merge nodes together, both as an organizational tool and allowing you to control the order of operations in a layer-based, rather than a node-based environment. You could conceivably composite and organize hundreds of separate layers using one Multi Merge node on your node tree.



A Sky Replacement composite requiring three separate Merge nodes (above) is replaced by one single Multi Merge node (bottom). The pipe of the currently selected layer in the Layer List has a slight glow applied (pink line).

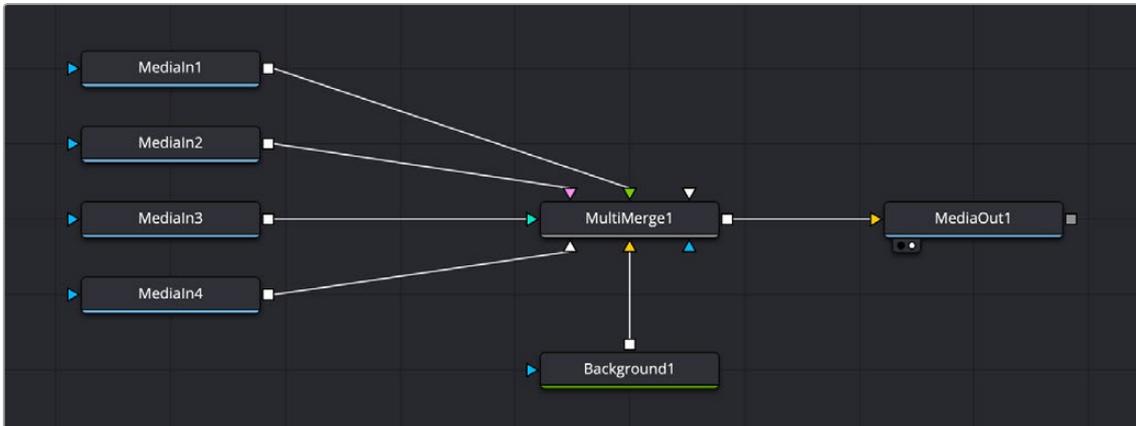
Inputs

The Multi Merge node provides these image inputs:

- **Background:** The orange background input is for the first of the images you want to composite together. You should connect the background input before connecting the foreground input.
- **Foreground:** The foreground inputs are for each subsequent image you want to composite together, which is typically a foreground subject that should be in front of the background. Connecting a pipe from a new source onto the Multi Merge node automatically creates a new foreground input on the node and a new layer in the Layer List.
- **Effect Mask:** (Optional) The effect mask input lets you mask a limited area of the output image to be merged where the mask is white (where the foreground image shows in front of the background), letting the background image show through by itself where the mask is black.

Basic Node Setup

Multi Merge nodes are typically connected in the following way, with multiple input images connected to the foreground inputs, a background input, and the output connected to the next node in the composition.

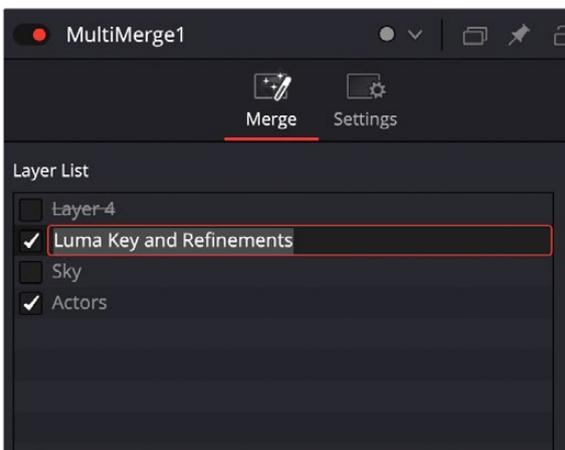


A typical Multi Merge node structure in DaVinci Resolve

Resolution Handling

While you can connect images of any resolution to the background and foreground inputs of the Multi Merge node, the image that's connected to the background input determines the resolution of the output.

Inspector



The Layer List of the Multi Merge node. The input to Layer 4 has been disconnected (strike through the name), and disabled (unchecked). The Luma Key layer is having its name changed, the Sky layer is disabled (unchecked), while the Actors layer is enabled (checked).

Layer List

For each foreground input connected to the Multi Merge node, a new layer is created sequentially in the Layer List. The Layer List is hierarchically sorted from top to bottom, with layers on top being above any layers below them in the image. You can customize this layer structure in several ways.

To Select a Layer:

Click on the Layer in the Layer List to make that Layer active. The active Layer's Merge Controls will appear at the bottom of the Inspector, and the pipe connecting to the layer's input on the Multi Merge node will glow slightly in the node tree.

To Move a Layer up or down the List:

Click and drag on the Layer Name and move it up or down the list. A grey line will highlight where in the list the layer will now be placed. Let go of the mouse button to make the change.

To Rename a Layer:

By default, each Layer is named sequentially (Layer 1, Layer 2, etc.) To change the Layer's name to something more meaningful, double-click on the Layer's name and type a new name in the text field. You can also right-click on a Layer's name and select Rename Layer from the contextual menu.

To Disable/Enable a Layer:

Checking or unchecking the box next to the Layer's Name will enable or disable that layer, respectively. Disabling the layer turns off that input's contribution to the overall composite in the Multi Merge but does not delete it.

To Remove or Replace a Layer:

By design, there is no way to remove a Layer from the Layer List. If you disconnect the pipe from a the Multi Merge's input, the Layer will still remain in its place in the Layer List but with a strike-through its name to let you know that nothing is currently connected. This allows you to quickly iterate and audition several input sources (clips, graphics, etc.) to the same layer without having to constantly rearrange the order of your Layer List.

Right-clicking on any Layer opens up a contextual menu with the following options:

- **Paste Setting:** Pastes a previous tool's settings to the layer, if applicable. For example, copying a transform from a background node and pasting on the layer sets the transform values to match.
- **Paste Layer List Group Settings:** Pastes a previous tool's settings to all layers, if applicable. For example, copying a transform from a background node and pasting on the layers sets the transform values for all layers to match.
- **Set to Default:** Resets the layer name and check box but not the order or merge controls for the current layer.
- **Set Layer List Group to Default:** Resets all the layer names and check boxes but not the order or merge controls for the the layers.
- **Set Layer X to Default:** Resets all the merge controls but not the name and checkbox for the selected layer.
- **Rename Layer:** Opens up a dialog box, allowing you to rename the selected layer.

- **Split Here:** Automatically creates another connected Multi Merge node and splits the existing layers between the two. The layer that was selected for the split, and all layers above it, will be spun off into a new Multi Merge node. The original Multi Merge node will be connected to the background input of the new Multi Merge node.
- **Go To Connected Tool:** Selects the tool that is connected to the Layer's input on the Mutli Merge node and opens the tool's parameters in the Inspector.

Merge Controls

Each layer has a separate and independent set of Merge Controls that appear here when the layer is selected. For detailed information on how the Merge Controls work, see the Merge section in the Composite Nodes chapter in the DaVinci Resolve Reference manual.

Depth Map

DaVinci Resolve's Depth Map FX is now available as a tool within Fusion. For more information on how to use the Depth Map, see Chapter 158, "Resolve FX Refine," in the DaVinci Resolve Reference Manual.

Chapter 5

Color

The Color Page has seen additional improvements in DaVinci Resolve 18.5, in terms of Color Management on a per-timeline basis, better LUT management, and additional controls for the DaVinci Resolve Mini Panel.

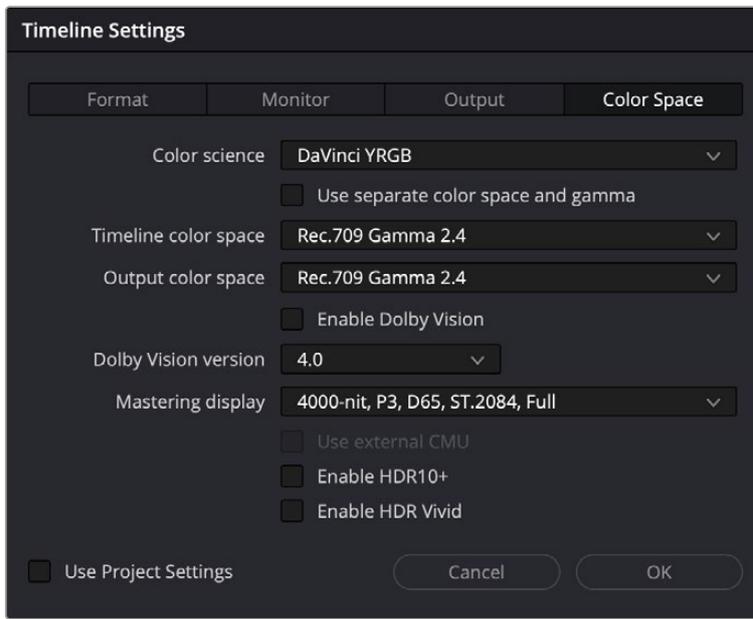
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Per-Timeline Resolve Color Management

Timelines using custom settings now allow you to override color management settings on a per timeline basis. This allows setting of independent timeline and output color spaces per timeline along with other color management properties. Any existing custom timelines are automatically initialized to color management settings from the project.



The Color Space tab in the Timeline Settings let you change color management on a per-timeline basis.

Set Composite Mode in the Corrector Node

You can now set a composite mode for a specific corrector node. Simply right-click the node and select Composite Mode from the contextual menu. You can then change the type of composite for the node to any of DaVinci Resolve's built-in composite modes.

Marker Overlays and Annotations in the Viewer

The Color page Viewer now supports overlays and annotations for timeline and clip markers. From the Viewer's 3-dot option menu, select Show Marker Overlays. When you select Annotation mode from the drop-down menu in the lower left of the Viewer, the Annotation tools are then shown in the toolbar. Drawing annotations on a frame without a marker creates a new timeline marker.

Missing LUTs Shown as a Viewer Overlay

Clips with missing LUTs no longer show a missing LUT warning dialog. Instead the Viewer shows an overlay at the bottom right of the screen indicating the name of the LUT if a single LUT is missing or an indicator that multiple LUTs are missing. This allows for quick previews of missing LUTs without interruption. Multiple missing LUTs can be seen and managed from the Missing LUTs tab in the LUT gallery.

Managing Missing LUTs from the LUT Gallery

The LUT gallery shows a new "Missing LUTs" tab when one or more LUTs are not found in a given timeline and project. This gives the ability to see a list of missing LUTs encountered so that they can be managed accordingly.

Dolby Vision[®] Controls in DaVinci Resolve Mini Panel

In the User button, the Dolby Vision option exposes the Dolby Vision Trim control set. These controls let you automatically analyze your HDR material and generate Dolby Vision trim metadata that will display your grade properly on SDR and HDR screens with a different brightness level than what you mastered on.

If you purchased a Dolby Vision license, you can manually adjust your trims using the Mini Panel as well. The Primary trim controls are available in the first menu using the knobs, and the secondary trim controls are accessed by tapping on the Next Page button.

Color Warper Controls in DaVinci Resolve Mini Panel

In the User button, the Color Warper button exposes DaVinci Resolve's Color Warper controls. The Color Warper palette is a mesh-based warping tool that, instead of warping the spatial location of pixels, warps one set of colors into another. These adjustments, made using a grid of draggable control points, automatically have a smooth falloff from the colors you're warping to other colors that are locked into place. The smoothness of this falloff depends on the distance between the warp points that are being adjusted and other warp points that are locked in place to prevent change.

The Color Warper controls in the Mini Panel are used in conjunction with the mouse and screen interface. Before using the Color Warper controls on the Mini Panel, you must first click on one or more control points in the user interface to select an area. Once selected, you can then manipulate and modify that area using the control knobs and soft buttons on the Mini Panel.

Chapter 6

Fairlight

DaVinci Resolve 18.5 offers the following new features and enhancements for Fairlight.

- Support for edit and mix groups in Fairlight
- Improved Elastic Wave pitch handling with voice-specific option
- Enhanced support for Dolby Atmos™

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Edit-Mix Groups

You can group audio tracks for editing and mixing tasks. Edit-Mix Groups let you specify which properties the group will control in the Groups dialog. Edit-Mix Groups are different from VCAs, which can control mixing (but in different ways than Edit-Mix groups).

With tracks grouped for editing, most edits you make to one track in the group apply to all tracks in the group, such as nudging or removing a selection over a range of grouped audio clips, or creating or modifying automation data. With tracks grouped for any mixing operation, any changes you make to one track in the group apply to all tracks in the groups while maintaining relative mixer settings, such as adjusting track fader positions.

Groups let you switch focus from individual tracks (Groups disabled), to smaller groups of tracks (2 or 3), to larger groups (e.g., all tracks of a certain type, a larger multitrack sub-mix, or all timeline tracks). Groups can be nested so that a smaller group of tracks can be part of a larger one.

Editing in Groups

With an active group, most editing operations apply to all tracks in the group together, such as selecting automation curve data, manipulating that data by trimming or adding or keyframes, or selecting areas of clips and deleting them. Operations that involve moving clip boundaries or trimming obey rules having to do with individual tracks, such as pressing up/down arrows to navigate to the next/previous clip boundary obeys the boundaries of the individual tracks within the group, regardless of their vertical position in the timeline.

When in Focus mode, you can also still select individual clips with the Grabber Hand tool and move a clip. In most cases, the clips in an edit group may be of differing lengths, but group behavior still applies and any trim, cut, or paste operation follows the group at its present boundaries. However, you can select individual clips that are smaller within a larger group selection and trim them individually.

Mixing in Groups

Mix Groups let you make changes to faders, mutes, solo, record arming, sends, fader, send or mute automation to all group members at once.

Fader and send positions maintain their relative levels and preserve their absolute levels when they may “top out” or “bottom out” (top or bottom of their range). For example, if you have 2 faders that are part of a group, with one starting at +6 and the other at -7.5 (a delta of 13.5 dB), and you move the lower fader to +2, the first fader will show +10 and won't change as the lower level fader is increased. As you decrease the group level, the offset of 13.5 dB is maintained so that the higher level fader eventually falls below +10 and keeps the correct offset as the group level lowers.

NOTE: That plug-ins controls cannot be included in Edit-Mix groups.

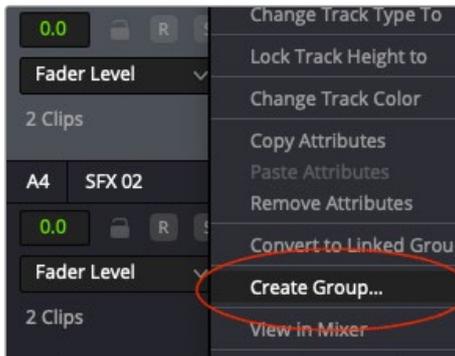
Creating and Editing Edit-Mix Groups

To show (or hide) the Groups List:

- Click the Index icon at the top of the Fairlight window.

To create an Edit-Mix group, do one of the following:

- Select 2 or more tracks, and click the Create Group icon in the upper-right corner of the Groups List.
- In the Timeline window, select 2 or more tracks, right-click on one of the track headers of a track you want to include in the group, and select Create Group in the context menu.



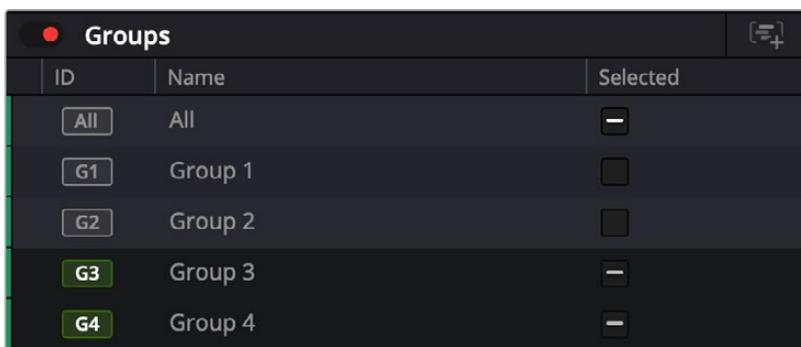
Create Group right-click option

- In the Mix window, select 2 or more tracks, right-click on the Group display area on one of the tracks you want to include in the group, and select Create Group in the context menu.



Create New Group icon

- Click Save to save the group. The new group appears in the Groups List.



Groups List

In the resulting dialog, do the following:

- Type a name for the group.
- Select which controls you want to include for the group (Editing, Fader, Solo, Mute, Arm, Sends, and Automation). Click Set As Default to retain your settings for creating groups in the future.

- Select tracks in the Add Channels column on the left, and then click the >> icon to add selected tracks to the group. You can also select tracks in the Channels Added column on the left and click the << icon to remove those tracks from the group.



Create Group dialog

- Click Save to save the group.
The new group appears in the Groups List.

To enable (or disable) a group:

- Select (or deselect) the Group ID in the Groups List (left-most column).

To rename a group:

- Double-click the group name in the Groups List.
- Type the new name you want for the group.

To edit a group:

- Click the Edit Group icon in the Groups List for the group you want to edit.



Edit Group icon

To delete a Track group:

- View the Tracks List/Group List.
- Click the Trash Can icon for the group you want to delete.



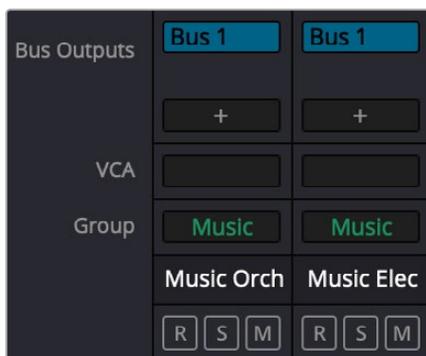
Delete Group icon

Viewing Groups in the Mixer

If a track is included in a group, the name of that group is displayed in the Mixer (just below the VCA row). For tracks that are included in nested groups, the name of the largest group is displayed.

To show (or hide) the groups in the Mixer:

- Select (or deselect) “Edit and Mix Group” in the View Options menu in the Mixer.



Group row shown in the Mixer

Improved Elastic Wave Pitch Handling with Voice-Specific Option

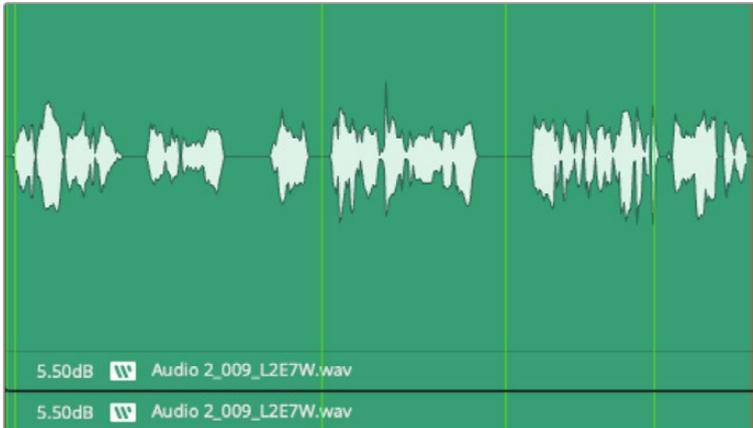
DaVinci Resolve includes a new “Voice” algorithm for Elastic Wave processing. The Elastic Wave context menu now includes Voice in addition to “General Purpose” and “Off.”

- **Off**: (Default) Elastic Wave is not enabled for the clip.
- **Voice**: Focused on human speech or singing. Note that this is not a good option for other material.
- **General Purpose**: Ideal for music and effects.

Elastic View

Elastic view shows Elastic Wave “Time Points,” which are similar, but not the same as, DaVinci Resolve keyframes. Keyframes represent a point in time plus a value, and Elastic Wave time points represent only a point in time.

When Elastic view is enabled, time points are visible on the selected clip.



Elastic Wave Time Points

When disabled, the time points are not visible but the info lane still shows that Elastic Wave is enabled with the Elastic Wave icon.



Elastic Wave disabled

Clearing Timing Points

“Timing points” are the moveable elastic wave breakpoints that stretch or compress a given area of a clip. If you choose “Clear Timing Points,” all selected points within a clip are cleared (deleted).

Elastic Wave can operate in the Edit Window where video editors may want to re-time spoken word performances so that when the audio is re-timed, the video follows the retiming to match. However, when working in the Fairlight page, re-timing of video is disabled so that you can have separate control of the audio file.

Dolby Atmos Improvements

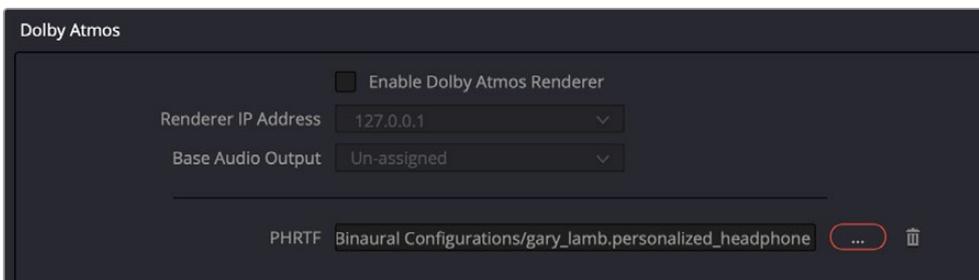
Support for 9.1.6 and 5.1.4 Rendering

9.1.6 and 5.1.4 are now available as output render formats in the internal Dolby Atmos™ renderer.

Personalized Binaural Rendering

You can generate a personalized HRTF (head related transfer function) in order to make binaural rendering more effective. You can download an iPhone or Android Creator app and take a 3D scan of the shape of your head. Once the scan is performed and uploaded to Dolby's servers, a personalized HRTF profile is generated and can be downloaded as a ".personalized_headphone profile file." For more information, visit <https://professional.dolby.com/phrtf/>.

The Dolby Atmos section within System preferences lets you load a profile and apply it for binaural rendering within DaVinci Resolve.



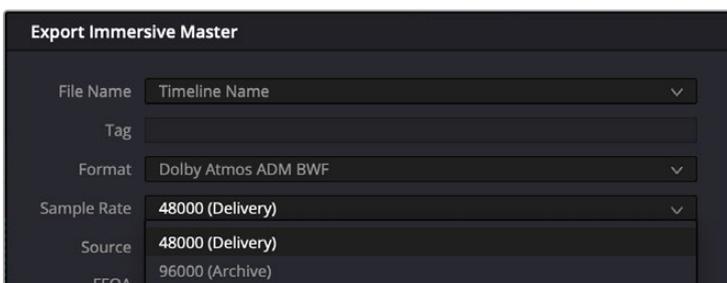
Dolby Atmos preferences

Low-latency Rendering

Previous versions of the Dolby Atmos Renderer were able to run at a specific latency of 10.67 ms. This restriction has been removed in 18.2, allowing selection of lower latency engine processing block sizes, and thus lower monitoring latency through the Dolby Atmos renderer. However, the larger block size is enforced by the renderer during certain operations, such as Binaural renderer, or when a parallel loudness down-mix is enabled.

Support for 96 kHz

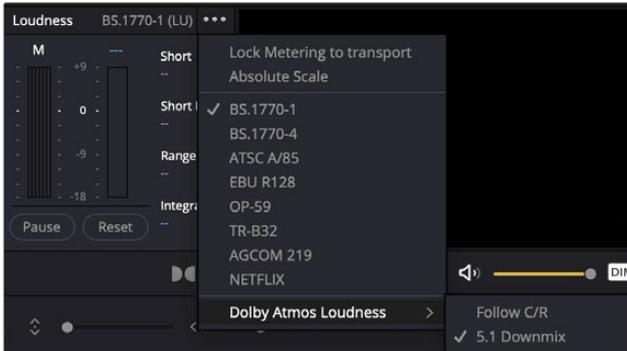
Previous versions were able to generate and render in 48 kHz only. DaVinci Resolve 18.5 now lets you render, monitor, import, and export 96 kHz master files. Note that it is possible to mix and archive at 96 kHz and export a down-sampled 48 kHz master for delivery.



Export Immersive Master options

Parallel Loudness Measurement

A parallel 5.1 down-mix can be performed during the render as a source for a 5.1 loudness measurement. Certain delivery specifications (such as for Netflix) require that the loudness measurement of Atmos Masters be performed at 5.1. You can enable this parallel 5.1 (or stereo) render for the loudness measurement and monitor in the room's native format.

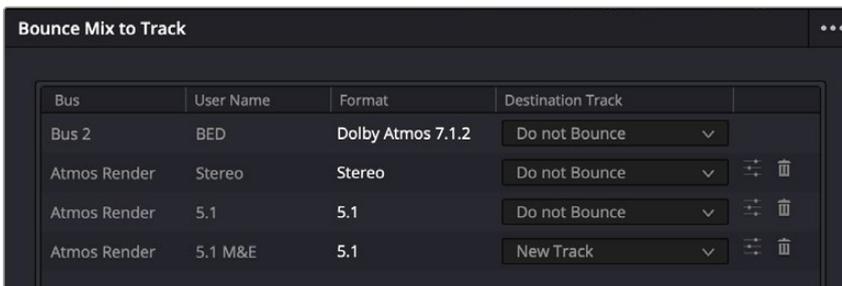


Selecting a Downmix option

Atmos Re-Renders

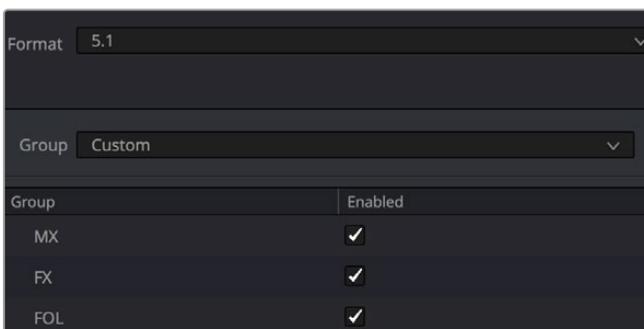
In order to provide parity with the external renderer, you can create presets that let you define a PCM output format and a set of sources using the bed, object and group definitions (such as 5.1).

Bounce Mix to Track has been extended in order to accommodate these re-render presets in Dolby Atmos timelines, which lets you generate multiple deliverables in a single pass. These render presets are stored and recalled as part of the timeline.



Bounce Mix to Track Dolby Atmos re-render options

In addition to render format, you can select the source from a combination of Beds, Objects or defined VCA Groups.



Dolby Atmos Render Preset options

Resolve FX

DaVinci Resolve 18.5 brings some new additions to Resolve FX.

IMPORTANT: This documentation is for the Public Beta of 18.5 only. As beta software, the features described below may be changed, redesigned, or removed completely from the final release. In all instances the documentation for the final 18.5 release supersede this documentation.

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Relight (Studio Version Only)

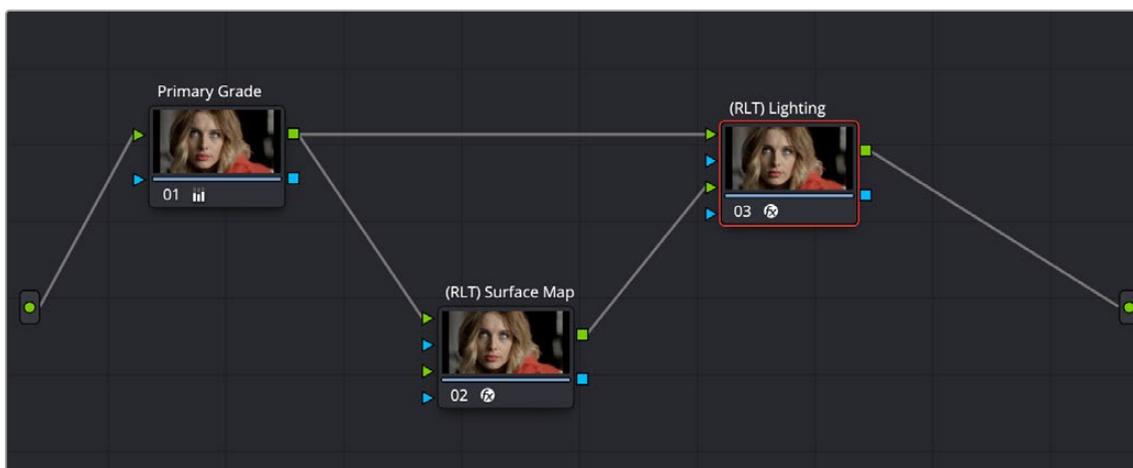
Relight allows you to apply more realistic and natural lighting effects to your scene. Unlike a simple shape window, which lightens everything equally within its boundaries, Relight creates a surface map that analyzes the perceived depth and direction of objects in your 2D image. Relight then takes this surface map and applies a lighting effect to it; this lets the light reflect more realistically off the objects selectively based on their “depth.” When dialed in properly, this effect provides the illusion of light wrapping around an object, reflecting off of highlights and disappearing into shadows.

Relight is useful in many situations when you wished you had another light in the scene, want to change the direction of the existing light to match another shot, or to add some verisimilitude to day-for-night shots.

NOTE: The Relight effect provides the illusion of depth but does not calculate any actual 3D geometry information. For example, if you shine a spotlight on an object, it will not cast a shadow onto the wall behind it. It’s designed to accentuate the lighting that already exists in the shot.

Setting up Relight

Analyzing the image, creating a surface map, and then relighting the result is very computationally intensive, and it is difficult to get real time performance in a single node on current hardware. While it is possible to do both operations in a single node and is the default setup, if you’re encountering performance issues, it may be necessary to split the computational load up into two separate Relight nodes. The first node will handle creating the surface map and render it to the cache, then feed the results into the second node which will handle the actual relighting. The sample dual node tree for Relight is below.



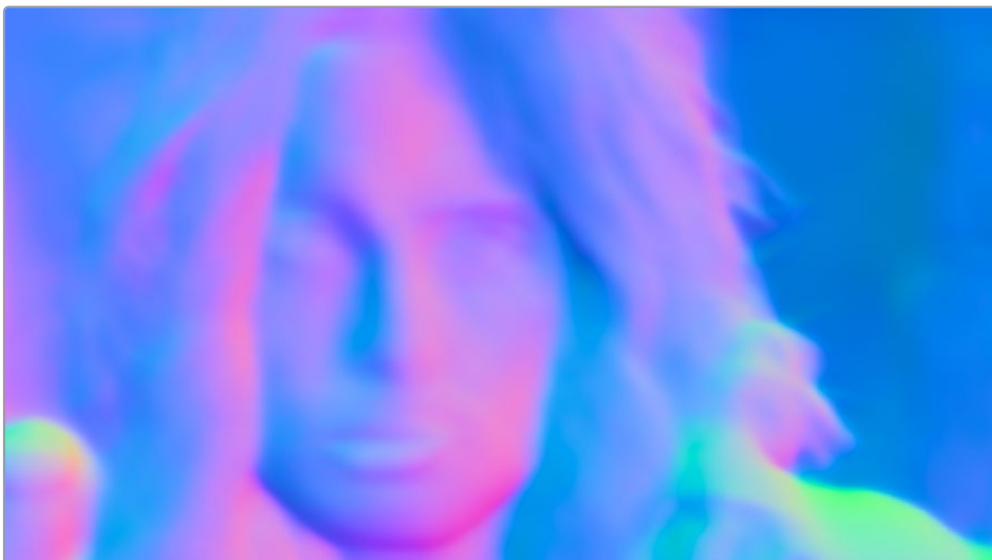
How to set up a dual Relight node tree. You need two separate Relight nodes, configured as above. These have been labeled Surface Map and Lighting for clarity.

In the above example, you have the source video, and two Relight nodes. This is how you connect them:

- The source video is connected to the top RGB input (green) of both nodes.

- The first Relight node ((RLT) Surface Map) creates the surface map for the image by selecting Generate Internally in the Surface Map Settings and checking the Export Surface Map box. The RGB output of this node is connected to the bottom RGB input (green) of the second Relight node.
- In the second Relight node ((RLT) Lighting), select Import from Input 2 in the Surface Map Settings. This exposes the lighting controls, and this node is where you will adjust all the settings for the effect.

You can also connect the Alpha channel (blue) from another node to the top Alpha input in the (RLT) Lighting node to limit the effect. For example, you could select a person using the magic mask, and then feed that Alpha to the (RLT) Lighting node to limit the lighting to affect just the person and not the background.



The output of the Relight Surface Map. This goes into the input of the Relight Lighting node.

The Relight Settings

These controls allow you to adjust the intensity, type, and direction of the light that reflects off the surface map. These controls are keyframable, allowing you to do things like move a spotlight across a wall. They can also be attached to the FX Tracker, letting you do things like moving a spotlight to follow a person as they move through the scene.

General Controls: These determine the main modes of operation of the Relight effect.

- **Surface Map:** This chooses which mode you will use to create the Surface Map.
 - **Generate Internally:** Generates the Surface Map in this node. You can use this map either in the same node, or export it to another node using the checkbox below.
 - **Import From Input 2:** Receives the Surface Map from another Relight Node. Select this on the second node of a dual Relight Node setup.
- **Export Surface Map:** Checking this box creates a multi-colored surface map of the underlying video clip. This surface map is then fed into a second Relight effect where the actual lighting takes place. Unchecking this box reveals all the Relighting settings below. You need two separate Relight nodes to make this effect work, one with this box checked, and the other unchecked.
- **Directional:** Creates a light source that emits from a specific direction at an infinite distance.

- **Point Source:** Creates a light source that emits from a central point.
- **Spotlight:** Creates a cone shaped light source.
- **Relighting Map Preview:** Checking this box reveals an Alpha channel, showing just the effect of this light. Unchecking this box shows the final composited image.

Diffuse Reflection Properties: These controls determine the quality of the emitted light.

- **Brightness:** This controls the strength of any grading that is applied to the scene. It does not add brightness changes on its own, but amplifies the changes you make in the grading tools.
- **Softness:** This controls the size of the light emitter, effectively determining how harsh or gentle the gradient is between light and dark.
- **Distance Falloff:** This controls how much reflections will dim with distance to the light source.

Glossy Reflection Properties: These controls determine the character of the light reflection.

If turned on, these will give the illusion of a metallic sheen to reflective surfaces.

- **Brightness:** Amplifies the amount of the glossy range reflected light.
- **Specularity:** Determines how metallic the reflections will appear.

Spotlight (Spotlight only): Controls for the properties of the Spotlight.

- **Cone Angle:** Sets how broad the beam of light is. This control is also available graphically in the Viewer.
- **Drop Off:** Controls the softness of the edges of the light beam.

Light Position: Controls the position of the light emitter for all light types. These controls are also available graphically in the Viewer.

- **Azimuth/Elevation XY (Directional Only):** Controls the angle from which the light is emitted.
- **Source Follows FX Tracker:** Check this box to have the light source follow the FX tracker.
- **Light Source XYZ:** These controls determine the light emitter's position in 3D space.
- **Spot Follows FX Tracker (Spotlight Only):** Check this box to have the center of the spotlight cone follow the FX tracker.
- **Spot Target XY (Spotlight Only):** These controls determine the position of the base of the spotlight cone.

External Map: If you wish, you can create surface maps in other applications and connect them to the Relight effect in lieu of the internally generated ones. These controls adjust surface maps that were created in other applications.

- **Rescale Oversaturated:** Certain applications use different methods and colors to create a surface map. If your imported surface map does not appear correct, check this box to re-interpret it.
- **Reinterpret Left/Right:** Check this box to swap the direction of your external surface map if your map surfaces are appearing concave instead of convex.
- **Reinterpret Up/Down:** Check this box to swap the direction of your external surface map if your map surfaces are appearing lit from below when the light is above them.

The Relight On Screen Controls

Several of the controls for positioning the light source are available graphically in the Viewer. Make sure that Open FX Overlay is selected in the lower left of the Viewer to see them.



In the Directional mode, you can drag the emitter (red rays) around the frame to set the Azimuth/Elevation controls.



In the Point Source and Spotlight modes, you can move the emitter (red rays) to change XY coordinates, and the circle to adjust the emitter's Z coordinates. If in Spotlight mode, you can drag the X to change the XY coordinates of the Spot Target and scale the large circle to adjust the Cone Angle.

Example

In this example we will be relighting the scene below. Shot during a cloudy overcast day, the director likes the flat look on the building. Unfortunately, the muted drab lighting also affected the model, which he wants to pop more out of the scene. We are going to use the Relight tool to add a phantom sunbeam directly to the model, and not to any of the surrounding fence or walls.



RelightBeforeExample

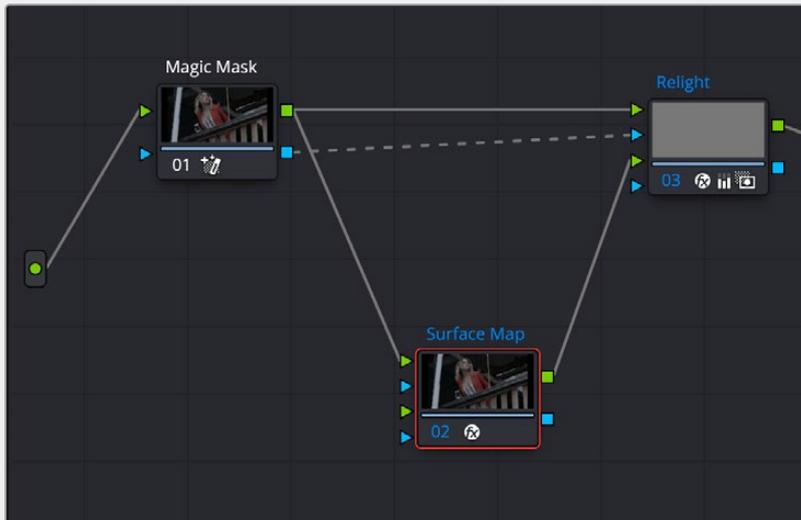
The model's lighting is flat and drab. We want to change it by adding an artificial sunbeam falling on her that wasn't there in the shot. We also want to keep the fence and background as they are.

The first tool we will use is the people Magic Mask to isolate the model from her environment.



Isolating the model with a Magic Mask to isolate the effect

Next we will add two different relight nodes, one to create the surface map, the other to receive it and actually relight the shot. The node tree is explained below.



The Relight node tree. There are two Relight nodes, one called Surface Map and one called Relight.

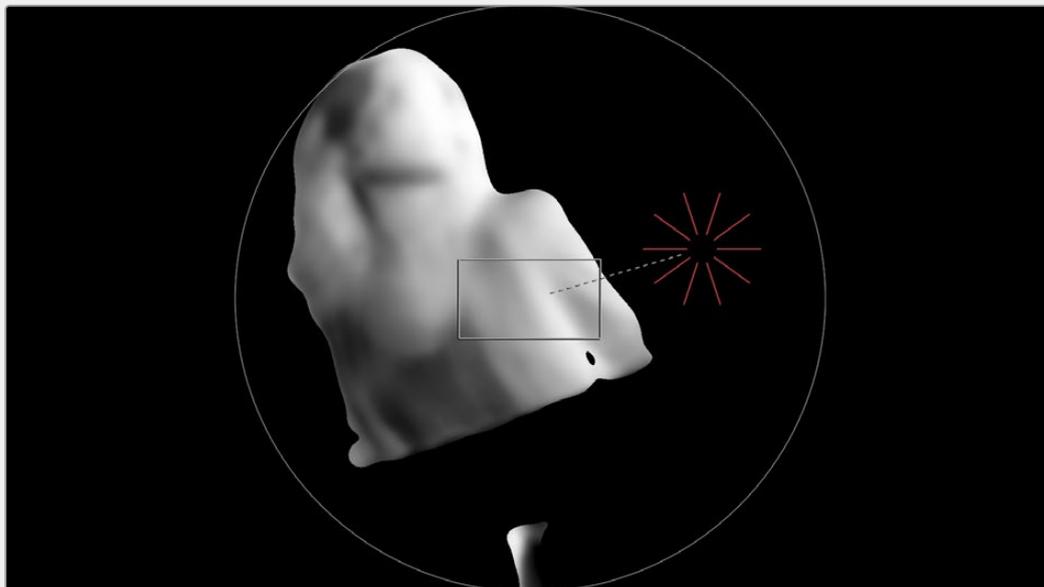
We feed the RGB output of the Magic Mask to the top RGB inputs of both nodes. We also feed the Alpha output of the Magic Mask into the Relight node. This way the Relight effect will only apply to the model we selected using the Magic Mask and will leave the background alone.

In the first node (Surface Map), we select Generate Internally from the Surface Map option. We also check the Export Surface Map checkbox to pass that generated map to the second (Relight) node. We then complete the connection by dragging the RGB output of the Surface Map node to the bottom RGB input of the Relight node. In the Relight node, we then select Import from Input 2 in the Surface Map option in the Inspector.



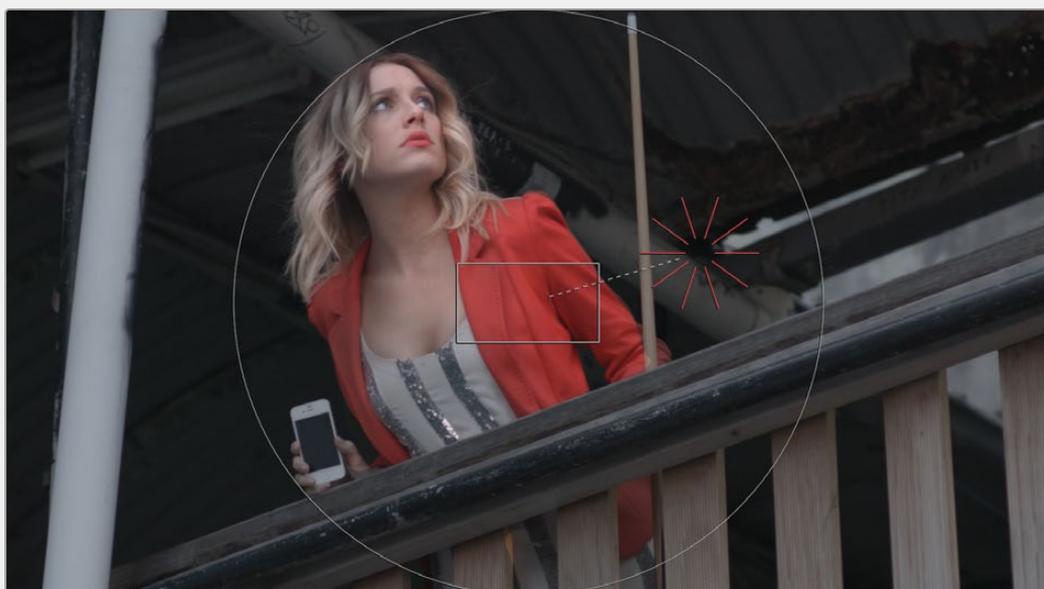
The surface map generated by the Surface Map node

Now that we have the node tree setup correctly, the Surface Map is generated in its node and will cache automatically. Then we can work directly in the Relight node and select a Directional light. Using the Relighting Map Preview checkbox and the on screen controls, we can then see exactly where the lighting effect will take place and how it will “wrap” around the subject.



With the Relighting Map Preview box checked, you can see exactly where and how the Relight will wrap itself around the subject. Unchecking the box lets you see the final color output.

The last thing we need to do is actually create our new light properties. By using the Primaries Wheels controls in the Relight effect, we can increase the gain and color it slightly yellow/orange, and increase the saturation to mimic a golden hour sunbeam on our subject, where before there was only a flat cloudy day.



Adjusting the gain and saturation controls in the Relight node to add the character of the light, selling the illusion that the model is leaning over the fence into a sunbeam.

The Process of Adding FX Nodes has Changed

As part of an overhaul of the Resolve FX system, to make it more intuitive and easier to use, dragging an effect from the Effects Library into the Node Editor will now create that effect using a standard color corrector node. This new node will now include all the additional inputs and Alpha connectors needed to use the effect. So now color correction nodes can be used for everything; there is no need to make separate FX nodes anymore. This should help simplify node trees and involve much less manual management of connections between nodes.

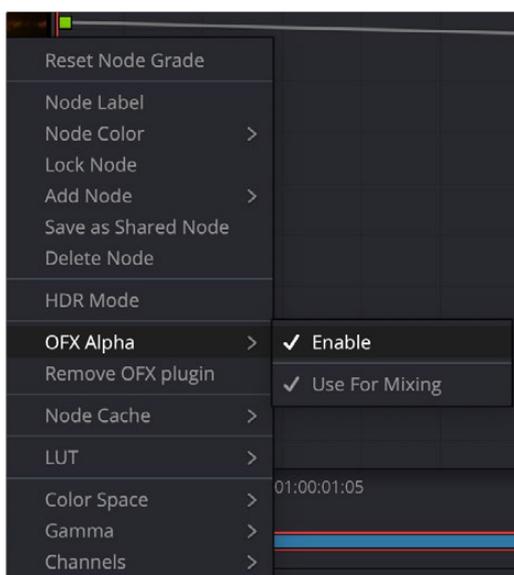
However, for legacy projects or if you still prefer to work in the old way, you can still force an FX node by option-dragging the effect from the Effects Library into the Node Editor instead.

The Process of Using OFX Alpha Channels Has Changed

In addition, the Use OFX Alpha option has been retired. Now that FX use standard color corrector nodes, the FX alpha is always available without having to manually set a menu option.

However, for legacy use there is an OFX Alpha menu instead with two options.

- **Enable:** On by default. When this is unchecked, even if the effect generates Alpha, the Alpha is ignored. Why one would go to the bother of generating an effect with an Alpha channel, only to discard it completely is a matter of conjecture, but the option is there if you're doing something exceedingly strange and complicated. Really just leave this on.
- **Use For Mixing:** On by default. When unchecked, no mixing of the Alpha happens on the node at all. Power Windows and Keys stop working, and the node behaves like a legacy FX Node. Any Alpha generated is still output; it just doesn't limit where the effect acts.



The Use OFX Alpha option has been replaced with the OFX Alpha menu. You most likely want to keep both Enable and Use for Mixing checked unless you have a really good reason.

Chapter 8

General Improvements

DaVinci Resolve 18.5 includes a variety of new features designed to expand the general utility of the software. These features work across multiple pages and are collected into this chapter for reference.

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Sign in and Upload Videos Directly to TikTok

You can now link your TikTok account to DaVinci Resolve, allowing you to directly upload your finished videos to your TikTok feed.

To link your account, open up DaVinci Resolve > Preferences > System, and select the Internet Accounts pane. Use the TikTok panel to log in and authorize DaVinci Resolve to make changes to your TikTok account.

To upload your video directly to TikTok, use the TikTok preset in the Deliver page, enter the appropriate parameters (including the use vertical resolution to give the correct aspect ratio for phones), and make sure the upload directly to TikTok checkbox is selected. Then add it to your Render Queue, and then click on the Render All button. DaVinci Resolve will render the video in the selected format to your local computer, then automatically upload it to your TikTok account.

TikTok Deliver Page Preset

These are the parameters you can set for your video's final delivery to TikTok

A drop-down menu lets you choose two different resolutions to render to and selects the appropriate settings for exporting your program as a file suitable for uploading to TikTok and many other video file sharing services. The preset renders a single clip and sets the following parameters:

- **Resolution:** 1920x1080 HD
- **Use Vertical Resolution:** Unchecked. Check this box if you want to deliver your video in portrait mode for proper display on phones. This should be on for TikTok.
- **Frame rate:** The chosen frame rate of your timeline. You can also override this and set another frame rate manually.
- **Format:** MP4
- **Video Codec:** H.264
- **Encoding Profile:** Auto
- **Audio:** Bus 1
- **Audio Codec:** AAC
- **Data burn-in:** Same as Project
- **Upload directly to TikTok:** When this box is checked, the resulting render will automatically upload to your TikTok account, and the following parameters will become available.
 - **Title:** Enter the title of your video.
 - **Visible To:** Lets you choose who will be able to view this video. The options are: Private, Public, and Friends.
 - **Allow comments:** Checking this box allows commenting on your TikTok video. Un-checking this box forbids comments on your video.
 - **Allow Duet:** Checking this box will allow your video to be used side by side with a video from another creator in TikTok using the Duet function.
 - **Allow Stitch:** Checking this box will allow your video to be edited and combined with a video from another creator in TikTok using the Stitch function.

Remote Monitoring Improvements

DaVinci Resolve 18.5 features a number of enhancements and capabilities for remote monitoring.

DaVinci Resolve Studio supports streaming to multiple remote monitoring clients simultaneously. The bandwidth used depends on the number of client connections. Insufficient bandwidth will impact the playback quality on all the clients.

Clients can monitor streams using a native player window on their computer displays on Mac, Windows, or Linux systems with DaVinci Resolve Studio installed.

Users can now initiate remote monitoring connections using Blackmagic IDs and a session code. Initiating a session no longer requires dealing with IP addresses and port forwarding. Users can sign up for a free Blackmagic ID and login to use this feature.

DaVinci Resolve Studio on Mac can initiate and run monitoring sessions. Windows and Linux systems still require a compatible NVIDIA GPU and supporting drivers to initiate a monitoring session.

The codec and profile selected in DaVinci Resolve need to be supported on client machines for the feature to work.

Along with the final release of DaVinci Resolve 18.5, an iOS app for iPhones and iPads will be introduced to use the device as a remote monitoring client.

Remote monitoring uses WebRTC to initiate connections between DaVinci Resolve Studio and multiple clients. Please ensure that all https connections to blackmagicdesign.com and its sub-domains are allowed. However, do note that some heavily restricted network setups might still block the initiation of a session.

Ability to Upload New Versions to Dropbox Replay

DaVinci Resolve now supports the versioning functions found in Dropbox Replay. This lets the Replay user easily comment and switch between different versions of the same clip.

Once the original timeline has been rendered and uploaded to Dropbox using the Replay preset in the Deliver page, an additional checkbox appears in the preset called "Upload as new version." With this box checked, any subsequent renders of this timeline will automatically be added to the version stack of the clip in Dropbox Replay. The latest version will always be the default for the clip in the Replay interface.

Press Play Multiple Times for Faster Playback from the Advanced Panel

Pressing play multiple times on the Advanced panel now causes multiple playback speeds. Pressing play once gives 1x, then 2x, then 3x and goes up to 5x speed.

DRT Exports Include Groups and Shared Nodes

When you export a DaVinci Resolve Timeline (.drt) file, any Groups or Shared Nodes you may have used in the Color page are now included in the exported timeline.

DRA Project Archives Include VFX Connect Media

When you export a Project Archive (.dra) file, any media used via the VFX Connect feature is now included in the archive.

Scripting & APIs

The following improvements have been added to the Scripting API in DaVinci Resolve 18.5

- Scripting API support to import and export DRT and DRB files.
- Scripting API support to load data burn presets.
- Scripting API support to get node label.
- Scripting API support to apply ARRI CDL and LUT to a clip.
- Scripting API support for querying and setting clip enabled state.
- Supported containers for selected codecs are now listed in the encode API.

Codec Support

DaVinci Resolve 18.5 has added application support for the following codecs:

- Support for rendering GIF, JPEG, and PNG image sequences.
- Support for rendering animated GIF clips.
- Support for decoding AC3 audio in Linux.
- Support for ARRI LogC4 colorspace for Alexa Mini cameras.
- Support for Sony XAVC raw controls.
- Ability to import MKV chapters as media markers.
- Ability to export timeline markers as MKV chapters.
- Hardware-accelerated VP9 decodes in DaVinci Resolve for supported Nvidia cards.
- Up to 50% faster encode speeds for Sony XAVC 420 8-bit clips.
- Support for decoding AV1 from MKV and WEBM clips.
- Support for encoding and decoding FFV1 formats.
- Encode support for ProRes, AV1, H.264, MP3, AAC in MKV containers.
- Hardware-accelerated encode support for AV1 in AMD systems.
- Ability to use multiple hardware encoders in supported AMD systems.
- Better disk usage estimates when rendering ProRes clips on Apple silicon.

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