



Edit

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Chapter 33

Using the Edit Page

In this chapter, you'll learn how to use and configure the Edit page user interface to prepare for editing projects in DaVinci Resolve.

For more information on how to use the Edit page to import and conform projects edited in other applications for color correction and finishing in DaVinci Resolve, see *Chapter 56, "Conforming and Relinking Clips."*

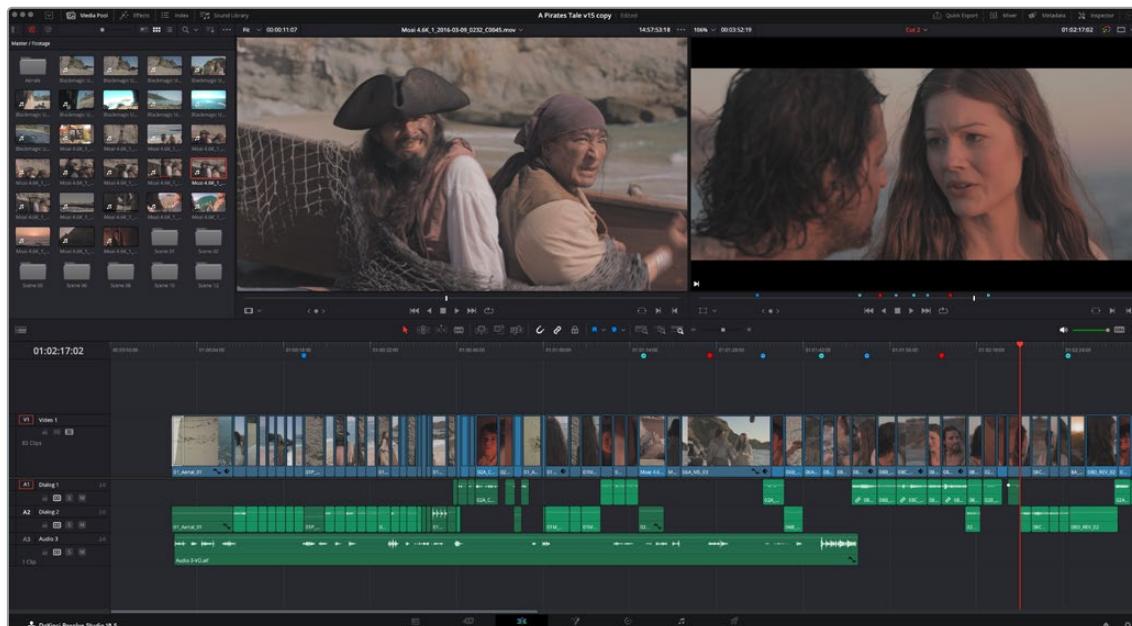
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The Edit Page User Interface

The Edit page has evolved into a source-record style NLE that contains nearly every editorial tool you need for creative editing through finishing. The Edit page is divided into three main regions: the browsers found at the left, the Viewers at the top, and the Timeline at the bottom, all of which work together to let you import, edit, and trim timelines with a flexible variety of tools and methods.



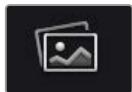
The Interface Toolbar

At the very top of the Edit page is a toolbar with buttons that let you show and hide different parts of the user interface. These buttons are as follows, from left to right:



The Interface toolbar

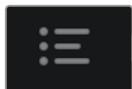
Media Pool/Effects Library/Edit Index height button: Lets you set the area used by the Media Pool, Effects Library, and/or Edit Index to take up the full height of your display (you can display two at a time), giving you more area for browsing at the expense of a narrower timeline. At half height, the Media Pool/Effects Library/Edit Index are restricted to the top of the UI (you can only show one at a time), and the timeline takes up the full width of your display.



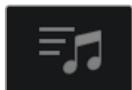
Media Pool: Opens or hides a smaller version of the full Media Pool page, allowing access to all the video clips, audio clips, and images used in the project.



Effects Library: Opens or hides the repository of all transitions, generators, OpenFX, and audio filters available to use in the Edit page.



Index: Opens or hides the Edit, Tracks, and Markers indexes.



Sound Library: Opens or hides the libraries of sound effects and music registered with DaVinci Resolve. For more information on using the Sound Library, see *Chapter 166, "Using the Fairlight Page."*



Quick Export: Opens the Quick Export window.



Mixer: Opens or hides the Audio Mixer, giving you graphical controls to adjust your sound mix.



Metadata: Shows or hides the Metadata Editor.



Inspector: Shows or hides the Inspector, which shows you the transform and compositing effects of selected clips, or the editable options of selected effects such as transitions or generators.

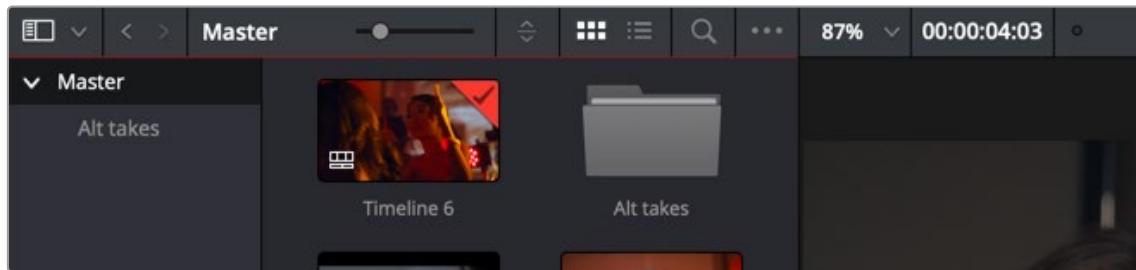
Navigating the Edit Page

Each of the panels in the Edit page user interface can be given focus via the Workspace > Active Panel Selection submenu. Additionally, the following keyboard shortcuts can be used to give focus to select bins, clips, the Source and Timeline Viewers, the Timeline, the Effects Library, Edit Index, and Inspector.

Key	Function
Command-1	Media Folders
Command-2	Media Clips
Command-3	Source Viewer
Command-4	Timeline
Command-5	Timeline Viewer
Command-6	Effects
Command-7	Edit Index
Command-8	n/a
Command-9	Inspector
Q	Toggle between Source and Timeline Viewers

Showing Which Panel Has Focus

Each panel you use has “focus,” meaning that clicking an item or control within a particular panel makes that panel the active panel, which serves to direct keyboard shortcuts that are shared among many panels to the particular panel you’re using. If you want to see which panel is in focus, you can turn on the “Show focus indicators in the User Interface” checkbox in the UI Settings panel of the User Preferences. When on, a red line at the top of the active panel indicates that it has focus.

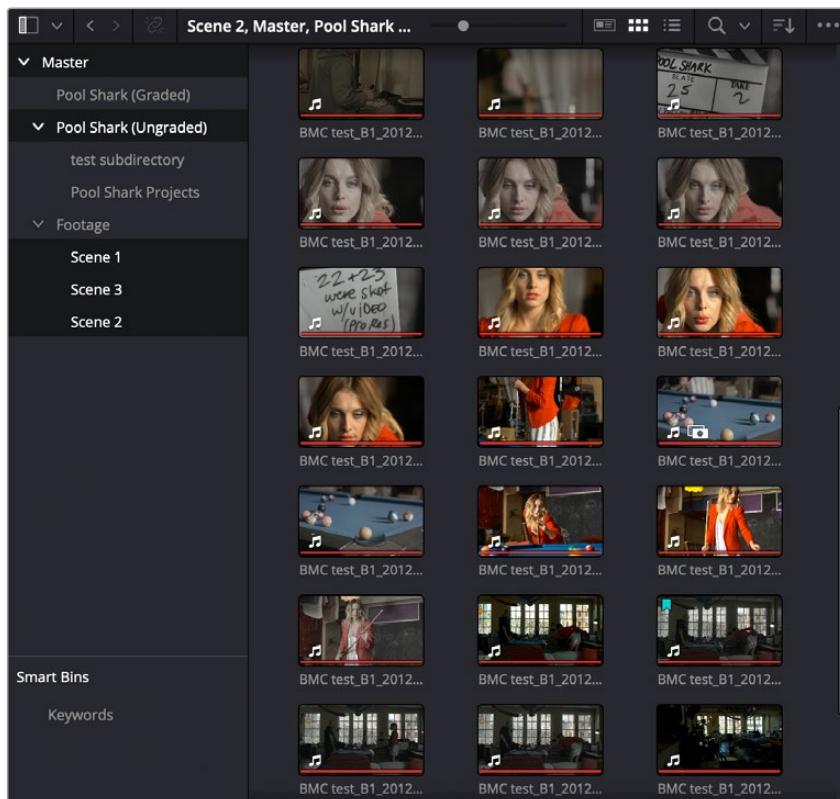


The focus indicator shown at the top edge of the Media Pool, shown next to a viewer that doesn’t have focus

The Media Pool

In the Edit page, the Media Pool contains all of the video, audio, and still image media you’ve imported for editing into the project at hand, as well as all of the timelines that you’re going to be editing into.

The Media Pool is also mirrored on the Media, Cut, Fusion, Color, and Fairlight pages, so you can access any audio or video clip, graphic, or timeline from any page where they can be used.



The Media Pool in Thumbnail mode, shown in half-height mode

The Bin list at the left shows a hierarchical list of bins used for organizing your media, which is also used to organize your timelines. By default, the Media Pool consists of a single bin, named "Master," but you can add more bins as necessary to organize timelines and clips by right-clicking anywhere in the empty area of the Media Pool and choosing Add Bin. You can rename any custom bin by double-clicking on its name and typing a new one, or by right-clicking a bin's name and choosing Rename Bin. The Bin list can be hidden or shown via the button at the upper left-hand corner of the Edit page toolbar.

The browser area to the right shows the contents of the currently selected folder. Every timeline you create, and every AAF, XML, or EDL file you import, appears here. You can create or import as many timelines as you need within a single project.

As in the Media page, the Media Pool can be displayed in either Metadata, Icon, or List view. In List view, you can sort the contents by any one of a subset of the total metadata that's available in the Metadata Editor of the Media page. Of particular interest to editors are columns for Name, Reel Name, different timecode streams, Description, Comments, Keyword, Shot, Scene, Take, Angle, Circled, Start KeyKode, Flags, Usage, Resolution, and Frames Per Second.

For more information on using the myriad features of the Media Pool, see *Chapter 18, "Adding and Organizing Media with the Media Pool."* In the sections that follow, some key features of the Media Pool are summarized for your convenience.

Importing Media Into the Media Pool on the Edit Page

While adding clips to the Media Pool in the Media page provides the most organizational flexibility and features, if you find yourself in the Edit, Cut, Fusion, Color, or Fairlight page and you need to quickly import a few clips for immediate use, you can do so in a couple of different ways.

To add media by dragging one or more clips from the Finder to the Edit page Media Pool (macOS only):

- 1 Select one or more clips in the Finder.
- 2 Drag those clips into the Media Pool of DaVinci Resolve or to a bin in the Bin list.

Those clips are added to the Media Pool of your project.

To use the Import Media command in the Edit page Media Pool:

- 1 With the Edit page open, right-click anywhere in the Media Pool, and choose Import Media.
- 2 Use the Import dialog to select one or more clips to import, and click Open.

Those clips are added to the Media Pool of your project.

For more information on using the myriad features of the Media Pool, see *Chapter 18, "Adding and Organizing Media with the Media Pool."* Below, some key features of the Media Pool are summarized for your convenience.

Bins, Power Bins, and Smart Bins

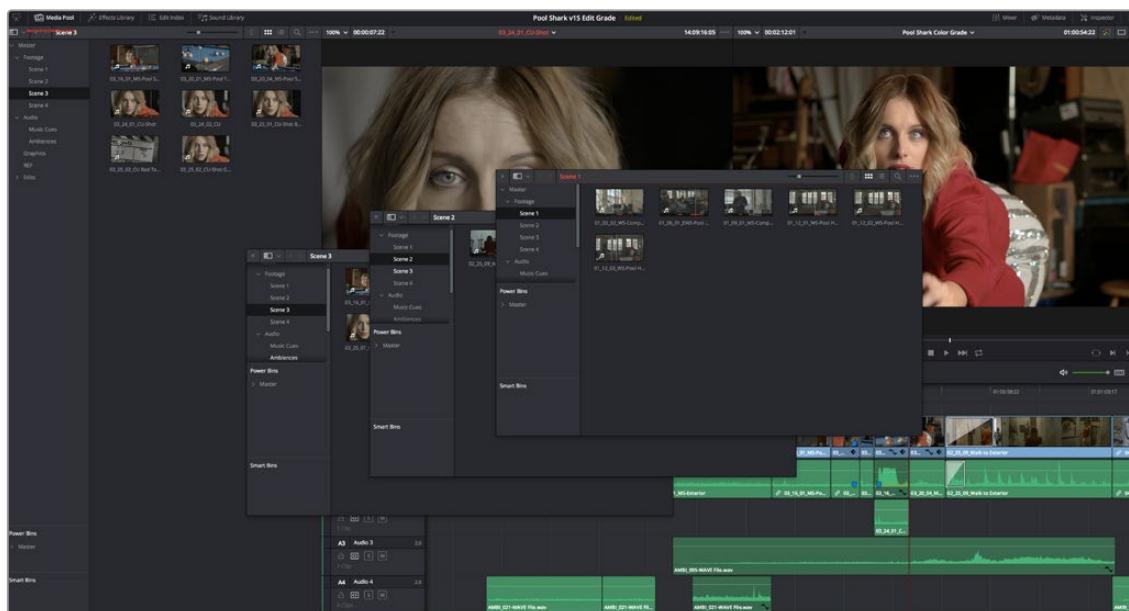
There are actually three kinds of bins in the Media Pool, and each appears in its own section of the Bin list. The Power Bin and Smart Bin areas of the Bin list can be shown or hidden by selecting/deselecting in the Media Pool option menu Show Smart Bins, and Show Power Bins. Here are the differences between the different kinds of bins:

- **Bins:** Simple, manually populated bins. Drag and drop anything you like into a bin, and that's where it lives, until you decide to move it to another bin. Bins may be hierarchically organized, so you can create a Russian dolls nest of bins if you like. Creating new bins is as easy as right-clicking within the bin list and choosing Add Bin from the contextual menu.
- **Power Bins:** Hidden by default. These are also manually populated bins, but these bins are shared among all of the projects in your current project library, making them ideal for shared title generators, graphics movies and stills, sound effects library files, music files, and other media that you want to be able to quickly and easily access from any project. To create a new Power Bin, show the Power Bins area of the Bin list, then right-click within it and choose Add Bin.
- **Smart Bins:** These are procedurally populated bins, meaning that custom rules employing metadata are used to dynamically filter the contents of the Media Pool whenever you select a Smart Bin. This makes Smart Bins fast ways of organizing the contents of projects for which you (or an assistant) has taken the time to add metadata to your clips using the Metadata Editor, adding Scene, Shot, and Take information, keywords, comments and description text, and myriad other pieces of information to make it faster to find what you're looking for when you need it. To create a new Smart Bin, show the Smart Bin area of the Bin list (if necessary), then right-click within it and choose Add Smart Bin. A dialog appears in which you can edit the name of that bin and the rules it uses to filter clips, and click Create Smart Bin.

Showing Bins in Separate Windows

If you right-click a bin in the Bin List, you can choose “Open As New Window” to open that bin into its own window. Each window is its own Media Pool, complete with its own Bin List, Power Bins and Smart Bins lists, and display controls.

This is most useful when you have two displays connected to your workstation, as you can drag these separate bins to the second display while DaVinci Resolve is in single screen mode. If you hide the Bin list, not only do you get more room for clips, but you also prevent accidentally switching bins if you really want to only view a particular bin’s contents in that window. You can as many additional Bin windows open as you care to, in addition to the main Media Pool that’s docked in the primary window interface.



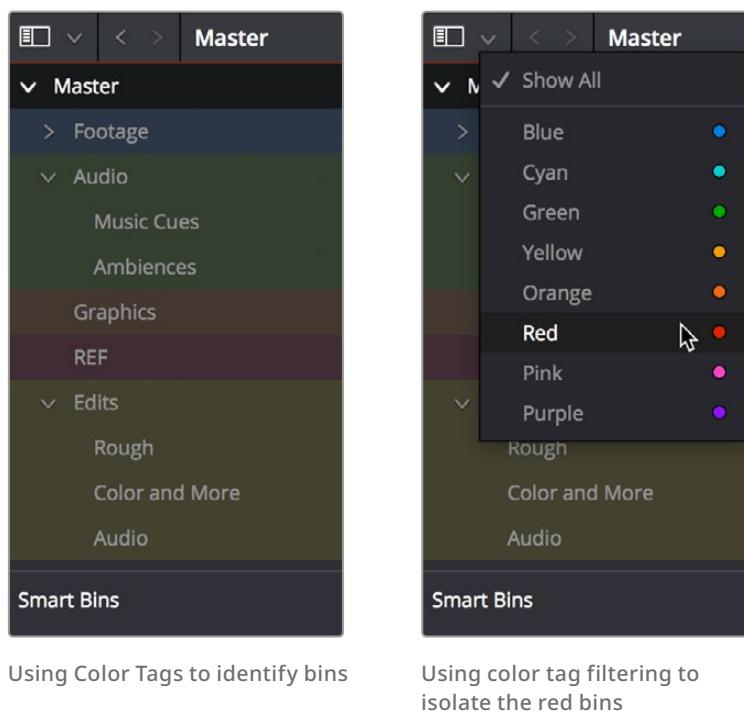
Media Pool bins opened as new windows

Filtering Bins Using Color Tags

If you're working on a project that has a lot of bins, you can apply color tags to identify particular bins with one of eight colors. Tagging bins is as easy as right-clicking any bin and choosing the color you want from the Color Tag submenu.

For example, you can identify the bins that have clips you're using most frequently with a red tag. A bin's color tag then appears as a colored background behind that bin's name.

Once you've tagged one or more Media Pool bins, you can use the Color Tag Filter drop-down menu (the drop-down control to the right of the Bin List button) to filter out all but a single color of bin.



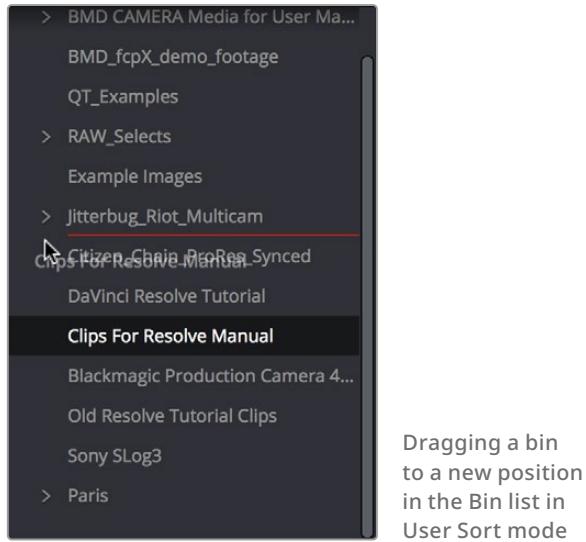
To go back to seeing all available bins, choose Show All from the Color Tag Filter drop-down.

Sorting the Bin List

The Bin list (and Smart Bin list) of the Media Pool can be sorted by Bin Name, Date Created, or Date Modified, in either ascending or descending order. Simply right-click anywhere within the Bin list and choose the options you want from the Sort by submenu of the contextual menu.

You can also choose User Sort from the same contextual menu, which lets you manually drag all bins in the Bin list to be in whatever order you like. As you drag bins in this mode, a highlighted line indicates the new position that bin will occupy when dropped.

If you use User Sort in the Bin list to rearrange your bins manually, you can switch back and forth between any of the other sorting methods (Name, Date Created, Date Modified) and User Sort and your manual User Sort order will be remembered, making it easy to use whatever method of bin sorting is most useful at the time, without losing your customized bin organization.



Dragging a bin
to a new position
in the Bin list in
User Sort mode

More About Timelines and Grading

DaVinci Resolve projects contain one or more edited timelines (sometimes called a sequence in other applications) which are also organized in the Media Pool, and displayed in the Timeline Editor (referred to as “the Timeline”). Timelines contain clips, the source media of which is kept in the Media Pool, and which also appear as edit events in the Edit Index that can be shown at the right of the Timeline.

Timelines, Grades, and Versions

Within any given timeline, grades are associated with the timecode of the source clip they’re applied to. That means that as you alter the timeline, each clip’s grade moves along with it, making it extremely easy to move back and forth between editing and grading as your needs require. By default, each timeline in a project has independent sets of grades using local versions; this is true even if your timelines are duplicates. That means each clip within every timeline has a completely independent grade.

However, if you switch the clips in one or more timelines to use Remote versions, a clip’s grades are shared by every instance of that clip in all timelines with clips that also use Remote versions. If you import a new timeline that rearranges clips into a different order and switch it to using Remote versions, then grades will automatically follow the clips, so that the clips within each new timeline inherits the grades applied to those same clips in other timelines.

You can switch a timeline between using Local and Remote grades at any time. For more information on using Local versus Remote versions, see *Chapter 139, “Grade Management.”* You can also copy grades from one timeline to another using the ColorTrace feature. For more information about ColorTrace, see *Chapter 146, “Copying and Importing Grades Using ColorTrace.”*

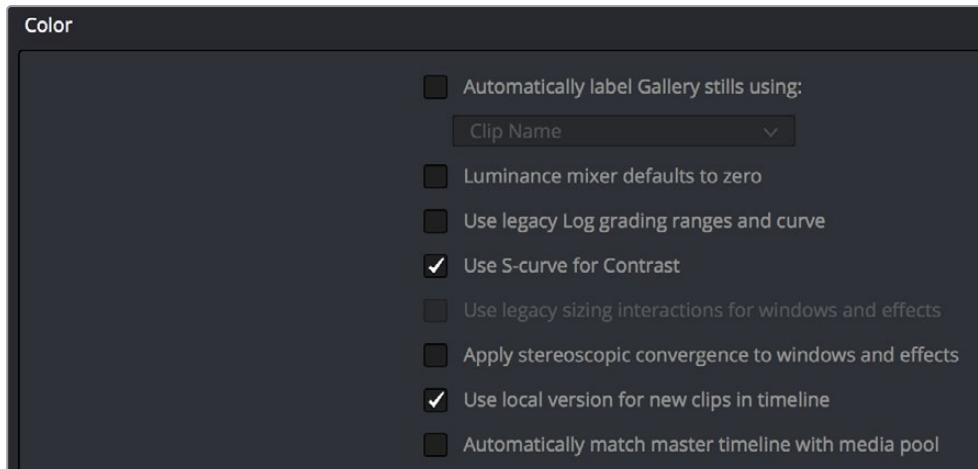
Enabling the Use of a Master Timeline

Previous versions of DaVinci Resolve had a Master Timeline, which consisted of one long timeline containing every clip in the Media Pool, arranged by default in ascending order by timecode. While the Master Timeline was useful for a variety of tasks, architectural improvements have rendered it unnecessary, and by default the Master Timeline does not appear in new projects created by DaVinci Resolve version 10 or later.

However, if you want a Master Timeline in order to have a single timeline that always contains all clips currently in the Media Pool, there's a way you can create one. You need to do it immediately upon creating a new project, before adding any media to the Media Pool. Once you've added one or more clips to the Media Pool, the option you need to do so will be disabled.

To create a new Master Timeline:

- 1 Create a new project, open the General Options panel of the Project Settings, and turn on the "Automatically match master timeline with media pool" checkbox. If you also want all clips to use Remote versions as you grade by default as in previous versions of DaVinci Resolve, you can turn off the "Use local version for new clips in timeline."

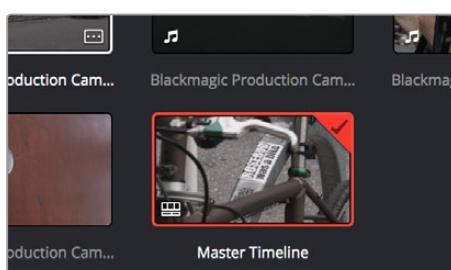


The option to use a Master Timeline is in the Color section of the General Options panel of the Project Settings

- 2 Click Save to close the Project Settings window.
- 3 Open the Edit page, and choose File > New Timeline (Command-N).
- 4 When the New Timeline Properties window appears, turn the Empty Timeline checkbox off, and click Create New Timeline.

Now, in addition to the new timeline, a Master Timeline appears in the Timeline list.

TIP: If you want to make sure that you always have a Master Timeline when you create new projects, you can alter the Project Setting preset for your user account to reflect these settings, or you can create a new Project Setting preset with these settings that you can easily switch to.



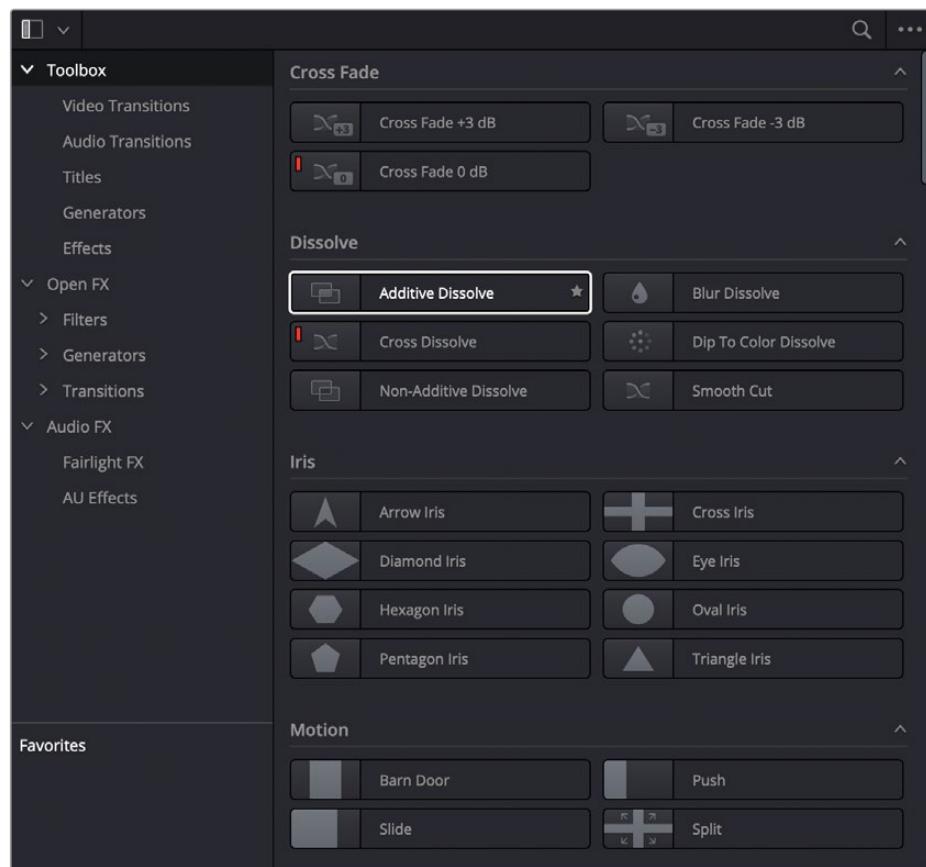
Creating a Master Timeline

The Master Timeline consists of one long sequence of every clip in the Media Pool, arranged in ascending order by timecode. Each clip in the Master Timeline appears at its full duration, regardless of the duration of corresponding clips in an EDL-, AAF-, or XML-imported timeline. Whenever you add more clips to the Media Pool, they're automatically added to the Master Timeline.

The Master Timeline is useful for organizing media for which no editing has yet been done, such as when grading digital dailies. The Master Timeline is also useful for identifying a range of similar clips, based on their similar ranges of timecode. For example, you could find all the talking head shots from a particular section of tape clustered together in the Master Timeline.

Using the Effects Library

All effects that you can add to your edit, including filters, transitions, titles, and generators, are found in the Effects Library, which is split into two parts. To the left is a bin list that shows a hierarchical list of all of the different Transitions, Title Effects, Generators, and Filters that are available, sorted by category. To the right is a browsing area in which you can see the contents of whichever bins are selected.



The Effects Library

Similar to the Media Pool, the Effects Library's bin list can be opened or closed using a button at the top left, while a menu just to the right of this button lets you sort the list into different categories.

The Toolbox

All of the video and audio transitions, titles, and generators that ship along with DaVinci Resolve appear in the Toolbox category of the Effects Library.

- **Toolbox:** Exposes all Transitions, Titles, Generators, and Effects at once.
- **Video Transitions:** Contains all of the built-in transitions that are available from DaVinci Resolve. You can drag any video transition to any edit point in the Timeline that has overlapping clip handles to add it to your edit; you have the option to drag the transition so that it ends on, is centered on, or starts on the edit point. For more information, see *Chapter 47, "Using Transitions."*
- **Audio Transitions:** Contains audio transitions for creating crossfades.
- **Titles:** Titles can be edited into the Timeline like any other clip. Once edited into the Timeline, you can edit the title text and position directly in the Timeline Viewer, or you can access its controls in the Inspector for further customization.
- **Generators:** Generators can also be edited into the Timeline like any other clip. Selecting a generator and opening the Inspector lets you access its controls for further customization. You can also choose a standard duration for generators to appear with in the Editing panel of the User Preferences.
- **Effects:** Contains unique placeholder effects like Adjustment Clip, and Fusion Composition, that can be customized to apply sophisticated effects to your programs.

OpenFX

DaVinci Resolve supports the use of third-party OpenFX filters, transitions, and generators in the Edit page. Once you install these effects on your workstation, they appear in this section of the Effects Library, organized by type and group depending on the metadata within each effect.

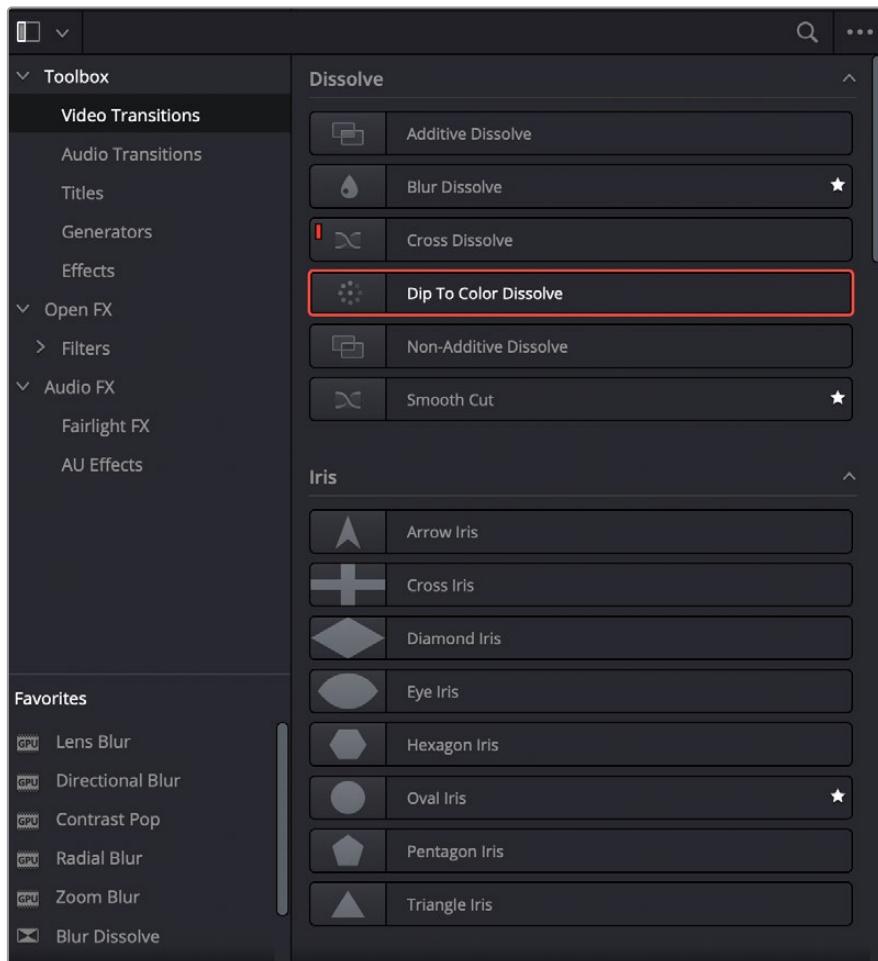
- **OpenFX:** Exposes all Resolve FX and third-party OpenFX installed on your workstation at once.
- **Filters:** Contains the Resolve FX filters that ship with DaVinci Resolve, as well as any third-party OFX plugins you've installed on your workstation. Filters can be dragged onto video clips to apply an effect to that clip. Once applied, filters can be edited and customized by opening the OpenFX panel of the Inspector.
- **Transitions:** Contains any third-party OFX transitions you have installed on your workstation. OFX transitions can be used similarly to any other transition, but they also expose an OpenFX panel next to the Transition panel in the Inspector, where you can customize settings that are unique to that transition.
- **Generators:** Contains any third-party OFX generators you have installed on your workstation. Can be edited into the Timeline just like the native generators that ship with DaVinci Resolve, but they also expose an OpenFX panel next to the Transition panel in the Inspector, where you can customize settings that are unique to that transition.

Audio FX

On all platforms, DaVinci Resolve supports Fairlight FX, which are built-in audio plugins that come with DaVinci Resolve. Additionally, DaVinci Resolve supports the use of third-party VST audio plugins on macOS and Windows, and Audio Unit (AU) audio plugins on macOS. Once you install these effects on your workstation, they appear in this panel of the Effects Library. Audio plugins let you apply effects to audio clips or an entire track's worth of audio to add creative qualities such as echo or reverb, or to take care of mastering issues using noise reduction, compression, or EQ.

Effects Library Favorites

You can click on the far right of any transition, title, or generator to flag that effect with a star as a favorite effect. When you do so, the favorited effects appear in a separate Favorites area at the bottom of the Effects Library Bin list.



Stars indicate a flagged favorite effect; all favorites are currently filtered.

Index

The index provides information about your timeline in a simplified spreadsheet format; it is used for both reference and timeline navigation. The index is broken up into the Edit Index, Tracks, and Markers tabs.

Edit Index

Clicking the Edit Index button opens the Edit Index. By default, this shows an EDL-style list view of all the edit events in the current timeline. Whichever timeline is selected in the Timeline list displays its events here. However, the contents of the Edit Index can be filtered using commands found in the Option drop-down, described later in this section.

#	Reel	V	C	Dur	Source In	Source Out	Record Duratio	Record In	Record Out	Name	Comments
1	V1	C			01:00:02:22	01:00:04:15	00:00:01:17	00:00:00:00	00:00:01:17	01_Outro shot from...	
2	A5	C			01:00:02:22	01:00:05:08	00:00:02:10	00:00:00:00	00:00:02:10	01_Outro shot from...	
3	A6	C			01:00:05:01	01:00:07:12	00:00:02:10	00:00:00:00	00:00:02:10	01_Outro shot from...	
4	A9	C			00:00:22:19	00:00:45:00	00:00:22:05	00:00:01:06	00:00:23:11	Piano dry	
5	A7	C			00:00:04:03	00:00:26:07	00:00:22:04	00:00:01:06	00:00:23:11	TASCAM_1212	
6	A8	C			00:00:14:06	00:00:36:10	00:00:22:04	00:00:01:06	00:00:23:11	TASCAM_1212	
7	V1	C			01:00:41:10	01:00:43:08	00:00:01:22	00:00:01:17	00:00:03:15	02_Dr_Sarah_Close ...	
8	A1	C			01:00:41:14	01:00:43:19	00:00:02:04	00:00:01:21	00:00:04:02	02_Dr_Sarah_Close ...	
9	V1	C			01:03:01:13	01:03:03:15	00:00:02:02	00:00:03:15	00:00:05:17	03_Dr Sarah_Wide ...	
10	A2	C			02:28:10:04	02:28:11:10	00:00:01:06	00:00:03:16	00:00:04:22	STE-037	
11	A4	C	31.1688		00:59:56:10	00:59:56:17	00:00:00:04	00:00:04:05	00:00:04:10	Dispatch	
M2			31.2		00:59:56:10						
12	A4	C			01:00:36:03	01:00:37:09	00:00:01:06	00:00:04:10	00:00:05:17	Dispatch Recording	
13	A2	C			01:04:12:09	01:04:16:07	00:00:03:22	00:00:04:22	00:00:08:20	05_Wide_Agents_T...	
14	V1	C			01:04:13:04	01:04:15:03	00:00:01:23	00:00:05:17	00:00:07:16	05_Wide_Agents_T...	
15	A4	C	31.1688		00:59:56:10	00:59:56:17	00:00:00:05	00:00:05:17	00:00:05:22	Dispatch	
M2			31.2		00:59:56:10						
16	A4	C	31.1688		00:59:56:10	00:59:56:17	00:00:00:05	00:00:07:11	00:00:07:16	Dispatch	
M2			31.2		00:59:56:10						
17	V1	C			01:05:32:19	01:05:34:13	00:00:01:18	00:00:07:16	00:00:09:10	04_Wide_Dr Sarah_...	
18	A4	C			01:00:37:22	01:00:39:08	00:00:01:10	00:00:07:16	00:00:09:02	Dispatch Recording	
19	A1	C			01:05:33:16	01:05:35:00	00:00:01:08	00:00:08:13	00:00:09:21	04_Wide_Dr Sarah_...	

Edit Index List shown open

Each clip and transition is shown as an individual event, each of which contains multiple columns of information. If you re-edit a timeline, your changes are also reflected in this list. The Edit Index is useful for creative editors that are looking for specific effects that are used in the current timeline, or for finishing editors that need more information about a specific clip, or who might need to filter the entire edit by specific criteria in order to troubleshoot various issues.

Navigating the Timeline Using the Edit Index

Whenever you move the Timeline playhead to intersect a clip, the Edit Index updates to show only the clips on the video track the intersecting clip is on, and that clip's event is highlighted in the Edit Index. This makes it easy to see the correspondence between a clip in the Timeline and its event, which is helpful when troubleshooting problems. There are also commands available in the Option menu to display only clips on enabled tracks, only video clips, and only audio clips.

Edit Index Columns

Each event populates several columns of information. These columns can be rearranged by dragging them to the left or right, depending on what information is most important to you.

The available columns of information are:

- **#:** The event number (which corresponds to the clip number shown in the Thumbnail timeline of the Color page).
- **Reel:** The reel name of the corresponding clip.
- **Match:** Flags clips that have clip conflicts, which display a question mark in this column. Once the clip conflict has been resolved, this flag disappears.
- **V:** Video event.
- **C:** The event type (C for cut, D for dissolve or transition).
- **Dur:** A number showing the duration of a transition in frames.

- **Source In/Source Out:** The Source In and Source Out timecode indicating the range of timecode referenced by that clip; corresponds to the timecode locations of each clip's In and Out point relative to the source media it comes from.
- **Record Duration:** The duration of the clip in the Timeline, determined by the Record In/Out timecodes.
- **Record In/Record Out:** Record In and Record Out timecode indicating that clip's position in the Timeline.
- **Name:** The name of the clip.
- **Comments:** Whatever comments were present in the EDL that was imported. For example, clip names exported from the original NLE to be used as reel names in RED workflows using EDL import.
- **Source Start/ Source End:** The very first and last frame of media available in the Source Media for that clip.
- **Source Duration:** The duration, in timecode, of the total source media available in that clip.
- **Codec:** The codec of the corresponding clip.
- **Source FPS:** The frame rate of the corresponding clip.
- **Resolution:** The frame size of the corresponding clip.
- **Color:** The color of flags or markers applied to that clip.
- **Notes:** Notes entered inside of markers applied to clips or the Timeline.
- **EDL Clip Name:** Shows the name of the imported EDL, if that's available.
- **Marker Keywords:** Lists all keywords found in a particular marker.

The columns in the Edit Index can be customized to prioritize the information that's important to you.

Methods of customizing metadata columns in the Edit Index:

- **To show or hide columns:** Right-click at the top of any column in the Edit Index and select an item in the contextual menu list to check or uncheck a particular column. Unchecked columns cannot be seen.
- **To rearrange column order:** Drag any column header to the left or right to rearrange the column order.
- **To resize any column:** Drag the border between any two columns to the right or left to narrow or widen that column.

You can also customize column layouts in the Edit Index. Once you've customized a column layout that works for your particular purpose, you can save it for future recall.

Methods of saving and using custom column layout:

- **To create a column layout:** Show, hide, resize, and rearrange the columns you need for a particular task, then right-click any column header in the Media Pool and choose Create Column Layout. Enter a name in the Create Column Layout dialog, and click OK.
- **To recall a column layout:** Right-click any column header in the Media Pool and choose the name of the column layout you want to use. All custom column layouts are at the top of the list.
- **To delete a column layout:** Right-click any column header in the Media Pool and choose the name of the column layout you want to delete from the Delete Column Layout submenu.

Filtering the Edit Index

You can use options found in the Edit Index's option menu to filter specific things that you want to check out, whether to go through all of the marked clips to see if there are any notes you need to address, or to isolate all offline clips, or to go through edits to see if there's anything you need to fix. You can filter the Edit Index in the following ways:

- **Show All:** Shows all entries in the list. Choose this option after using any of the other options to go back to seeing the entire timeline.
- **Show Active Track Items:** Filters out all clips that appear on tracks above or below tracks identified with a destination control. For example, if you have three video tracks and the destination control is on track V2, then all clips on tracks V1 and V3 will be hidden from the Edit Index.
- **Show Video Track Items:** Filters out all audio clips so only video clips appear in the list.
- **Show Audio Track Items:** Filters out all video clips so only audio clips appear in the list.
- **Show Flags:** Isolates clips with flags in the list. A submenu lets you choose to show all clips with flags or only clips with a particular color of flag.
- **Show Markers:** Isolates all clips with markers in the list. A submenu lets you choose to show all clips with markers or only clips with a particular color of marker.
- **Show Clip Colors:** Isolates all clips that have been labelled with clip colors in the list. A submenu lets you choose to show all clips that are labelled using any clip color or only clips labelled with a particular color.
- **Show Through Edits:** Filters only clips that have through edits, or cuts where continuous timecode appears from the outgoing to the incoming half of the edit, that you may or may not want to remove, depending on why they're there.
- **Show Offline Clips:** Isolates all offline clips (clips that have become unlinked from the corresponding source media on disk) in the Timeline, so you can quickly navigate to each one and troubleshoot the issue.
- **Show Clip Conflicts:** Filters all clips with clip conflict warning badges (indicating there is reel, name, and timecode metadata that overlap that of another clip) in the Timeline, so you can quickly navigate to each one and check whether they're using the correct clip.
- **Show Clips With Speed Effects:** Filters all clips with linear or variable Speed Effects in the Timeline.
- **Show Clips With Composite Effects:** Filters all clips with Composite mode or Opacity settings other than the default (Normal, 100).
- **Show Clips With Transform Effects:** Filters all clips with altered Transform settings.
- **Show Clips With Filters:** Filters all clips with Resolve FX or OFX filters applied to them.
- **Show Stills and Freeze Frames:** Filters all clips that are stills or that have freeze frame speed effects applied to them.
- **Show Compound Clips and Nested Timelines:** Filters all compound clips and nested timelines in the Timeline.
- **Show VFX Connect Clips:** Filters all Fusion Connect Clips.

Exporting the Edit Index

If you've filtered a series of edits in the Edit Index that you'd like to share with someone else, this is easy to do. For example, you might filter the Edit Index to show a list of all the offline clips in the current timeline, and then export a list as either a .csv or .txt file to give to your assistant editor so they can chase down the necessary media. Both types of files are widely compatible with spreadsheet and database software in the event you want to import the data into another application.

To export the Edit Index:

- 1 Click on the Edit Index option menu, and choose Export Edit Index from the contextual menu.
- 2 Use the Export Edit Index window to choose a location to save the exported file, and choose a format from the drop-down menu at the bottom. You can export either a Comma Separated Values (.csv) file, or a Tab Delimited Values (.txt) file.
- 3 Click Save.

Tracks

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

#	Name	Track Controls	Format	Monitor	ADC
V3	Adjustment Clips	🔓 🔍 📺			
V2	Titles	🔓 🔍 ✎			
V1	Video 1	🔓 🔍 📺			
A1	Dialog Mix	🔓 🔍 S M	1.0	▢	✓
A2	SFX	🔓 🔍 S M	1.0	✓	✓
A3	Music	🔓 🔍 S M	1.0	▢	▢
A4	Foley	🔓 🔍 S M	2.0	✓	✓

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 tracks.

Markers

You can use the Marker Index to easily view, edit, and organize all your timeline and clip markers in one convenient location. The Marker Index can be found by clicking on the Index panel and selecting the Markers tab.

Methods of working with markers in the Marker Index:

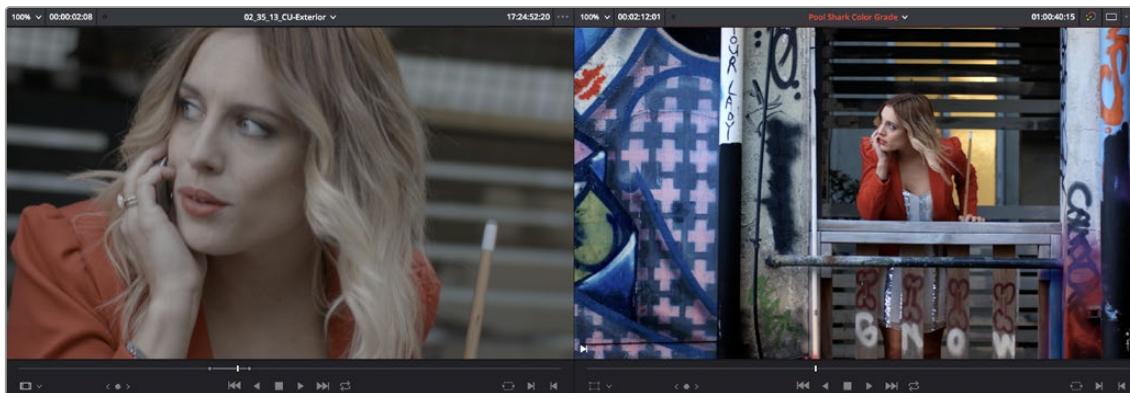
- **To filter markers in the Marker Index:** Click the Option menu of the Marker Index, and choose Show All or Show Only to choose a specific color. Each clip with a matching marker appears in a list, with columns corresponding to the color(s), information, and notes of each timeline and clip marker. Columns can be sorted in ascending or descending order by clicking on the column header. Individual columns can be turned on or off by right-clicking on the column header and checking or unchecking the column name.
- **To move the playhead to the position of a marker in the Marker Index:** Double-click that marker's entry in the list.
- **To edit marker information:** You can change the values of a marker by clicking in the Name, Notes, or Keyword fields and modifying the text field. Other values are not editable in the Marker Index and should be changed in the timeline marker's Edit dialog.
- **To search for a specific marker:** Click on the Search icon (magnifying glass), and type in your search terms. Currently the search only queries the Marker Name column; you cannot search by notes and keywords.
- **To switch between Thumbnail and List view:** Click on either the Thumbnail or List View icons in the top bar of the Marker Index.

Markers								
#	Frame	Name	Start TC	End TC	Duration	Color	Notes	Keyword
1		Boom in Shot	01:00:02:04	01:00:02:05	00:00:00:01	■	Slightly zoom in to remove boom!	
2		Wrong direction	01:00:18:15	01:00:18:16	00:00:00:01	■	What happened here?	
3		Wrong Frame Rate?	01:01:04:00	01:01:04:01	00:00:00:01	■	Isn't this supposed to be 25fps?	

The Marker Index in List View mode lets you edit and organize all your timeline's markers in one place.

Source and Timeline Viewers

By default, the Edit page presents a traditional source/record style editing experience. The Source Viewer lets you view individual clips from the Media Pool to prepare them for editing. Meanwhile, the Timeline Viewer lets you play through your program, showing you the frame at the position of the playhead in the Timeline.



Source and Timeline Viewers

You can select either viewer by clicking with the pointer, or by pressing Q (Source/Timeline Viewer), and the name of the viewer that currently has focus appears in orange.

How Each Clip's Grade Looks in Each Viewer

Because of DaVinci Resolve's deep color and effects tools, the state of the image you see in each viewer of the Edit page depends on a number of things.

The Source Viewer

The Source Viewer shows each clip as it looks at the source. If you have Resolve Color Management (RCM) turned on or source LUTs applied, then the Source Viewer will show your clips as they're being processed by RCM and/or the source LUTs, since those are source-level color operations. However, in the absence of RCM and source LUTs, the image in the Source Viewer looks exactly the same as it does on disk. If you have log-encoded media that looks flat and low-contrast, then that's how it's going to look in the Source Viewer.

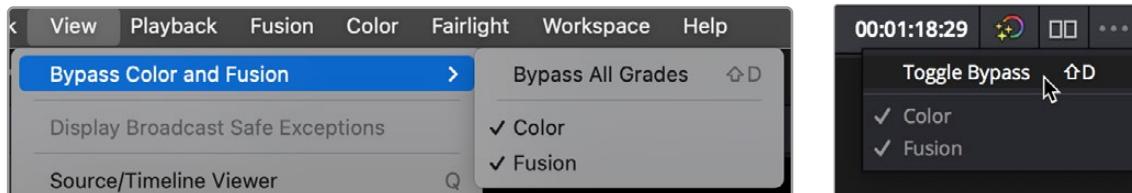
The Timeline Viewer

The Timeline Viewer follows all of the same rules as the Source Viewer, with the addition that the Timeline Viewer also shows you how each clip in the Timeline looks with Fusion page and/or Color page operations applied, since the Timeline Viewer is actually showing you the output of the Color page, so you can see every clip of your program in context of how the image is being affected by the DaVinci Resolve image processing pipeline.

NOTE: The Color Viewer Lookup Table options in the Color Management panel of the Project Settings only affect the GUI Viewer in the Color page. They do not affect the viewers in the Edit page.

Turning Grades and/or Fusion Effects Off in the Timeline Viewer

The Bypass Color Grades and Fusion Effects button/drop-down from the Color page is also available on the Edit page either via the View > Bypass Color and Fusion drop-down, or via a toggle button/drop-down menu in the Timeline Viewer. If you choose Bypass All Grades or click the Viewer control, you'll turn off whatever is checked in the optional menu, which lets you choose whether or not you want to bypass both Color and Fusion, or just one or the other.

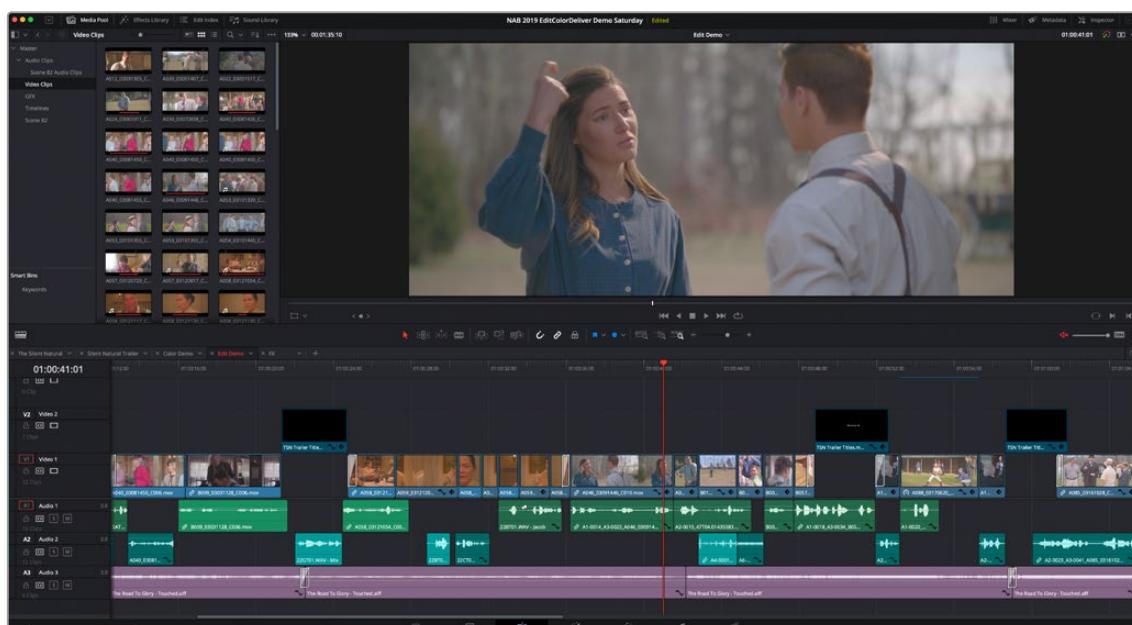


(Left) Menu commands for bypassing Color and Fusion, (Right) Edit page Timeline Viewer controls

Turning off color grades and Fusion effects is an easy way to improve playback performance on low power systems when you just need to make a quick set of edits, and it's also a convenient way to quickly evaluate the original source media.

Source and Timeline Viewers vs. Single Viewer Mode

If you want to change the Edit page layout to hide the Source Viewer, you can choose Workspace > Single Viewer Mode to instead use just a single viewer to contextually display either a selected Source Clip or the current frame of the Timeline.



Single Viewer mode turned on

In Single Viewer mode, whatever you select in the Media Pool or Timeline determines which controls appear in the Viewer, which lets you do nearly everything you can do with two simultaneously open viewers.

Viewer Controls

Both viewers share the following onscreen controls:

- **Zoom drop-down menu:** Choosing Fit fits the currently visible frame to the available size of the Viewer. Choosing a percentage zooms the visible frame to that size. You can also use the scroll wheel functionality of your mouse, trackpad, or tablet to zoom in and out of the Viewer..
- **Duration field:** At the top left-hand side of the Source Viewer, this displays the total duration of the clip, or the duration from the In to the Out point, if these have been placed. In the Timeline tab, this displays the total duration of the currently selected timeline.
- **GPU Status Display:** Every viewer in DaVinci Resolve exposes a GPU status indicator and a frame-per-second (FPS) meter, which appears in the Viewer's title bar, which shows you your workstation's performance whenever playback is initiated. Since DaVinci Resolve uses one or more GPUs (graphics processing units) to handle all image processing and effects, the GPU status display shows you how much processing power is being used by whichever clip is playing.
- **Clip Name:** The clip name is displayed at the center of the Source Viewer title bar.
 - The Source Viewer displays a drop-down at the top of the Source Viewer, next to the name of the currently open clip, which lets you open a menu containing a list of the last 10 clips you opened in the Source Viewer. This list is first in, first out, with the most recently opened clips appearing at the top. If you wish to clear the visual history in the menu, you can remove unwanted entries and start a new queue by clicking on the Viewer's option menu and selecting Clear Recently Viewed Clips.
 - The Timeline Viewer displays the timeline name and is also a drop-down menu that lets you switch among other timelines in the current project. The clip/timeline name is highlighted orange when either the Source or Timeline Viewer has focus.
- **Bypass Color Grades and Fusion Effects:** The Bypass Color Grades and Fusion Effects button/drop-down from the Color page is also available on the Edit page either via the View > Bypass Color and Fusion drop-down, or via a toggle button/drop-down menu in the Timeline Viewer. Turning off color grades and Fusion effects is an easy way to improve playback performance on low power systems when you just need to make a quick set of edits, and it's also a convenient way to quickly evaluate the original source media.
- **Source/Timeline Timecode/Frame/Keycode Display:** At the top right-hand side of the Source Viewer, this field shows the timecode of the current frame at the position of the playhead in the Source Viewer's jog bar, and can be switched between source timecode, source frame, and keycode by right-clicking and choosing from the contextual menu. In the Timeline Viewer, this field shows the record timecode of the current frame at the position of the playhead in the Timeline, and can be switched between source and record timecode, source and record frames, and keycode by right-clicking and choosing from the contextual menu.
- **Source Viewer Option menu:** Contains the following commands:
 - **Gang Viewers:** With Gang Viewers enabled, the movement of the Source and Timeline Viewer playheads is locked together, so that they move in unison. This is useful when you're matching the timing of part of a clip in the Source Viewer to match an event in the Timeline.
 - **Live Media Preview:** Enabled by default, makes it possible for thumbnails that you're skimming in the Media Pool to show the skimmed frame in the Viewer. When skimming with Live Media Preview enabled, the playhead that appears in the thumbnail is locked to the playhead displayed in the Viewer's jog bar.

- **Show All Video Frames:** When available processing power is insufficient to play the clip or clips at the position of the playhead due to the grade, transforms, or effects that are applied at that moment in the Timeline, you have the ability to choose exactly how performance in DaVinci Resolve degrades. When off, DaVinci Resolve prioritizes audio playback at the expense of dropping video frames when processing power is tight, resulting in a more conventional playback experience. When on, audio quality is compromised while every frame of video plays in slower-than-real time to maintain playback.
- **Show Zoomed Audio Waveform:** When enabled, shows an audio waveform overlay at the bottom of the Source Viewer with a zoomed in section of the audio surrounding the current position of the playhead.
- **Show Full Clip Audio Waveform:** When enabled, shows an audio waveform overlay at the bottom of the Source Viewer that displays the audio over the entire duration of the clip.
- **Show Marker Overlays:** Enabled by default, markers that intercept the playhead when playback is paused appear superimposed in the Viewer.
- **Markers submenu:** When one or more markers are applied to the clip in the Source Viewer, they appear in this list in chronological order, listed by Name and Note. Choosing a marker from this menu jumps the playhead to that marker in the Source Viewer.
- **Timeline Viewer Option menu:** Contains the following commands:
 - **Gang Viewers:** With Gang Viewers enabled, the movement of the Source and Timeline Viewer playheads is locked together, so that they move in unison. This is useful when you're matching the timing of part of a clip in the Source Viewer to match an event in the Timeline.
 - **Show All Video Frames:** When available processing power is insufficient to play the clip or clips at the position of the playhead due to the grade, transforms, or effects that are applied at that moment in the Timeline, you have the ability to choose exactly how performance in DaVinci Resolve degrades. When off, DaVinci Resolve prioritizes audio playback at the expense of dropping video frames when processing power is tight, resulting in a more conventional playback experience. When on, audio quality is compromised while every frame of video plays in slower-than-real time to maintain playback.
 - **Timeline Sort Order:** These options allow you to set the sort order that timelines use in the timeline selector in the top middle of the Viewer. Options are: Alphabetical, Creation Date, or Recently Used.
 - **Show Marker Overlays:** Enabled by default, markers that intercept the playhead when playback is paused appear superimposed in the Viewer.
 - **Show Timecode Overlays:** When enabled, shows the source timecode of the video and audio clips under the position of the playhead when playback is paused.
 - **Show Overlays During Playback:** When enabled, shows timecode and marker overlays on the Viewer constantly during playback. When disabled, overlays are only visible while playback is paused.
 - **Markers submenu:** When one or more markers are applied to a Timeline, they appear in this list in chronological order, listed by Name and Note. Choosing a marker from this menu jumps the playhead to that marker in the Timeline.

- **Source Viewer Mode drop-down (Source Viewer only):** This drop-down menu lets you set the Source Viewer to display different views of the clips you’re working on, depending on what you need to do.
 - **Source:** Shows the video of the currently open clip in the Source Viewer.
 - **Offline Reference Movie button:** If you’ve assigned an offline reference movie to the currently selected timeline, clicking the Offline Mode button lets you display the offline movie so you can compare it with the currently open timeline. In this mode, Source and Timeline playback are synced; an Offset field replaces the duration field, letting you re-sync the offline reference movie, if necessary.
 - **Audio Track:** Shows the audio waveforms corresponding to all channels of the currently open clip in the Source Viewer. The top of this audio-only view shows the waveform for the entire duration of the clip, while the main region of the viewer shows a zoomed in section of the audio waveform. The level of zoom displayed is controlled by the zoom drop-down at the upper left-hand corner of the Source Viewer.
 - **Multicam:** Shows you the multi-angle Multicam Viewer that you can use to switch among different angles of video and audio while multicam editing a clip in the Timeline. For more information on multicam editing, see *Chapter 41, “Multicam Editing.”*
 - **Annotations:** Allows you to draw directly onto the current frame to highlight areas for further attention.
- **Transform Mode drop-down (Timeline Viewer Only):** This functions as both a toggle switch and a drop-down menu. Clicking the button control to the left enables or disables onscreen controls that you can use to transform the clip right in the viewer. Clicking the drop-down control to the right lets you switch between two modes of transforms:
 - **Transform:** Exposes controls for Pan (X) and Tilt (Y), Scale X and Y, and Rotation.
 - **Crop:** Exposes controls to crop from the top, bottom, left, and right.
 - **Dynamic Zoom:** Shows controls to do quick pan and scan effects on the selected clip.
 - **OpenFX Overlay:** Exposes the onscreen controls of an applied OpenFX filter.
 - **Fusion Overlay:** Exposes the onscreen controls of an applied Fusion FX or Title filter.
 - **Annotations:** Allows you to draw directly onto the current frame to highlight areas for further attention.
 - **Smart Reframe:** Exposes the onscreen controls of the Smart Reframe.
- **Jog control:** Clicking the Jog control and dragging left and right lets you move slowly through a clip or the Timeline a frame at a time.
- **Transport controls:** These controls include, from left to right, Jump to First Frame, Play Reverse, Stop, Play Forward, Jump to Last Frame.
- **Loop Playback:** Enables or disables looped playback. Looping is also controllable via the Playback > Loop/Unloop command (Command-/). When enabled, each playback command loops back to the beginning when the end of that command’s range is reached. In and Out points in the Source or Timeline Viewers do not trigger looping. For example, when enabled, the Play command will play through the entire clip or timeline, and then loop back to the beginning when the end is reached and start playing automatically. The Play Around command, on the other hand, will start at the beginning of pre-roll, play through the post-roll, and then immediately loop back around to the beginning of pre-roll, continuing playback in this manner until you stop it.

- **Match Frame:** In the Source Viewer, Match Frame attempts to move the playhead in the Timeline to match the current frame of the clip in the Source Viewer. In the Record Viewer, Match Frame opens the Media Pool clip corresponding to the clip at the current position of the playhead into the Source Viewer, setting In and Out points and the playhead position to match those of the clip in the Timeline.
- **In/Out buttons:** Places In and Out points with which to define a range of the clip, or of the Timeline, in preparation for making different kinds of edits.
- **Jog bar:** In the Source Viewer, drag within the jog bar to reposition the Source playhead, scrubbing through the clip. In the Timeline tab, drag to reposition the playhead throughout the entire program.

Transport Controls and Important Playback Controls

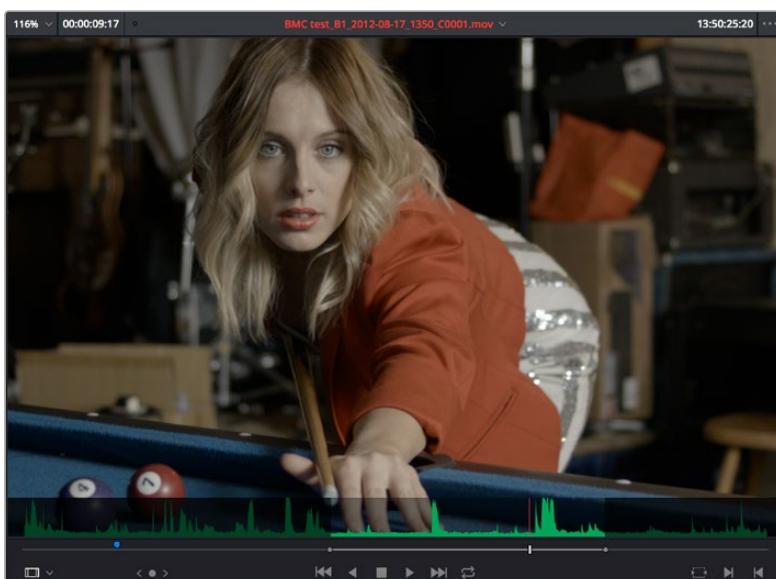
While the operation of the main transport controls is probably obvious, there are additional playback controls of interest to the editor that may not be so readily found.

For more information about transport controls, see *Chapter 35, “Preparing Clips for Editing and Viewer Playback.”*

Simultaneous Audio Waveform Display in the Source Viewer

When the Source Viewer is set to Source, two options in the Option menu let you see a superimposed audio waveform running along the bottom of the viewer, over the video of the currently selected clip.

- **Show Zoomed Audio Waveform:** Shows a zoomed-in section of audio that scrolls as you play the clip. Useful for seeing dialog and music cues as you play through a clip.
- **Show Full Clip Audio Waveform:** Shows the audio waveform for the entire source media of that clip. The section of audio from the In to Out points you've set in the Source Viewer are highlighted. Useful for using the audio waveform to navigate throughout that clip using the waveform as a reference.



The Source Viewer with “Show Current Frame Audio Waveform” enabled

Cinema Viewer Mode

You can also put either the Source or Timeline Viewers into Cinema Viewer mode by choosing Workspace > Viewer Mode > Cinema Viewer (P), causing whichever viewer is currently selected to fill the entire screen, which is good for doing a test viewing of your edit without the distractions of the DaVinci Resolve Edit Page UI. This command toggles Cinema Viewer mode on and off.

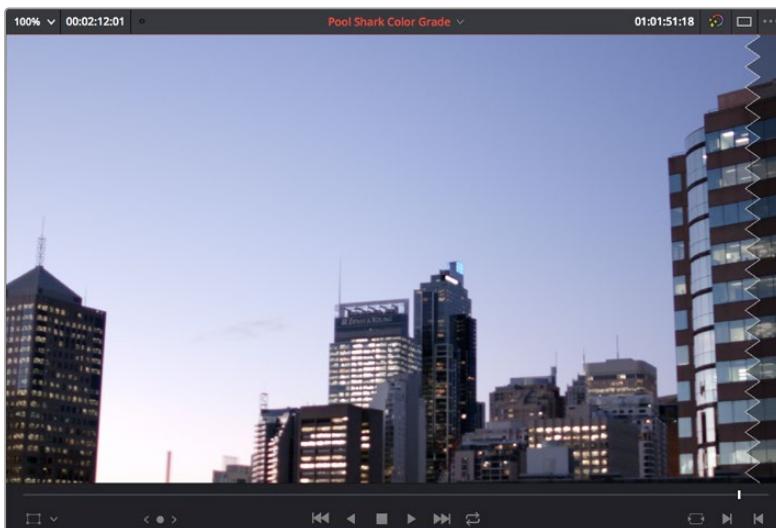
Viewer Indicators

Certain frames trigger visible indicators in either the Source or Timeline viewers. For example, if the playhead is at the very first or last frame of media available to a particular clip, indicators appear in the lower-left or right corner of the frame to let you know there's no more media in that direction.



The first and last frame clip indicators

If the playhead in the Timeline is on the first frame of black immediately after the last video clip in the Timeline, an end of sequence indicator appears in the Timeline Viewer to let you know that you're viewing the last frame of the current sequence of clips, even though the playhead is actually on a frame of black. This makes it easy to see what you're doing while you're first assembling clips together.



The end-of-sequence indicator

Other Viewer Options

There are additional overlays and options you can use to customize how the viewer appears.

- **Safe Area:** Choosing View > Safe Area > On lets you turn on Safe Area overlays showing you Title Safe, Action Safe, and other available overlays. If you want to choose the aspect ratio with which these overlays are represented, you can do so from the View > Select Aspect Ratio submenu.
- **Show Gray Backgrounds in Viewers:** Checking the Show Gray Backgrounds in Viewers box in the User Preference's UI Settings changes the empty area of the Viewer (if there is any) to a lighter gray, making it easier to see which parts of the viewer are black because of blanking, and which parts are simply empty because of the way the image is zoomed or panned.

Fast Review in the Timeline Viewer

Fast Review plays back your timeline at variable fast forward speeds where the speed of playback is dependent on the length of each clip on the Timeline. Longer clips play back at faster speeds than shorter ones. This feature is designed to allow you to quickly scan through a large amount of material on a timeline.

To use the Fast Review feature on your Edit page Timeline, select Playback > Fast Review. Pressing K or the spacebar will return you to the normal JKL playback mode. If you use this feature often you can bind Fast Review to a specific key in the Keyboard Customization window.

NOTE: Fast Review does not work for clips in the Source Viewer, only for timelines in the Timeline Viewer.

Opening Clips in the Source Viewer

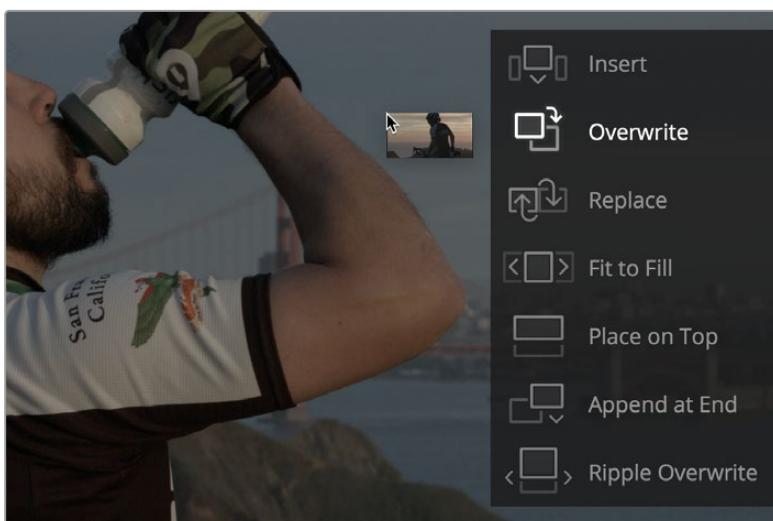
There are two methods of opening clips into the Source Viewer. Which is enabled depends on the "Live Media Preview" setting found in the Viewer options menu (the three-dots menu found at the upper right-hand corner of the Viewer).

- When Live Media Preview is enabled (by default), skimming a thumbnail in the Media Pool also shows the skimmed frame in the Source Viewer, effectively opening each clip you skim in the Media Pool into the Source Viewer. As you skim, the playhead that appears in the thumbnail is locked to the playhead that's displayed in the Viewer's jog bar.
- When Live Media Preview is disabled, you must either double-click a clip in the Media Pool to open it into the Source Viewer, or you can select a clip in the Media Pool and press the Return key to open it into the Source Viewer.

Which method is best is purely a matter of preference.

Timeline Viewer Edit Overlays

Dragging a clip from the Media Pool or Source Viewer onto the Timeline Viewer also exposes edit overlays that let you choose what kind of edit you want to make by choosing which overlay to drop the clip onto.



The overlay that appears when you drag a clip onto the Timeline Viewer lets you choose from a variety of edits

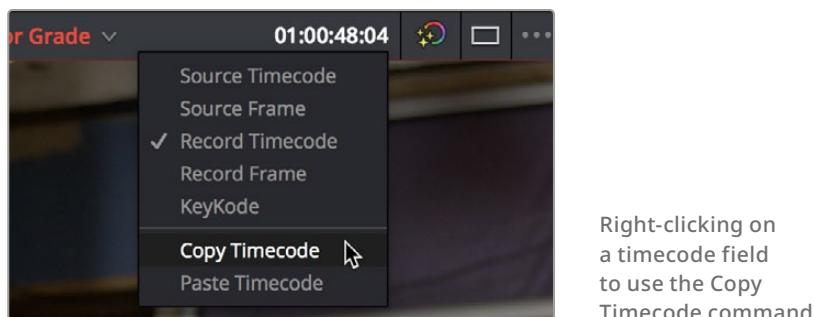
This overlay exposes every type of edit that's available in DaVinci Resolve, including the Insert, Overwrite, Replace, Fit to Fill, Place On Top, Ripple Overwrite, and Append at End edits, all of which are also available from the Edit menu. It's a useful method of making three-point edits if you like drag and drop editing, but it also provides a nice reminder of what types of edits are available, given all the different options that are available.

By default, the larger empty area to the left of these overlays defaults to the highlighted Overwrite overlay, while all the smaller buttons let you perform each of the other edit types that are available.

However, the "Timeline overlay retains the last performed action" checkbox in the Editing panel of the User Preferences can be turned on if you want DaVinci Resolve to always remember the last edit type you used, and highlight it on this overlay whenever you drag another clip over the Timeline Viewer to let you know that the last edit you performed is the new default edit if you drop clips to the left of the overlay. For example, with this option enabled, if you perform a place on top edit, then the next time you drop a clip into the empty area to the left of the overlays, the result will be another place on top edit. This option is off by default.

Copy and Paste Timecode in Viewer Timecode Fields

You can right-click on most Viewer timecode fields in the Media, Edit, and Color pages to choose Copy and Paste commands from a contextual menu for copying and pasting timecode values. You can also click in the timecode fields and use the normal Copy (Command-C), and Paste (Command-V) keyboard commands. This works even between pages. The timecode value you're pasting must be valid timecode, for example you can't paste 0 hour timecode onto a 1 hour timeline.



Export The Current Frame from The Viewer

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

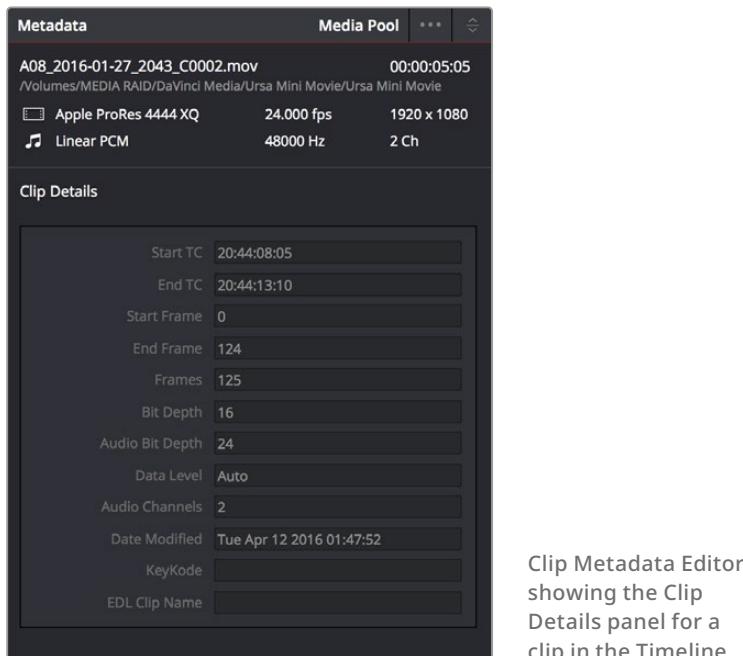
Metadata Editor

Both the Media and Edit pages have a Metadata Editor. In the Edit page, the Metadata Editor opens in the same place as the Inspector, to the right of the Source and Timeline Viewers. When you select a clip in the Media Pool or Timeline, its metadata is displayed within the Metadata Editor, and the title bar indicates whether you're evaluating a clip in the Timeline or Media Pool. If you select multiple clips, only the last clip's information appears. The Metadata Editor's header contains uneditable information about the selected clip, including the file name, directory, duration, frame rate, resolution, and codec.

Because there are so very many metadata fields available, two drop-down menus at the top let you change which set of metadata is displayed in the Metadata Editor.

- **Metadata Presets (to the left):** If you've used the Metadata panel of the User Preferences to create your own custom sets of metadata, you can use this drop-down to choose which one to expose. Surprisingly enough, this is set to "Default" by default.
- **Metadata Groups (to the right):** This drop-down menu lets you switch among the various groups of metadata that are available, grouped for specific tasks or workflows.

The heart of the Metadata Editor is a series of editable fields underneath the header that let you review and edit the different metadata criteria that are available. For more information on editing clip metadata, and on creating custom metadata presets, see *Chapter 19, "Using Clip Metadata."*



Inspector

The Inspector can be opened to let you customize compositing, transform, and cropping parameters for clips, as well as clip-specific retime and scaling options. Furthermore, the Inspector lets you edit the parameters of transitions, titles, and generators used in the Timeline, in order to customize their effect.



The Inspector, opened and showing a clip's parameters

When the Inspector is open, the Source and Timeline viewers move to the left, to sit alongside the Inspector showing the selected clip's parameters. However, if your computer display's resolution is not high enough, opening the Inspector may result in the Source Viewer being hidden.

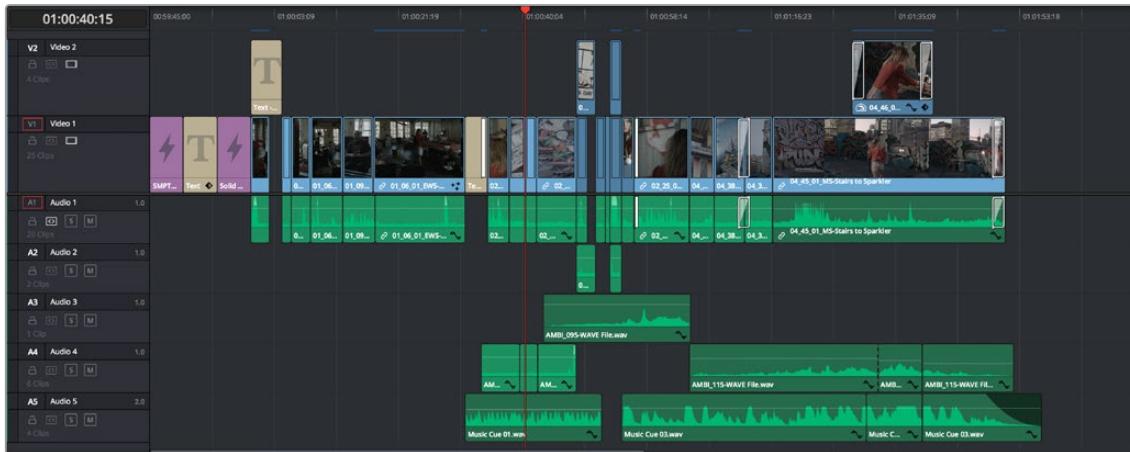
Methods of showing parameters in the Inspector:

- **To open a video or audio clip's transform settings when the Inspector is closed:** Select that clip, and then click the Inspector button at the far right of the Edit page toolbar.
- **If the Inspector is already open:** You need only select a clip or effect to reveal its controls in the Inspector.
- **If the Inspector is closed:** Double-clicking any transition will automatically open it.

The Inspector shows different buttons at the top that let you switch among different pages of parameters. For example, when you select a clip with both audio and video components, the Inspector shows Video and Audio buttons at the top that let you switch among each set of controls.

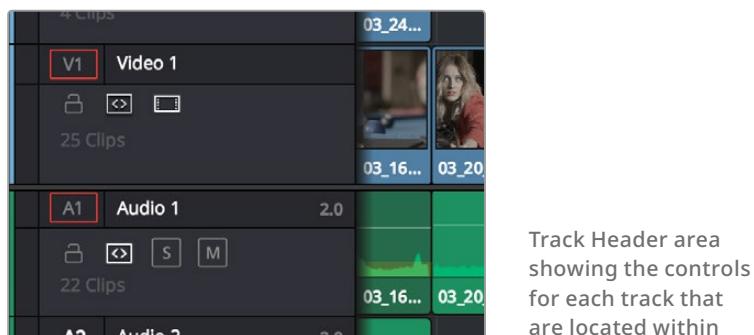
Timeline

The Timeline shows whichever timeline you've double-clicked in the Timelines browser. It's where you either edit programs together from scratch, or import sequences from other applications. For imported programs, the Timeline provides a visual representation of the edited program that's helpful for verifying that the project was imported correctly, checking the media corresponding to each clip in the program, and performing whatever editorial tasks are necessary to prepare a project for grading (such as replacing or adding clips, superimposing composites, and modifying composite modes or transitions).



An edited timeline

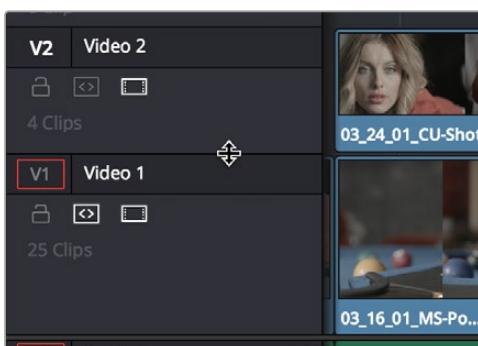
- **Timeline Ruler:** The Timeline Ruler shows the program's timecode, and the playhead indicates the current frame of the current clip. Whichever clip intersects the playhead is the one that you'll be working on in the Color page. Dragging within the Timeline Ruler moves the playhead. When you add markers to the timeline, these markers appear within the Timeline Ruler, as well.
- **Playhead:** The playhead automatically syncs with the Timeline Viewer's jog bar playhead, the playheads in the Mini-Timeline and Thumbnail timeline of the Color page, Cut page, and the playhead on the Deliver page. Furthermore, the Edit Index event that corresponds to the clip intersecting the playhead is automatically highlighted.
- **Timecode field:** Shows the current timecode value corresponding to the position of the playhead.
- **Video Tracks:** DaVinci Resolve supports multiple video tracks. At the left of each track is a header area that contains a number of controls.
- **Track Header:** The Track Header contains different controls for selecting, locking/unlocking, and enabling/disabling tracks. Each track header also lists how many clips appear on that track. The Track Header contains the following five controls, from left to right:



- **Track Color:** Each track can be color-coded with one of 16 different colors. These color codes correspond to the Edit page Mixer, and to the Fairlight page Mixer and Audio Meters. You can choose a new color for any track by right-clicking the track header and choosing from the Change Track Color submenu.
- **Destination control and Track Number:** These controls are highlighted orange when that track is selected for editing, dark gray when that track is not selected, and flat gray if that track is disabled for editing. The Destination buttons dictate into which tracks audio and video media in the Source Viewer will be placed when an edit is executed. Ordinarily, there is one

video destination control (V1) and one audio destination control (A1). If you add additional tracks, you can see that each destination control is numbered according to its track position. The bottom track is “V1,” and subsequently numbered tracks appear higher in the Timeline. Click any track’s number to select that track for different editing functions; the selected track is highlighted black.

- **Track Name:** Each track has a name that defaults to the type of track and the track number, such as Video 1, Audio 1. However, you can click any track’s name and edit it to be whatever you like. For example, you can rename each audio track with the type of audio you’re editing onto it, such as Production, Ambience, SFX, or Music. These track names are also used to identify each track’s channel in the Edit page Mixer and in the Fairlight page Mixer.
- **Enable Track/Mute button:** A slash indicates when a track is disabled. This control lets you turn tracks on and off. Clips on tracks that are turned off aren’t visible in the viewer, don’t show up in the Color page, and aren’t available for rendering or output. For Audio tracks this is the Mute button.
- **Lock Track button:** Light gray when turned on, dark gray when turned off. When a track is locked, clips can’t be replaced, moved, or otherwise edited, although clips on locked tracks can be graded.
- **Auto Select button:** On by default. Light gray when that track is selected, dark gray when that track is not selected. When this control is on, clips on that track are automatically included in operations that affect all clips that intersect the position of the playhead, or that intersect a region defined by the Timeline In and Out points. When this control is off, clips on that track are ignored by those same operations. Furthermore, rippling is suspended on tracks with Auto Select turned off for operations that would otherwise ripple the Timeline. Note, manual selections made in the Timeline that highlight specific clips take precedence over the Auto Select controls, so if Auto Select is turned off on track 1, but you’ve selected a clip on track 1, the selected clip will be still be affected by whatever operation you’re about to perform.
- **Audio Channel Type indicator:** Audio tracks also show which channel configuration that track uses, listing the number of channels for mono, stereo, 5.1, 7.1, and adaptive.
- **Number of clips:** The number of clips on that particular track of the Timeline is listed, but only if the track is tall enough to have room for them.
- **Vertical and horizontal scroll bars:** If your project is longer than the current width of the Timeline, or the number of video tracks is taller than the current height of the Timeline, these scroll bars let you drag to navigate around your program.
- **Individual Timeline track resizing:** Any track in the Timeline can be individually resized by dragging its top divider in the Track Header area.



Resizing an individual timeline track by dragging its top border in the Track Header

Timeline Options

Specific elements and behaviors within the Timeline can be customized in various ways.

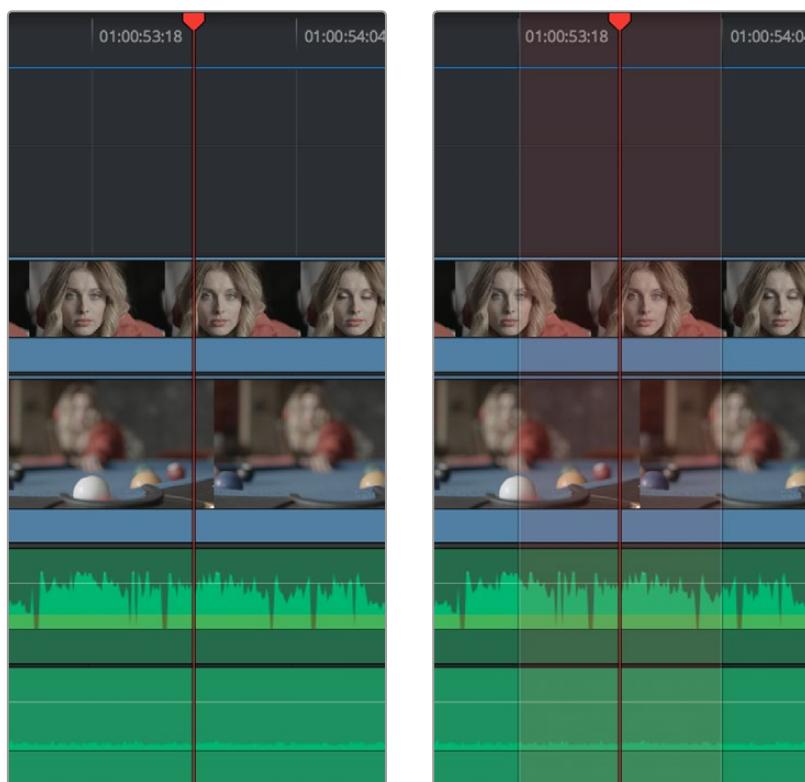
Selection Follows Playhead

As of DaVinci Resolve 17, the Clip selection no longer automatically moves along with the playhead. Instead, a new set of commands lets you create and move a selection by holding down the Command key and pressing the Up, Down, Left, and Right Arrow keys. This allows you to select clips above and below the current track and to the left and right, independently of the playhead.

You can return the Clip Selection mode back to its previous behavior of automatically selecting the top clip it's intersecting by choosing the option Timeline > Selection Follows Playhead.

Show Playhead Shadow

Ordinarily, the playhead is shown in the Timeline as a single line that indicates the beginning of the frame that you're viewing in the Timeline Viewer. However, you can choose Show Playhead Shadow from the User Preferences UI Settings to display an orange-ish background surrounding the playhead.



(Left) The playhead's default look, (Right) The playhead showing the optional playhead shadow

This shadow can make it easier to see the playhead's position, and it can also serve as a measuring tool for projects where you have an interest in visualizing a specific offset, in frames, both before and after the current position of the playhead. This offset can be adjusted by changing the Pre- and Post-Playhead Shadow Length parameters in the Editing panel of the User Preferences, which let you specify the number of frames to shadow both before and after the playhead. The default length of the playhead shadow is 5 frames.

TIP: You can set the "Pre-playhead shadow length" to 0, and the "Post-playhead shadow length" to 1 if you want to display a "Media Composer-style" playhead that shows the duration of the current frame.

Enabling and Disabling Audio Scrubbing

Audio scrubbing is enabled by default, meaning that you'll hear audio when dragging the playhead with the mouse back and forth. While this can be useful when you're searching for audio cues, it can also be distracting if you're just focused on the picture.

To enable or disable audio scrubbing:

- Choose Timeline > Audio Scrubbing (Shift-S)

Playback Post-Roll

Enables the playhead to continue playing past the last clip in the Timeline for a duration equal to the “Post-roll time” Project Setting in the Editing panel. This is good for editors that want to experience a few moments of playback after cutting or fading to black after the last frame of audio and video in the Timeline.

To enable or disable playback post-roll:

- Choose Timeline > Playback post-roll

Switching Among Multiple Timelines

Timelines can be organized like any other clip in the Media Pool. To open or switch among timelines, use the following procedures.

To switch timelines, do one of the following:

- Double-click a timeline in the Media Pool on any page.
 - Turn on Stacked Timelines in the Timeline View Options menu of the Edit page toolbar, so that all timelines you open appear as tabs. Clicking different tabs switches to that timeline.
 - In the Edit page Timeline Viewer, choose a timeline from the Timelines drop-down menu at the top of the viewer.
 - In the Color page, choose a timeline from the Timelines drop-down menu at the top of the Viewer.
 - In the Fairlight page, choose a timeline from the Timelines drop-down menu to the left of the transport controls.

Toolbar

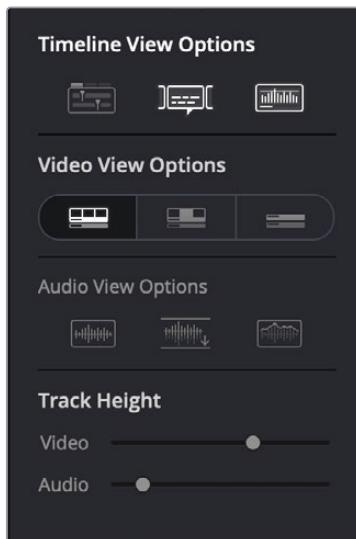
At the center of the toolbar that sits above the Timeline, several buttons let you choose different tools and options for performing various editing functions.



Buttons in the toolbar



Timeline View Options: The controls let you customize the look of the clips on the tracks (Filmstrip, Thumbnail, or Minimized), audio waveform displays, stacked timelines, subtitles, and the adjustable height of the video and audio tracks.



Selecting the Timeline View options



Selection Mode: The default mode in which you can move and resize clips in the Timeline, roll edits, and do other basic editing tasks. In this mode, making specific selections in the Timeline and using the nudge commands of Comma and Period resizes, moves, or rolls the selection, as does absolute or relative timecode entry.



Trim Edit Mode: In this mode, the Trim tool lets you make slip, slide, ripple, and roll edits by dragging different parts of clips in the Timeline, by making specific selections and using the “nudge” keyboard shortcuts of Comma and Period to move the selection left or right, or by making specific selections and using timecode entry to make relative or absolute adjustments.



Dynamic Trim Mode: This mode works in conjunction with either the Selection or Edit modes. With Dynamic Trim mode enabled, you can either resize and move clips (in Selection mode), or ripple, slip, or slide them (in Trim mode) using the JKL keyboard shortcuts that play forward and backward through the Timeline. While enabled, the spacebar triggers the Play Around Current Selection command. The Toolbar button for this mode also changes to show you whether you’re in slip or slide mode for nudging, timecode-entry adjustment, or dynamic trim (set by pressing the S key).



Blade Edit Mode: Lets you add cuts to clips at the playhead in the Timeline by clicking.



Insert Clip: Performs an insert edit to the Timeline with whatever clip is in the Source Viewer.



Overwrite Clip: Performs an overwrite edit to the Timeline with whatever clip is in the Source Viewer.



Replace Clip: Performs a replace edit to the Timeline with whatever clip is in the Source Viewer.



Snapping: Enables or disables clip snapping. When turned on, clip In and Out points, markers, and the playhead all snap to one another for reference while you're editing.



Linked Selection: Enables or disables audio/video linking. When turned on, clicking a video clip in the Timeline automatically selects the corresponding audio clip if they're linked together. When turned off, clicking a video clip won't select its audio. Clip linking can be toggled while you work by pressing the Option key while clicking to make selections in the Timeline.



Position Lock: Prevents clips from being moved to the left or right, and it prevents all ripple operations. Essentially ensures all the Timeline elements stay in sync and can't be adjusted accidentally.



Flag Clip/Flag Colors drop-down menu: Flags identify clips, and indicate all clips that correspond to the same item of media in the Media Pool. Clips can have multiple flags. Clicking the Flag button automatically adds a flag to whichever clip is currently selected in the Timeline. A drop-down menu to the right lets you choose differently colored flags, and clear all flags from the currently selected clip.



Add Marker/Marker Colors drop-down menu: Markers identify specific frames of individual clips. Clicking the Add Marker button adds a marker of the currently displayed color to the clip at the position of the playhead in the Timeline. A drop-down menu to the right lets you choose differently colored markers, and clear all markers from the currently selected clip.



Full Extent Zoom: Dynamically adjusts the zoom level to encompass the whole Timeline as you add or remove clips.



Detail Zoom: Zooms the Timeline in on the Playhead to the frame level.



Custom Zoom: Zooms the Timeline to the level selected by the Zoom slider to its immediate right.



Zoom Slider: Lets you zoom into or out of the clips in the Timeline. Use the scroll wheel of your mouse to horizontally zoom into and out of the Timeline. Scrolling up zooms in, while scrolling down zooms out. You can also use Command-Plus to zoom in, and Command-Minus to zoom out, and Shift-Z to fit every clip in your program into the available width of the Timeline.

These functions are described in greater detail in the following sections of this chapter.

Toolbar Audio Monitoring Controls

At the far right of the toolbar, a set of three monitoring controls lets you quickly control the output volume of your mix. An audio Enable/Disable button lets you turn audio playback on and off, while a slider lets you change the volume, and a DIM button lets you temporarily duck the monitored volume being output in order to have a quick chat with your client about sports or the state of the world while keeping half an ear on the mix.



The monitoring controls in the Edit page

When there are multiple audio Mains defined for a project, an additional drop-down dialog appears with the audio monitoring controls in the toolbar that lets you choose which Main you're listening to.

The Mixer and Meters

The Audio Mixer provides a set of graphical controls you can use to set track levels, pan stereo audio, and mute and solo tracks, all while you continue to edit.



The Audio Mixer, with four channel strips corresponding to the four tracks in the Timeline

To open the Audio Mixer:

- Click the Mixer button on the Interface toolbar.

The Audio Mixer exposes a set of channel strips with controls that correspond to the tracks in the Timeline, and each channel strip displays a number of audio meters equal to the number of channels within that track. By default, a Main 1 channel strip appears all the way to the right that lets you adjust the overall level of the mix. However, if you add subs and mains on the Fairlight page, those will appear at the right of the mixer as well.

For more information about the use of the Mixer in the Edit page, see *Chapter 44, “Working with Audio in the Edit Page.”*

For more information about using the Mixer in the Fairlight page, see *Chapter 173, “Mixing in the Fairlight Page.”*

Displaying Audio Meters

If you just want to see your program's levels, you can also switch to display the "Control Room" audio meters instead of the Mixer. How many audio meters appear depends on the current speaker configuration in the Video and Audio I/O panel of the System Preferences.

To show the Audio Meters:

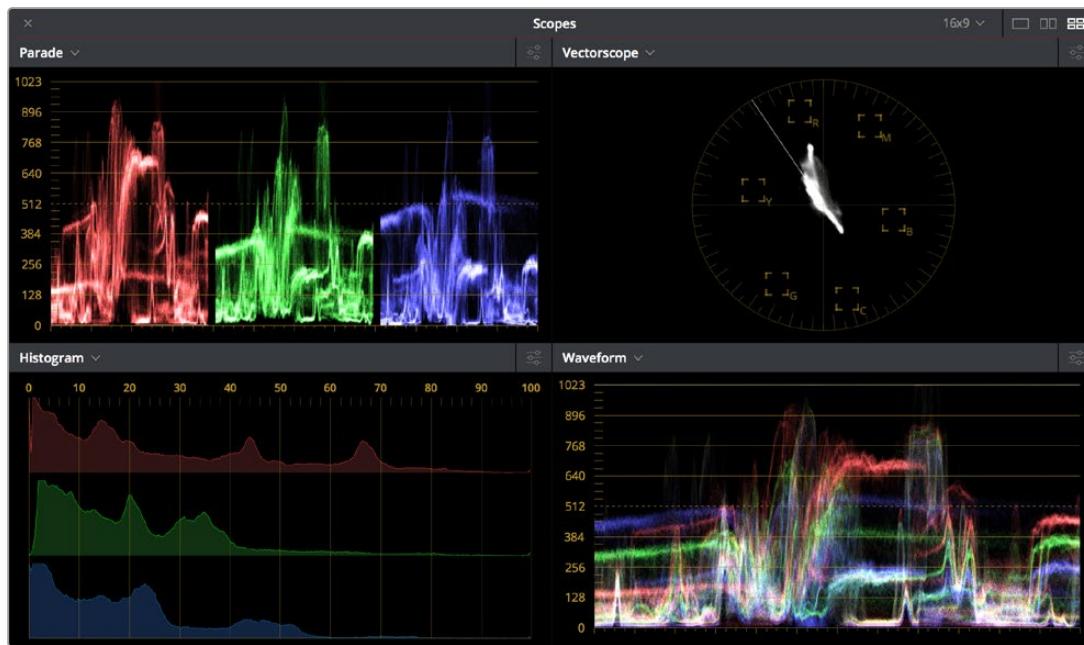
- Click the Mixer button on the Interface toolbar to display the audio panel, and then choose Meters from the option menu at the upper right-hand corner.

Using Video Scopes

DaVinci Resolve has a set of four real-time video scopes that you can use to monitor the internal data levels of clips in your project as you work. Each scope provides an unambiguous graphical analysis of the various characteristics of the video signal, showing you the relative strength and range of individual color components including luma, chroma, saturation, hue, and the red, green, and blue channels that, together, comprise the color and contrast of the images in your program.

To open video scopes from the Media, Cut, Edit, Color, or Deliver pages, do one of the following:

- Choose Workspace > Video Scopes > On/Off (Command-Shift-W) to open video scopes into a floating window.
- Choose Workspace > Dual Screen > On to open video scopes as part of a dual screen layout.



Video scopes in a floating window

The video scopes aren't just available in the Color page. They're also available in the Media, Cut, Edit, and Deliver pages for whenever you need to evaluate the video signal more objectively, such as when you're setting up to capture from tape or scan from film, or when you're setting up for output.

For more information on using the video scopes, see *Chapter 124, "Using the Color Page."*

Floating Timecode Window

A Timecode Window is available from the Workspace menu on every page except Fusion. Choosing this option displays a floating timecode window that shows the timecode of the Viewer or Timeline that currently has focus. This window is resizable so you can make the timecode larger or smaller.



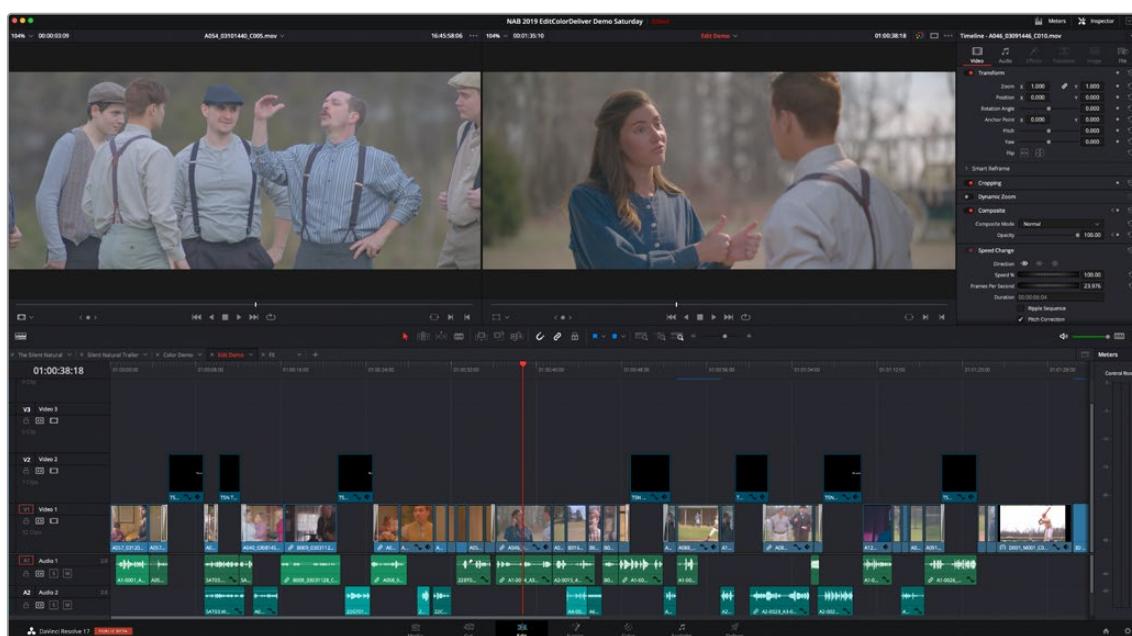
A new floating timecode window is available

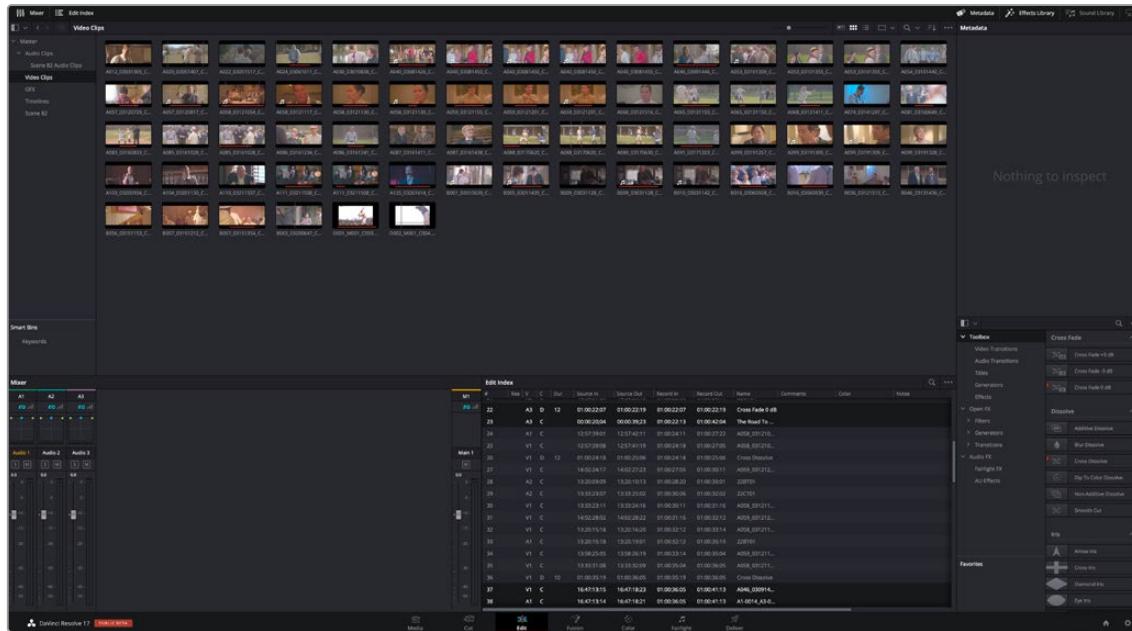
Dual Monitor Layout

The Edit page has a dual monitor layout that provides maximum space for the Timeline and Viewers on the primary monitor, and an enlarged Media Pool, simultaneously displayed Timelines browser, Edit Index, Effects Library, and Metadata Editor on the secondary monitor.

To enter dual screen mode:

- Choose Workspace > Dual Screen > On.





The Edit page in dual-screen mode

To switch which UI elements appear on which monitors:

Choose Workspace > Primary Display > (Monitor Name), which reverses the contents of both monitors in dual screen mode.

Customizing the Edit Page

The default layout is quite efficient for a number of tasks on most displays. You can always return to the default layout by choosing Workspace > Reset UI Layout. However, the Edit page can be customized to create more room for specific areas of the interface to accommodate different tasks.

To resize any area of the Edit page:

- Drag the vertical or horizontal border between any two panels to enlarge one and shrink the other.

To expand the width of the Timeline:

- Click the Media Pool/Effects Library/Edit Index height button to reduce the area used by the Media Pool, Effects Library, and/or Edit Index to shrink to half height. At this size, the Media Pool/Effects Library/Edit Index are restricted to the top of the UI (you can only show one at a time), and the Timeline takes up the full width of your display.
- Hiding the Edit Index and the Effects Library causes the Timeline to expand to the full width of your screen.

To resize the height of individual video or audio tracks:

- Move the pointer to the top border of any video track header, or the bottom border of any audio track header, and when it becomes a resize cursor, drag that border up or down to resize that track. Each track can have an independent size when you do this.

To enable a full-screen timeline in Dual Screen mode:

- Choose Workspace > Dual Screen > Full Screen Timeline, which causes the Timeline to fully occupy the primary display, while the Browser, Viewers, Audio Mixer, Edit Index, and Effects Library appear on the secondary display.

To customize the columns in the Edit Index:

- **To show or hide columns in the Edit Index:** Right-click any column header, and choose the column you want to show or hide from the contextual menu. Checked columns are shown, unchecked columns are hidden.

To resize any column of the Edit Index:

- Move your pointer over the divider between any two columns and drag when the horizontal resize cursor appears.

To sort the Edit Index by any column:

- Click the Option button at the top right to display all active tracks, just the video, or just the audio tracks.

To rearrange Edit Index columns:

- Drag the header of any column to the left and right to move that column.

To show and hide the Audio Meters or Audio Mixer:

- Click the Mixer button in the UI toolbar.

To switch between the Audio Meters and the Audio Mixer:

- Choose Meters or Mixer from the Option menu at the top right corner of the Mixer.

Undo and Redo in DaVinci Resolve

No matter where you are in DaVinci Resolve, Undo and Redo commands let you back out of steps you've taken or commands you've executed and reapply them if you change your mind. DaVinci Resolve is capable of undoing the entire history of things you've done since creating or opening a particular project. When you close a project, its entire undo history is purged. The next time you begin work on a project, its undo history starts anew.

Because DaVinci Resolve integrates so much functionality in one application, there are three separate sets of undo "stacks" to help you manage your work.

- The Media, Edit and Fairlight pages share the same multiple-undo stack, which lets you backtrack out of changes made in the Media Pool, the Timeline, the Metadata Editor, and the Viewers.
- Each clip in the Fusion page has its own undo stack so that you can undo changes you make to the composition of each clip, independently.
- Each clip in the Color page has its own undo stack so that you can undo changes you make to grades in each clip, independently.

In all cases, there is no practical limit to the number of steps that are undoable (although there may be a limit to what you can remember). To take advantage of this, there are three ways you can undo work to go to a previous state of your project, no matter what page you're in.

To simply undo or redo changes you've made one at a time:

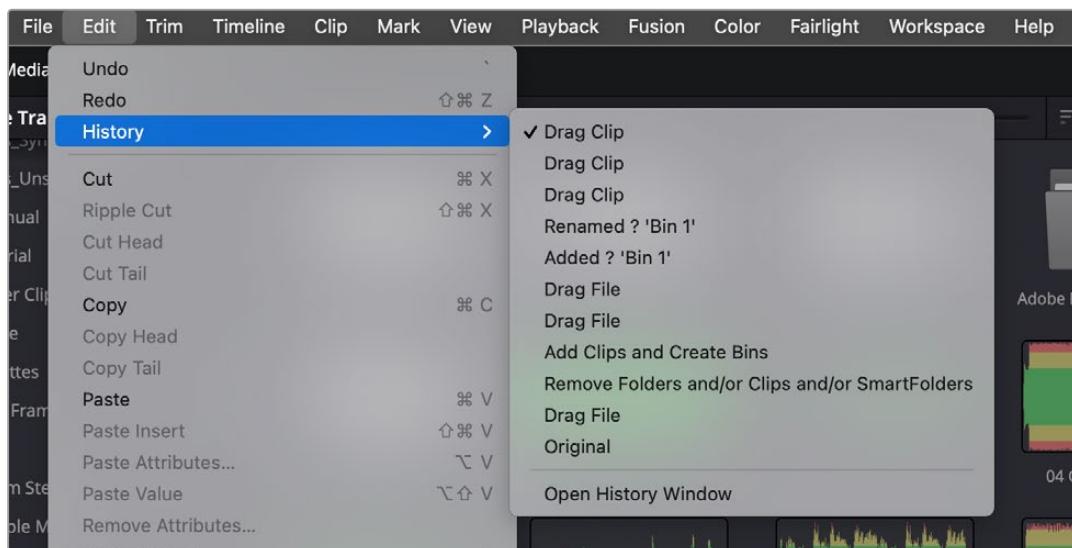
- Choose Edit > Undo (Command-Z) to undo the previous change.
- Choose Edit > Redo (Shift-Command-Z) to redo to the next change.
- On the DaVinci control panel, press the UNDO and REDO buttons on the T-bar panel.

TIP: If you have the DaVinci control panel, there is one other control that lets you control the undo stack more directly when using the trackballs, rings, and pots. Pressing RESTORE POINT manually adds a memory of the current state of the grade to the undo stack. Since discrete undo states are difficult to predict when you're making ongoing adjustments with the trackball and ring controls, pressing RESTORE POINT lets you set predictable states of the grade that you can fall back on.

You can also undo several steps at a time using the History submenu and window. At the time of this writing, this only works for multiple undo steps in the Media, Cut, Edit, and Fairlight pages.

To undo and redo using the History submenu:

- 1 Open the Edit > History submenu, which shows (up to) the last twenty things you've done.
- 2 Choose an item on the list to undo back to that point. The most recent thing you've done appears at the top of this list, and the change you've just made appears with a check next to it. Steps that have been undone but that can still be redone remain in this menu, so you can see what's possible. However, if you've undone several changes at once and then you make a new change, you cannot undo any more and those steps disappear from the menu.

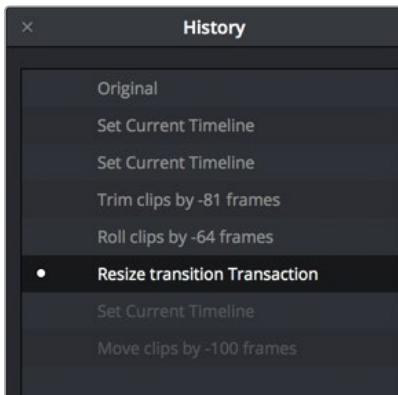


The History submenu, which lets you undo several steps at once

Once you've selected a step to undo to, the menu closes and the project updates to show you its current state.

To undo and redo using the Undo window:

- 1 Choose Edit > History > Open History Window.
- 2 When the History dialog appears, click an item on the list to undo back to that point. Unlike the menu, in this window the most recent thing you've done appears at the bottom of this list. Selecting a change here grays out changes that can still be redone, as the project updates to show you its current state.



The Undo history window that lets you browse the entire available undo stack of the current page

- 3 When you're done, close the History window.

Creating and Working with Timelines

In this chapter, you'll learn how to create and modify the timelines into which you edit clips to create the edited sequences that are your programs.

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Keyboard Shortcuts in This Chapter

Here's a list of keyboard shortcuts you might find helpful that relate to topics found in this chapter.

Key Shortcut	Function
Command-N	Create new timeline
Delete/Backspace	Remove timeline from Media Pool
Command-Shift-N	Create new bin in Media Pool
Command-Minus (-)	Zoom out of timeline
Command-Equals (=)	Zoom into timeline
Shift-Z	Zoom all clips to available width of screen; toggles back to previous zoom level
Home	Move playhead to beginning of timeline
End	Move playhead to end of timeline
N	Toggle timeline snapping off and on
Command-Shift-L	Toggle linked selection off and on
Command-4	Select the timeline panel

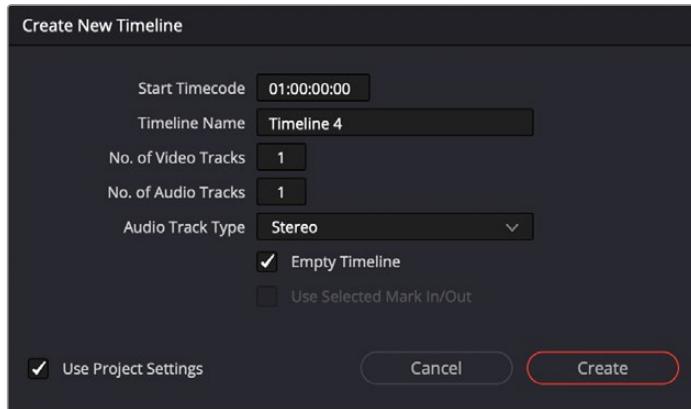
Creating and Duplicating Timelines

If you're not importing a project that's been edited elsewhere, you can create a new timeline to cut together a new edit from scratch, to use to assemble clips for use in a Fusion composition, to grade a set of dailies, or to put together an audio program within the Fairlight page. When you create a new timeline, you can either create a timeline that contains all clips found in the Media Pool to quickly create a big batch of offline dailies, or an empty timeline that's ready for you to add specific clips to. Timelines you create are stored in the currently selected Media Pool bin.

If you'd like an easy way to browse all the timelines in your project at once, regardless of their diverse locations, you can enable the "Smart Bin for Timelines" option, which is in the Editing panel of the User Preferences. This creates a Smart Bin in the Bin list of the Media Pool that filters all timelines in your project, making it easy to see all your timelines without altering your original organization.

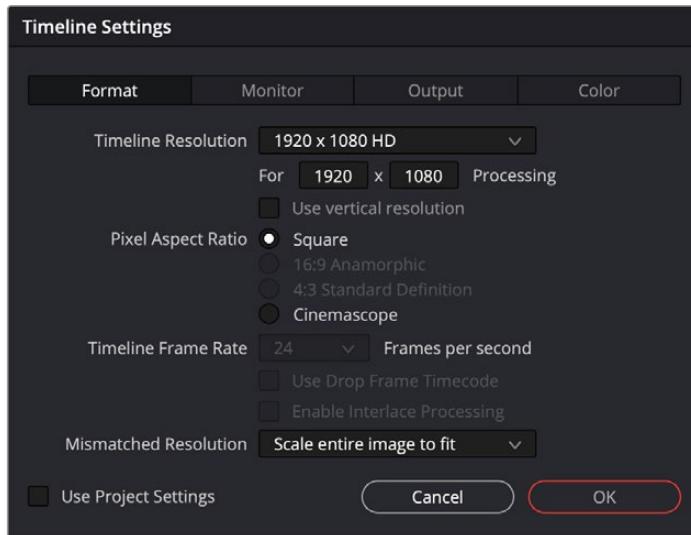
Individual Timeline Settings for Format, Monitoring, Output, and Color

When you create a new timeline, there are a number of ways you can customize it, but by default it will mirror the current project-wide timeline settings for resolution, frame rate, and other format and monitoring parameters.



The Create New Timeline dialog with standard customization settings

However, you have the option of creating separate timelines with individual Format, Monitoring, Output Sizing, and Color Management settings for situations where you need to set up multiple timelines to create multiple deliverables with different resolutions, pixel aspect ratios, frame rates, monitoring, or output scaling options, and color management than the overall project, including “Mismatched Resolution Files” settings. To choose individual settings, uncheck the Use Project Settings box in the New Timeline dialog, and additional controls will appear.



Clicking Use Custom Settings exposes additional panels for individualized timeline settings

Once you've created a timeline with individual settings, you can edit its settings by right-clicking that timeline in the Media Pool, and choose Timelines > Timeline Settings from the contextual menu. An Edit Timeline dialog appears, with separate panels for Format, Monitor, Output, and Color settings that you can choose. You can also click Use Project Settings to have that timeline use the project-wide timeline settings instead.

It is also possible to change the starting timecode for multiple timelines at the same time using the custom timeline settings.

To change the start timecode for multiple timelines at once:

- 1 Select the Timelines whose timecode you want to modify.
- 2 Right-click on one of the selected Timelines and choose Timelines > Starting Timecode from the contextual menu.
- 3 Enter the new timecode in the Time Start field.
- 4 Click on OK.

Creating Blank and Stringout Timelines

If you're cutting a new video or audio program, you'll usually want a blank timeline. However, the same command can be used to create stringout timelines when putting together dailies by turning the "Empty Timeline" checkbox off.

To create a new blank timeline:

- 1 (Optional) Select or create a folder in the Bin list in which to put the new timeline.
- 2 Do one of the following:
 - Choose File > New Timeline (Command-N).
 - Right-click within the Media Pool, and choose Timelines > Create New Timeline.
- 3 When the New Timeline Options window opens, set the following options:
 - **Start Timecode:** You can change the Start Timecode if a specific start time is required.
 - **Timeline Name:** Enter a name into the Timeline Name field.
 - **No. of Video Tracks:** Enter how many video tracks you want to have. You can also drag within this field to adjust the number of video tracks with a virtual slider.
 - **Use Fairlight Preset:** If this box is checked, it creates a timeline with pre-assigned audio tracks using a previously created Fairlight Configuration preset. A drop-down menu then appears, allowing you to select the specific preset for the Timeline. The preset is used in lieu of the No. Of Audio Tracks setting below. You can create Fairlight Configuration presets using the Fairlight Presets Library, available from the Fairlight menu.

For more information, see Chapter 169 , "Setting up Tracks, Buses, and Patching" in the DaVinci Resolve Manual. If you have no Fairlight Configuration presets saved, this option will not appear.

- **No. of Audio Tracks:** Enter how many audio tracks you want to have. You can also drag within this field to adjust the number of audio tracks with a virtual slider.
 - **Audio Track Type:** Choose the channel mapping you want the new audio tracks to use.
 - **Empty Timeline:** Checked by default, this sets new timelines to be created empty. If you turn off the Empty Timeline checkbox, the new Timeline that's created will contain all media found in every bin within the Media Pool, effectively creating a stringout of everything you've imported.
 - **Use Selected Mark In/Out:** Only available when "Empty Timeline" is turned off. When you turn this checkbox on, each clip's duration in the new Timeline is defined by the In and Out points saved within each clip. If there are no In/Out points in a clip, the clip's entire duration is used.
 - **Use Custom Settings:** Click this button if you want to expose the Format, Monitor, and Output tabs that can expose unique settings for each timeline.
- 4 Click Create New Timeline.

A new timeline is created. If necessary, you can duplicate an existing timeline in order to alter an edit or create an alternate grade.

TIP: If you're going to be creating several new timelines with a specific set of parameters, you can open the User pane of the Preferences and edit the New Timeline Settings, found in the Editing panel. This will define new presets that populate the New Timeline Options window from that point forward.

Creating Timelines by Drag and Drop

When you first create a new project, no timeline inhabits the Timeline Editor, and you have an opportunity to create a new timeline by drag and drop.

To create a timeline by dragging and dropping a clip:

Drag any clip into the empty Timeline Editor area underneath the Viewers on the Edit page, and a new timeline will automatically be created.

Creating Timelines From Bins and Selections

The "Create Timeline Using Bin" and "Create Timeline Using Selected Clips" commands let you quickly assemble a timeline using the contents of the Media Pool, using whatever In and Out points have been added to each clip, and using the sort order of the enclosing bin to determine the order in which the clips will be assembled.

TIP: These commands are especially useful for putting together quick assembly edits if you have metadata-rich media with scene, shot, and take information that you can use to sort clips into the proper order, and In and Out points that you've already logged.

To create a timeline using the full contents of a bin:

- 1 (Optional) Put the Media Pool into List mode, set In and Out points for each clip in your Bin, and sort the Media Pool by the column that will put all clips in the order you want them to be assembled.
- 2 Right-click the bin in the Bin list, and choose Create Timeline Using Bin.
- 3 Type the name of the new timeline in the New Timeline Properties dialog. If you want to use the In and Out points of each clip, make sure "Use Selected Mark In/Out" is checked, and click Create New Timeline.

To create a timeline using manually selected clips:

- 1 (Optional) Put the Media Pool into List mode, set In and Out points for each clip in your Bin, and sort the Media Pool by the column that will put all clips in the order you want them to be assembled.
- 2 Select one or more clips you want to assemble into a new timeline.
- 3 Right-click one of the selected clips, and choose Create Timeline Using Selected Clips.
- 4 Type the name of the new timeline in the New Timeline Properties dialog. If you want to use the In and Out points of each clip, make sure "Use Selected Mark In/Out" is checked, and click Create New Timeline. By default, Audio Track Type is set to "Based on selected media," so the timeline audio tracks reflect the track mapping of the clips you've selected, but you can manually choose other specific mappings if you need to.

Creating Timelines Using an IMF or DCP Composition Playlist (CPL)

You can create a timeline in DaVinci Resolve that exactly replicates the Composition Playlist (CPL) of a DCP or IMF package. This is currently a DaVinci Resolve Studio only feature.

To create a timeline using a Composition Playlist (CPL):

- 1 Import an IMF or DCP package into the Media Pool, like any other piece of media.
- 2 Right-click on the imported clip and choose "Create New Timeline Using Composition Playlist" from the contextual menu.
- 3 In the New Timeline dialog box, choose a specific CPL from the package in the "Composition Playlist" drop-down menu.
- 4 Make any other normal new Timeline adjustments you may need (such as Resolution, Aspect Ratio, etc.), then click the "Create" button.

Duplicating Timelines

You can also duplicate existing timelines in preparation for saving a copy prior to making modifications, or as a starting point for a different version of your content.

To duplicate a Timeline, do one of the following:

- Select a timeline in the Media Pool, and choose Edit > Duplicate Timeline. The duplicate timeline appears with "copy" appended to the name.
- Right-click a timeline in the Media Pool, and choose Duplicate Timeline from the contextual menu.

Disabling Timelines

You can disable/enable timelines in the Media Pool for both performance and organizational purposes. This is particularly useful for editors who like to maintain a history of a program's editing via an ongoing series of periodically duplicated timelines. Since having a large number of timelines within a single project file can affect performance, having the ability to disable timelines lets you maintain these backup/alternate timelines without any penalty.

Disabled timelines are never loaded into RAM, have no effect on the speed at which a project opens, saves, exports, or loads, and have no effect on program performance. A disabled timeline also hides the timeline from the viewer drop-down menus throughout the program. Disabled timelines are still visible in the Media Pool, but have a crossed out eye icon in the lower left to show the status. A disabled timeline cannot be opened in any page of DaVinci Resolve.

To disable a timeline:

- Select the Timeline, right-click on it and choose "Disable Timeline" from the drop-down menu.

To enable a timeline:

- Select the Timeline, right-click on it and choose "Enable Timeline" from the drop-down menu.



The crossed-out eye in the lower left of the thumbnail indicates this Timeline is disabled.

TIP: Enabled and Disabled timelines can be easily grouped and organized across the entire project by creating a Smart Bin with the MediaPool Properties > Timeline fields, and choosing "is Enabled/Disabled."

Import and Export DaVinci Resolve Timelines (.drt)

You can export and import individual timelines from one DaVinci Resolve project into another previously existing DaVinci Resolve project, allowing you to pass timelines quickly between projects and workstations, without creating additional imported project files. Just the timeline and its associated clip information are exported; none of the actual media files are included.

To export a timeline from the Media Pool:

- 1 Select a timeline from the Media Pool.
- 2 Choose File > Export > Export AAF, XML, DRT (Shift-Command-O).
- 3 Choose "DaVinci Resolve Timeline Files (*.drt)" from the format options popup in the file system dialog.
- 4 Choose where to save the DaVinci Resolve Timeline file (.drt) in the file system dialog, and click Save.

To import a timeline into the Media Pool:

- 1 Choose a bin in the Media Pool in which you want the imported timeline to be saved.
- 2 Do one of the following:
 - Choose File > Import Timeline > Import AAF, XML, DRT (Shift-Command-I), then Select a DaVinci Resolve Timeline file (.drt) from the file system dialog, and click Open.
 - Double click the .drt file in your file system.

The timeline will appear in the Media Pool, along with all of the clips associated with it, including any media sync information. Any timelines imported this way will have the word "import" appended to their name, to avoid duplicate names. The imported timeline will be automatically conformed to corresponding media that's already in the Media Pool. However, if the timeline has been moved to another computer, you may have to reimport or relink missing or offline media in to bring the imported timeline fully online.

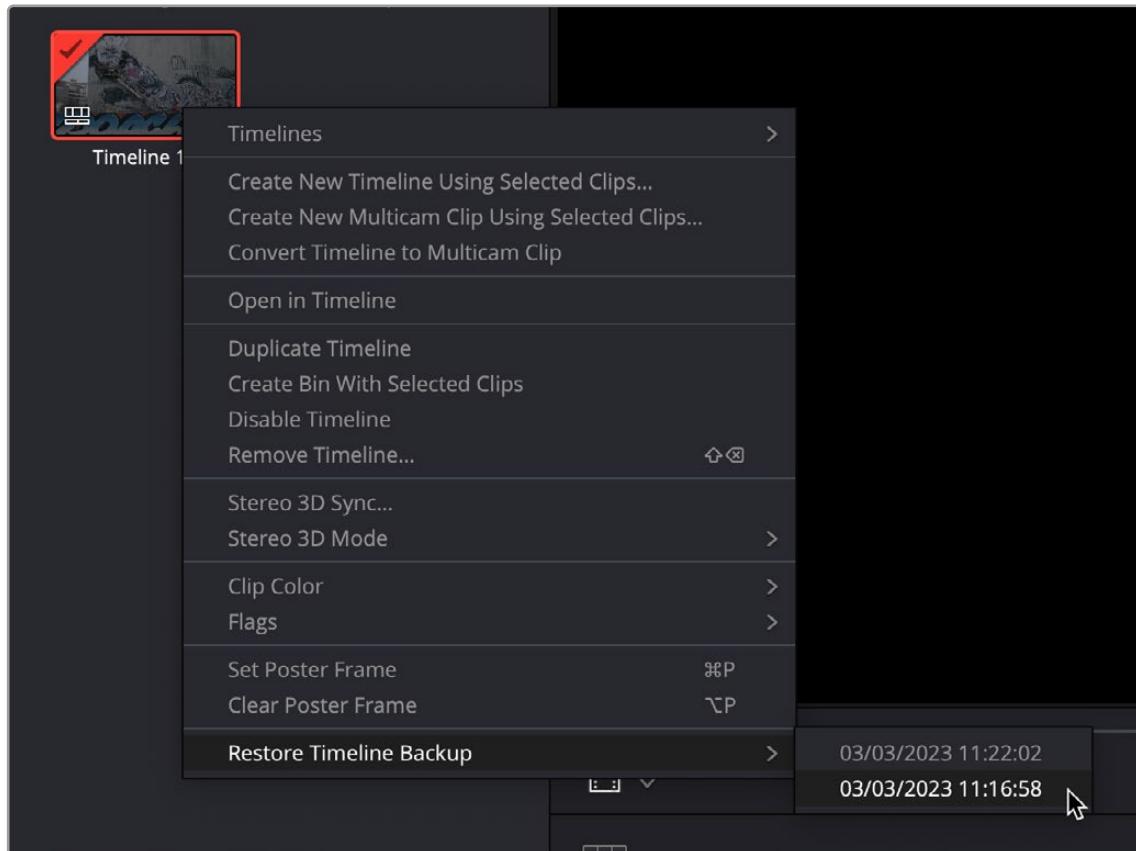
NOTE: Only a single timeline can be imported and exported at a time using this method. To import or export multiple timelines, use the Import/Export Bin function instead.

Backing Up and Restoring Timelines

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.

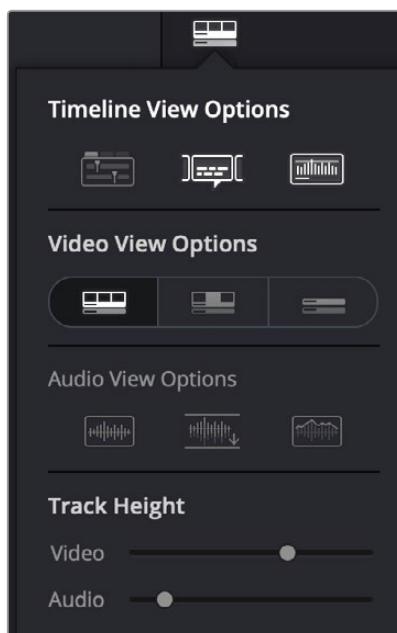
- **Perform backups every X minutes:** The first field specifies how often to save a new backup within the last hour you've worked. By default, a new backup is saved every 10 minutes, resulting in six backups within the last hour. Once an hour of working has passed, an hourly backup is saved and the 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.

Timeline View Options

As you're working on an edit, it can often be useful to modify the appearance of the Timeline, changing the height of video or audio clips, choosing whether audio waveforms are drawn or not, and so on. Using the Timeline View Options drop-down at the far left of the Timeline, you can make these kinds of changes as you work.

Timeline View Options

Three buttons let you choose to show or hide specific Timeline interface elements, including the following:



The Timeline View Options drop-down



Show tabbed and stacked timelines: This option lets you open multiple timelines by displaying a tabbed interface, and also gives you the ability to show stacked timelines for simultaneous display of timelines one on top of another.



Subtitle Tracks: Lets you display or hide the subtitle tracks region of the Timeline. Hiding subtitle tracks does not disable subtitle display; to do that you must disable the currently displayed subtitle track.



Show Audio Waveforms: Lets you turn audio waveform viewing off and on. When Audio Waveform is turned off, audio tracks are minimized.

Video View Options

Three buttons let you choose the overall appearance of video and audio tracks. From left to right:



Filmstrip: Displays each clip as a series of frames along its length. The number of frames displayed depends on the current zoom level of the clip in the Timeline.



Thumbnail: Displays each clip as a solid color with a thumbnail image of the clip's In point at the beginning of the clip, and a thumbnail image of the Out point at the end. The thumbnails displayed depend on the current zoom level, and track height of the clip in the Timeline. If the clip does not have enough room for both, only the In point thumbnail will appear.



Simple: Minimizes all track height and displays each clip as a solid color along its length. Hovering the mouse over the track selection indicator will reveal the track names in a tooltip.

Audio View Options

Three buttons govern the look of audio waveforms in the Timeline, when visible.



Non-Rectified Waveform: Lets you toggle between the waveform being drawn from the bottom of the audio track up, or centered and mirrored about itself.



Full Waveform: Hides the divider bar that keeps the waveform separate from the file name area of each audio clip, so the waveform occupies the full space of each audio bar in the Timeline.



Waveform Border: Draws a dark border around the edges of each waveform to make them easier to see.

Track Height

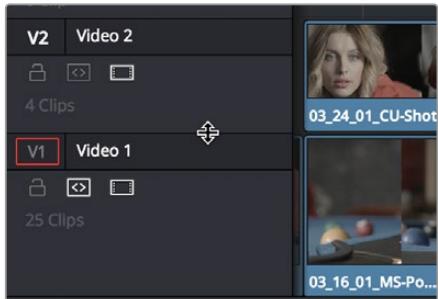
In addition, any track in the Timeline can be individually resized by dragging its top divider in the Track Header area. Track heights in the Edit page are independent of the Thumbnail and Waveform view settings in the Timeline View options. Previously, specific Timeline viewing options such as Filmstrip or Thumbnail view had minimum track height settings. Now you can freely change track height no matter what options you've chosen, and resizing one or more tracks below the minimum height for filmstrips or thumbnails automatically collapses those tracks into Simple view to avoid clutter.

Video

Video track height slider: Lets you resize the size of all video tracks at once, independently of the audio tracks.

Audio

Audio track height slider: Lets you resize the size of all audio tracks at once, independently of the video tracks.



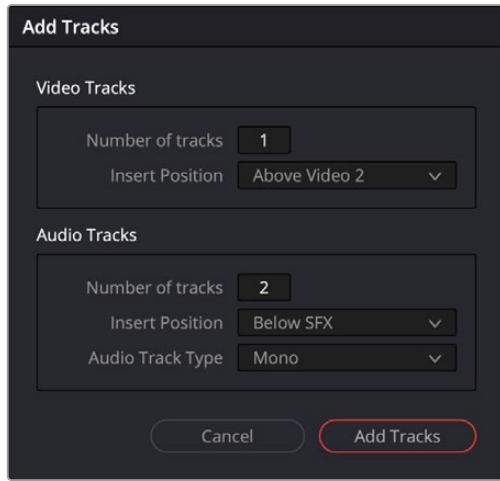
Resizing an individual Timeline track by dragging its top border in the Track Header

Modifying Timeline Tracks

When you're getting ready to edit clips into the Timeline, you need to make sure you've got enough tracks to do the job. The following procedures cover the different methods available for adding, removing, and rearranging tracks as you work. These commands are all available via the contextual menu that appears when you right-click anywhere in the Timeline header area (the header of the Timeline is the area to the left where each track's various buttons and controls are located).

Methods for adding, deleting, and rearranging tracks:

- **To add a track to the Timeline:** Right-click on a Track Timeline header and choose Add Track. A new video track will be created immediately above the track you right-clicked on. A new audio track will be created immediately below the track you right-clicked on. If you add an audio track, you can choose what type of channel mapping you want. For more information about audio track channel mappings, see *Chapter 44, "Working with Audio in the Edit Page."*
- **To add multiple tracks to the Timeline at a specific position:** Right-click anywhere in the Timeline header and choose Add Tracks. When the Add Tracks dialog appears, choose the number of video and audio tracks you want to add, choose the position you want to insert the tracks above or below, and choose the Audio Track Type you want to add if you're adding audio tracks. When you're done, click "Add Tracks."
- **To delete a track from the Timeline:** Right-click within a track's Timeline header and choose Delete Track. If there are clips on a track you remove, they are deleted from the Timeline.
- **To delete all unused tracks in the Timeline:** Right-click anywhere in the track header area and choose Delete Empty Tracks. All tracks without clips will be deleted at once.
- **To move tracks and the clips on them up and down:** Right-click within a track's Timeline header and choose Move Track Up or Move Track Down from the contextual menu. That track, along with all clips on it, will be moved up or down relative to the other tracks in the Timeline. You can also rearrange track order from the Tracks Index. Simply click on the track in the # field and drag the track to its new position.



The Add Tracks Dialog lets you add multiple tracks at once and set their locations in the timeline.

Naming Timeline Tracks

If you're a stickler for organization, you can also name the tracks on a timeline to identify its purpose.

To rename a track:

- 1 Make sure the Timeline View Options are set to either the Filmstrip view or the Thumbnail view, and that audio tracks are tall enough, so that track names are visible.
- 2 To edit the name of any track, click the default "Video X" or "Audio X" track name to select it, then type your preferred name and press the Return key.

Using the Tracks Index

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

#	Name	Track Controls	Format	Monitor	ADC
V3	Adjustment Clips	☰ ▶️ 🔍			
V2	Titles	☰ ▶️ 🔍			
V1	Video 1	☰ ▶️ 🔍			
A1	Dialog Mix	☰ ▶️ [S] [M]	1.0		<input checked="" type="checkbox"/>
A2	SFX	☰ ▶️ [S] [M]	1.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A3	Music	☰ ▶️ [S] [M]	1.0		
A4	Foley	☰ ▶️ [S] [M]	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):** Chooses which busses or tracks can be selected in the monitor drop-down menu in the upper right of the Edit or Fairlight 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 index.

Using Timeline Snapping and Zooming

When preparing to make an edit into the Timeline, you can set the snapping and zoom controls to whichever state is most useful for the operation you need to perform. For example, if you're editing an insert shot into a rapid-fire section of edits in the Timeline, you may want to zoom in to better see the exact place where you want to place the incoming clip. Since there are many edits at that point, disabling snapping might make it useful to avoid having the clip jump to the nearest edit point if you need to move the incoming clip to a very specific frame.

Playhead Snapping:



To turn clip and playhead snapping on and off: Click the Snapping button in the toolbar, or press N. When snapping is turned on, the In and Out points and markers of clips all snap to one another and to the playhead. You can also press N to temporarily turn snapping on or off while dragging a clip in the Timeline, or while scrubbing the playhead using the pointer (snapping reverts to its previous state when you finish the operation).

Timeline Zoom presets:



From left to right: Full Extent, Detail, and Custom Zoom controls



Full Extent Zoom: This mode dynamically adjusts the zoom level to encompass the whole Timeline as you add or remove clips. As your timeline grows by adding clips, the zoom level decreases automatically to fit the new clips into your Timeline Viewer. Conversely, the zoom level will increase automatically as you remove clips.



Detail Zoom: This setting zooms the Timeline in on the Playhead to the frame level to quickly make fine timing adjustments.



Custom Zoom: Zooks the Timeline to the level selected by the Zoom Slider to its immediate right.



Zoom Slider: Drag the zoom slider to the left to zoom out, and right to zoom in. You can also press Command-Minus (-) and Command-Equal (=) to zoom out and in. Either way, zooming is always centered on the current position of the playhead, even if the playhead is off screen.

To frame every clip into the width of the Timeline: Press Shift-Z. This is a toggle, so pressing Shift-Z frames your whole edited sequence to the width of the Timeline, and then pressing Shift-Z again returns the Timeline to whatever level of zoom you were using previously. Using this keyboard shortcut makes it really easy to navigate the Timeline when you're zoomed in, as you can press Shift-Z, move the playhead to another part of the Timeline you want to work on, and then press Shift-Z again to zoom back into the new location of the Timeline.

Zoom Around Mouse Pointer

You can set up the Edit Timeline zoom controls to stay centered on the pointer as you zoom in or out, instead of staying centered on the Timeline playhead as usual, by selecting View > Zoom Around Mouse Pointer. This can be helpful when navigating longer timelines.

With this option enabled, zooming in and out of the Timeline using the scroll control of your pointing device while holding the Option key down keeps the Timeline centered on the pointer. Deselect this option to return to the behavior of only zooming in or out centered on the playhead position.

Scrolling Through the Timeline

When you're zoomed into the Timeline, there are several methods you can use to scroll around as you work.

- You can scroll left and right, or up and down, by dragging the Timeline's horizontal and vertical scroll bars.

- You can scroll left and right through the Timeline, one “page” at a time at the current zoom level, by selecting Playback > Next/Previous > Timeline Page. If you use these often, you can assign them a keyboard shortcut.
- You can also scroll up and down the tracks of the Timeline using the scroll wheel, scroll ball, or scroll gestures of your mouse, trackball, trackpad, or other pointing device.
- You can also scroll within the Timeline by middle-clicking and dragging in any direction, which works the same as panning around a viewer that you’ve zoomed into. This frees you from having to use the scroll bars as you move around your edited clips.

If you scroll past the position of the playhead, a small playhead indicator appears in the bottom scroll bar to let you know where it is relative to the entire duration of your edited sequence.



A small indicator shows the position of the playhead if it’s outside of the visible area of the Timeline.

Scroll Wheel Controls on Timeline

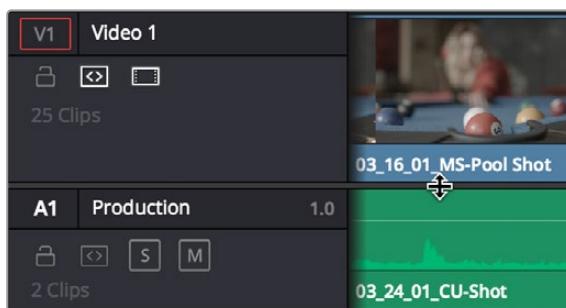
Additional scroll wheel and key presses can be used to manipulate the Timeline on the Edit page.

To manipulate the Timeline, rotate the scroll wheel while holding down:

- **Shift:** Expands or contracts all the Video or Audio track heights, depending on what section the pointer is located at when you scroll.
- **Option:** Zooms in and out the view of the Timeline.
- **Command:** Navigates forward and backward in the Timeline.

Resizing the Timeline’s Video and Audio Track Regions

If you need to see more of the video or audio tracks in the available area of the Timeline, you can drag the horizontal divider that separates the audio and video tracks up or down to create room where you need it.



Dragging the Timeline center divider to make more room for audio or video tracks

Using the Tracks Index

The Tracks Index presents an easy to use track list that lets you view and control all your track headers in one place. It also gives more audio information than the track header section of the Timeline. The Tracks Index is especially useful for controlling projects with a large number of video and audio tracks, and is accessed by clicking on the Index pane, and selecting the Tracks tab.

Using the Tracks Index for video tracks:

- **Color:** Shows a bar of the track's assigned color. You can right-click on the track to change its color.
- **#:** Shows the track's number.
- **Name:** Shows the track's name. This field is editable.
- **Track Controls:** Exposes the Lock, Auto Track Selector, and the Enable/Disable Video track toggle. All of these controls are active.

Using the Tracks Index for audio tracks:

- **Color:** Shows a bar of the track's assigned color. You can right-click on the track to change its color.
- **#:** Shows the track's number.
- **Name:** Shows the track's name. This field is editable.
- **Track Controls:** Exposes the Lock, Auto Track Selector, Solo, and Mute controls. All of these controls are active.
- **Format:** Shows the audio track type. Right-clicking on this field lets you change the audio track type.
- **ADC:** Shows the current amount of Automatic Delay Compensation on the track. Clicking on the checkbox toggles the automatic delay compensation on or off.
- **Group:** Shows the track's VCA group number.
- **Tags:** Shows any tags assigned to the track.

Using the Tracks Index for subtitle tracks:

- **Color:** Shows a bar of the track's assigned color. You can right-click on the track to change its color.
- **#:** Shows the track's number.
- **Name:** Shows the track's name. This field is editable.
- **Track Controls:** Exposes the Lock, Auto Track Selector, and the Enable/Disable Subtitle toggle. All of these controls are active.

Using the Tracks Index options:

- **To search for a specific track:** Click on the search icon (magnifying glass), and type in your search terms. Currently the search only queries the Track Name column.
- **To select which type of tracks are included in the Tracks Index:** Click on the Option menu to choose which type of tracks will be included in the list. The options are: Video, Audio, and Subtitle.

Tracklist						
#	Name	Track Controls	Format	ADC	Group	Tags
ST1	ADA VOICE	🔓 🔍 🔍				
V3	Video 3	🔓 🔍 🔍				
V2	Video 2	🔓 🔍 🔍				
V1	Video 1	🔓 🔍 🔍				
A1	EMILIANA	🔓 🔍 S [M]	1.0	✓ 9752		
A2	PHILIP	🔓 🔍 S [M]	1.0	✓		
A3	ADA VO wFX	🔓 🔍 S [M]	2.0	✓ 128		
A4	ROOM	🔓 🔍 S [M]	1.0	✓		
A5	PFX	🔓 🔍 S [M]	1.0	✓		
A6	MEDLAB 1	🔓 🔍 S [M]	L	✓		
A7	MEDLAB 2	🔓 🔍 S [M]	R	✓		
A8	DRONE 1	🔓 🔍 S [M]	2.0	✓		
A9	SFX	🔓 🔍 S [M]	2.0	✓		
A10	MUSIC	🔓 🔍 S [M]	2.0	✓		
A11	OSC NOISE	🔓 🔍 S [M]	1.0	✓		

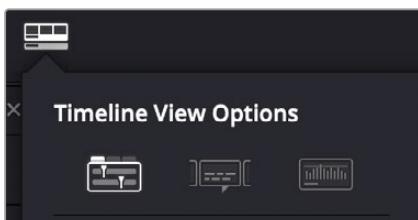
The Tracker Index lets you control all your track headers in one place.

Tabbed and Stacked Timelines

The Timeline now supports the option to have tabs that let you browse multiple timelines quickly. With tabbed timeline browsing enabled, a second option lets you open up stacked timelines to simultaneously display two (or more) timelines one on top of another.

Tabbed Timelines

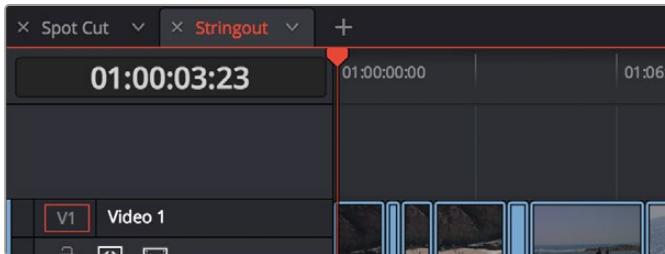
The Timeline View Options menu in the toolbar has a button that lets you enable tabbed browsing and the stacking of timelines.



A button in the Timeline View Options enables tabbed timelines.

When you first turn this on, a Timeline tab bar appears above the Timeline, displaying a tab for the currently open timeline that contains a Close button and a Timeline drop-down menu. Once you enable Tab mode, opening another timeline from the Media Pool opens it into a new tab.

To the right of the currently existing tabs, an Add Tab button lets you create additional tabs that default to "Select Timeline." Click any tab's drop-down menu to choose which timeline to display in that tab.

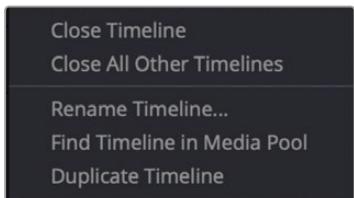


Tabs above the Timeline Editor let you switch among multiple timelines quickly

Right-clicking a tab opens a contextual menu that gives access to several commonly used Timeline functions.

Tabbed timeline contextual menu options:

- **Close Timeline:** Closes the current tab's timeline, and removes the tab. The same as clicking on the "x" inside the tab.
- **Close All Other Timelines:** Closes all open timelines and tabs except for the one that you right clicked and chose this option on.
- **Rename Timeline:** Opens the tab's text editing field, allowing you to change the name of the timeline inside the tab. This will change the timeline's name across the project in the Media Pool as well.
- **Find Timeline in Media Pool:** Opens the bin where the timeline is stored in the Media Pool, and highlights the timeline in orange.
- **Duplicate Timeline:** Creates a duplicate of the selected timeline in the same bin, with the word "copy" appended to the timeline name. It also automatically opens the copied timeline in a new tab.



Right-clicking on a tab will show the timeline options.

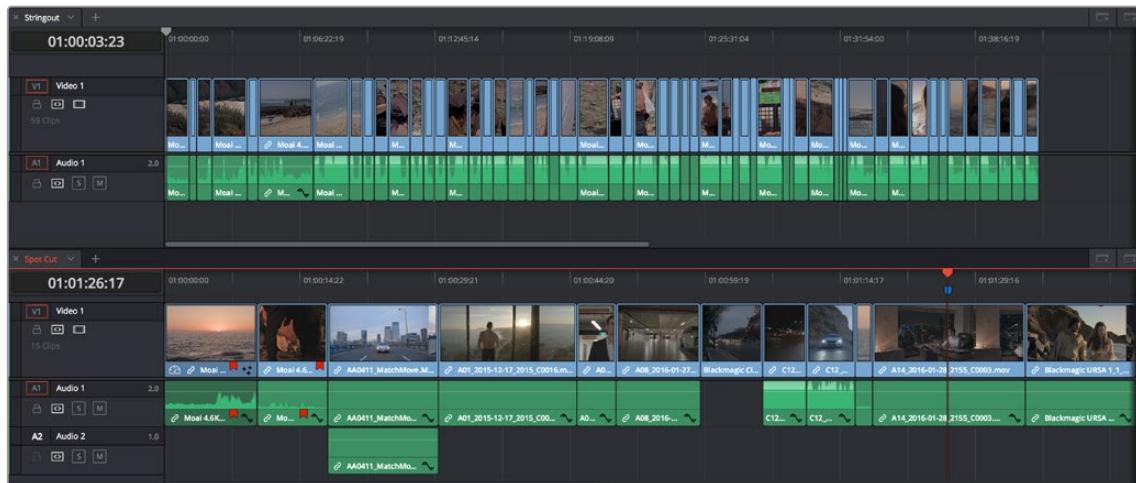
Methods of working with tabbed timelines:

- Click any tab to switch to that timeline.
- Use the drop-down menu within any tab to switch that tab to display another timeline from the Media Pool. Each tab's drop-down menu shows all timelines within that project, in alphabetical order, but a timeline can only be open in one tab or stack at a time.
- Drag any tab left or right to rearrange the order of timeline tabs.
- Click any tab's Close button to close that timeline and remove that tab.
- Middle-click any tab to close that timeline and remove that tab.

Stacked Timelines

While tabbed browsing is turned on, an Add Timeline button appears on the far right of the tab bar that enables you to stack two (or more) timelines one on top of another. This lets you have two (or more) timelines open at the same time, making it easy to edit clips from one timeline to another.

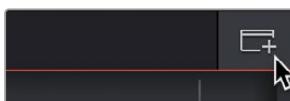
A good example of when this is useful is when you've created a timeline that contains a stringout of selects from a particular interview. You can stack two Timeline Editors, one on top of another, and then open the Selects Timeline at the top and the Timeline you're editing into at the bottom. With this arrangement, it's easy to play through the top timeline to find clips you want to use, to drag and drop into the bottom timeline to edit into your program.



Two timelines stacked on top of one another

To enable or disable stacked timelines:

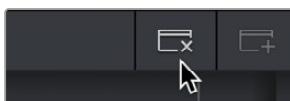
- Click the Add Timeline button at the right of the Timeline tab bar.



The button for adding a stacked timeline

Once you've enabled stacked timelines, each timeline has its own tab bar and an orange underline shows which timeline is currently selected.

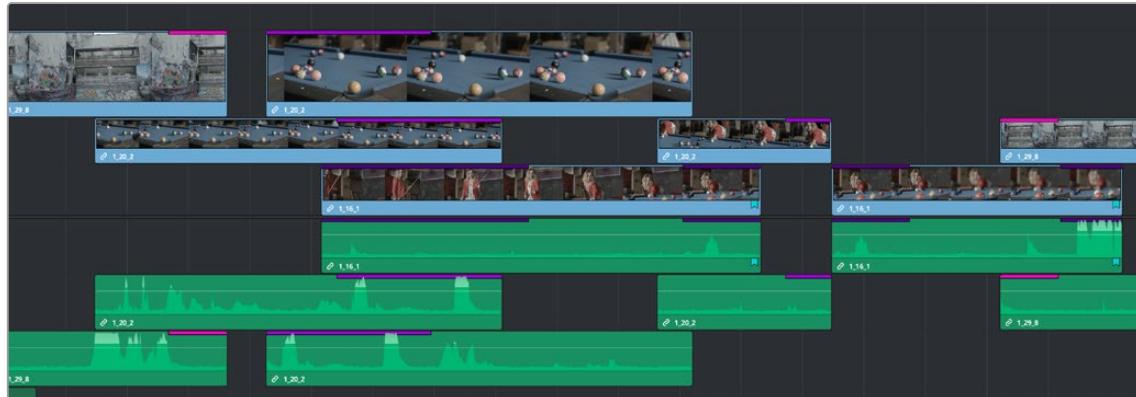
At the right of each Timeline tab bar, a Close Timeline button appears next to the Add Timeline button, which lets you close any timeline and remove that timeline browsing area from the stack.



The button for closing a stacked timeline

Duplicate Frame Detection

You can turn on Duplicate Frame Detection (often referred to as Dupe Detection) for clips in the Timeline by choosing View > Show Duplicate Frames. Doing so shows colored bars at the top of clips in the Timeline whenever a range of frames has been used more than once.



Duplicate Frame Detection shows colored bars where a range of frames is used more than once in a timeline

Comparing Timelines

For instances where you're importing multiple versions of a timeline that's been edited in another application, or where you're working with multiple editors on different versions of the same Timeline in either collaborative mode or on multiple separate DaVinci Resolve installations, DaVinci Resolve provides a method of comparing two timelines with one another. Using the Timeline Comparison window, you can both see a visual comparison of which sections of two timelines differ, and you can derive a more traditional change list by opening up the Difference Index.

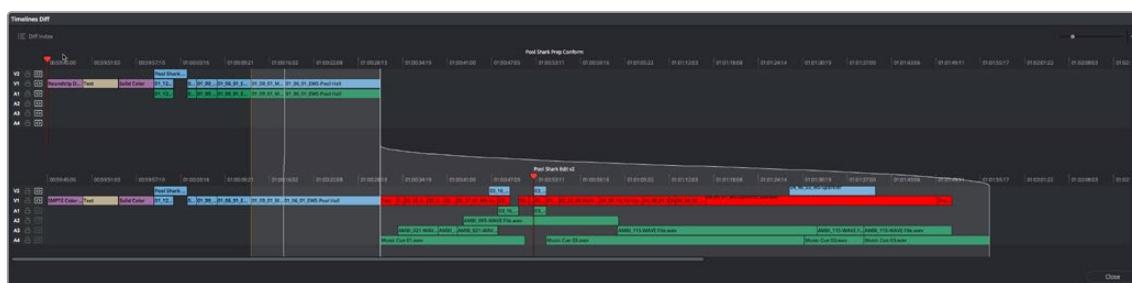
To compare two timelines:

- 1 Open the first timeline you want to compare.
- 2 Right-click a second timeline in the Media Pool, and choose Compare With Current Timeline.

A Timeline Comparison window appears, showing you the currently opened Timeline at the bottom and the Timeline you right-clicked at the top.

The Timeline Comparison Window

When you first open the Timeline Comparison window, the first thing you see is a pair of miniature timelines. The currently open Timeline appears at the bottom and the Timeline you right-clicked appears at the top.



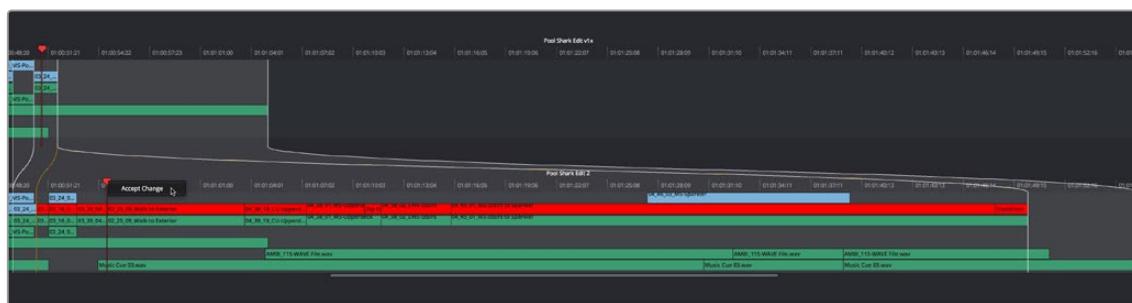
The Timeline Comparison window

Comparison Window Playhead Output

By default, the two playheads are ganged together, with the top playhead being displayed in the Source Viewer, and the bottom playhead being displayed in the Timeline Viewer. These playheads can be unganged if you want to compare different areas of both timelines, simply by turning off Sync Playheads in the option menu.

Highlighting Differences

Special highlights indicate sections of both timelines that are different. Individual changes are not individually highlighted, although they can be seen, on the premise that you're more interested in a section by section analysis of what your collaborating editor has been doing, for purposes of deciding whether to incorporate changes or reversions based on this comparison.



Each section of differences between the two timelines are highlighted

When using this tool, you can change the bottom Timeline to match the top Timeline, on a section by section basis, by right-clicking a highlighted section and choosing Accept Change from the contextual menu. When you do this, the currently open Timeline is immediately changed to incorporate the altered section from the Timeline you're comparing to. If necessary, you can undo this.

Identifying Differences Using Clip Labelling

You can also use the Timeline Comparison window to use clip labeling to indicate all differences between the comparison Timeline and the currently open Timeline. The method for doing this has not yet been defined at the time of this writing.

The Change List

Clicking the Diff Index button opens the change list, which shows you a more conventional item by item comparison of the differences between the two timelines.

Timelines Diff				
#	In	Out	In	Out
1	01:00:49:20	01:00:51:02	01:00:49:20	01:00:49:20
2	01:00:51:02	01:00:52:12	01:00:49:20	01:00:51:06
3	01:00:52:12	01:00:52:12	01:00:51:06	01:01:50:12
4	01:00:52:12	01:01:05:02	01:01:50:12	01:01:57:01

On the right side of the table, there are two columns of dropdown menus for each row. The first column contains V2, V1, A1, A2, A3, A4, and A5. The second column contains V2, V1, A1, A2, A3, A4, and A5. These likely represent the two timelines being compared.

The Change List of the Timeline Comparison window

The method of exporting this change list has not yet been defined at the time of this writing.

Chapter 35

Preparing Clips for Editing and Viewer Playback

Before you start editing, there are a wide variety of things you can do to prepare your clips for editing. In this chapter, you'll learn how to browse, select, and play through clips that you need to log, adding markers, setting In and Out points, and creating subclips as you identify pieces you'll be using later as you edit.

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Keyboard Shortcuts in This Chapter

Here's a list of keyboard shortcuts you might find helpful that relate to topics found in this chapter.

Key Shortcut	Function
Arrow Keys (Media Pool)	Move selection in Media Pool; left and right arrow keys also open and close bins in the Bin list
Shift (modifier)	Hold Shift down when clicking-to-select clips to select a contiguous range
Command (modifier)	Hold Command down when clicking-to-select clips to select non-contiguous clips
Command-A	Select all; selects all clips in the Media Pool browser area
Return or Enter	Opens selected clip or timeline into the Source Viewer (in dual viewer mode) or Viewer
I, O	Set in/out point in Media Pool, Source Viewer, or Timeline
Option-Shift-I, O	Set video-only in/out point in Media Pool, Source Viewer, or Timeline
Command-Shift-I, O	Set audio-only in/out point in Media Pool, Source Viewer, or Timeline

Key Shortcut	Function
Shift-I, O	Move playhead to in/out point
Spacebar	Play and stop
J, K, L	Play reverse, stop, play forward; more uses covered later in this chapter
Option-L	Play again
Option-K	Stop and go to last position (of playhead)
/	Play around current selection
Up, Down Arrow	Go to previous clip/edit, go to next clip/edit
M	Add marker; doesn't stop playback
Command-M	Add marker, open modify marker while pausing playback, then continue playback
Shift-M	Modify marker
Option-M	Delete marker
Shift-Up, Down Arrow	Go to previous/next marker
Option-B	Create subclip (in currently selected Media Pool bin)

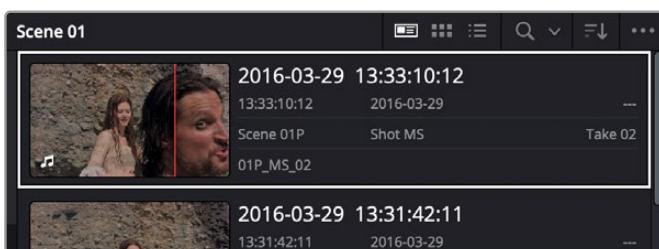
Browsing Clips in the Media Pool

The following procedures show how to select one or more clips in the Media Pool to accomplish various editing tasks, either by opening a clip in the Source Viewer, or selecting a group of clips with which you want to do drag and drop editing. This section starts by presenting different ways you can browse the contents of the Media Pool to find clips you want to use, in preparation for making a selection for your next operation.

Methods of browsing clips in the Media Pool:

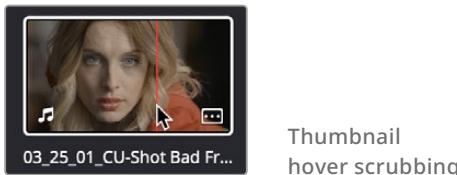
In the Metadata View mode, each clip is represented by its own card with a thumbnail and basic clip metadata information visible. This view is designed to have more metadata information than a thumbnail but more targeted information than the List view. This feature, combined with its Sort modes, is a powerful way to organize and reorganize your clips in the Media Pool.

- **Using thumbnail hover scrub in the Media Pool's Metadata view:** Drag the pointer over a thumbnail to scrub through its contents.

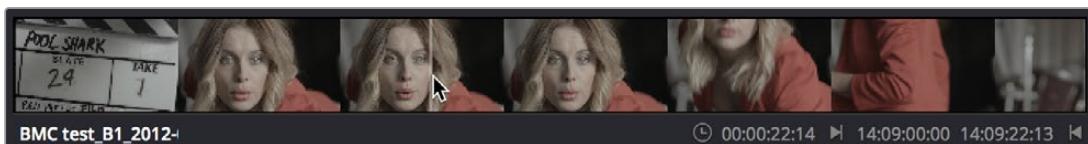


The Metadata View icon view (highlighted icon in the top bar), showing the thumbnail being scrubbed next to the clip's metadata

- **Using thumbnail hover scrub in the Media Pool's Thumbnail view:** Drag the pointer over a thumbnail to scrub through its contents.



- **Using the Media Pool Filmstrip in the Media Pool's List view:** Select "Show Filmstrip" in the Media Pool's option menu. Select a clip to expose it in the Filmstrip at the top of the Media Pool, and hover the pointer over the Filmstrip to watch it play. At any time, you can double-click a clip in the Filmstrip to open it into the Source Viewer.



Using the Filmstrip when the Media Pool is in List view

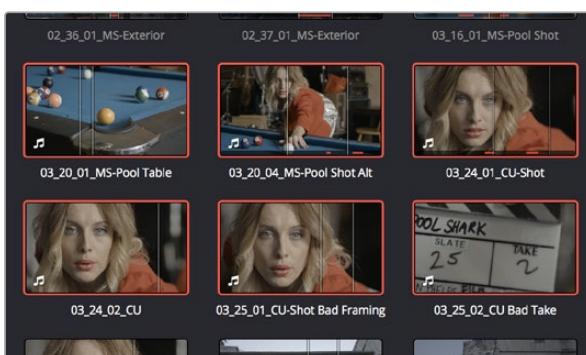
TIP: When browsing media, you can open clips you want to have a closer look at in the Source Viewer by double-clicking them in the Media Pool. Meanwhile, you can continue to open other clips in the Filmstrip with a single clip in order to compare different clips with your main selection that remains in the Viewer.

Selecting Clips in the Media Pool to Edit

Once you've found one or more clips that you want to use in your edit, you'll need to make a selection in preparation for performing an edit.

Methods of selecting clips in the Media Pool using the mouse:

- **To select a single clip:** Click a clip in the Media Pool.
- **To select a contiguous range of clips:** In either Metadata, Thumbnail, or List view, drag a selection box over all the clips you want to select, or click to select the first clip in a series, then Shift-click the last clip to select those clips and everything in between.



Selecting a contiguous range of clips

- **To select a noncontiguous range of clips:** Command-click each clip you want to include in the selection. Or, you can hold the Command key down while you drag bounding boxes over unselected clips to add them to the current selection, or over selected clips to remove them from the selection.



Selecting a noncontiguous range of clips

Methods of selecting clips using the keyboard:

- **To navigate the Bin list:** Either click any bin in the Bin list to the left of the Media Pool, or press Command-1 to make the Bin list the active pane of the Edit page, then use the Up and Down Arrow keys to move up and down among the available bins. Use the Right Arrow key to open a bin that's closed, and use the Left Arrow key to close the bin again.
- **To select a single clip:** Press Command-1 to make the Media Pool Bin list the active area, and use the arrow keys to select and open bins. Then press Command-2 to select the clip browser area and use the Arrow keys to move the selection from clip to clip. Once a clip is selected, you can use any of the edit keyboard shortcuts to edit the selected Media Pool clip straight to the currently open Timeline.
- **To select multiple clips:** Hold the Shift key down while you're using the Arrow keys to move the selection to expand or contract a continuous selection in the Media Pool.
- **To select all clips in the Media Pool:** Make sure the Media Pool has focus by clicking a clip or clicking anywhere in the background of the Media Pool, then press Command-A to select all clips.
- **To open a selected clip or timeline into the Source Viewer:** Press the Return key. Once you've opened a clip into the Source Viewer, you can use the transport controls to play through it.

Duplicating Clips in the Media Pool

If you want to create duplicates of clips in the Media Pool, you can Option-drag one or more clips to another bin. You can also select the clip or clips you want to duplicate and select **Edit > Duplicate Clips**. The duplicated clips will appear in the same bin as the original media. The duplicate clips have their own individual links to the source media on disk.

Viewer Playback and Navigation

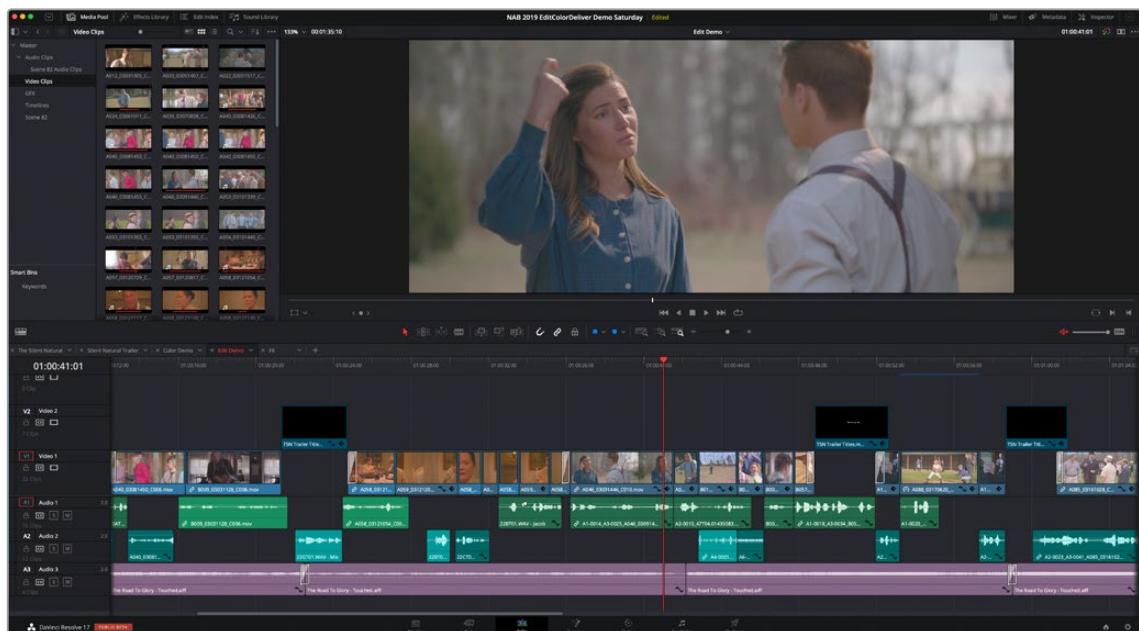
By default, the Edit page presents a traditional source/record style editing experience. The Source Viewer lets you view individual clips from the Media Pool to prepare them for editing. Meanwhile, the Timeline Viewer lets you play through your program, showing you the frame at the position of the playhead in the Timeline.



Source and Timeline Viewers

Source and Timeline Viewers vs. Single Viewer Mode

If you want to change the Edit page layout to hide the Source Viewer, you can choose Workspace > Single Viewer Mode to instead use just a single viewer to contextually display either a selected Source Clip or the current frame of the Timeline.



Single Viewer mode

In Single Viewer mode, whatever you select in the Media Pool or Timeline determines which controls appear in the Viewer, which lets you do nearly everything you can do with two simultaneously open viewers.

Opening Clips Into the Source Viewer to Prepare for Editing

Once you've decided which clips you want to use in your program, you can open them into the Source Viewer to review them more completely. How this works depends on the Source Viewer's Live Media Preview setting.

To skim through a Media Pool metadata or thumbnail and view clips in the Source Viewer using Live Media Preview:

- 1 Turn on Live Media Preview (if necessary) by clicking the Source Viewer option menu and choosing Live Media Preview.
- 2 With the Media Pool open and in Metadata or Thumbnail mode, position the pointer over a clip, and after a few moments when that clip's thumbnail starts to skim, you can see the clip you're scrubbing in the Source Viewer. Do one of the following:
 - a As you skim within the thumbnail, the playhead that appears in the thumbnail is locked to the playhead displayed in the Viewer's jog bar. While skimming, you can add markers and set In and Out points
 - b Leaving the pointer positioned over that clip, use the JKL keyboard shortcuts to play through the clip, adding markers and setting In and Out points as you like
- 3 It takes a moment for skimming to begin, which allows you to quickly move the pointer from that clip back to the Source Viewer without opening any other clip.

Turning off Live Media Preview lets you use more traditional and controlled methods of opening clips into the Source Viewer.

To open a clip into the Source Viewer using the mouse:

- Double-click any clip in the Media Pool, or in the Filmstrip of the Media Pool, to open it into the Source Viewer.

To load the previous or next clip in the bin into the Source Viewer:

- 1 Click inside the Source Viewer to bring it into focus.
- 2 Press the Up Arrow key to navigate to the previous clip in the currently open bin, and load it into the Source Viewer.
- 3 Press the Down Arrow key to navigate to the next clip in the currently open bin, and load it into the Source Viewer.

To open a clip into the Source Viewer using the keyboard:

- 1 If necessary, press Command-1 to select the Bin list, and press the Up and Down arrows to choose a folder to view its contents. Press the Right Arrow key to open folders and show any nested folders within, or the Left Arrow key to close folders and hide their nested contents.
- 2 Press Command-2 to select the Media Pool browser, and use the Arrow keys to change the selection from clip to clip in the Media Pool, up, down, left, and right.
- 3 When the clip you want is highlighted, press Return to open it into the Source Viewer.

To open a timeline into the Source Viewer:

- Drag and drop any timeline into the Source Viewer in preparation for either ganging it to the existing Timeline, or editing it, in whole or in part using In and Out points, into the currently open Timeline.

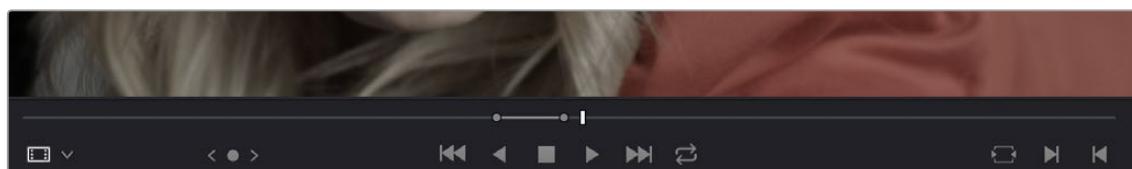
Monitoring with an External Video Display

While working in the Edit page, the image that's displayed on an external video display (if one is connected) is determined either by the current selection in the Media Pool, or by which part of the Edit page interface has focus. For example, if you select a clip in the Media Pool so it's displayed within the Filmstrip, that clip is output to video. If you then open it into the Source Viewer, then the contents of the Source Viewer are output to video. If you switch to the Timeline Viewer, then your timeline is output to video.

Viewer Transport Controls

The Edit page has two Viewers. The left Viewer, when you're editing, should be set to show either source video or source audio, so it shows the source clip in any edit you're setting up. At right is the Timeline Viewer, that shows the frame at the current position of the playhead in the Timeline. Using the Source and Timeline Viewers, you can set up a wide variety of edits.

There are identical transport controls underneath each of the Viewers.



The transport controls at the bottom of the Source Viewer

A jog bar appears directly underneath the transport controls, letting you drag the playhead directly with the pointer. The full width of the Source Viewer's jog bar represents the full duration of a clip, while the full width of the Timeline Viewer's jog bar represents the full duration of the current timeline. The current position of each playhead is shown in the timecode field at the upper right-hand corner of each viewer.

A separate jog control, to the left of the other transport controls, provides a way to jog more slowly through long clips or a long timeline. Click and drag to the left and right to move through a clip or the Timeline a frame at a time.

Transport controls appear above the jog bar. In the Source Viewer, these controls let you Jump to the First Frame, Play Reverse, Stop, Fast Forward, and Jump to the Last Frame. In the Timeline Viewer, these controls move to the Previous Edit, Play Reverse, Stop, Play Forward, and move to the Next Edit. A loop control governs the looping behavior during playback.

Simple Keyboard Shortcuts for Playback and Navigation

There are many different keyboard shortcuts you can use to simply navigate clips and timelines, and control playback.

- **Spacebar:** You can use the Spacebar to start and stop playback.
- **Play Again:** Press Option-L to immediately restart playback from where the playhead began without stopping; for instances where you quickly want to replay the beginning of what you're listening to.
- **Step One Frame Forward/Step One Frame Back:** The Left Arrow and Right Arrow keys move the playhead back and forth one frame at a time, while Shift-Left Arrow and Shift-Right Arrow move the playhead in one-second increments.
- **Step One Second Forward/Step One Second Reverse:** Shift-Left Arrow and Shift-Right Arrow moves the playhead back and forth one second at a time.
- **Next Edit/Previous Edit:** Up Arrow moves the playhead to the previous edit and selects the edit point, while Down Arrow moves the playhead to the next edit and selects the edit point.
- **First Frame/Last Frame of the Current Clip:** The Semicolon key moves the playhead to the first frame of the clip intersecting the playhead, while the Apostrophe key moves the playhead to the last frame of the clip intersecting the playhead.
- **Previous Keyframe/Next Keyframe:** Shift-Semicolon moves the playhead to the next previous keyframe on the left when keyframes are displayed in the Timeline, while Shift-Apostrophe moves the playhead to the next keyframe to the right.
- **Previous Marker/Next Marker:** If there are markers in either the Timeline Ruler or within clips in the Timeline, Shift-Up Arrow and Shift-Down Arrow moves the playhead left and right from one marker to the next.
- **Previous Gap/Next Gap:** If any tracks of the Timeline that have Auto Select control enabled have gaps between clips, Option-Command-Semicolon and Option-Command-Apostrophe moves the playhead left and right from one gap to the next.
- **Timeline Start/Timeline End:** The Home key moves the playhead to the first frame of the Source or Timeline Viewer, while the End key moves the playhead to the last frame of the Source or Timeline Viewer.

Go to
- **In Point/Go to Out Point:** Shift-I moves the playhead to the In point set in either the Viewer or the Timeline. Shift-O moves the playhead to the Out point.

TIP: One of the options in the Editing panel of the User Preferences window, "Always highlight current clip in the media pool," lets you decide whether the current selection in the Timeline is mirrored in the Media Pool.

Using JKL to Control Playback

The JKL keyboard shortcuts are common to many editing applications, and experienced editors know these to be some of the most useful controls for playback and editing there are. Here's a list of the many different ways you can use these three keyboard shortcuts to play through clips and timelines as you work.

J	Plays 100% backward
K	Stops playback
L	Plays 100% forward
Press J repeatedly	Increases backward play speed each time you press J, for a range of fast-reverse speeds
Press L repeatedly	Increases forward play speed each time you press L, for a range of fast-forward speeds
Shift-J	Plays in fast reverse
Shift-L	Plays in fast forward
Shift-K	Play Slow at 1/2, 1/4 or 1/8 speeds
Press and hold K+J	Plays backward at slow motion (with slow motion audio playback)
Press and hold K+L	Plays forward at slow motion (with pitch-corrected audio playback on macOS)
Pressing K while tapping J	Moves the playhead back one frame
Pressing K while tapping L	Moves the playhead forward one frame
Command-J and Command-L	Holding the Command key down while using the J and L keyboard shortcuts lets you dynamically resize or trim selected edit points or clips at 100 percent or faster speed, depending on whether the Selection or Trim tool is enabled. For more information on dynamic trimming, see <i>Chapter 43, "Trimming."</i>

When you're playing back at faster or slower than real-time speed using the JKL commands, a speed indicator appears to the right of the frame per second indicator of the Viewer.



A speed indicator above the Viewer shows that you're playing at 4x speed

Once you learn all the different methods of JKL playback, they will probably become one of the main ways you move the playhead around in DaVinci Resolve.

Special-Purpose Playback Commands

In addition to the standard transport controls, there are some additional playback controls, available via keyboard shortcuts or the Playback menu, that let you perform different playback operations.

- **Loop:** Command-Forward Slash (/). Toggles looped playback off and on. While looped playback is on, playback initiated with any of the following commands will loop automatically until you stop playback.
- **Play around selection:** Forward Slash (/). This command works contextually depending on what's selected in the Timeline. Plays a section of the Timeline from x frames before to y frames after (a) the playhead (if nothing's selected), (b) the currently selected edit point, (c) the currently selected clip, (d) the currently selected transition, (e) a selection of multiple clips. This command is useful for previewing how the current selection plays within the context of the clips immediately surrounding it. The pre-roll and post-roll time is customizable in the Editing panel of the User Preferences.
- **Play around current frame:** Plays a section of the Timeline from x frames before to y frames after the current position of the playhead. This command is useful for previewing how edits play within the context of the clips immediately surrounding them. The pre-roll and post-roll time is customizable in the Editing panel of the User Preferences.
- **Play around current clip:** (no default key assigned). Plays a section of the Timeline from x frames before to y frames after the current clip intersecting the position of the playhead. The pre-roll and post-roll time is customizable in the Editing panel of the User Preferences.
- **Play Around In:** Option-Space. Plays a section of the Timeline from x frames before to y frames after the current assigned In point, letting you preview the transition from one clip to the next. The pre-roll and post-roll time is customizable in the Editing panel of the User Preferences.
- **Play Around Out:** Shift-Space. Plays a section of the Timeline from x frames before to y frames after the current assigned Out point, letting you preview the transition from one clip to the next. The pre-roll and post-roll time is customizable in the Editing panel of the User Preferences.
- **Play In to Out:** Option-Forward Slash (/). If you've marked a section of a clip or timeline with In and Out points, this command lets you preview how it will play.
- **Play to In:** (no default key assigned). Initiates playback and stops at the current In point.
- **Play to Out:** Option-Command-Forward Slash (/). Initiates playback and stops at the current Out point.

Option to “Stop and Go to Last Position”

Playback > Stop and Go to Last Position lets you set DaVinci Resolve to a mode where the playhead returns to where playback began whenever you stop. This option is most useful when editing audio, although it's available any time. When using the JKL keys to navigate the Viewer in this mode, "K" will pause the playhead in place, while the space bar (stop) will go to last position.

This option is also available when you right-click on the Stop button in the transport controls of any viewer. A contextual menu appears where you can turn "Stop and go to last position" on or off as the default behavior.

Enabling and Disabling Audio Scrubbing

Audio scrubbing is enabled by default, meaning that you'll hear audio when dragging the playhead with the mouse back and forth. While this can be useful when you're searching for audio cues, it can also be distracting if you're just focused on the picture.

To enable or disable audio scrubbing:

- Choose Timeline > Audio Scrubbing (Shift-S).

Playback Post-Roll

Enables the playhead to continue playing past the last clip in the Timeline for a duration equal to the "Post-roll time" Project Setting in the Editing panel. This is good for editors that want to experience a few moments of playback after cutting or fading to black after the last frame of audio and video in the Timeline.

To enable or disable Playback Post-Roll:

- Choose Timeline > Playback Post-Roll.

Moving the Playhead Using Timecode

You can use absolute or relative timecode entry to either move the playhead in both the Source and Timeline Viewers, or to move or trim selected edit points or clips. When navigating the Timeline, timecode entry lets you move the playhead very precisely, or jump to specific timecode values really quickly.

TIP: The method of timecode entry described here is used for many different commands that require timecode entry and is designed for fast and efficient editing.

How to Enter Timecode Values

When entering timecode, type each pair of hour, minute, second, and frame values from left to right, with a period representing a pair of zeros for fast entry. The numbers you enter appear in the timecode field at the upper right-hand corner of the Viewer with focus. When you're finished typing, press the Return key to execute the timecode command. The rules for timecode entry are as follows:

- The right-most pair of timecode values (or period) you enter is always the frame number.
- A period to the left or to the right of any number you type is considered to be a pair of zeroes.
- A single period between two numbers is considered to either be a single zero, or ignored if it's between two pairs of numbers.
- Any untyped pairs of values to the left of what you enter are assumed to be whatever those values were prior to the timecode you entered; this makes it easy to type partial timecode values even when the Timeline starts at hour one.
- It's not necessary to enter colons or semicolons.

Absolute Timecode Entry

Absolute timecode is entered simply by typing in a timecode value. So long as no clips or edit points are selected when you press the Return key, the playhead will move to that timecode value. If an edit point or clip is selected, those will be moved or trimmed to the corresponding timecode value, if possible.

Here are some examples of absolute timecode entry using this method:

Original TC Value	User-Typed Value	New TC Value
01:10:10:10	15245218	15:24:52:18
01:10:10:10	2..	01:02:00:00
01:10:10:10	15	01:10:10:15
01:10:10:10	12	01:10:10:12
01:10:10:10	1.2	01:10:01:02
01:10:10:10	1115..	11:15:00:00
01:10:10:10	23...	23:00:00:00

Relative Timecode Entry

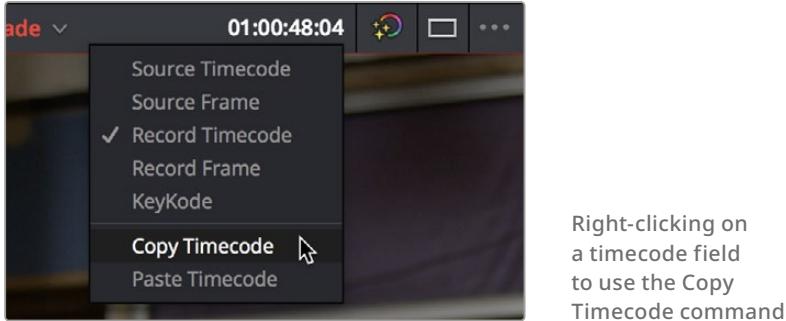
Relative timecode is entered by starting the timecode value with a plus (+) or minus (-). Adding a plus results in the value you type being added to the current timecode value for purposes of offsetting the playhead or moving a selection. Adding a minus will subtract the value you type from the current timecode value.

Here are two examples of relative timecode entry:

User-Typed Value	Result
+20.	00:00:20:00 is added to the current timecode value.
+3..	00:03:00:00 is added to the current timecode value.
-5	00:00:00:05 is subtracted from the current timecode value.

Copy and Paste Timecode in Viewer Timecode Fields

You can right-click on most Viewer timecode fields in the Media, Edit, and Color pages to choose Copy and Paste commands from a contextual menu for copying and pasting timecode values. You can also click in the timecode fields and use the normal Copy (Command-C), and Paste (Command-V) keyboard commands. This works even between pages. The timecode value you're pasting must be valid timecode, for example you can't paste 0 hour timecode onto a 1 hour timeline.



Gang Viewers (Playhead Ganging)

Ordinarily, the playhead movement in the Source and Timeline Viewers is independent. However, if you click the Option menu at the upper right-hand corner of either Viewer and turn Gang Viewers on, the movement of the Source and Timeline Viewer playheads is locked together, so that they move in unison. This is useful when you're marking the In and Out points of a clip in the Source Viewer to match the duration of a clip or other event in the Timeline.

When the Source and Timeline Viewers are ganged, you can still switch focus back and forth between the Source and Timeline Viewers, and your video output device will consistently switch to output whichever Viewer is in focus.

Adding Markers

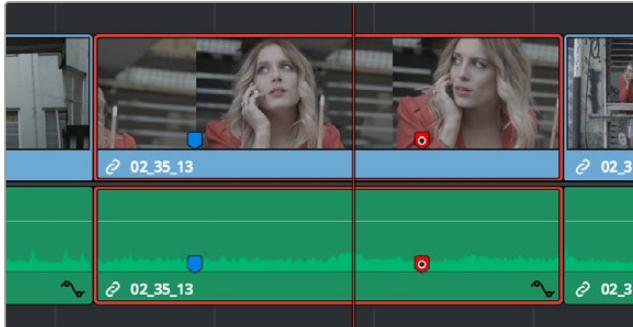
While markers, flags, and clip labels are covered in much more detail elsewhere in the editing section, the use of markers is so important that a summary of how to add and edit markers appears here. Markers are used to call attention to a particular frame within a specific clip. Markers can be individually colored, and can have customized name and note text. Whenever you enter text into a marker, that marker displays a small dot that indicates there's more information inside of it. Once placed, markers snap to In and Out points, edit points, the playhead, and other markers whenever snapping is enabled, making it easy to use markers to "measure" edits and trims that you make in the Timeline.

Adding Markers to Clips

You can place markers on the jog bar of source clips in the Source Viewer (or in the Media Page Viewer) and on clips that are selected within a timeline.



Markers placed on a source clip



Markers placed on a clip in the Timeline

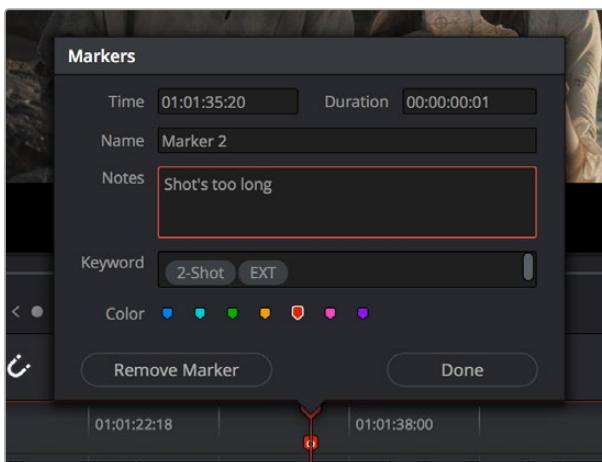
To mark a source clip in the Source Viewer or Media Page Viewer, do one of the following:

- To place a marker without doing anything else, move the playhead to the frame you want to mark, and then press M.
- To place a marker and immediately open the marker dialog to enter a name or note within it during playback, press Command-M. Playback pauses until you enter the text you want to and close the marker dialog again, at which point playback continues.
- Move the playhead to the frame you want to mark, then right-click in the jog bar and choose a marker color from the Add Marker submenu of the contextual menu.

Once you've added some markers, you may want to edit their contents to make them more useful.

To open a marker's edit dialog to alter its properties:

- 1** Do one of the following:
 - Press Command-M to add a marker during playback and immediately open its edit dialog.
 - Double-click any marker you want to edit.
 - Move the playhead to the frame containing the marker you want to annotate using Shift-Up Arrow/Down Arrow and press M.
 - Select a marker anywhere in the Source Viewer or Timeline, and press Shift-M.
- 2** When the marker dialog opens, you can modify several properties.



The properties found in the marker dialog

For much more information about markers, see *Chapter 40, "Marking and Finding Clips in the Timeline."*

Setting In and Out Points

Now that you've used playback commands to review your clips, you can place In and Out points to set the range of each clip that you want to edit into the Timeline. If you don't set In or Out points, then the entire clip will be edited into the Timeline. If you do set In and Out points, those points will be saved in the Media Pool and used the next time you edit that clip.

Setting Clip In and Out Points in the Media Pool

You can set In and Out points right in the Media Pool to prepare for editing.

To set In and Out points while skimming a thumbnail in the Media Pool's Metadata view:

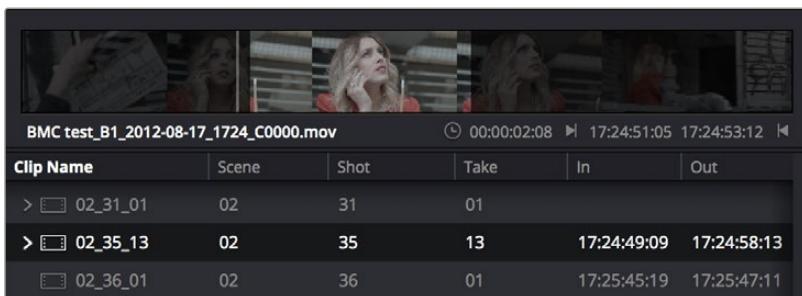
- Set the Media Pool to Metadata view, then move the pointer over the Thumbnail and wait a moment until dragging the pointer begins to skim through that clip. As you skim, press I and O to set In and Out points to encompass the part of that clip you're going to want to use.

To set In and Out points while skimming a thumbnail in the Media Pool's Thumbnail view:

- Set the Media Pool to Thumbnail view, then move the pointer over a clip and wait a moment until dragging the pointer begins to skim through that clip. As you skim, press I and O to set In and Out points to encompass the part of that clip you're going to want to use. When you're finished, that clip's thumbnail will show a range indicator at the bottom to show how much of the clip you've selected.

To set In and Out points using the Media Pool's List view Filmstrip:

- Set the Media Pool to List view, then select a clip to expose it in the Filmstrip at the top of the Media Pool, drag the pointer through the Filmstrip to watch it play, and press I and O to set In and Out points to the appropriate range.



Marking In and Out points in the Filmstrip of the Media Pool in List view

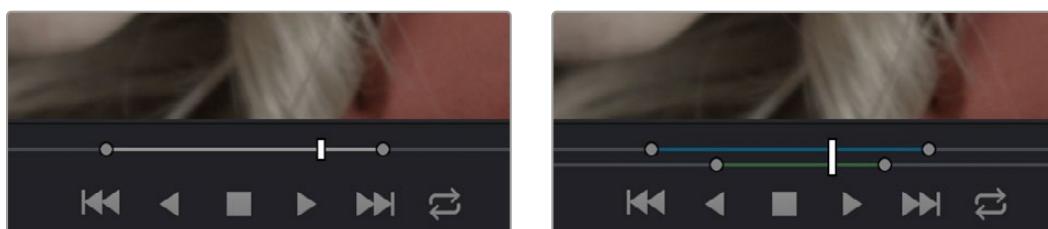
The Filmstrip will dim the heads and tails to let you see the range of media you've marked. Once you've marked In and Out points in the Filmstrip, you can drag them to the left and right to move them.

Setting Clip In and Out Points in the Source Viewer

For a better look at your footage, you can set In and Out points in the Source Viewer in preparation for editing.

To set In and Out points in the Source Viewer:

- 1 Either skim a Media Pool thumbnail with Live Media Preview enabled in the Source Viewer's option menu, or open a clip into the Source Viewer.
- 2 Use JKL, the Spacebar, the transport controls, or drag in the jog bar to move the playhead to where you want to set an In or Out point.
- 3 Do one of the following:
 - **To mark simple In and Out points:** Use the In and Out buttons to the right of the transport controls, or press the I or O keys.
 - **To mark split In and Out points in preparation for making a split edit:** Right-click the Jog Bar and choose Mark Split > Mark Video In (Shift-Option-I) / Mark Audio In (Command-Option-I) / Mark Video Out (Shift-Option-O) / Mark Audio Out (Command-Option-O).



Marking In and Out points in the Source Viewer,
both as simple (Left) and split edits (Right)

Simple In and Out points let you join the audio and video of two clips at a single edit point in the Timeline. However, setting split In or Out points sets you up to create split edits where the video is offset from the audio in a single step.

Clearing and Navigating In and Out Points

Once placed, you can also clear In and Out points you don't want and move the playhead to In and Out points you might want to edit.

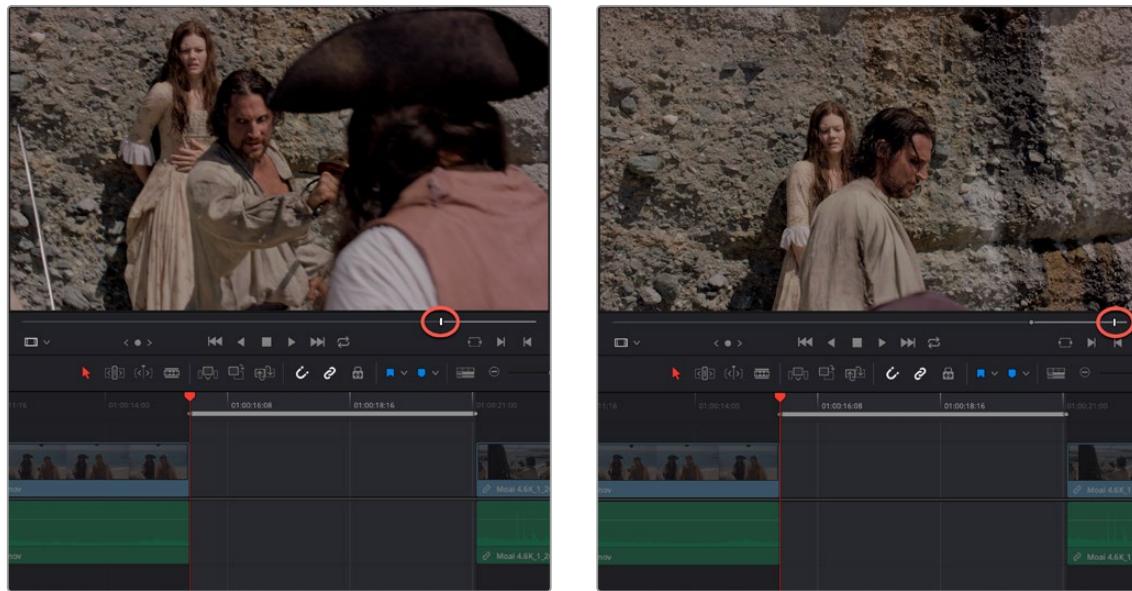
To clear In and Out points:

- **To clear In or Out points:** Move the pointer over a marked thumbnail in the Media Pool or over the Media Pool film strip, or open a clip in the Source Viewer, and then press Option-I to clear the current In point, or Option-O to clear the current Out point.
- **To clear Split In or Split Out points:** Press Shift-Option-X to clear the Video In and Video Out points. Press Command-Option-X to clear Audio In and Audio Out points.
- **To clear both the In and Out points at once:** With the pointer over a marked thumbnail in the Media Pool or over the Media Pool film strip, or with the Source Viewer selected, press Option-X.

To jump the playhead to the current In or Out points in the Source or Timeline Viewer:

- Press Shift-I to move the playhead to the current In point (Playback > Go To > In).
- Press Shift-O to move the playhead to the current Out point (Playback > Go To > Out).

The Go to In and Go to Out commands are capable of placing the playhead at the implicit (but unmarked) In and Out points defined by a three point edit you're setting up, even when Preview Marks have not been enabled. For example, if you mark In and Out points in the Timeline, and you then mark an In point for a clip in the Source Viewer, pressing Shift-O (Go to Out) automatically moves the Source Viewer playhead to the frame that will be the Out point of that clip were you to execute this edit.



(Left) In and Out points set in the Timeline and an In point set in the Source Viewer set up a three point edit, (Right) Using Go to Out to move the Source Viewer playhead to the implicit Out point defined by a three point edit

Clip Edit Points Are Saved

Once set, In and Out points remain in place within each source clip or timeline until you set new ones. If you quit DaVinci Resolve and later reopen the same project, each clip's In and Out points are saved for future reference.

Turning In and Out Points into Markers With Duration and Back Again

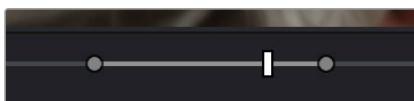
If you want to log the most important sections of clips using In and Out points, you can only log a single section at a time, as In and Out points are used to identify the next section of a clip to be edited in a three point edit. However, two commands in the contextual menu of the Source Viewer jog bar work together to let you turn In and Out points into Markers with Duration, and vice versa:

- **Convert In and Out to Duration Marker:** Turns a pair of In and Out points into a duration marker. By default, no key shortcut is mapped to this command, but you can map one if you like.
- **Convert Duration Marker to In and Out:** Turns a duration marker into a pair of In and Out points, while retaining the marker. By default, no key shortcut is mapped to this command, but you can map one if you like.

Using these two commands, you can easily use markers with duration to mark regions of clips that you want to log for future use, turning each region into an In and Out point when necessary for editing. By default, these commands don't have keyboard shortcuts assigned to them, but you can assign them if you use them frequently.

To turn In and Out points into a duration marker:

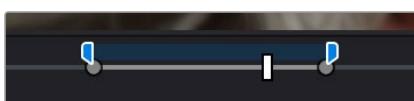
- 1 Set In and Out points in the Source Viewer jog bar to identify a region you want to log for future reference.



Marking In and Out points in preparation to log that section of the clip

- 2 Do one of the following:
 - Right-click the jog bar and choose Convert In and Out to Duration Marker.
 - Choose Mark > Convert In and Out Into Duration Marker.

A duration marker appears above the In and Out points. To edit its name or notes, double-click the marker, press Shift-M, or choose Mark > Modify Marker.



A duration marker is created from the In and Out points

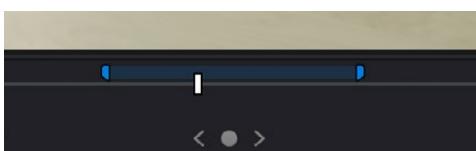
In this way, you can log several regions within a single clip for future use.



A clip with multiple logged sections identified via markers with duration

To turn a duration marker into an In and Out point:

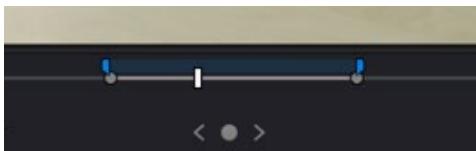
- 1 Find a duration marker you want to convert into In and Out points..



Finding a duration marker to convert into In and Out points

- 2 Do one of the following,
 - Right-click the jog bar and choose Set In and Out from Duration Marker.
 - Position the playhead over the duration marker and choose Mark > Set In and Out from Duration Marker.

In and Out points appear under the duration marker.



In and Out points are created from the duration marker

In this way, you can turn a duration marker that you've logged into In and Out points in preparation for executing a three-point edit.

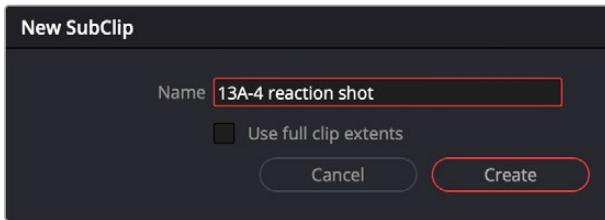
These are extremely useful logging techniques for three reasons. First, markers with duration can be searched for in the Media Pool using the All Fields, Marker Name, and Marker Notes Filter by options. Second, they can be filtered with Smart Bins using the Marker Name and Marker Notes Media Pool Properties options. Lastly, once one or more duration markers have been added to a clip, they can quickly be used to perform three-point edits into the Timeline.

Organizing Media by Creating Subclips

Subclips give you another way of organizing media in the Media Pool, letting you break excessively long clips into shorter ones. For example, if the director of a project is fond of "rolling takes" where multiple takes are all recorded within a single clip, you can break these takes up by making them into subclips.

To create a subclip in the Edit page:

- 1 Do one of the following to open a clip into the Source Viewer in either the Media page or the Edit page, in preparation for creating subclips.
 - Double-click any clip in the Media Pool.
 - Single-click any clip in the Media Library of the Media page to create a subclip without needing to first import that clip into the Media Pool.
- 2 Set In and Out points in the Source Viewer to define the section you want to turn into a subclip.
- 3 Do one of the following:
 - Choose Mark > Create Subclip.
 - Press Option-B.
 - Right-click the jog bar and choose Create Subclip from the contextual menu.
 - Drag a clip from the Source Viewer to the Media Pool.
- 4 A new subclip dialog appears, allowing you to name the subclip and decide to use its full extents by turning on the checkbox.

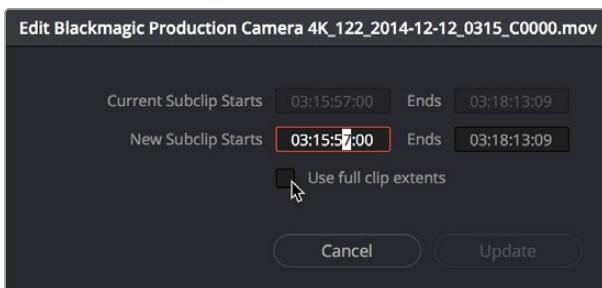


The New SubClip dialog

Once created, subclips appear and work like any other clip in DaVinci Resolve. You can also create subclips in the Media page while performing other organizational tasks there.

Removing or Changing Subclip Limits

Once created, you can right-click any subclip in the Media Pool or a timeline and choose Edit Subclip to open a dialog in which you can turn on a checkbox to use the subclip's full extents, or to change the start or end timecode of the subclip via timecode fields, before clicking Update to modify the subclip.



The Edit Subclip dialog

Audio Transcription and Text Based Editing (Studio Version Only)

The most critical metadata about any clip is knowing what people have said in it. A full transcription of a shot is useful in narrative film letting you find specific clips based on the dialog in the script, but a transcript is especially important in unscripted documentary and news production, both to understand what pieces of the story you actually captured and for a variety of organizational, creative and legal requirements.

Until recently, transcribing audio was a labor-intensive process requiring a human being to listen to a clip in real time and then type out what was being said in a log sheet. With recent advances in the DaVinci Resolve Neural Engine, your computer can now perform the tedious work of transcribing each clip for you automatically, and most importantly, accurately. In addition, having text transcripts attached to the clips in your project gives you powerful new text-based editing tools to select, search and insert clips into your timeline.

Transcribe Audio

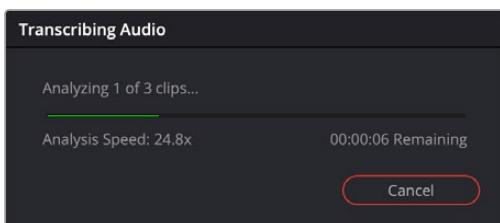
The Transcribe Audio feature is accessed via the Media Pool in the Media, Cut, Edit, and Fairlight pages and is a fully automated process.



The Transcribe
Audio icon in the
Media and Edit pages

To automatically transcribe the audio of a clip:

- 1 Select a clip or clips with audio to transcribe in the Media Pool.
- 2 Right-click on any of the selected clips and select Audio Transcription > Transcribe from the contextual menu. Or click on the Transcribe Audio icon in the Media Pool toolbar.



The Transcribing
Audio Window

At this point the Transcribing Audio window will appear, showing you how many clips are left to analyze, the speed at which the analysis is taking place vs. real time, and approximately how much longer the analysis of the selected clips will take. There is a button to cancel this operation at any time.



The speech balloon
icon showing that
a clip has been
transcribed

Any clip that has a transcription attached to it will have a small speech balloon icon appear in the lower left of its thumbnail in the Media Pool.

To remove a transcription from a clip:

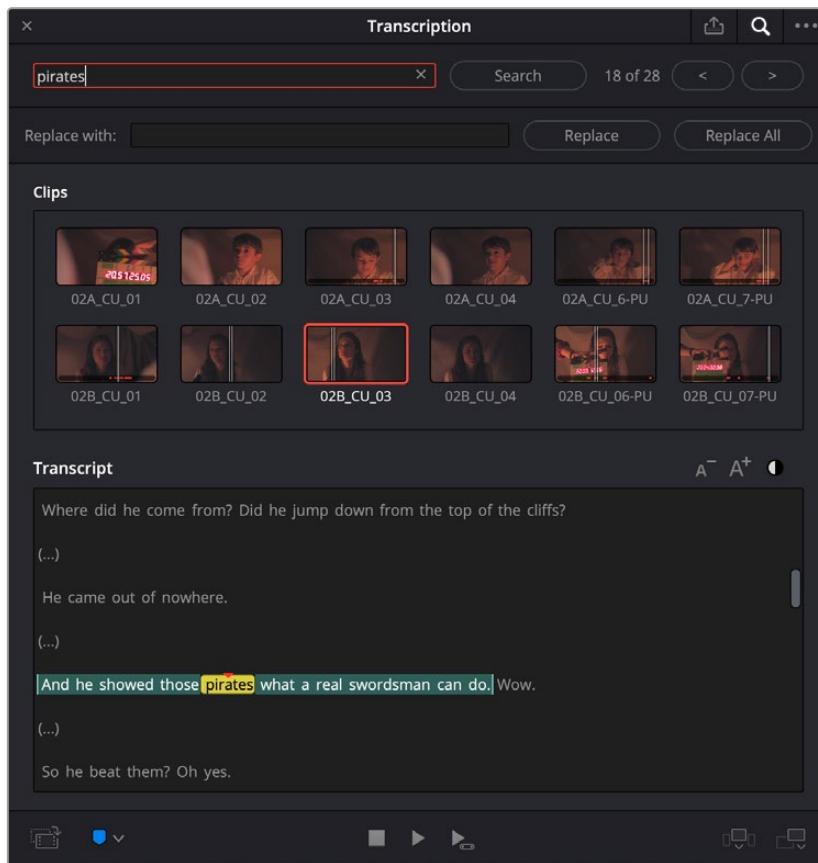
- 1 Select a clip you want to delete the transcription from in the Media Pool.
- 2 Right-click on the selected clips and select Audio Transcription > Clear Transcription from the contextual menu.

Audio Transcription of Timelines

Audio Transcription works not just with clips but for timelines as well and in the same way as described above. There are several practical uses for a text transcription of a timeline for legal and organizational requirements. However, if you're intending to make subtitles or captions for the

Timeline, there is a dedicated tool specifically for that purpose. For more information on the Create Subtitles from Audio feature, see *Chapter 52, "Subtitles and Closed Captioning."*

The Transcription Window



The Transcription Window showing multiple clips with the Search pane open. The searched for text is highlighted in yellow.

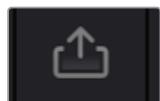
The In and Out range of the clip is highlighted in teal, and the current playhead position in the Viewer is indicated by a red triangle.

The Transcription Window is where the text is displayed, along with its options and editing tools. For ease of use, the Transcription Window is freely movable around the GUI, even to another monitor.

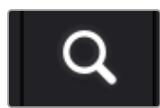
To access the Transcription Window:

- Right-click on a clip or clips that have been transcribed, and select Transcribe Audio from the contextual menu. Or click on the Transcribe Audio icon in the Media Pool toolbar.

The Transcription Window is comprised of the following sections and tools:



Export: Clicking this icon will launch a file browser, where you can save a .txt file of the transcription results for use in other programs.



Search: Clicking this icon will expose a Search and Replace dialog, letting you find specific words or phrases across all the selected clips in the Clips panel. Found words will be highlighted in yellow.



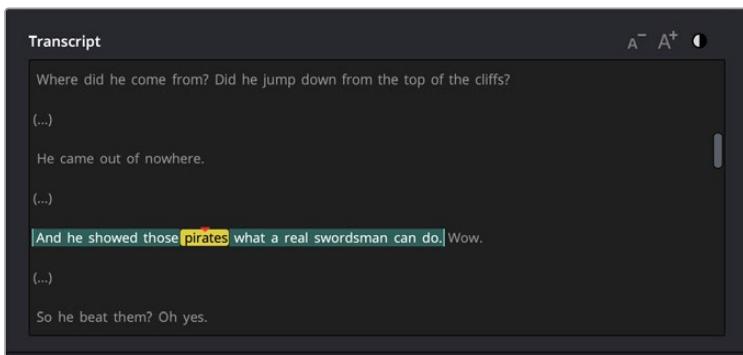
Options Menu: Reveals the Transcription Window options. Currently the only option is Remove Silent Portions.



Clips: This panel shows all the selected clips that you've chosen to see the transcription for.

Clicking on a thumbnail loads that clip's transcription into the Transcript window.

The selected clip is outlined in orange. If you only selected one clip, this panel does not appear.



Transcript: Displays the transcription text. You can also use this box to select the playhead position and set in and out points of a clip, as described in the Text Based Editing section below.



Text View Controls: Allows you to control the font size and the high contrast settings of the text in the Transcript window.



Create Subclip: Creates a new subclip of the shot based on the In and Out points set by the highlight in the Transcript window.



Marker: Places a marker at the word location that is highlighted in red, or if an In/Out range is highlighted, it will place a duration marker for the range instead.



Stop: Stops playback of the clip in the Viewer.



Play: Plays the clip forward in realtime in the Viewer.



Play in to Out: Plays forward only between the set In and Out range.



Insert: Performs an Insert edit of the selected range into the Timeline.



Append: Performs an Append edit of the selected range to the end of the Timeline.

Editing Text in the Transcription Window

Not everything transcribed in the audio of a clip is useful or wanted in the final transcription. Crew chatter, flubbed lines, and long silences can all be edited out, as well as mistakes fixed in the Audio Transcription process itself.

Selecting Text

In order to edit text, you first need to select it in the Transcription Window. There are a few ways of doing so, depending on how much text you wish to select.

To select a specific word in the transcription:

- Double-click on the word to select it and highlight it in teal.

To select a range of text in the transcription:

- Click and drag over the text you want to edit to select it and highlight it in teal.

To select an entire paragraph in the transcription:

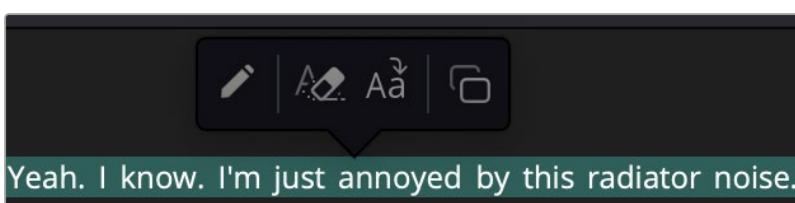
- Triple-click on any word in the paragraph to select the whole paragraph and highlight it in teal.

To select all the text in the transcription:

- Press Command-A to select all of the text and highlight it in teal.

Editing Text

Once any text is selected (highlighted in teal), you can right-click on it to bring up the editing options. Clicking on any of the editing tools executes the action.



The Transcription Window Editing tools (l-r): Edit, Delete, Undelete, and Copy, accessed by right-clicking on any selected text.

- **Edit:** Clicking on this tool brings up a text field, where you can perform simple edits on the selected text. You can use this to correct the transcription in terms of incorrect words, spelling mistakes, and adjusting proper names. Radically altering the text, such as replacing an entire paragraph with a two or three word summary, will have unpredictable effects if used for editing. This action is undoable.

- **Delete:** Clicking this tool does not delete the selected text from the Transcription window as in a word processor, instead it will mark the text in orange with a strike-through. Any text thus marked will not appear in the exported transcript, nor will its range be inserted into the Timeline with any edit operation. This means a cut will appear in the Timeline where the deleted text range is in the transcript. Since the “deleted” words are all still there in the audio clip as they were recorded, it may be easier to think of this as an “exclude” operation rather than a deletion.
- **Undelete:** Clicking on this tool reverses any previous deletion. It changes the orange strike-through text back into normal text, allows it back into the exported transcription, and re-includes its range for editing purposes.
- **Copy:** Copies the selected range for use in other applications. There is no Paste command for the Transcription Window.

Understanding Silence (...) in the Transcription Window

In most shots, a significant portion of the audio clip will have no dialog at all. These silences are marked in the Transcription window as ellipses (...). As important as knowing where the dialog is, it's also useful to know where it isn't. These silences (...) can be treated just like words in the Transcription Window, meaning they can be deleted, and thus excluded from any editing operation.

For example, say you have a long interview with frequent pauses between questions. You could cut this long clip up manually by setting In and Out points and picking out the individual questions and answers. But, by using Audio Transcription and deleting all the silences (...) in the Transcription Window and then editing that range into the Timeline, you would instantly have a series of individual clips laid down comprised of only the questions and the answers. This lets you automatically insert all of the relevant clips at once, without all the tedious scrubbing and setting of edit points for every single section of the clip in the Viewer.



The original Interview clip (Tracks V1, A1 violet) and the same media with all silences removed using the transcription window (tracks V2, A2). Note how it is automatically broken into individual question and answer clips.

Removing silences in the Transcript Window has many useful applications for both exporting a transcript and in text based editing, and so has a dedicated tool for deleting them all.

To delete all the silences (...) in the Transcription Window:

- Click on the Option menu in the upper right of the Transcription Window, and select Remove Silent Portions from the contextual menu.

Audio Transcription Supported Languages

You can choose which language is used to generate the transcription in the Project Settings > Subtitle and Transcription> Transcription Setup section. You can select any of the supported language models, or keep it on Auto for DaVinci Resolve to figure out who is speaking what.

As of this writing Audio Transcription and Text-Based Editing support the following languages:

- Danish, Dutch, English, French, German, Italian, Japanese, Korean, Mandarin (Simplified, Traditional), Norwegian, Portuguese, Russian, Spanish, and Swedish.

Text-Based Video Editing

After a Transcribe command has been applied, DaVinci Resolve now knows the exact timecode position of each word in the clip, and that information opens up several useful text-based editing tools using the Transcription Window. Text-based video editing is available in the both the Cut and Edit pages.

The cursor in the Transcription Window and the playhead in the Viewer are linked. As you move the cursor in the text, the playhead updates to that respective position in the clip in the Viewer. This allows you to precisely place the playhead exactly where you want it based on the text word, rather than having to scrub back and forth through the audio track.

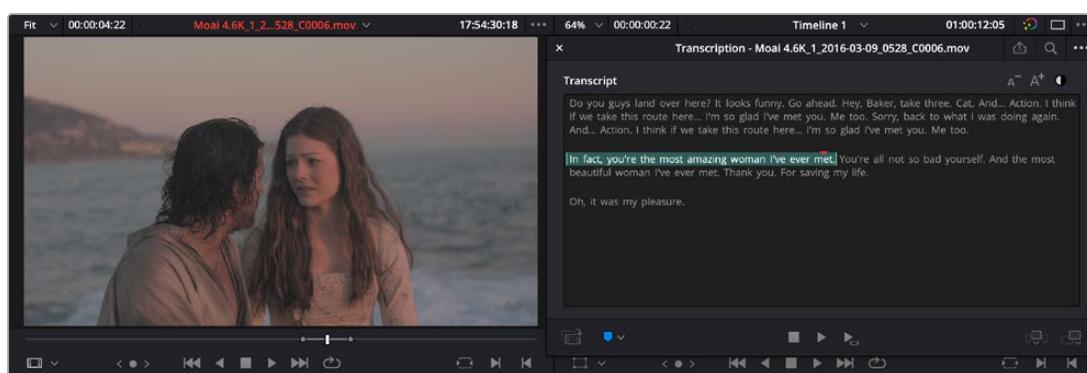
To move the playhead to a specific word in the clip:

- Click on a word in the Transcript Window, and it will highlight with a red arrow. The viewer playhead will then jump directly to the end of that word in the clip in the Viewer.

In addition to the cursor and playhead being linked, the In and Out points of a clip are also linked to the selected range of the text in the Transcription Window.

To select an In and Out range in the clip:

- Click and drag over the text in the Transcription Window to highlight it in teal. The In point of the clip is set just before the first word, and the Out point is set just after the last word in the highlighted text.



Selecting a text range in the Transcription Window (R), automatically sets In and Out points for that range on the clip in the Viewer (L).

With an In and Out range set, you can now use the editing tools in the Transcription Window to perform some common editing and media management functions.



The Create Subclip and Add Marker tools in the Transcription window

To create a new subclip from a selected range:

- 1 Select a range of text in the Transcription window by clicking and dragging to highlight the text in teal.
- 2 Press the Create Subclip icon in the lower left of the Transcription window.
- 3 In the Create Subclip window, enter a new name for the subclip and select the Create button.

To add a marker to a clip:

- 1 Either select a specific word in the Transcription window (red arrow) for a standard marker, or select a range of text by clicking and dragging to highlight the text in teal for a duration marker.
- 2 Click on the Marker icon in the lower left of the Transcription Window.



The Insert and Append edit icons
in the Transcription window

To edit an In and Out range into the current timeline:

- 1 Select a range of text in the Transcription window by clicking and dragging to highlight the text in teal.
- 2 Click the Insert Edit icon in the lower right of the Transcription window to insert the selected range into the Timeline, or click on the Append icon to add the clip to the end of the Timeline.

Chapter 36

Editing Basics

In this chapter, you'll learn many of the fundamental methods and commands you'll use when beginning to assemble clips into the Timeline.

This includes drag and drop operations to begin assembling a timeline, different ways of selecting and deselecting the clips you've edited in preparation for different tasks, maintaining sync between the audio and video components of clips you're editing, and deleting clips and gaps you don't want.

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Keyboard Shortcuts in This Chapter

Here's a list of keyboard shortcuts you might find helpful that relate to topics found in this chapter.

Key Shortcut	Function
V	Select nearest edit to playhead
Shift-V	Select clip intersecting playhead
U	Select incoming, outgoing, or centered part of edit
Option-U	Toggle selection among video+audio, video only, and audio only
Option-Y	Select clips forward (of the playhead) on all tracks
Command-Option-Y	Select clips backward (of the playhead) on all tracks
Y	Select clips forward (of the playhead) on current track
Command-Y	Select clips backward (of the playhead) on current track

Key Shortcut	Function
Up, Down Arrow Keys	Move selection to previous/next edit or clip
Delete	Delete clip and leave gap (lift edit)
Forward Delete	Ripple delete; deletes a clip and moves the rest of the timeline left to fill the gap
Command-Backslash (\)	Insert edit; adds a cut to the clip(s) at the position of the playhead
N	Toggle timeline snapping off and on
Command-Shift-L	Toggle linked selection off and on
Option-1 through 8	Set video destination control to that track number; press again to enable/disable
Command-Option-1 through 8	Set audio destination control to that track number; press again to enable/disable
Option-Shift-1 through 8	Toggle lock for individual video tracks
Option-Shift-9	Toggle lock for all video tracks
Option-Shift-F1 through F8	Toggle lock for individual audio tracks
Option-Shift-F9	Toggle lock for all audio tracks
F9	Insert Edit selected clip(s) from Media Pool or Source Viewer to the Timeline
F10	Overwrite Edit selected clip(s) from Media Pool or Source Viewer to the Timeline
F11	Replace Edit the first of selected clip(s) from Media Pool or Source Viewer to the Timeline
F12	Place On Top Edit from Media Pool or Source Viewer to the Timeline
Shift-F10	Ripple Overwrite from Media Pool or Source Viewer to the Timeline
Shift-F11	Fit to Fill from Media Pool or Source Viewer to the Timeline
Shift-F12	Append To End Edit from Media Pool or Source Viewer to the Timeline
Undo	Command-Z
Redo	Command-Shift-Z

Drag and Drop Editing

If you've already used other editing programs, the procedures in this section will almost certainly be remedial, but if you're new to editing, this section covers the most basic methods of editing a series of clips into the Timeline to get you started. The absolute simplest method of editing is to drag clips from the Media Pool and drop them into the Timeline. You can do this with individual clips, or with selected groups of clips.

Drag and Drop Editing of Individual Clips Into the Timeline

If you're just editing one clip at a time to create an edited sequence in a timeline, this is how that works.

- 1 If you need to edit specific ranges of the clips you're editing, you can set In and Out points in source clips first by doing one of the following:
 - **Setting In and Out points while skimming a thumbnail in the Metadata View:** As you're skimming over a clip's thumbnail in the Viewer, press I and O to set In and Out points to encompass the part of that clip you're going to want to use. If you've turned on Live Media Preview in the Source Viewer, then the Source Viewer will show what you're skimming so you can get a closer look. If you don't like the current In and Out points, you can press Option-X to clear them both.
 - **Setting In and Out points while skimming a thumbnail in the Media Pool:** As you're skimming over a clip's thumbnail in the Viewer, press I and O to set In and Out points to encompass the part of that clip you're going to want to use. If you've turned on Live Media Preview in the Source Viewer, then the Source Viewer will show what you're skimming so you can get a closer look. When you're finished, that clip's thumbnail will show a range indicator at the bottom to show how much of the clip you've selected. If you don't like the current In and Out points, you can press Option-X to clear them both.
 - **Using the Media Pool Filmstrip in the Media Pool's List view:** Set the Media Pool to List view, select Show Filmstrip in the option menu, then select a clip to expose it in the Filmstrip at the top of the Media Pool, drag the pointer through the Filmstrip to watch it play and press I and O to set In and Out points to the appropriate range. The Filmstrip will dim the heads and tails to let you see the range of media you've marked. If you've turned on Live Media Preview in the Source Viewer, then the Source Viewer will show what you're skimming so you can get a closer look. If you don't like the current In and Out points, you can press Option-X to clear them both.
 - **Using the Source Viewer:** Open a clip in the Viewer by double-clicking it in the Media Pool, or by selecting it in the Media Pool and pressing the Return or Enter key. Then use the transport controls, jog bar, control panel buttons, Spacebar, or JKL commands to move the playhead, and place In and Out points using the In and Out buttons to the right of the transport controls, or by pressing the I or O keys. If you don't like the current In and Out points, you can press Option-X to clear them both.

- 2 Drag the clip you want to edit from either the Media Pool or the Source Viewer, and drop it onto the desired position in the Timeline to perform an overwrite edit. If you drag a clip on top of another clip that's already in the Timeline, the clip you're dragging will overwrite the part of the clip that it overlaps.



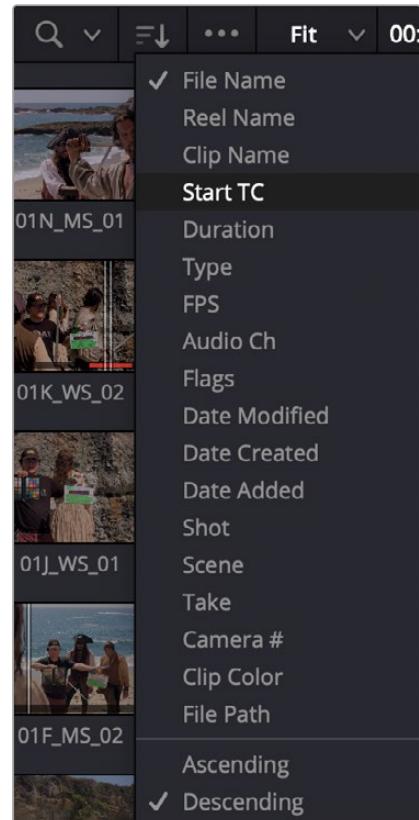
Dragging a clip from the Media Pool to overwrite a clip in the Timeline

TIP: If you drag a clip into the blank area above an existing video track or below an existing audio track, a new track will automatically be created.

Drag and Drop Editing of Several Clips Into the Timeline At Once

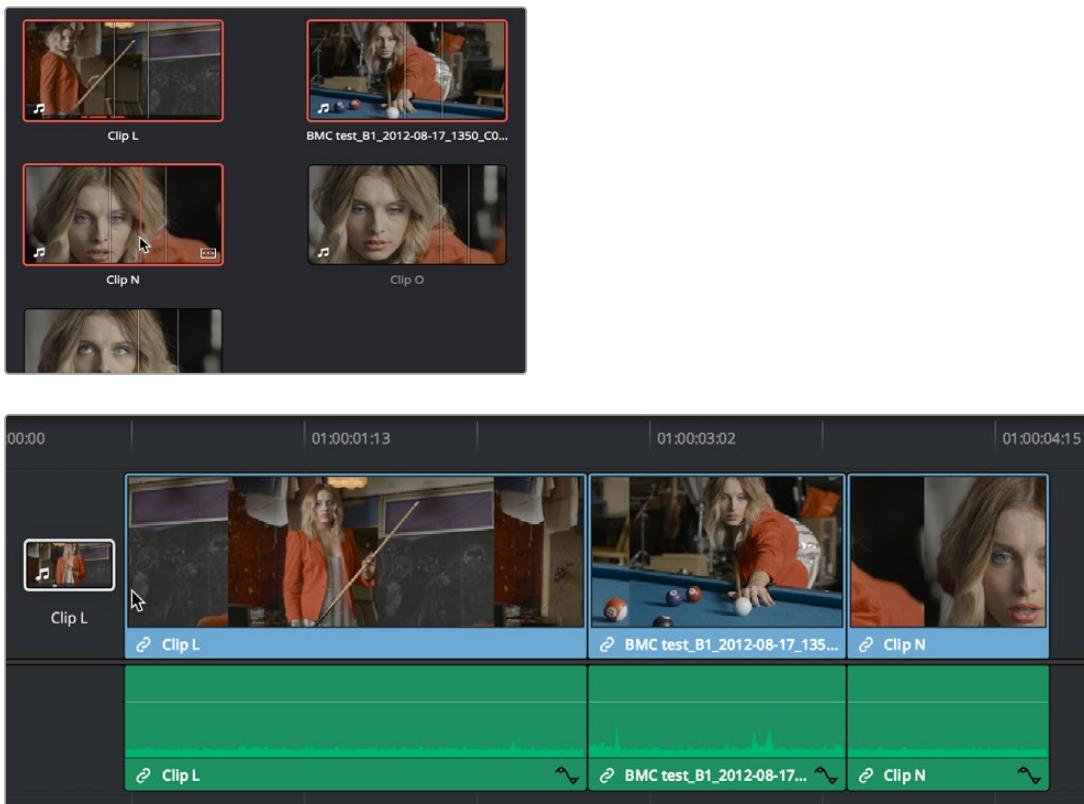
The procedure above also works when you want to edit several clips into the Timeline at once by dragging them from the Media Pool.

- 1 Change the sort order of the Media Pool's browser area to put the clips into the order in which you want them to appear. In Thumbnail view you can use the Sort Order menu, but in List view you can click the header of any metadata column to sort by that column's data. If you've used the Metadata Editor to add Scene, Shot, Take, or other information to identify each clip, you can sort by these metadata criteria.
- 2 Use the Media Pool thumbnails, the Media Pool List view Filmstrip, or the Source Viewer to set In and Out points to define the part of each clip that you want to edit into the Timeline.
- 3 Select the Media Pool clips you want to edit into the Timeline by dragging a bounding box, Command-dragging multiple bounding boxes over different sets of clips, by Shift-clicking a range of clips, or by Command-clicking individual non-contiguous clips.



Using the Sort Order menu to change the sort order of clips in the Media Pool

- 4 Drag any of the selected clips to the desired position in the Timeline to perform an overwrite edit.



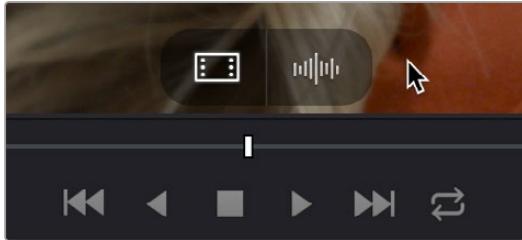
Dragging multiple clips into the Timeline in the sort order of the Media Pool

The clip(s) you drag overwrite whatever other clips they overlap in the Timeline. Multiple clips dragged from the Media Pool will be edited in the order in which they're sorted in the Media Pool, using each clip's In and Out points.

Drag and Drop Editing of Video-Only or Audio-Only Edits

While it's easy to edit just the video or just the audio of a clip by disabling the audio or video destination control in the Timeline prior to doing any sort of edit (described later in Chapter 39, "Three- and Four-Point Editing"), there's also a pair of keyboard modifiers you can use to do the very same thing while you're dragging.

- **To edit only the video of a clip from the Media Pool:** Option-drag clips from the Media Pool/ Filmstrip, Source Viewer, or Finder into the Timeline.
- **To edit only the audio of a clip from the Media Pool:** Shift-drag clips from the Media Pool/ Filmstrip, Source Viewer, or Finder into the Timeline.
- **To edit only the video or audio of a clip from the Source Viewer:** Open a clip into the Source Viewer, then move the pointer over the Source Viewer and drag from either the Video-only or Audio-only overlays that appear over the bottom of the image.



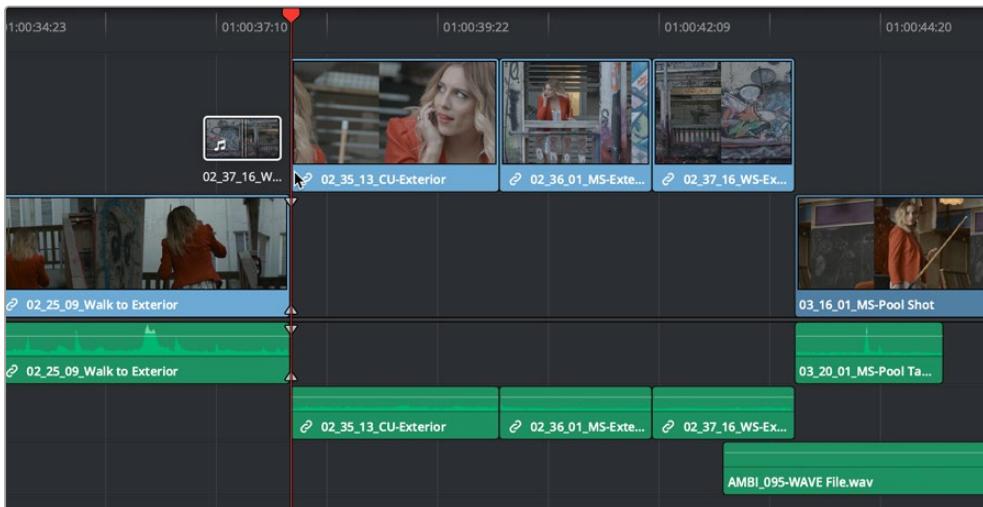
Video and Audio-only overlay controls appear in the Source Viewer that let you drag just the video or just the audio into the Timeline

Drag and Drop Insert Editing

You can also drag multiple clips from the Timeline, or a single clip from the Source Viewer, at any frame of the current timeline to either insert the selection between any two clips or to insert it in the middle of an existing clip, moving (actually rippling) all media to the right of the new edit point you create to make room for the new incoming media.

To shuffle insert multiple clips from the Media Pool or Source Viewer into the Timeline:

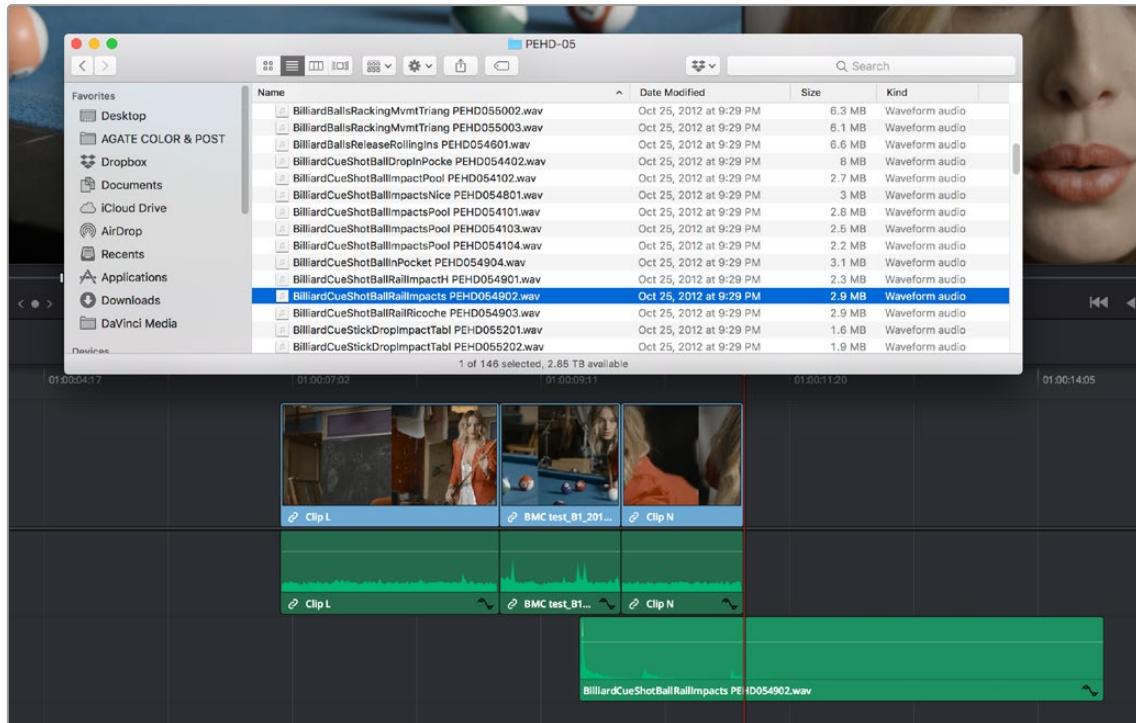
- 1 Select one or more clips in the Media Pool (the sort order dictates the final order of the edited clips), or open a clip in the Source Viewer.
- 2 Press and hold the Command and Shift keys, and drag the selection from the Media Pool or Source Viewer into the Timeline.
- 3 As you drag, the clips you're dragging will be inserted into the Timeline at the pointer location. Release the mouse to finish making the edit.



Making an Insert Edit while dragging clips from the Media Pool

Dragging Clips From the File System Into the Timeline

You can also drag a clip directly from your file system to the Timeline on supported platforms.



Dragging multiple clips into the Timeline from the macOS Finder

Inserting Multiple Clips into the Timeline From the Media Pool

For certain large volume editing projects, you can insert multiple clips from the Media Pool into a timeline all at once. The parameters for the order and positioning of the clips depend on the method used.

Insert Selected Clips to Timeline Using Timecode

Clips can now be edited directly from the Media Pool into a timeline, such that each clip's source timecode is aligned with an identical record timecode value in the Timeline. This can be useful for long form multi-camera events, like weddings or concerts, where all cameras are linked by the same timecode to ensure all edits are perfectly synced. This function matches the Source Overwrite edit on the Cut page.

IMPORTANT: The timecode of the Timeline must overlap the timecode of the clip(s) for this edit to function. This can be set in the Start Timecode field of the New Timeline settings.

To insert selected clips to timeline using timecode:

- 1 Select one or more clips to edit into the Timeline in the Media Pool. If there are In and Out points set on the clip, the edit will respect those boundaries. If no In/Out points are set, each selected clip's full duration will be edited in its entirety.

- 2** Set a destination control to determine which track in the Timeline you want to edit to.
- 3** Right-click one of the selected clips and choose "Insert Selected Clips to Timeline Using Timecode" from the drop-down menu.
- 4** All of the selected clips will be overwritten into the Timeline at their appropriate timecode locations onto the destination track.

IMPORTANT: If multiple selected clips have overlapping timecode, no edit will occur.

Insert Selected Clips to Timeline With Handles

This command inserts multiple clips into the Timeline serially, using the current sort order of the Media Pool, with handles subtracted from the current In and Out points of each clip (using the Default Handles Length in the Editing panel of the User Preferences). Combined with the Add Transition tool (Command-T), this function is useful when quickly creating montages from multiple clips.

To insert clips with handles to the Timeline:

- 1** Select the clips to insert into the Timeline with handles in the Media Pool.
- 2** Right-click any selected clip, then choose "Insert Selected Clips to Timeline With Handles." The clips will be inserted starting at the Timeline In point with the default handles length already calculated.

TIP: To finish creating the montage, select the clips in the Timeline, then choose "Add Transition" (Command-T) from the Timeline menu. This will apply the default transition to all of the clips at once.

Audio Track Creation While Editing

When dragging an audio clip to the undefined gray area of the Timeline below currently existing audio tracks in order to create a new track, the new track is set to a channel mapping that reflects the number of channels of the audio clip you're dragging.

This also means that if you've used Clip Attributes to map a clip's audio to consist of multiple tracks where each track has a different channel mapping, for example, one 5.1 track, one stereo track, and six mono tracks, then editing that clip into the Timeline so that the audio portion creates new tracks will automatically create eight tracks: one that's 5.1, one that's stereo, and six that are mono.

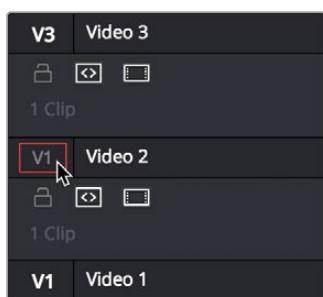
Using Keyboard Shortcuts and Three-Point Editing to Assemble a Program

While drag and drop editing is intuitive enough, there are other methods of editing clips into the Timeline by using the playhead to define where those clips will start that can be more efficient and precise. These examples all use “overwrite” edits, which delete unwanted media from the Timeline as you’re adding clips that you do want. Here are two examples of how to do this.

Example: Assembling Clips Into the Timeline From the Source Viewer

The following example shows how you can use the Edit page to assemble a quick first cut of edits using different features of the Media Pool, Viewers, and Timeline. Written out with every possible option, this may seem like a lot of steps, but once you learn these fundamentals and develop some muscle memory for the keyboard shortcuts in use, these methods become really fast to do.

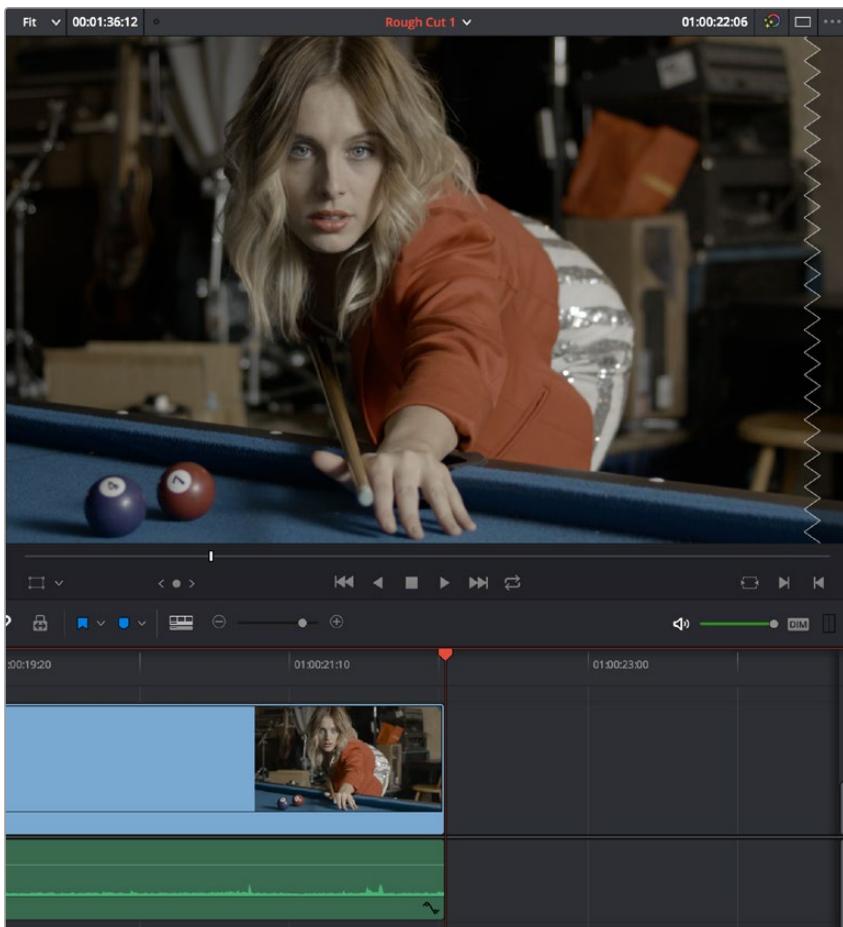
- 1 Press Command-1 to open the Bin list, and use the Arrow keys to select a bin (Up and Down to change the selection, Right and Left to open and close bins). Then press Command-2 to choose the clip browser, and use the Arrow keys to select a specific clip.
- 2 Press the Return or Enter key to open the selected clip into the Source Viewer.
- 3 Drag the playhead with the pointer or use the Spacebar or JKL keys to move the playhead and set In and Out points (I and O) to define the section of that clip you want to edit into your program.
- 4 By default, the destination controls are assigned to tracks V1 and A1. If necessary, choose different video and audio tracks to edit the clip to in the Timeline by doing one of the following:
 - Click the destination controls of the tracks you want to edit to. You can also drag them from where they are now to where you want them to be.
 - Use the Command-Option Up and Down Arrow (for audio) and Command-Shift Up and Down Arrow (for video) shortcuts to move the destination controls up and down.
 - Use the Option-1-8 (for video) and Command-Option-1-8 (for audio) key shortcuts to assign the video and audio destination controls to specific tracks.
- 5 By default, all destination controls are enabled. If you want to edit clips into the Timeline as audio or video only, you can do one of the following:
 - Click any destination control itself to disable the video or audio component.
 - Press Option-1-8 (for video) or Command-Option-1-8 (for audio) for the currently assigned tracks to toggle the destination controls on those tracks on and off.



Setting the destination control to the track you want to edit into.

- 6 In the Timeline Viewer or the Timeline itself, use the pointer, Spacebar, or JKL controls to move the Timeline playhead to the frame you want the beginning of the clip you're about to edit to start. If no In or Out points are set in the Timeline, the playhead position is used as the In point by default.
- 7 To perform an overwrite edit, do one of the following:
 - Drag the clip from the Source Viewer to the Timeline Viewer and drop it on the Overwrite overlay. If you're in single viewer mode, this overlay only appears when you drag a clip from the Media Pool to the Timeline Viewer.
 - Click the Overwrite Clip button in the toolbar.
 - Choose Edit > Overwrite (or press F10).

The selected clip(s) are overwritten to the selected track at the position of the playhead, and the playhead automatically moves to the end of the newly edited clip, ready for you to perform another edit. If that clip is the last one on the Timeline, you'll see the last frame to the left of the playhead (with a jagged overlay at the right-hand side of the Timeline Viewer) instead of the black that is the actual frame after that clip. This makes it easier for you to line up the next edit. Otherwise, the playhead will show whatever frame happens to be at that point in time.



The Timeline playhead at the first frame after the clip you've just edited; the Timeline Viewer shows a jagged overlay at the right to let you know this isn't a real frame

- 8 To edit another clip, open the next clip you want to edit into the Source Viewer, set In and Out points, and use the Overwrite Clip button or command to edit it into the Timeline. Continue this process until you've edited together the assembly of edits you want.

Example: Assembling Clips Into the Timeline From the Media Pool

If you want, you can also edit clips directly into the Timeline from the Media Pool using a variety of commands. This can be a fast way of appending clips to the end of the Timeline (although you can also perform insert edits this way).

To edit one or more clips from the Media Pool to the Timeline:

- 1 Press Command-2 or click with the pointer to choose a clip in the Media Pool.
- 2 Set In and Out points for one or more clips in the Media Pool by doing one of the following:
 - In Metadata view, drag the pointer over a clip's thumbnail and use the I and O keys. If Live Media Preview is enabled in the Source Viewer, dragging over a clip's thumbnail mirrors the content in the Source Viewer.
 - In Thumbnail view, drag the pointer over a clip's thumbnail and use the I and O keys. If Live Media Preview is enabled in the Source Viewer, dragging over a clip's thumbnail mirrors the content in the Source Viewer.
 - In List view, drag over the Media Pool Filmstrip Viewer and use the I and O keys. If Live Media Preview is enabled in the Source Viewer, dragging over the filmstrip mirrors the content in the Source Viewer.
- 3 Change the sort order of the Media Pool's browser area to put the clips into the order in which you want them to appear. In Thumbnail view you can use the Sort Order menu, but in List view you can click the header of any metadata column to sort by that column's data.
- 4 Click, drag, use the Command-Option and Command-Shift Up and Down Arrow Key shortcuts, or use the Option-1-8 and Command-Option-1-8 key shortcuts to assign the video and audio destination controls to the tracks you want to edit the video and audio of the incoming clip(s) to. Click any destination control itself to disable it if you want to edit clips into the Timeline as audio or video only.
- 5 Select one or more clips you want to edit. Insert, overwrite, place on top, ripple overwrite, and append at end edits are all capable of editing multiple clips at once, while replace and fit to fill edits can only edit one clip at a time, and will only edit the first of multiple selected clips into the Timeline.
- 6 To perform the edit, do one of the following:
 - Use any of the editing commands in the Edit menu.
 - Use the equivalent keyboard shortcuts to Insert (F9), Overwrite (F10), Replace (F11), Place On Top (F12), Ripple Overwrite (Shift-F10), Fit to Fill (Shift-F11), or Append To End of Timeline (Shift-F12) the selected clips into the Timeline.
 - Right-click one or more selected clips in the Media Pool, and choose "Insert Selected Clips to Timeline" or "Append Selected Clips to Timeline."

The selected clip(s) are edited into the Timeline.

Making Selections in the Timeline

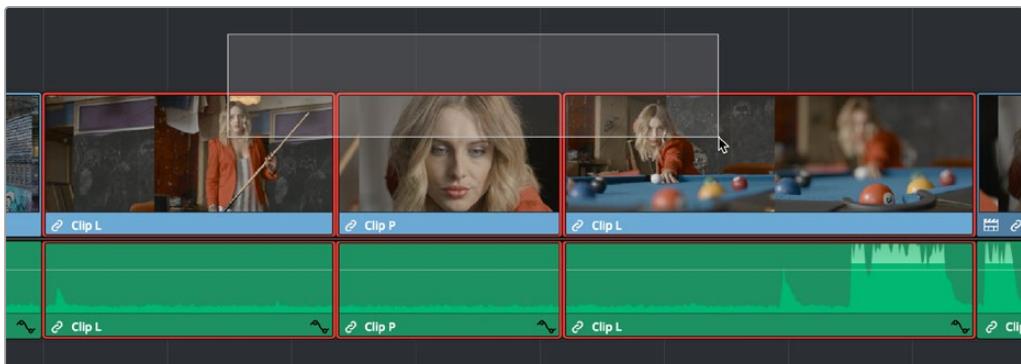
Once you've assembled a sequence of clips in the Timeline, you'll probably need to manipulate them further, moving, deleting, trimming, or otherwise adjusting the clips in the Timeline to make the edit play with the pacing and verve you require.

Manually Selecting Clips in the Timeline

Many operations require you to make a selection first, to define the scope of what you're about to do. There are many ways to do so.

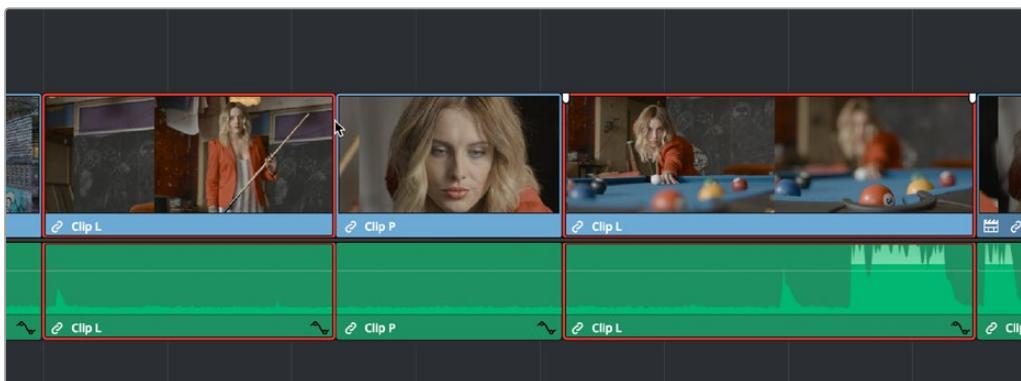
Selections you can make using the mouse:

- **To select one clip:** Click a clip with the mouse.
- **To select all clips under the playhead:** You can 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).
- **To select a continuous range of clips by dragging:** Drag a bounding box from an empty area of the Timeline to surround a group of clips.



Dragging a bounding box to select a continuous range of clips in the Timeline

- **To select a continuous range of clips by Shift-clicking:** Click the first clip you want to select, and then Shift-click the last clip you want to select, and all clips in-between will automatically be selected as well.
- **To select a discontinuous range of clips:** Command-click any clips to select them no matter where they appear on the Timeline. Command-clicking a selected clip deselects it.



Command-clicking to select a discontinuous range of clips in the Timeline

Selecting clips using the keyboard or menu commands:

- **To select one clip:** Using the keyboard, make sure the Auto Select button for the track the clip is on is enabled, then move the playhead over that clip and press Shift-V.
- **To select a clip using keyboard navigation:** Holding down the Command key and pressing the Up, Down, Left, and Right Arrow keys allows you to select clips above and below the current track and to the left and right, independently of the playhead.
- **To select all clips forward of the playhead on the current track:** Move the playhead to the first clip you want to include in the selection, then press the Y key (Timeline > Select Clips Forward > On This Track) to select that clip and every clip to its right in the same track of the Timeline.
- **To select all clips forward of the playhead on all tracks:** Move the playhead to the first clip you want to include in the selection, then press Option-Y (Timeline > Select Clips Forward > On All Tracks) to select that clip and every clip to its right in all tracks of the Timeline.
- **To select all clips backward from the playhead on the current track:** Move the playhead to the last clip you want to include in the selection, then press Command-Y (Timeline > Select Clips Backward > On This Track) to select that clip and every clip to its left in the same track of the Timeline.
- **To select all clips backward from the playhead on all tracks:** Move the playhead to the last clip you want to include in the selection, then choose Command-Option-Y (Timeline > Select Clips Backward > On All Tracks) to select that clip and every clip to its left in all tracks of the Timeline.
- **To select all clips in the Timeline:** Make sure the Timeline has focus, then press Command-A.

To change which clip is selected using the keyboard:

- Select a clip, then use the Up Arrow and Down Arrow keys to change the selection to the previous or next clip among all tracks with Auto Select turned on.

Selecting Clips Based on Markers, Flags, and Clip Color

It's also possible to select multiple clips that have a particular color of marker, flag, or clip coloration. This is useful in any situation where you're using these organizational tools to keep track of clips with specific characteristics that you might need to later select for multi-clip operations.

For example, you might add purple markers to a series of audio clips that might need special EQ settings. Later, you can choose Timeline > Select Clips With Marker Color > Purple to select all of those clips in order to move them to another track, where you can apply the same EQ to all of them using an audio filter applied to the track. There are three ways of selecting groups of clips.

To select groups of clips based on marker, flag, or clip color:

- Choose Timeline > Select Clips With Flag Color > Blue – Cream
- Choose Timeline > Select Clips With Marker Color > Blue – Cream
- Choose Timeline > Select Clips With Clip Color > Orange – Chocolate

Selecting Edits in the Timeline

A variety of editing and trimming methods require you to select an edit point, or part of an edit point, in order to resize, ripple, or roll an edit. You can do so using the mouse or using the keyboard.

Methods for selecting edit points using the mouse:

- **To select an edit to roll:** Move the mouse to the center of an edit point, and when the ripple cursor appears, click to select the edit.



Selecting an edit point to roll

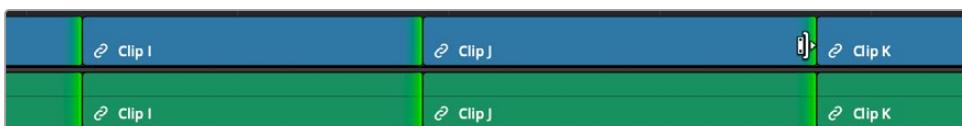
- **To select just the incoming or outgoing half of an edit point to resize or ripple:** Move the mouse to the left or right of the center of an edit, and when the resize/ripple cursor appears, click to select that portion of the edit.



Selecting incoming or outgoing halves of an edit point to resize or ripple

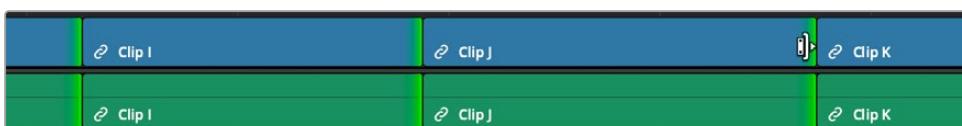
To select multiple edit points, do one of the following:

- **To select multiple roll points:** Command-click the center of multiple edit points. Command-click a selected edit point to deselect it.



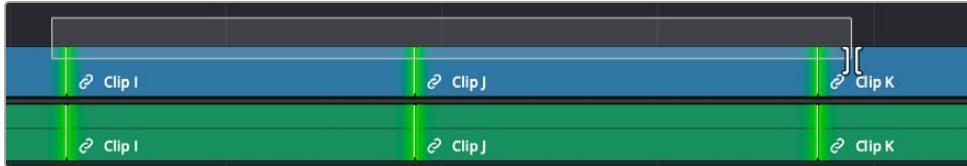
Command-clicking the center of several edits to prepare to roll them all

- **To select multiple ripple points:** Command-click the left or right sides of multiple edit points.



Command-clicking the left or right of several edits to ripple them all

- **To drag to select many edit points:** Select the Trim tool (T), and drag a bounding-box over the edit points you want to select. You can press U to switch all selected edit points among rippling incoming edits, rippling outgoing edits, and rolling edits.



Using the Trim tool, you can drag a bounding box to select multiple edits

There is also a flexible set of keyboard shortcuts that makes it easy to select edit points in preparation for various operations if you like to avoid using the mouse.

Keyboard shortcuts for selecting edits:

- **V:** Selects the nearest edit point to the playhead on the lowest track with Auto Select enabled. Selects both the audio and video edit points of a clip together.
- **Option-E:** Selects the nearest video edit point to the playhead on the lowest track with Auto Select enabled. Linked audio edit points are not selected.
- **Shift-E:** Selects the nearest audio edit point to the playhead on the lowest track with Auto Select enabled. Linked video edit points are not selected.
- **U:** Once you've selected an edit point, this shortcut toggles among selecting the outgoing half, incoming half, or the entire edit.
- **Option-U:** Once you've selected an edit point, this shortcut toggles among selecting the video+audio of the edit, just the video, or just the audio.

To move the selection to another edit:

- Select a single edit point, then use the Up Arrow key (Previous Edit) or Down Arrow key (Next Edit) to change the selection to the previous or next edit point among all tracks with Auto Select turned on.

To deselect all edit points:

- **Using the mouse:** Click any empty area of the Timeline.
- **Using the keyboard:** Press Shift-Command-A.

A Practical Example of Keyboard-Driven Selections

Here's an example of how you would use these keyboard shortcuts together as a sequence of operations.

To select an edit point using the keyboard:

- 1 Press Command-4 to give focus to the Timeline.
- 2 Move the Timeline playhead close to the edit point you want to select using the JKL keys.
- 3 Press the V key to select the nearest edit point to the playhead on the lowest track with Auto Select enabled. If there are overlapping superimposed clips on multiple tracks, turn off the Auto Select controls of tracks with edits you don't want to select using Option-F1 through Option-F8 corresponding to the Auto Select controls on tracks 1–8. Using the mouse, you can solo a track's Auto Select state by Option-clicking its Auto Select button. (Option-F9 toggles the Auto Select controls of all video tracks.)

- 4 Initially, the entire edit is selected, in preparation for a roll edit. To toggle among selecting the outgoing half, incoming half, and the entire edit, press the U key.
- 5 To toggle among selecting the video+audio of the edit, just the video, or just the audio, press Option-U.
- 6 Perform whatever operation you need to. When you're finished, using Up-Arrow or Down-Arrow to move the selection backward or forward in the Timeline, or press Command-Shift-A to deselect it.

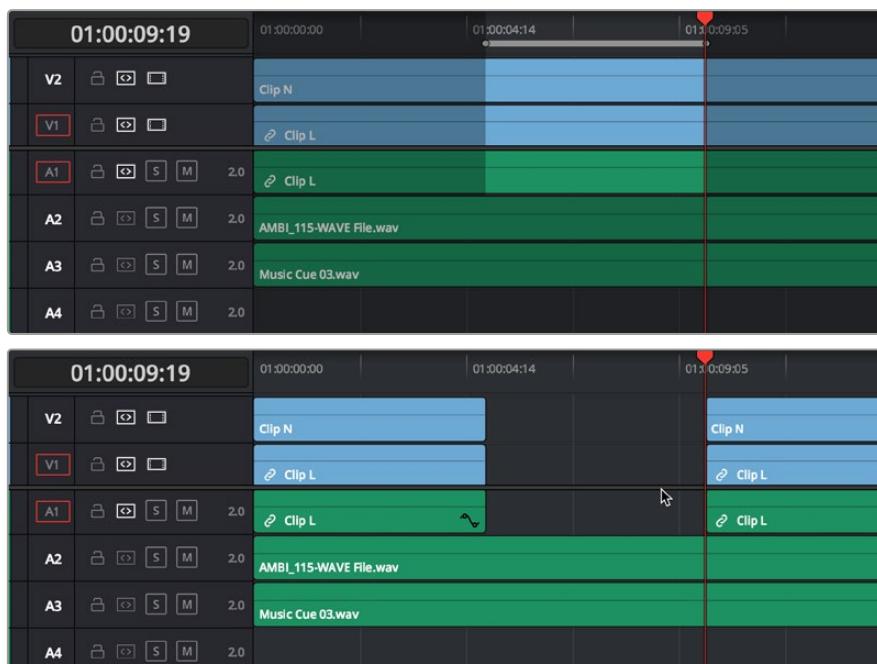
Using Auto Select Controls to Define Selections

The Timeline Auto Select controls are extremely useful and versatile controls that serve many purposes. In short, they give you a way to specify which tracks will be affected or considered when you're performing an operation upon multiple superimposed clips on multiple tracks of the Timeline.

Also, the Timeline Auto Select controls are particularly convenient when you're using keyboard shortcuts to edit and you don't want to have to grab your mouse to explicitly select a single clip, since you can turn Auto Select on or off via keyboard shortcuts.

Defining Selections With the Help of Auto Select Controls

Here is the easiest example of when the Auto Select controls are indispensable. In the following example, there are two superimposed video clips and three superimposed audio clips. Supposing you only want to delete the media from tracks V2, V1, and A1, but you want to leave the media on A2 and A3 alone, you can turn off the Auto Select controls for tracks A2 and A3, and set Timeline In and Out points to define the range of the clips you want to delete. When you press the Delete key, only the media on the Auto Select-enabled tracks is deleted.



Before and After deleting a clip with Auto Select on Tracks A2, A3, and A4 turned off

TIP: If you set In and Out points to perform an operation and you don't see any shading in the Timeline to indicate which parts of the Timeline will be affected and which won't, chances are you have another selected clip in the Timeline somewhere you can't see that's overriding auto select. Press Command-Shift-A to de-select all and things should go back to normal.

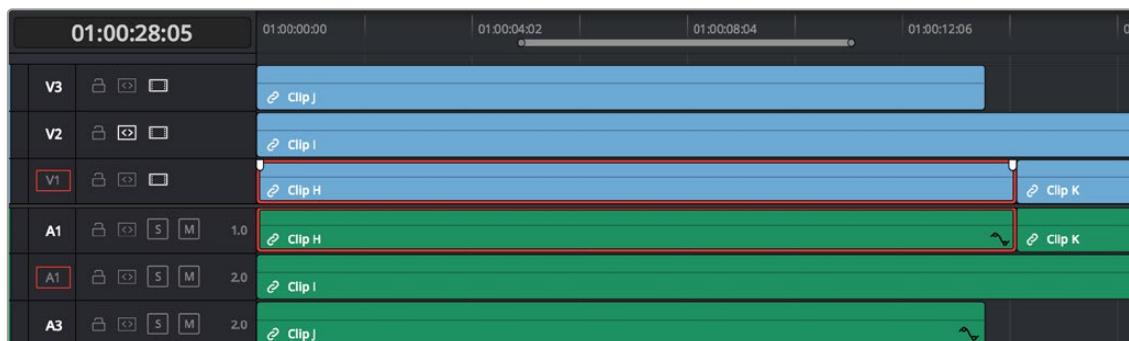
Overriding Automatic Selections by Making Manual Selections

It's important to note that manual selections that you make which highlight specific clips in the Timeline always override whatever the Auto Select control of a track is set to. In the following example, three clips are superimposed and the Auto Select control of every track except V2 has been turned off. Setting Timeline In and Out points now automatically defines that region of the clip on track V2 to be deleted were you to press the Delete key. You can see the affected part of the Timeline because it's highlighted while the rest of the Timeline is dimmed.



Soloing the Auto Select control on track V2 to limit a Delete operation

However, if you clicked the clip on track V1 to select it manually, the automatic selection defined by the In and Out points disappears in favor of the highlighted clip you just clicked. This is because manual selections almost always take precedence over automatic selections you define using the In and Out points and Auto Select controls.



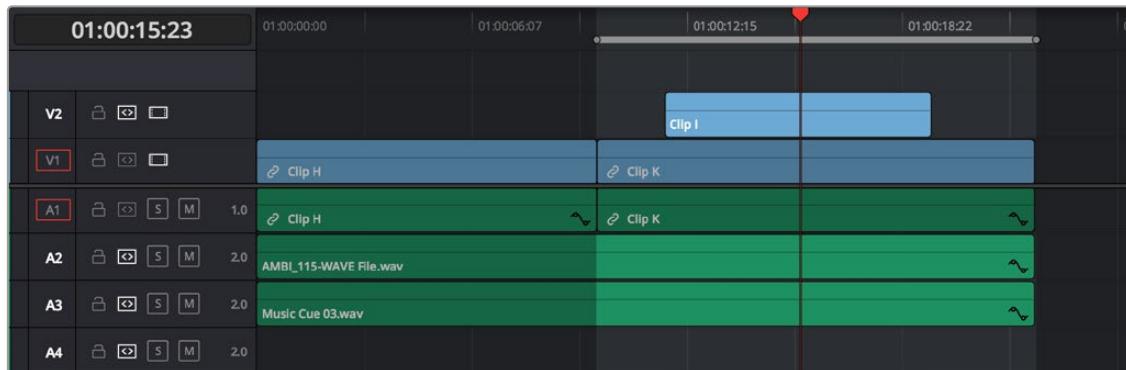
Making a manual selection overrides the Auto Select controls

This is good to keep in mind for situations where the fastest way to do the operation you need to do is to simply manually select the clip you want to define the operation.

Using Auto Select Controls to Control Other Operations

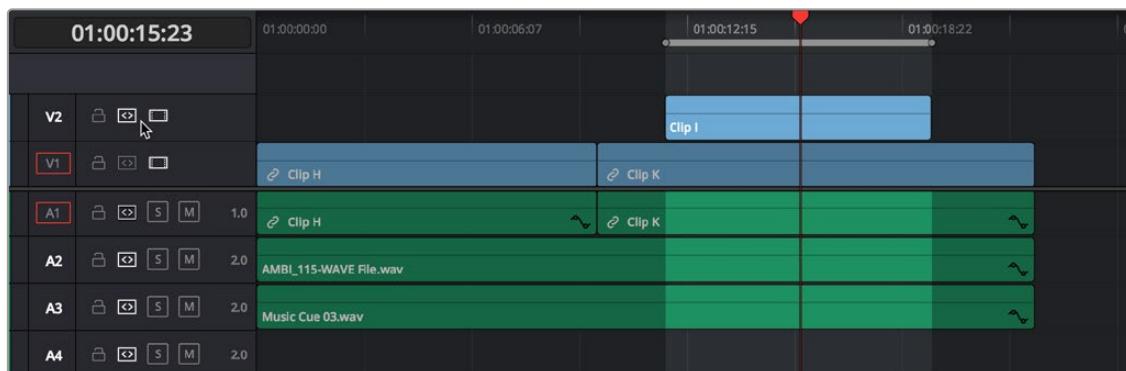
Other operations that are affected by the Auto Select controls include any command that uses “the clip on the lowest-numbered track with Auto Select enabled” to define what happens. This includes Copy and Paste, Mark Clip, Go To Next Edit/Previous Edit, the Selection Follows Playhead mode, Next Gap/Previous Gap, and so on (a full list of affected operations appears later).

A common example of when this is important is whenever you use the Mark Clip command to automatically set In and Out points to match the duration of a clip on the Timeline. If that clip happens to be at a section of the Timeline where there are multiple superimposed clips, each of which has a different duration, then by default the In and Out points (first and last frames) of the clip on the lowest numbered track is used to set Timeline In and Out points when you use Mark Clip.



Using Mark Clip with all Auto Select controls enabled, the clip on the lowest-numbered video track with Auto Select enabled defines the result

However, if you disable the Auto Select control of track V1, then whichever clip is on the lowest video track with Auto Select still enabled is used as the target clip for the Mark Clip operation. In this example, the shorter clip on track V2 now sets the locations of the In and Out points.



Using Mark Clip with Auto Select controls enabled

Methods of enabling and disabling the Auto Select controls:

- **To toggle Auto Select for any track:** Click any track’s Auto Select control.
- **To toggle Auto Select for video tracks:** Press Option-F1 through F8 to toggle Auto Select on the corresponding tracks.

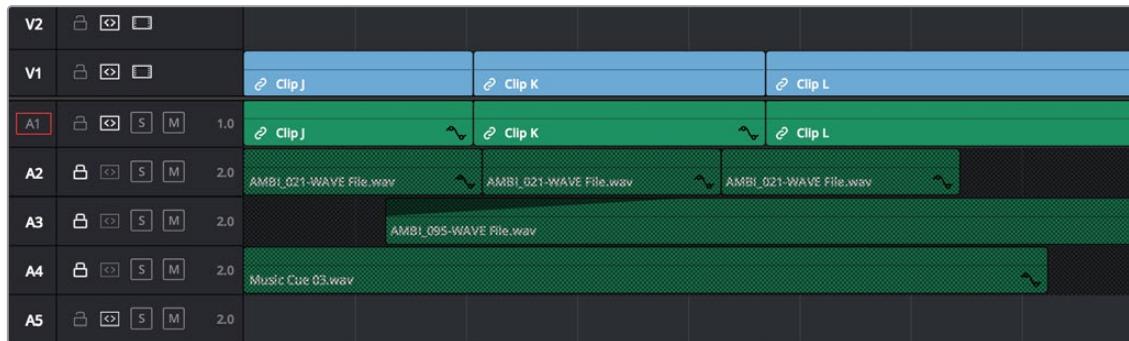
- **To toggle Auto Select for audio tracks:** Press Option-Command-F1 through F8 to toggle Auto Select on the corresponding tracks.
- **To toggle all video track Auto Select tracks off and on:** Press Option-F9.
- **To toggle all audio track Auto Select tracks off and on:** Press Option-Command-F9.
- **To “solo” Auto Select for a track and disable Auto Select on all other tracks:** Option-click any Auto Select control to leave that control on while turning off all other Auto Select controls of that type (video or audio).
- **To turn all audio or video Auto Select controls on and off:** Shift-click any video or audio Auto Select control to toggle on or off all Auto Select controls of that type (video or audio).

The following operations are affected by the state of each track’s Auto Select control:

- **Cutting, ripple cutting, copying, or deleting clips:** When using Timeline In and Out points to delete a range of media from the Timeline, only media on tracks with an enabled Auto Select control will be cut, copied, or deleted.
- **Deleting gaps:** When selecting and deleting gaps in the Timeline, clips on other tracks that overlap the selected gap will also be deleted on tracks with an enabled Auto Select control. Media to the right of affected tracks will ripple left to close the gap.
- **Selecting edit points using the keyboard:** When you press V to select the nearest edit point, the edit point on the lowest track with Auto Select enabled is selected. When pressing the Up Arrow and Down Arrow keys to move the selection from edit point to edit point, edit points on tracks with a disabled Auto Select control are ignored.
- **Selecting clips using the keyboard:** When a clip is selected, you can press the Up Arrow and Down Arrow keys to move the selection from clip to edit clip, but clips on tracks with a disabled Auto Select control are not seen by this operation.
- **Using Mark Clip:** When using the Mark Clip command, clips on tracks with disabled Auto Select controls are ignored. This lets you choose a target clip to use for marking the clip when there are multiple overlapping superimposed clips.
- **Match Frame:** When making a Match Frame operation, clips on tracks with disabled Auto Select controls are ignored. This lets you choose a target clip to use for matching a frame when there are multiple overlapping superimposed clips.
- **Rippling the Timeline during a trim operation:** Tracks with Auto Select turned off will not be rippled. For more information on the rules of ripple trimming, see *Chapter 43, “Trimming.”*
- **Pasting clips:** All copied clips will be pasted to the lowest numbered track with Source Control enabled. If all tracks of a particular type have their Auto Select controls turned off, then no clips of that type will be pasted at all.
- **Paste Insert:** Tracks with Auto Select turned off will not be rippled or affected by clips being pasted via a Paste Insert command.
- **Using the insert or ripple overwrite edits:** Only clips on tracks with Auto Select turned on will be rippled during an insert edit or ripple overwrite edit.
- **Finding gaps:** When using Playback > Previous Gap (Command-Option-Semicolon) or Next Gap (Command-Option-Apostrophe), gaps on tracks with Auto Select disabled will be ignored.
- **Using Selection Follows Playhead:** When you turn on “Selection Follows Playhead” so that the clip intersecting the position of the playhead is automatically selected. If multiple clips are intersecting the playhead, the clip on the highest track will be selected. Clips on tracks with Auto Select disabled will not be selected.

Locking Tracks You Don't Want to Change

Another step you can take to prepare before performing any kind of editorial operation is to lock tracks with media that you don't want to be affected by whatever it is you're about to do. For example, if you have a complex set of music edits on track A3 that you don't want to be affected by operations that will ripple the Timeline, you can lock track A3 so those clips remain unaffected.



Tracks V2, V1, and A1 are unlocked, while tracks A2, A3, and A4 are locked

Clips on locked tracks cannot be moved, deleted, cut, or otherwise affected by editorial operations. Furthermore, parameters of locked clips cannot be edited in the Inspector. However, clips on locked tracks can be graded and otherwise modified in the Color page.

To toggle the lock or unlock state of tracks, do one of the following:

- Click any track's lock control to toggle lock on and off.
- Shift-click any track's lock control to toggle locking on and off for all tracks.
- Press Option-Shift-1 through 8 to lock or unlock tracks V1 through V8.
- Press Option-Shift-9 to lock or unlock all video tracks.
- Press Option-Shift-F1 through F8 to lock or unlock tracks A1 through A8.
- Press Option-Shift-F9 to lock or unlock all audio tracks.

Position Lock for Finishing

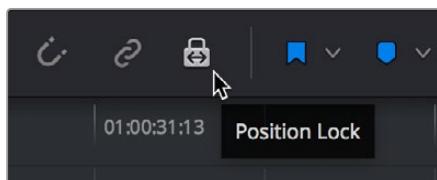
In a nutshell, turning position lock on prevents clips from being moved to the left or right, and it prevents all ripple operations. This is primarily useful when you're near the end of post on a project for which the cut has been locked (or at least as "locked" as directors and producers allow any more), but you still need to make surgical changes that don't risk throwing the video out of sync with audio that may be being edited and mixed elsewhere because of an accidentally rippled edit.

With position lock on, you can still make edits (such as Replace), slip clips, roll edits, add Resolve FX and other Open FX, and alter all manner of effects in the Inspector. You just can't do anything that alters the position of clips in the Timeline, or ripples entire sections of the Timeline.

There are two ways you can enable Position Lock.

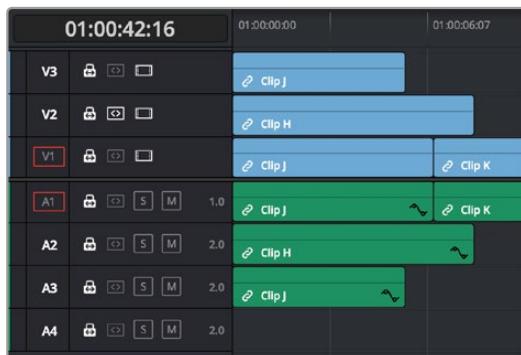
Position Locking All Tracks

You can turn Position Lock on and off for all tracks via a button in the toolbar above the Timeline.



The Position Lock button on the toolbar

When you turn position lock on, the Lock button of all tracks changes to show that position lock is enabled instead.

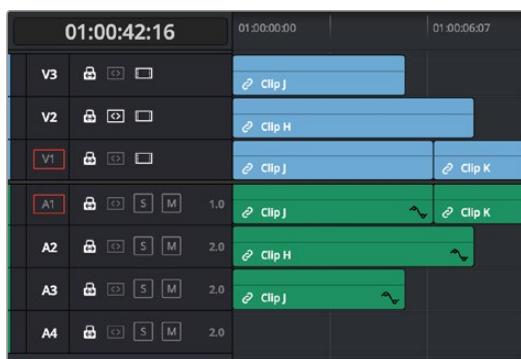


Position lock indicated by each track's Lock icon changing

Position Locking Individual Tracks

You can also be extra tricky and enable position lock on a track-by-track basis by Command-clicking any track's Lock button.

Position lock can be released by simply clicking that track's Lock icon.

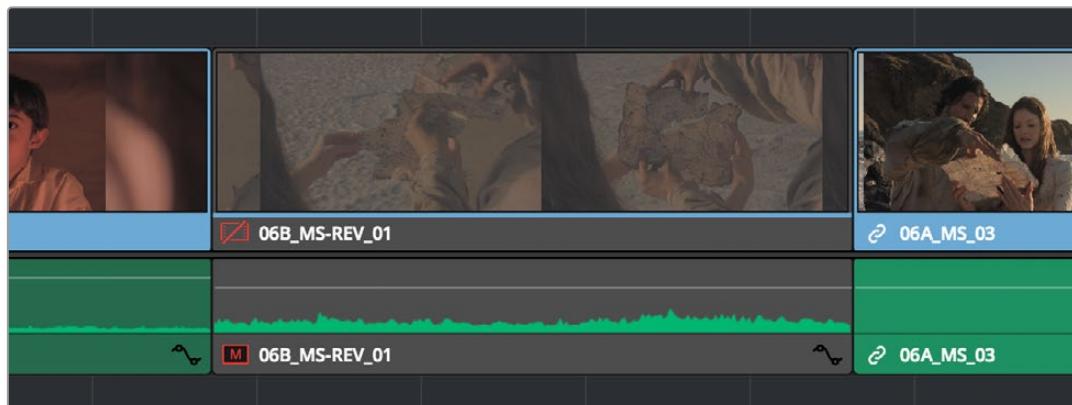


Command-click any track's Lock button to put that track into Position Lock mode

Disabling and Re-Enabling Clips in the Timeline

Sometimes there's one or more video or audio clips in the Timeline that you don't want to play along with the rest of the edited sequence, but you don't want to remove from the Timeline either, in case you change your mind later. For this reason, it's possible to Disable clips, effectively turning them off without removing them.

Disabled clips appear dimmed in the Timeline. They don't play back, they're not rendered, and they're not output to video. However, their position is preserved in the Timeline, so you can always re-enable them at a later time if you change your mind and decide you want to use them.



A clip that's been disabled between two enabled clips; the disabled clip is dimmed

To disable or re-enable one or more selected clips:

- Right-click part of the selection and choose Enable Clip from the contextual menu.
- Choose Clip > Enable Clip.
- Press D.

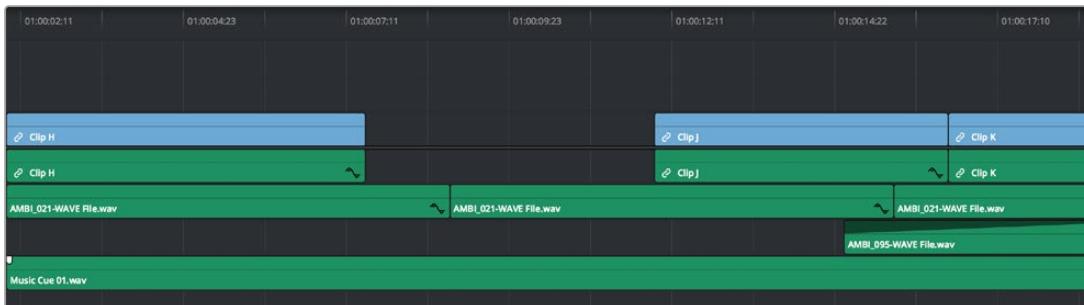
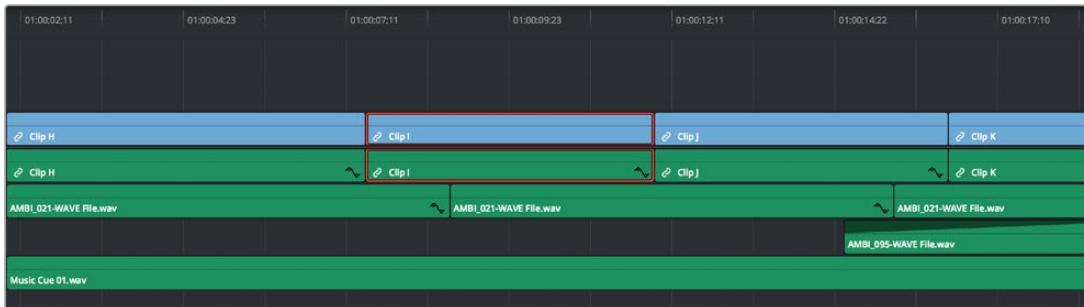
Deleting Clips and Gaps From the Timeline

There are two ways you can delete clips you don't want in the Timeline. Using the Delete key, you can perform what's sometimes called a "lift edit," removing the unwanted clips and leaving a gap. Using the Forward Delete key, you can perform a "ripple delete," removing unwanted clips and closing the gap by rippling the rest of the edited Timeline to the right of the deleted clip(s) by moving it to the left.

Deleting clips as a "lift edit" operation:

- **To remove one or more clips from the Timeline, leaving a gap:** Select a clip in the Timeline, or Shift-click or Command-click to select the clips you want to remove, and press the Delete key (or right-click the selection and choose Delete).

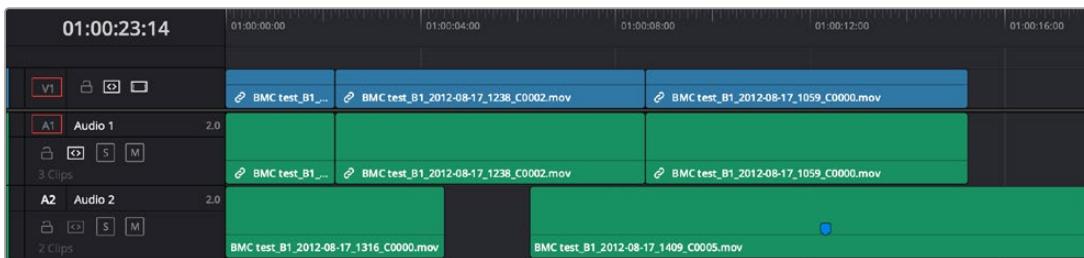
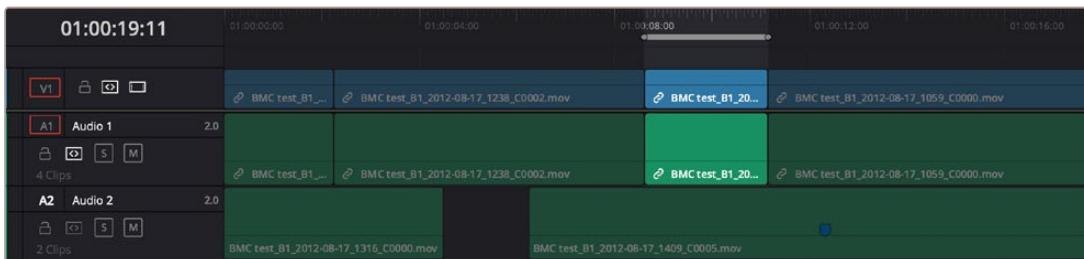
- **To remove a range of media from the Timeline on multiple tracks, leaving a gap:** Set Timeline In and Out points defining the range of media you want to delete, then turn off the Auto Select controls of any tracks with media you want to preserve, and press the Delete key (or right-click the selection and choose Delete).



Deleting Clip I using the Backspace or Delete key and leaving a gap

Deleting clips as a “ripple delete” operation:

- **To delete one or more clips and close the gap by rippling the Timeline left:** Select a clip in the Timeline, or Shift-click or Command-click to select the clips you want to remove, and press the Forward Delete key.
- **To delete a range of media and close the gap by rippling the Timeline left:** Set Timeline In and Out points defining the range of media you want to delete, then turn off the Auto Select controls of any tracks with media you want to preserve, and press the Forward Delete key.



Deleting Clip I using the Forward Delete key to ripple all clips with In points to the right in the Timeline to close the gap

As with any ripple operation, all clips with In points to the right of the deleted range of media on tracks with auto select enabled are rippled to close the gap, and any clips with In points to the left of the In point of the affected range of media are unaffected.

Finding, Selecting, and Deleting Gaps in the Timeline

A gap is defined as a space between any two clips on the same track. Often gaps are desirable as they allow audio or video clips to be spaced apart from one another very specifically, but sometimes they're not. If you want to find accidental gaps in your timeline that may be too small to see, a pair of commands lets you do this.

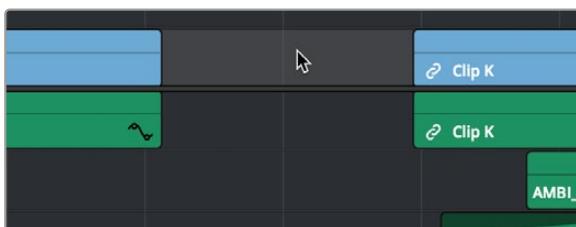
To move the playhead to the next gap on the Timeline:

- 1 Turn off the Auto Select controls of any tracks you want to omit from this operation.
- 2 Do one of the following:
 - Choose Playback > Previous Gap, or press Option-Command-Semicolon (;) to move the playhead to the next gap to the left of the playhead's current position.
 - Choose Playback > Next Gap, or press Option-Command-Apostrophe ('') to move the playhead to the next gap to the right of the playhead's current position.

To select or deselect a gap:

- Click once to select a gap, and click that gap again to deselect it.

You can only select one gap at a time. The principal reason to select a gap is to delete it, in the process rippling the Timeline to close the gap. In the following example, there's a gap between two clips on track V1 that you'd like to close.



Selecting a gap on track V1

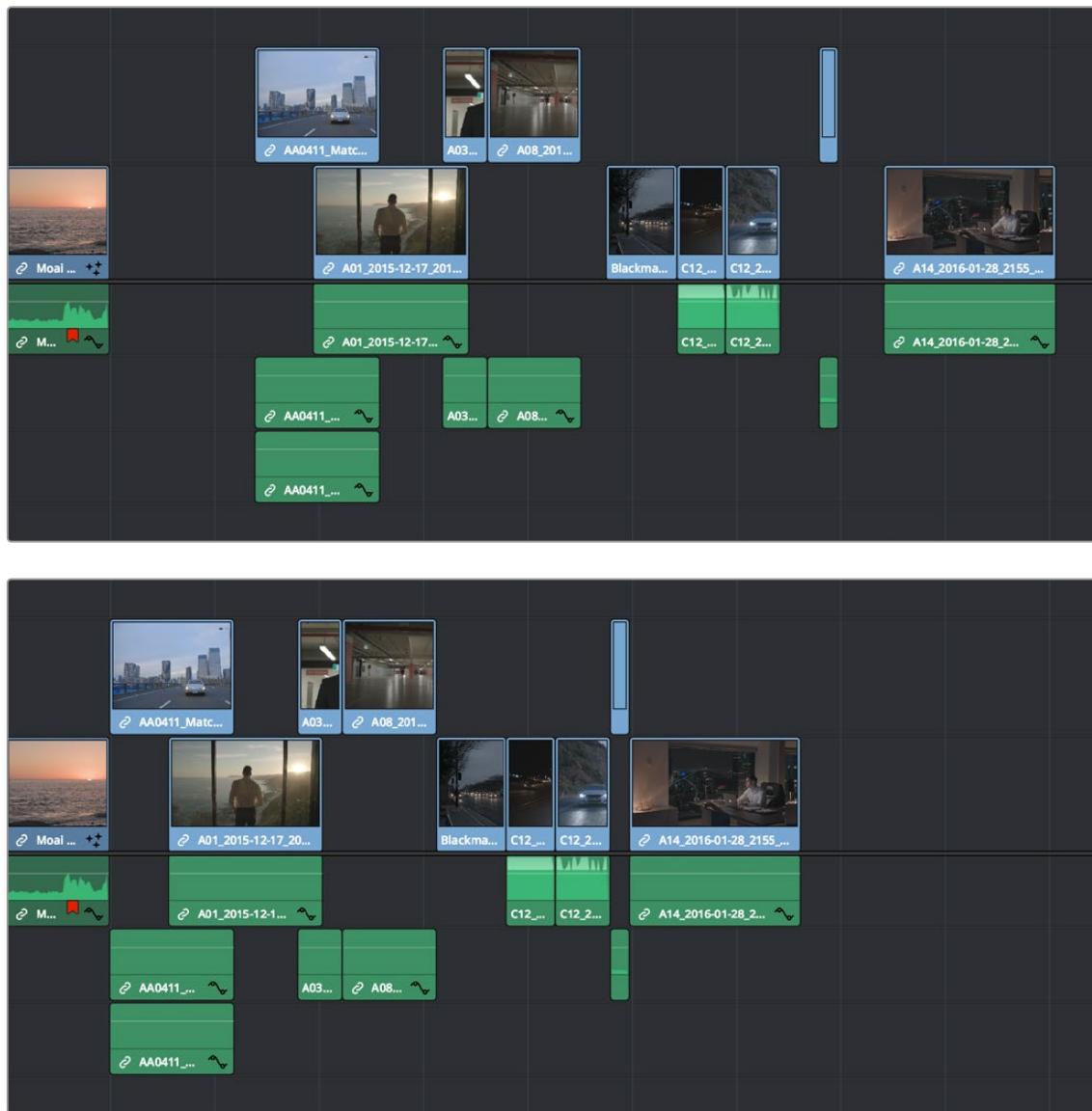
To delete a gap:

- Press the Delete key to close the gap. All clips to the right of it on tracks with Auto Select enabled will be rippled to the left to close the gap. Clips on tracks with Auto Select disabled will not ripple. If you select a gap in a timeline with clips on multiple tracks, which clips will be deleted depends on the state of the Auto Select controls for each track in the Timeline.
 - **All tracks with Auto Select enabled:** The range of media that overlaps the selected gap will also be deleted. Clips on those tracks will ripple left to fill the gap.
 - **All tracks with Auto Select disabled:** The range of media that overlaps the selected gap will be left intact, and clips on those tracks will not ripple left, going out of sync with whichever clips do ripple.

Deleting Multiple Timeline Gaps at Once

You can also ripple-delete video and audio gaps in the Timeline all at once using the Edit > Delete Gaps command. This removes gaps among consecutive clips in the Timeline on all Auto Select enabled tracks. Each segment of the Timeline with a gap is rippled, in order to move clips that are to the right of each gap left to close that gap.

All gaps are defined for purposes of this command as empty spaces between clips that span all tracks in the Timeline. In the following example, various audio/video, audio-only, and video-only clips have gaps between them. Using Remove Gaps causes the Timeline to be rippled such that these clips abut one another as a continuous sequence, without any of them overlapping any others.



(Top) Before removing gaps, (Bottom) After removing gaps

This is an extremely powerful and wide-ranging command. However, it's made safer by following strict rules in order to maintain overall A/V sync in timelines:

- Gaps will not be removed past the point where video and/or audio clips will overlap one another.
- Gaps will not be removed if they're under superimposed video clips that bridge the gap.
- Gaps will not be removed if one or more continuous audio clips bridge the gap.

- You can limit the range of the gaps to be deleted by setting In/Out points on the Timeline.
- If a linked set of video and audio items has a gap that includes an L or J split edit, it will be closed to the point that the audio or video, whichever extends the farthest, abuts the nearest clip to it.

Disabling a track's Auto Select Control omits that track from consideration when following the above rules. This lets gaps on other tracks be closed so clips overlap those on the Auto Select-disabled track.

WARNING: Performing Remove Gaps with Auto Select disabled on one or more tracks could result in massive loss of video/audio sync if you're not careful. To avoid this, Shift-click one video Auto Select control (or press Option-F9) and one audio Auto Select control (or press Command-Option-F9) to toggle all video and all audio Auto Select controls until they're all turned on at once.

Audio/Video Linking

DaVinci Resolve gives you complete control over the linked relationship between the video and audio associated with a clip. By default, DaVinci Resolve tries its best to keep the video and audio of clips and timelines in sync. However, there are several ways you can suspend automatic syncing when you need to make a specific kind of edit.

Controlling Linked Selection

While selecting edits and clips, you can also choose whether the video and audio associated with a clip should be selected together (linked) or not. This determines whether operations performed to the video of a clip automatically affect the audio of the clip, and vice versa. In most instances, you'll probably want to leave Linked Selection turned on, so that selecting the video of a clip to move it elsewhere in the Timeline also results in the audio being selected and moved at the same time. Disabling A/V linking in this case could cause your video and audio to go out of sync undesirably.

However, there are plenty of instances when you'll want to temporarily suspend this linked A/V relationship, such as when you want to create a split edit, where a clip's audio In point is at a different frame than the video In point. In this case, you can suspend Linked Selection to select just the audio In point, then roll it either farther back or forward to create the split, without changing the In point of that clip's video. When you're finished, you can re-enable A/V linking.

At all times, the state of Linked Selection is visible via the Chain-link button at the right of the toolbar.



The Link Audio/Video button

To turn Linked Selection off and on:

- Click the Link Audio/Video button (or press Shift-Command-L).

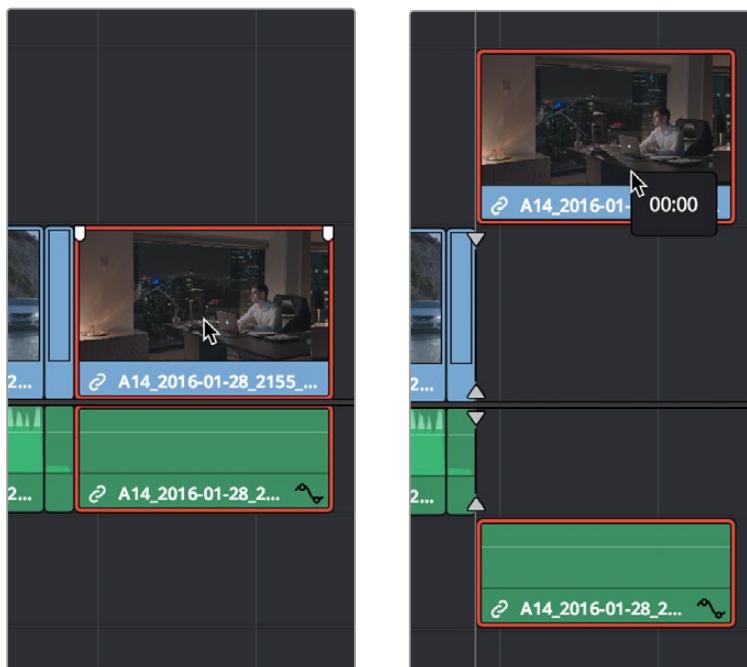
To temporarily suspend Linked Selection while making a selection:

- Press the Option key while clicking a clip or edit point to select the video without selecting the audio, or vice versa.

Linked Move Across Tracks

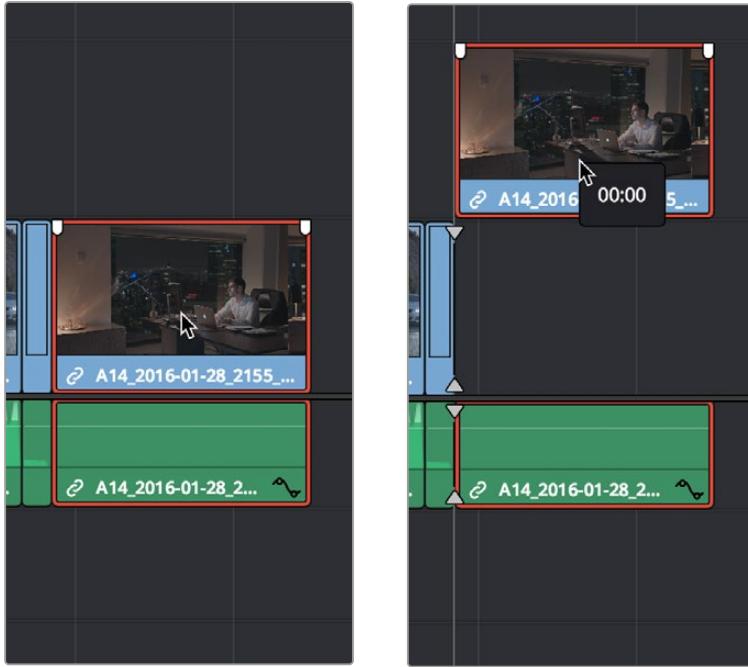
The Timeline > Linked Move Across Tracks setting works in conjunction with Linked Selection to let you change how linked video and audio items move in the Timeline when you drag them up and down to reorganize clips from track to track. Depending on the task at hand, one or the other behaviors might be more convenient, but no matter how you have this mode set, video/audio sync is always maintained when you move clips left and right.

- **When Linked Move Across Tracks is enabled:** (On by default) Dragging one of a linked pair of video and audio items up or down in the Timeline moves the linked item up or down as well. So, moving a video clip from track V1 to V2 results in its linked audio clip moving from track A1 to A2 as well.



Before and after with
Linked Move Across Tracks
enabled; if video clip is
moved, the linked audio
clip moves simultaneously

- **When Linked Move Across Tracks is disabled:** Dragging one of a linked pair of video and audio items up or down to another track in the Timeline only moves that one item, other linked item(s) remain in the same track. So, moving a video clip from track V1 to V2 leaves the audio clip in track A1, where it was originally. This makes it easy to reorganize video clips into different tracks while leaving your audio clips organized the way they were, or vice versa. Keep in mind that in this mode, while you can move one item of a linked pair up and down freely, moving that item left or right results in all linked items moving by the same amount, so sync is maintained.

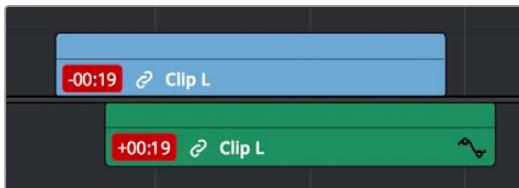


Before and after with Linked Move Across Tracks disabled; if the video clip is moved, the linked audio clip remains in its original position or vice versa

Dealing with Audio Video Sync Offsets

Audio/video sync is one of the most important things to maintain in any edited program. However, there are times when you may want to override the sync relationship of a clip's audio and video to make a particular edit, so moving a clip's audio and video out of sync is allowed.

If you disable Linked Selection and then move the audio or video of a clip independently of its linked video or audio counterpart, you'll see red "out-of-sync" indicators at the left of each clip's name bar, that displays the timecode offset by which the audio and video of that clip are out of sync. In the following example, the audio and video of a clip have been moved out of sync by Option-clicking the video and dragging it to the left.

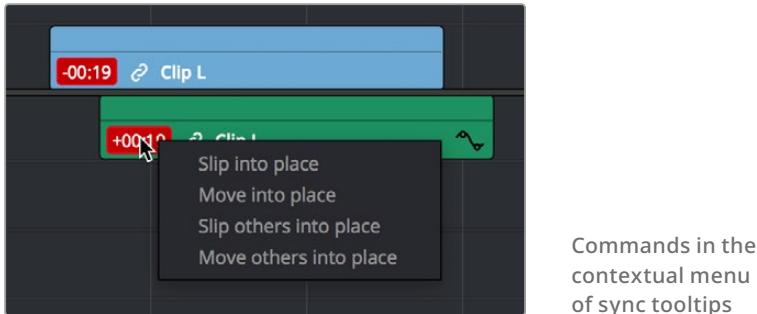


Sync markers on a clip with audio and video out of sync

If you've moved the audio and video of a clip out of sync with one another, there's a really easy way of getting them back into sync, by right-clicking the red out-of-sync indicator of any clip and choosing one of the available commands:

- **Slip into place:** Slips the content of the selected clip, without moving the clip, so that it's in sync with the other items that are linked to that clip.
- **Move into place:** Moves the selected clip so that it's in sync with the other items that are linked to that clip.

- **Slip others into place:** Slips the content of all other items that are linked to the selected clip, without moving them, so that all linked items are in sync.
- **Move others into place:** Moves all other items that are linked to the selected clip so that all linked items are in sync.



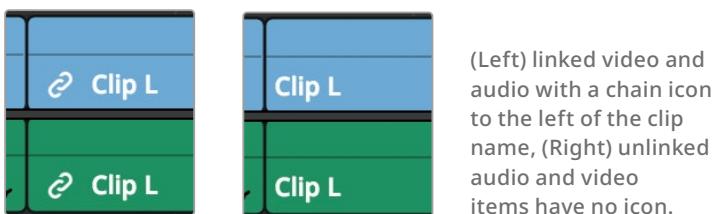
Commands in the contextual menu of sync tooltips

Manually Unlinking and Relinking Audio and Video

By default, clips that you import into DaVinci Resolve have their video and audio linked together, which makes it easy to maintain the relationship and sync of the audio and video components of a clip while you're editing. However, there are many reasons you might want to override this automatic relationship, either breaking the A/V linking of a clip's audio and video completely, or breaking it and relinking in a different way, or to different clips.

Methods of permanently changing audio/video linking in the Timeline:

- **To unlink audio and video from one another:** Select a clip, then right-click it and choose Link from the contextual menu (or press Option-Command-L). Unlinked clips do not appear with a chain icon before the clip name in the Timeline.
- **To link audio and video clips to one another:** Command-click an audio clip and a video clip so they're both selected, then right-click the selected clips and choose Link from the contextual menu (or press Option-Command-L). A chain icon appears before the name of linked clips in the Timeline.



(Left) linked video and audio with a chain icon to the left of the clip name, (Right) unlinked audio and video items have no icon.

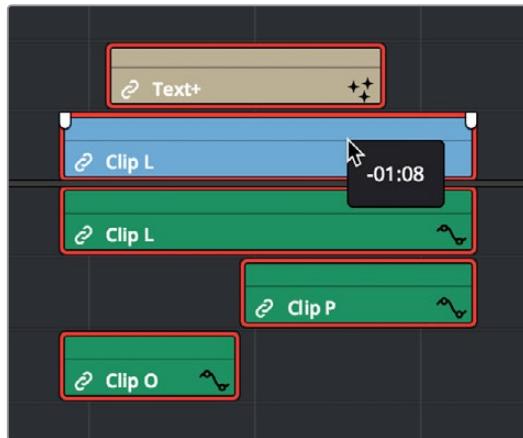
Linking Multiple Clips in the Timeline

You don't just have to link audio and video clips that sync together, though. You can actually link any number of video and audio clips that you want to be able to select, move, and edit together as one, even if they were never originally meant to be synced. This makes linking an organizational mechanism as much as a sync management tool.

Here are some examples of how you can use this:

- You can link a text generator with a subtitle to the clip it plays along with.
- You can link a sandwich of overlapping audio sound effects with the video clip they accompany.
- You can link off camera audio to an on camera shot.
- You can link the background and foreground clips of a green screen composite, with sound from both.

Linking multiple clips in the Timeline works the same as linking a single audio and video clip together; every single linked item appears with a chain icon to the left of the clip name, and suspending linked selection to force any single clip out of sync will result in the display of an “out-of-sync” indicator.



Multiple audio and video items that have been manually linked together to act as a single clip in the Timeline when Linked Selection is enabled

Commands for Slipping Audio/Video Sync

Another set of commands in the Trim > Slip Audio submenu let you slip the contents of one or more selected clips in order to alter the sync between the audio and video, either in whole frame increments, or in sub-frame increments if there are clips with marginal sync that you want to improve.

- One Frame Forward (Option-Period)
- One Frame Reverse (Option-Comma)
- One Subframe Forward (Option-Right Arrow)
- One Subframe Reverse (Option-Left Arrow)

Using the Inspector in the Edit Page

The Inspector holds all the controls to modify, resize, retime and generally adjust anything related to a clip, transition, or effect on the Edit page Timeline.

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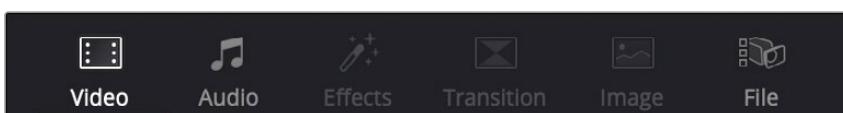
Using the Inspector

The Inspector has been redesigned to make it easier to find specific controls and to adjust common settings for your clips. Instead of a long vertical list, different aspects of the Inspector have now been organized into panels, with each controlling specific grouped sets of parameters for your clip.

The Inspector is activated by clicking on the Inspector panel in the upper-right section of the User Interface toolbar. The Inspector is broken up into individual Video, Audio, Effects, Transition, Image, and File panels. Inspector panels that are not applicable to your clip or selection are grayed out.



The Inspector Panel icon in the upper right of the UI toolbar



The Inspector panels showing Video, Audio, and File parameters available for adjustment; others are grayed out.

Methods of using controls in the Inspector:

- **To activate or deactivate a control:** Click the toggle to the left of the control's name. The orange dot on the right means the control is activated. A gray dot on the left means the control is deactivated.
- **To reveal a control's parameters:** Double-click the control's name.
- **To reset controls to their defaults:** Click the reset button to the right of the control's name.

Video

The Video panel of the Inspector exposes a vast array of controls designed to manipulate the size, speed, and opacity of your clips.

Transform

The Transform group includes the following parameters for resizing and repositioning your clips:

- **Zoom X and Y:** Allows you to blow the image up or shrink it down. The X and Y parameters can be linked to lock the aspect ratio of the image, or released to stretch or squeeze the image in one direction only.
- **Position X and Y:** Moves the image within the frame, allowing pan and scan adjustments to be made. X moves the image left or right, and Y moves the image up or down.
- **Rotation Angle:** Rotates the image around the anchor point.
- **Anchor Point X and Y:** Defines the coordinate on that clip about which all transforms are centered.

- **Pitch:** Rotates the image toward or away from the camera along an axis running through the center of the image, from left to right. Positive values push the top of the image away and bring the bottom of the image forward. Negative values bring the top of the image forward and push the bottom of the image away. Higher values stretch the image more extremely.
- **Yaw:** Rotates the image toward or away from the camera along an axis running through the center of the image from top to bottom. Positive values bring the left of the image forward and push the right of the image away. Negative values push the left of the image away and push the right of the image forward. Higher values stretch the image more extremely.
- **Flip Image:** Two buttons let you flip the image in different dimensions.
 - **Flip Horizontal control:** Reverses the image along the X-axis, left to right.
 - **Flip Vertical control:** Reverses the clip along the Y-axis, turning it upside down.

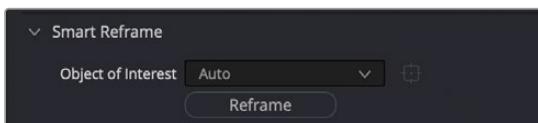


The Transform section of the Video Inspector panel

Smart Reframe (Studio Version Only)

The Smart Reframe feature makes it easier to quickly reframe material across extreme aspect ratio changes. It's useful for situations where you've shot a 16:9 horizontal video and find yourself needing to create a vertically-oriented 9:16 version for mobile phones and social media deliverables, or using 4:3 archival footage in a 2.39:1 widescreen movie. Smart Reframe can be used manually, or automatically executed using the DaVinci Resolve Neural Engine.

- **Object of Interest:** Tools for selecting the subject that the resize will frame around.
 - **Auto:** DaVinci Resolve's Neural Engine will analyze the clip and choose its most representative object. This will be the only option if more than one clip is selected for Smart Reframing.
 - **Reference Point:** Allows you to manually adjust a bounding box around the subject to reframe around.
- **Reframe:** This button executes the Smart Reframe command. This can take some time depending on the length and number of clips.



The Smart Reframe section of the Video Inspector panel

Cropping

The Video Inspector controls the image's cropping parameters.

- **Crop Left, Right, Top, and Bottom:** Lets you cut off, in pixels, the four sides of the image. Cropping a clip creates transparency so that whatever is underneath shows through.

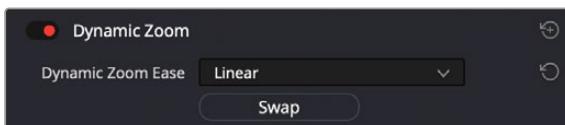
- **Softness:** Lets you blur the edges of a crop. Setting this to a negative value softens the edges inside of the crop box, while setting this to a positive value softens the edges outside of the crop box.
- **Retain Image Position:** Clicking this checkbox will lock the crop parameters in place when you resize the image using the Transform tool above. Unchecking this box will scale and position the crop as well as the image.



Dynamic Zoom

The Dynamic Zoom controls, which are off by default, make it fast and easy to do pan and scan effects to zoom into or out of a clip. Turning the Dynamic Zoom group on activates two controls in the Inspector that work hand-in-hand with the Dynamic Zoom onscreen adjustment controls. For more information on using the Dynamic Zoom controls, see *Chapter 50, "Compositing and Transforms in the Timeline."*

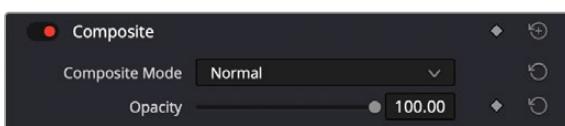
- **Dynamic Zoom Ease:** Lets you choose how the motion created by these controls accelerates. You can choose from Linear, Ease In, Ease Out, and Ease In and Out.
- **Swap:** This button reverses the start and end transforms that create the dynamic zoom effect.



Composite

Composite modes can be used to combine clips that are superimposed over other clips in the Timeline.

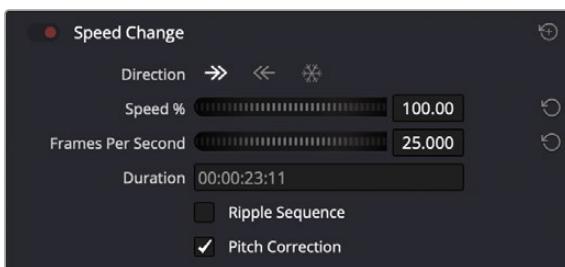
- **Composite Mode:** This selects the type of composite mode to combine the superimposed clips. The default “Normal” means no compositing mode is applied. For more information on Composite Modes, see *Chapter 50, "Compositing and Transforms in the Timeline."*
- **Opacity:** This slider makes a clip more or less transparent in addition to compositing already being done.



Speed Change

You can change the speed of your clip directly in the Video Inspector's Speed Change controls. This method has the benefit of being available in both Cut and Edit pages.

- **Direction:** Selects the desired motion of the clip, forward, backward, or freeze frame.
- **Speed %:** Adjusting this slider changes the clips motion on a percentage basis. This value can be keyframed.
- **Frames Per Second:** Adjusting this slider changes the clips motion by increasing or decreasing the number of frames per second to play the clip back at. This value can be keyframed.
- **Duration:** You can directly select how long you want the clip to be by setting a specific duration here in HH:MM:SS:FF format. This will then automatically adjust the speed of the clip to playback all frames in that exact amount of time.
- **Ripple Sequence checkbox:** If you want the speed change you're about to make to ripple the Timeline, pushing or pulling all clips following the current one to accommodate the clip's new size, then turn on this checkbox.
- **Pitch Correction checkbox:** Checking this box will perform pitch correction on the audio attached to the clip so that while the audio duration is changed to match the picture speed, it will still sound natural. Be aware that pitch correction on large speed adjustments may not sound as good as pitch corrections made to small speed adjustments.



The Speed Change controls in the Video Inspector

Stabilization

These controls let you smooth out or even steady unwanted camera motion within a clip. The analysis is performed in such a way as to preserve the motion of individual subjects within the frame, as well as the overall direction of desirable camera motion, while correcting for unsteadiness.

These are the same stabilizer controls found in the Color page's Tracker palette (minus the tracker graph), and the resulting stabilization analysis is mirrored on the Color page, where you can see the data visualized on the graph, if necessary.

A pop-up menu provides three different options that determine how the selected clip is analyzed and transformed during stabilization. You must choose an option first, before clicking the Stabilize button above, because the option you choose changes how the image analysis is performed. If you choose another option, you must click the Stabilize button again to reanalyze the clip.

- **Perspective:** Enables perspective, pan, tilt, zoom, and rotation analysis and stabilization.
- **Similarity:** Enables pan, tilt, zoom, and rotation analysis and stabilization, for instances where perspective analysis results in unwanted motion artifacts.
- **Translation:** Enables pan and tilt analysis and stabilization only, for instances where only X and Y stabilization gives you acceptable results.



The Stabilization section of the Video Inspector panel

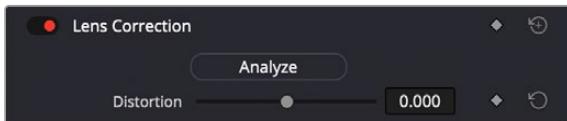
The other controls let you customize how aggressively the selected clip is stabilized.

- **Stabilization Toggle:** The toggle control for the Stabilization controls lets you turn stabilization off and on to be able to compare the stabilized and unstabilized image.
- **Camera Lock:** Turning on this checkbox disables Cropping Ratio and Smooth, and enables the stabilizer to focus on eliminating all camera motion from the shot in an effort to create a locked shot.
- **Zoom:** When this checkbox is turned on, the image is resized by a large enough percentage to eliminate the blanking (black edges) that is the result of warping and transforming the image to eliminate unwanted camera motion. The lower a value Cropping Ratio is set to, the more DaVinci Resolve will need to zoom into an image to eliminate these blanked edges. If you turn this off, the image is not zoomed at all, and whatever blanking intrudes into the image is output along with the image, on the assumption that you'll have dedicated compositing artists deal with eliminating this blanking by filling in the missing image data in a more sophisticated manner. You may also leave this checkbox turned off if you're planning on animating the Input Sizing Zoom parameter to dynamically zoom into and out of a shot being stabilized to eliminate blanking only where it occurs, using only as much zooming as is necessary for each region of the shot.
- **Cropping Ratio:** This value limits how hard the stabilizer tries to stabilize, by dictating how much blanking or zooming you're willing to accept in exchange for eliminating unwanted motion. A value of 1.0 results in no stabilization being applied. Progressively lower values enable more aggressive stabilization. Changing this value requires you to click the Stabilize button again to reanalyze the clip.
- **Smooth:** Lets you apply mathematical smoothing to the analyzed data used to stabilize the clip, allowing camera motion in the shot while eliminating unwanted jittering. Lower values perform less smoothing, allowing more of the character of the original camera motion to show through, while higher values smooth the shot more aggressively. Changing this value requires you to click the Stabilize button again to reanalyze the clip.
- **Strength:** This value is a multiplier that lets you choose how tightly you want to use the stabilization track to eliminate motion from a shot using the current analysis. With a value of 1, stabilization is maximized. Since some clips might look more natural with looser stabilization, choosing a number lower than 1 lets a percentage of the original camera motion show through. Zero (0) disables stabilization altogether. As an additional tip, you can invert the stabilization by choosing -1 when pasting a stabilization analysis from another clip to perform a match move based on the overall motion of the scene, and you can use a negative value either lower than 0 or higher than -1 to under or overcompensate when inverting the stabilization, simulating the effects of parallax where foreground and background planes move together but at different speeds.

Lens Correction

The Lens Correction group (only available in Resolve Studio) has two controls that let you correct for lens distortion in the image, or add lens distortion of your own.

- **Analyze:** Automatically analyzes the frame in the Timeline at the position of the playhead for edges that are being distorted by wide angle lens. Clicking the Analyze button moves the Distortion slider to provide an automatic correction. If you're analyzing a particularly challenging clip, a progress bar will appear to let you know how long this will take.
- **Distortion:** Dragging this slider to the right lets you manually apply a warp to the image that lets you straighten the bent areas of the picture that can be caused by wide angle lenses. If you clicked the Analyze button and the result was an overcorrection, then dragging this slider to the left lets you back off of the automatic adjustment until the image looks correct.

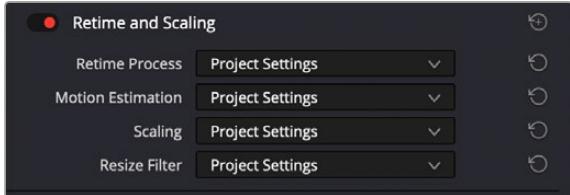


The Lens Correction section of the Video Inspector panel

Retime and Scaling

The Retime and Scaling group has four parameters that affect retiming quality and clip scale:

- **Retime Process:** Lets you choose a default method of processing clips in mixed frame rate timelines and those with speed effects (fast forward or slow motion) applied to them, on a clip-by-clip basis. The default setting is "Project Settings," so all speed-effected clips are treated the same way. There are three options: Nearest, Frame Blend, and Optical Flow, which are explained in more detail in the Speed Effect Processing section of Chapter 51, "Speed Effects."
- **Motion estimation mode:** When using Optical Flow to process speed change effects or clips with a different frame rate than that of the Timeline, the Motion Estimation pop-up lets you choose the best-looking rendering option for a particular clip. Each method has different artifacts, and the highest quality option isn't always the best choice for a particular clip. The default setting is "Project Settings," so all speed-effected clips are treated the same way. There are several options. The "Standard Faster" and "Standard Better" settings are the same options that have been available in previous versions of DaVinci Resolve. They're more processor efficient and yield good quality that are suitable for most situations. However, "Enhanced Faster" and "Enhanced Better" should yield superior results in nearly every case where the standard options exhibit artifacts, at the expense of being more computationally intensive, and thus slower on most systems.
The Speed Warp setting is available for even higher-quality slow motion effects using the DaVinci Neural Engine. Your results with this setting will vary according to the content of the clip, but in ideal circumstances this will yield higher visual quality with fewer artifacts than even the Enhanced Better setting.
- **Scaling:** Lets you choose how clips that don't match the current project resolution are handled on a clip-by-clip basis. The default setting is "Project Settings," so that all mismatched clips use the same method of being automatically resized. However, you can also choose an individual method of automatic scaling for any clip. The options are Crop, Fit, Fill, and Stretch; for more information see the 2D Transforms section of Chapter 149, "Sizing and Image Stabilization."



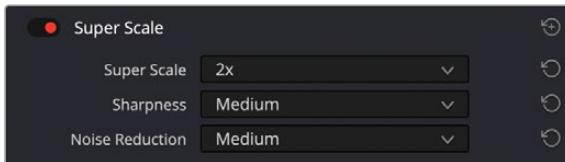
The Retime and Scaling section of the Video Inspector panel

- **Resize Filter:** For clips that are being resized in any way, this setting lets you choose the filter method used to interpolate image pixels when resizing clips. Different settings work better for different kinds of resizing. There are four options:
 - **Sharper:** Usually provides the best quality in projects using clips that must be scaled up to fill a larger frame size, or scaled down to HD resolutions.
 - **Smoother:** May provide higher quality for projects using clips that must be scaled down to fit an SD resolution frame size.
 - **Bicubic:** While the Sharper and Smoother options are slightly higher quality, Bicubic is still an exceptionally good resizing filter and is less processor intensive than either of those options.
 - **Bilinear:** A lower quality setting that is less processor intensive. Useful for previewing your work on a low-performance computer before rendering, when you can switch to one of the higher quality options.
- **Other Resize Methods:** A selection of specific resize algorithms is available if you need to match them to other VFX workflows.
- **Deinterlace Quality (Interlaced Clips Only):** Allows per clip deinterlace-quality adjustments regarding how DaVinci Resolve combines the two fields of interlaced media into progressive frames.
 - **Normal:** A high-quality deinterlacing method that is suitable for most clips. For many clips, Normal is indistinguishable from High. Normal is always used automatically during playback in DaVinci Resolve.
 - **High:** A more processor-intensive method that can sometimes yield better results, depending on the footage, at the expense of slower rendering times.
 - **DaVinci Neural Engine:** This option uses the advanced machine learning algorithms of the DaVinci Neural Engine to analyze motion between the fields of interlaced material and reconstructs them into a single frame. This option is very computationally intensive but, ideally, will deliver an even more aesthetically pleasing result than the "high" setting.

Super Scale

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. 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 in the Super Scale effect into the optimized media) or cache the clip in some way. For more detailed information on Super Scale, see *Chapter 11, "Image Sizing and Resolution Independence."*

Using Super Scale in the Inspector is functionally equivalent to setting the same controls for the media clip in the Clip Attributes. This means that changing this setting affects all of the additional edits referencing the selected media as well.



The Super Scale parameters

The Super Scale group has the following parameters that affect the quality and clip scale:

- **Super Scale:** Lets you choose the amount of scaling required. The options are: 2x, 2x Enhanced, 3x, or 4x.
- **Sharpness:** Lets you choose the amount of detail in the scaling. This is limited to Low, Medium, or High, unless the Super Scale Mode is set to 2x Enhanced, which allows you to apply variable sharpness. You will want to balance this setting against Noise Reduction.
- **Noise Reduction:** Lets you choose the amount of noise reduction in the scaling. This is limited to Low, Medium, or High, unless the Super Scale Mode is set to 2x Enhanced, which allows you to apply variable noise reduction. You will want to balance this setting against Sharpness.

Audio

The Audio tab contains four commonly used audio controls for video editing purposes, including Clip Volume, Clip Pan, Clip Pitch, and Clip Equalizer.

- **Clip Volume:** Each clip has a single volume control that corresponds to the volume overlay over each audio clip.
- **Clip Pan:** (Only exposed for clips) A simple Pan slider that controls stereo panning.
- **Voice Isolation (Studio Version Only):** Voice Isolation is a plugin that can remove loud, undesirable sounds from existing voice recordings. This effect utilizes AI to provide models that let you completely remove undesired sounds. The AI model is trained for any type of human voice, male or female, young or old, so you can get incredible results that isolate dialog from background sounds in a recording, including everything from air conditioning or fans to extremely loud sounds like a jackhammer, restaurant background noise, or music playing at the same time that the subject is speaking, and so on.



The Audio Inspector parameters

- **Amount:** Lets you adjust the amount of voice isolation processing.
- **Preset Menu:** The preset menu provides the following options:
 - **Optimized for most sources:** This option is selected by default and works well as for most sources.
 - **More lift for low levels:** Select this option if the source has more low level dialog that you want to boost.
 - **Lift soft whispery sources:** Select this option if the source has whispered dialog and background noise.
- **Reduce Loud Dialogue:** When enabled, louder dialogue is ridden downward on peaks, and acts somewhat like a “perfect limiter” where you don’t have to adjust threshold or time constants. Due to the “near real time” aspect, analysis occurs prior to audible playback for optimal results.
- **Lift Soft Dialogue:** When enabled, finds low level dialogue and lifts and evens out material that is more variable in level and softer, but because the process is dialogue focused it doesn’t tend to raise background sounds (unless they are happening at the same time as the dialogue itself). More often than not, the Lift Soft Dialogue option is the most useful of the three options, as it makes less audible lines of dialogue more audible and naturally smooth, while not boosting background noise.
- **Background Reduction:** When enabled, reduces background sounds by focusing on dialogue and gently removing them based on the internal presets (Preset menu).
- **Output Gain:** Adjust the Output Gain by clicking and dragging on the Output Gain control or by entering a value in the numeric field (Output Gain control in dB with 0 to +6 dB range with .1dB resolution).
- **Clip Pitch:** Lets you alter the pitch of a clip without changing the speed. Two sliders let you adjust clip pitch in semi tones (large adjustments, a twelfth of an octave) and cents (fine adjustments, 100th of a semi tone).
- **Clip Equalizer:** Each clip also has a four-band EQ, complete with low-pass, high-pass, and parametric settings for fine tuning and problem-solving audio issues at the clip level.

NOTE: There are many more refined plugins and effects for audio clips in the Audio FX library. If you apply any of these, the controls will appear in the Inspector’s Effects tab Audio section, instead of here.

Effects



The Effects Inspector controls

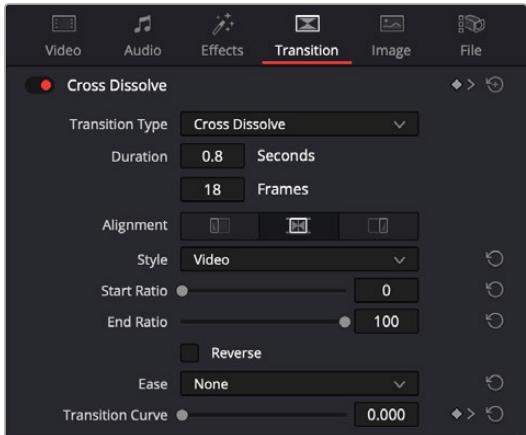
Any Fusion FX, Open FX, or Audio FX filters that have been applied to a clip can be modified here in their respective tabs. Different effects in the Timeline expose different controls in the Effects panel. Whichever panels are exposed, parameters within each panel are organized into groups, with a title bar providing the name of that group, along with other controls that let you control all parameters within that group at the same time.

These controls include:

- **Enable button:** A toggle control to the left of the parameter group's name lets you disable and re-enable every parameter within that group at once. Orange means that track's enabled. Gray is disabled.
- **Parameter group title bar:** Double-clicking the title bar of any group of parameters collapses or opens them. Even more exciting than that, Option-double-clicking the title bar of one parameter group collapses or opens all parameter groups at once.
- **Keyframe and Next/Previous Keyframe buttons:** This button lets you add or remove keyframes at the position of the playhead to or from every single parameter within the group. When the button is highlighted orange, a keyframe is at the current position of the playhead. When it's dark gray, there is no keyframe. Left and right arrow buttons let you jump the playhead from keyframe to keyframe for further adjustment.
- **Reset button:** Lets you reset all parameters within that group to their default settings.
- **Use Alpha:** Checking this box applies the Open FX alpha channel to the selected clip, compositing it over any background elements that appear in lower tracks. If more than one alpha-modifying effect is applied to a single clip, the alpha channels are mixed together.

For a detailed explanation of each of the Resolve FX plugins that accompany DaVinci Resolve, see Part 12, "Resolve FX Overview."

Transition



The Transition Inspector controls

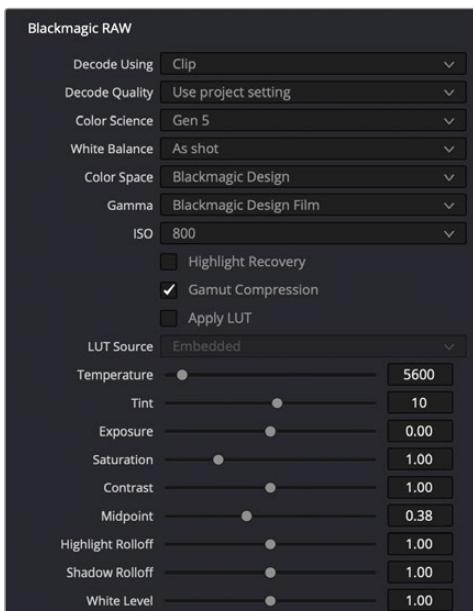
Double-clicking a transition in the Timeline opens that Transition Panel in the Inspector. Each transition has the following properties you can edit.

- **Transition Type:** The currently selected transition. You can change to any other installed transition by selecting one in the drop-down menu.
- **Duration:** The duration of the transition, shown in both seconds and frames.
- **Alignment:** A drop-down that lets you choose the transition's position relative to the edit point it's applied to. Your choices are "Start on Edit," "Center on Edit," and "End on Edit."
- Additional properties that are specific to each type of transition appear in another group below. Since the Cross Dissolve transition is the most common transition used, its properties will be shown as an example.
- **Style:** The different Dissolve transitions (Cross Dissolve, Additive Dissolve, and so on) expose this drop-down that lets you choose different ways for the outgoing clip to blend into the incoming clip during the dissolve. There are six different options to choose from:
 - **Video:** A simple linear dissolve; the outgoing clip fades out as the incoming clip fades in.
 - **Film:** A logarithmic dissolve, simulating film dissolves as created by an optical printer.
 - **Additive:** The outgoing and incoming clips are cross faded using the Additive composite mode. As a result, the transition seems to brighten at the halfway point.
 - **Subtractive:** The outgoing and incoming clips are cross faded using the Subtractive composite mode. As a result, the transition seems to darken at the halfway point.
 - **Highlights:** The outgoing and incoming clips are cross faded using the Lighten composite mode. The lightest parts of each clip are emphasized during this transition.
 - **Shadows:** The outgoing and incoming clips are cross faded using the Darken composite mode. The darkest parts of each clip are emphasized during this transition.
- **Start Ratio:** Defines the percentage of completion for the transition at its first frame, from 0 to 100 percent. Setting the Start Ratio to anything but 0 results in the transition immediately appearing at a more fully cross-dissolved state from the very first frame.
- **End Ratio:** Defines the percentage of completion for the transition at its last frame. Setting the End Ratio to anything but 0 results in the transition never fully dissolving to the incoming shot at its last frame.

- **Reverse:** Reverses the transition. This parameter is disabled for Dissolve transitions.
- **Ease:** A drop-down that lets you apply nonlinear acceleration to the beginning, ending, or overall duration of a transition. The result is to add inertia to the transition from the outgoing clip to the incoming clip, providing a gentler change from each clip into and out of the transition.
- **None:** The outgoing clip fades away to the next shot in a linear fashion.
- **In:** The outgoing clip lingers as the beginning of the transition dissolves more slowly than the end.
- **Out:** The outgoing clip fades away more quickly as the beginning of the transition dissolves more quickly than the end.
- **In & Out:** Both the outgoing and incoming clips make slower transitions at the beginning and end of the dissolve, but the very center of the transition is faster as a result.
- **Custom:** Lets you modify the parameters of the fade manually using the Transition Curves below.
- **Transition Curve:** Allows you to manually set keyframes controlling the progress of the transition along its duration.

Other types of transitions display properties that are specific to that transition's particular effect. For a detailed explanation of each of the transitions that accompany DaVinci Resolve, see *Chapter 47, "Using Transitions."*

Image

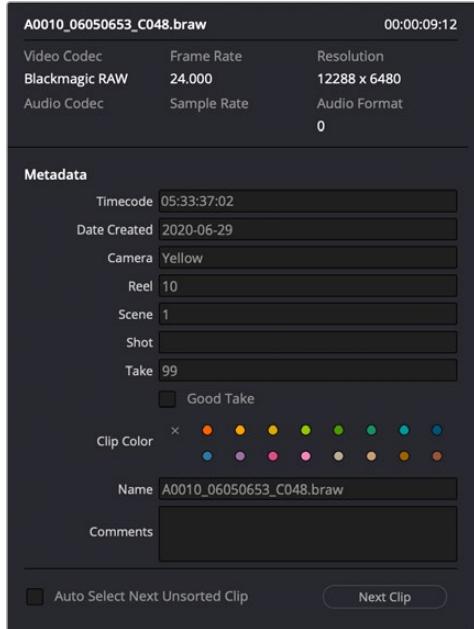


The Image Inspector controls for BRAW footage

The Image panel contains groups of parameters that correspond to every camera raw media format that's supported by DaVinci Resolve. Using these parameters in the Image panel, you can override the original camera metadata that was written at the time of recording and make simultaneous adjustments to camera raw media throughout your project.

For a detailed explanation of each of the RAW camera parameters supported by DaVinci Resolve, see *Chapter 7, "Camera Raw Settings."*

File



The File Inspector controls

The File panel of the Inspector provides a consolidated way to view and edit a subsection of a clip's most commonly used media file metadata. It's easily accessible in the Inspector across the Media, Cut, Edit, and Fairlight pages. The tab is composed of the following parts:

- **Clip Details:** Presents data about the clip's data format (codec, resolution, frame rate, etc.).
- **Metadata:** Presents a reduced set of common metadata fields for quick user entry.
 - **Timecode:** The start timecode of the clip. This field is editable if you want to manually change the clip's starting timecode.
 - **Date Created:** The date that the clip was created. This field is editable if you want to manually change the clip's creation date.
 - **Camera:** Sets the Camera # metadata.
 - **Reel:** Sets the Reel/Card ID.
 - **Scene:** The Scene number of the clip.
 - **Shot:** The Shot letter/number of the clip.
 - **Take:** The Take number of the clip.
 - **Good Take:** This checkbox indicates if the clip is a good or circled take.
 - **Clip Color:** Assign a specific color to a clip that is reflected in the Timeline.
 - **Name:** This can be entered manually, and changes a clip's name in that specific timeline only.
 - **Comments:** Add a text description to the clip.
 - **Auto Select Next Unsorted Clip:** When this box is checked, the next clip in the Media Pool is selected when you hit the Return button after entering a metadata field, and the cursor is automatically placed in the same field. This allows rapid sequential metadata entry without having to manually click to load each individual clip in the Media Pool. The Next Clip button will select the next clip in the Media Pool, regardless of the checkbox status.

Chapter 38

Modifying Clips in the Timeline

Once you've edited a variety of clips into the Timeline, you'll start working with them as you refine your edit. In this chapter, you'll learn simple methods of modifying clips, including resizing, splitting, shuffling, disabling, copying and pasting, and duplicating.

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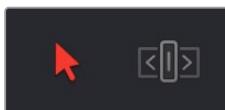
Keyboard Shortcuts in This Chapter

Here's a list of keyboard shortcuts you might find helpful that relate to topics found in this chapter.

Key Shortcut	Function
A	Selection tool mode
V	Select nearest edit to playhead
Shift-V	Select clip intersecting playhead
U	Select incoming, outgoing, or centered part of edit
Option-U	Toggle selection among video+audio, video only, and audio only
Up, Down Arrow Keys	Move selection to previous/next edit or clip
Comma, Period	"Nudge" keys to move a selected edit or clip left or right a frame at a time
Shift-Comma, Period	"Fast Nudge" keys to move a selected edit or clip left or right 5 frames at a time (customizable)
Shift-Left, Right Bracket ([,])	Trim Start to Playhead and Trim End to Playhead to trim a clip at the position of the playhead
E	Extend edit to move a selected edit point to the playhead
B	Razor blade tool for adding cuts to clips using the pointer
Command-Backslash (\)	Insert edit; adds a cut to the clip(s) at the position of the playhead
Delete	Delete clip and leave gap (lift edit)
Forward Delete	Ripple delete; deletes a clip and moves the rest of the Timeline left to fill the gap
N	Toggle timeline snapping off and on
Command-Shift-L	Toggle linked selection off and on
Command-D	Change clip duration
Command-Shift (modifier)	While dragging, holding Command-Shift lets you "shuffle" or "swap" edit clips forward or backward to rearrange clips in the Timeline
D	Disable/Enable selected clips
Command-X	Cut selected clips, leave gap
Command-Shift-X	Ripple cut selection; close gap left by cut clip(s)
Command-C	Copy selected clips
Command-V	Paste clips
Command-Shift-V	Paste insert clips

Moving, Resizing, and Rolling Clips in Selection Mode

After editing a series of clips into a timeline, the next thing even the most careful of editors probably needs to do is to start making changes. The simplest changes are made in Selection Mode, using the regular arrow pointer.

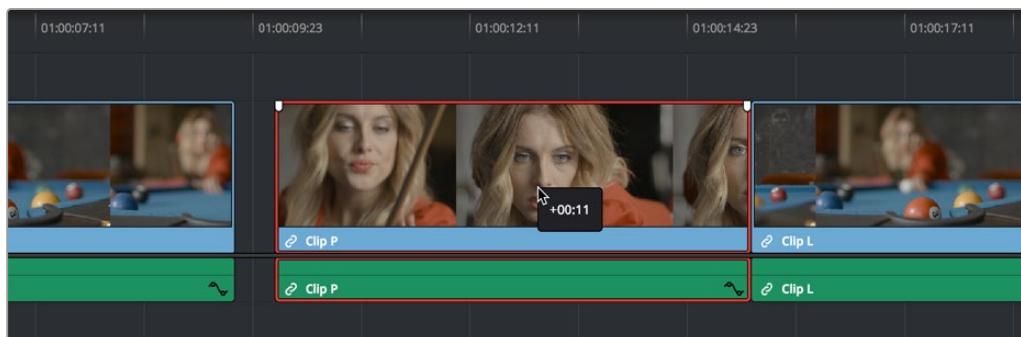


The Selection Mode button at left is enabled; the Trim mode button at right is disabled

This is the default mode when you open DaVinci Resolve, and allows you to move clips to other places in the Timeline, resize them to make them longer or shorter, and roll the edit points between two clips to move the edit to an earlier or later position on the Timeline. What this tool does depends entirely on what you click to select as you work.

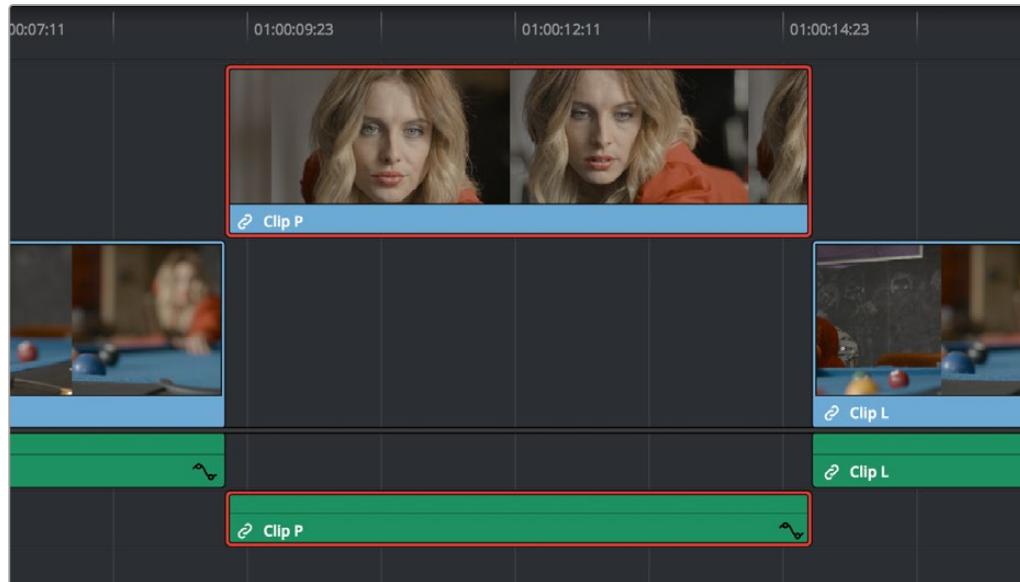
Manipulating clips using the mouse:

- 1 Click the Selection Mode tool (the arrow), or press A.
- 2 Do one of the following:
 - **To move clips in the Timeline:** Drag any clip in the Timeline to any other position. If you drag a clip to overlap another clip, the clip you're dragging overwrites the clip you're dropping it onto.



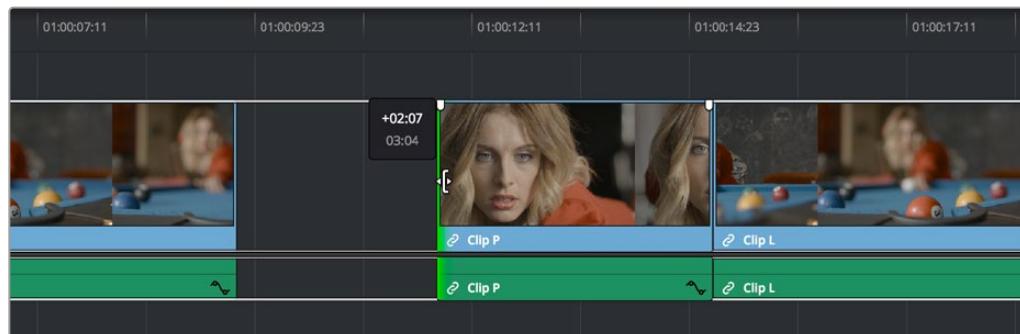
Moving a clip in the Timeline to overwrite part of another clip; a tooltip shows you how many frames you've moved

- **To move clips in the Timeline up or down to other tracks while keeping them at the same time:** Hold the Shift key down while dragging clips up or down in the Timeline. Or, you can hold the Option key down and press Up or Down Arrow.



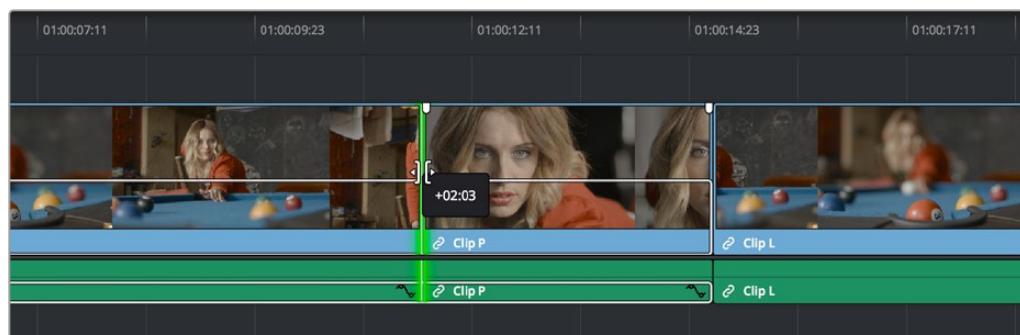
Moving a clip into another track without sliding it in time by holding the Shift key down

- **To shorten or lengthen clips:** Move the Selection Mode pointer over the beginning or end of a clip, and when it turns into the Resize cursor, drag the In or Out point to the left or right to change the clip's length. As you do so, the audio will scrub along with the Resize cursor.



Resizing a clip in the Timeline to create a gap; a tooltip shows the offset, and outlines show you how much media is available in the clip being adjusted

- **To roll any edit:** Move the Selection Mode pointer over any edit point, and when it turns into the Roll Edit cursor, drag it to the left or right to move the edit point while simultaneously resizing the outgoing and incoming edits points of the two clips surrounding it. As you do so, the audio will scrub along with the right clip's In point.



Rolling an edit; a tooltip shows the offset, and an outline shows the available area you can roll within

Manipulating clips using the keyboard:

- 1 Press A to choose Selection Mode.
- 2 Do one of the following:
 - **To roll any edit incrementally:** Select the closest edit point to the playhead using the V key, moving the selection to another edit, if necessary, by using the Up Arrow and Down Arrow keys. Then press the Comma key (nudge 1 frame left) or Period key (nudge 1 frame right) to roll the selected edit to the left or right. Shift-Comma and Shift-Period nudges by 5 frames.
 - **To roll any edit using the playhead:** Select the closest edit point to the playhead using the V key, moving the selection to another edit, if necessary, by using the Up Arrow and Down Arrow keys. Then use the JKL keys to move the playhead to the frame you want to move the edit to, and press E to do an “extend” edit.
 - **To shorten or lengthen clips incrementally:** Select the closest edit point to the playhead using the V key, then use the U key to toggle the selection among the end of the outgoing clip and the beginning of the incoming clip. Then, press the Comma key (nudge 1 frame left) or Period key (nudge 1 frame right) to shorten or lengthen that side of the clip. If you nudge one end of a clip to overlap another, the clip you’re nudging overwrites the adjacent clip. Shift-Comma and Shift-Period nudges by 5 frames. In Selection mode, this either leaves a gap or overwrites neighboring clips.
 - **To shorten clips using the playhead:** Use the JKL keys to move the playhead over the frame in the Timeline where you want to set a new In or Out point for that clip, then press Shift-Left Bracket ([]) to “trim start,” or Shift-Right Bracket (]) to “trim end.” No selection is necessary. In Selection mode, this leaves a gap.
 - **To lengthen clips using the playhead:** Select the closest edit point to the playhead using the V key, then use the U key to toggle the selection among the end of the outgoing clip and the beginning of the incoming clip. Then, use the JKL keys to move the playhead to the frame to want to extend that edit point to, and press E to do an “extend” edit. In Selection mode, this overwrites neighboring clips.
 - **To move clips forward or back in the Timeline:** To select a clip in preparation for moving it, either click it, or use the Spacebar or JKL keys to move the playhead over it and press Shift-V. Then press the Comma key (nudge 1 frame left) or Period key (nudge 1 frame right) to move the clip to the left or right. If you nudge a clip to overlap another clip, the clip you’re nudging overwrites the adjacent clip. Shift-Comma and Shift-Period nudges by 5 frames. In Selection mode, this leaves a gap.
 - **To move clips up or down to other tracks:** To select a clip in preparation for moving it, either click it, or use the Spacebar or JKL keys to move the playhead over it and press Shift-V. Then, press Option-Up Arrow to move the Video and Audio of that clip to the next higher-numbered track, or press Option-Down Arrow to move the Video and Audio to the next lower-numbered track.

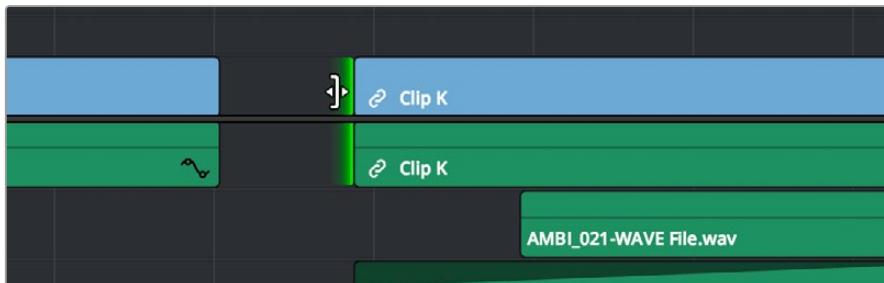
TIP: You can hold down the Shift key while nudging a selection to do a “fast nudge.”

The duration of a fast nudge is customizable in the Editing panel of the User Preferences.

By default it’s five frames, but you can set it to whatever you want.

Trimming Gaps

The start and end of gaps can also be rippled using the Trim tool. For more information, see *Chapter 43, "Trimming."*



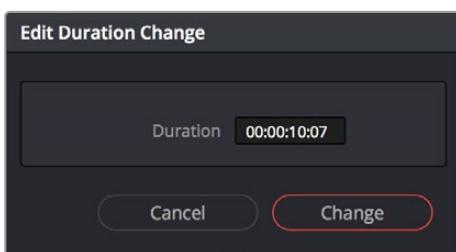
Using the Trim tool to ripple the Out point of a gap to narrow it

Modifying Clip Duration Via Timecode

You can change a clip's duration numerically in one of two ways.

To change a selected clip's duration:

- 1 Decide if you want to ripple the Timeline or overwrite neighboring clips when you change a clip's duration. If you want to ripple the Timeline, choose the Trim tool. If you want to overwrite neighboring clips or leave a gap, choose the Selection tool.
- 2 Do one of the following:
 - Select a clip and choose **Clip > Change Clip Duration**.
 - Right-click any clip in the Timeline and choose **Change Clip Duration** from the contextual menu.
- 3 When the **Edit Duration Change** dialog appears, enter a new duration in the Timecode field, and click **Change**. For more information on timecode entry, see "Moving the Playhead Using Timecode" in Chapter 35, "Preparing Clips for Editing and Viewer Playback."



A window for changing the duration of a clip in the Timeline

Resizing or Trimming Clips in the Source Viewer

You can also open a clip from the Timeline into the Source Viewer to perform trimming in different ways. You can do this in one of two ways:

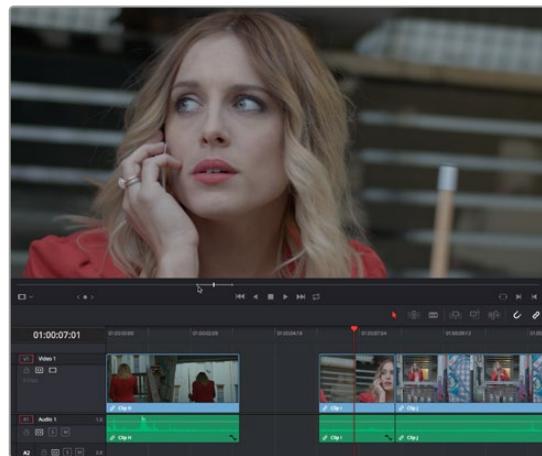
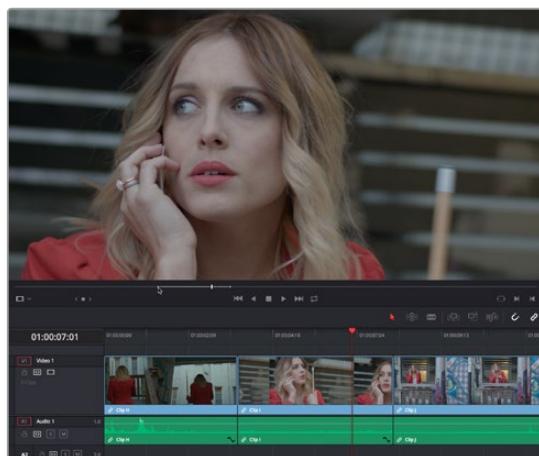
- Double-click a clip in the Timeline to open it into the Source Viewer.
- Move the playhead over a clip in the Timeline, press Shift-V to select that clip, and then press the Return or Enter key to open it into the Source Viewer.

Once you open a clip into the Source Viewer, the Source Viewer has focus, enabling you to use the Spacebar or JKL commands to move the playhead around in the Viewer in order to make edits. How these edits affect the Timeline depends on whether you use the Selection tool or the Trim tool.

TIP: To instead open a match frame of a clip in the Timeline using the pointer, hold the Option key down while double-clicking a clip.

Using the Selection Tool

When the Selection tool is selected, you can drag the In and Out markers, or use the playhead and I and O keyboard shortcuts to resize that clip in the Timeline.



(Left) A Timeline clip opened in the Source Viewer, (Right) resizing the clip and leaving a gap by dragging its In point in the Source Viewer

Using the Trim Tool

When the Trim tool is selected, dragging the In and Out points, or setting new ones using the I and O keys resizes the clip while rippling the Timeline left or right as necessary.

Doing a Slip Edit in the Viewer

If you hold the Shift key down while dragging the In or Out point of a timeline clip you've opened in the Source Viewer, you'll move both the In and Out points together, doing a slip edit of that clip's content in the Timeline. This works using either the Selection or Edit tools.

Shuffle/Swap Insert Edits

A Shuffle Insert edit (sometimes referred to as a Swap Insert edit) lets you quickly rearrange one or more selected clips in the Timeline simply by Command-Shift dragging them to the left or right. When you do so, the surrounding clips automatically move to the right or left to switch places with the clip or clips that you're dragging. This is a really fast way to reorder clips to try out different arrangements, without needing to drag clips onto multiple tracks to get them out of the way, first.

You have a lot of flexibility in how you shuffle clips around. You can select one clip, or multiple consecutive clips to shuffle. If you select multiple consecutive clips, they'll move together as a single block. You can even select multiple consecutive clips on multiple tracks to shuffle around the Timeline as a single item.

Furthermore, you can also select clips that are part of split edits, where the audio and video In and Out points start or end at different frames. In this case, how other clips move in the Timeline to make room for the split edit clip you're dragging depends on whether you click the video or audio portion of the clip to start dragging:

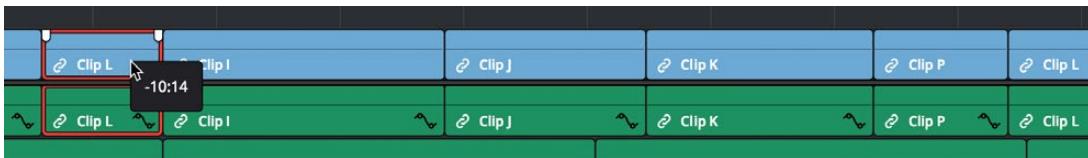
- If you click-and-drag the video portion of the clip, then all clips will rearrange themselves based on the duration of that video item on that track, so that all video items on that track rearrange themselves without either overwriting one another or leaving gaps. As you drag to shuffle the selection through the Timeline, overlapping linked audio items will either overwrite the audio on neighboring clips, or leave a gap.
- If you click-and-drag the audio portion of the clip, then all clips will rearrange themselves based on the duration of that audio item on that track, so that all audio items on that track rearrange themselves without either overwriting one another or leaving gaps. As you drag to shuffle the selection through the Timeline, overlapping linked video items will either overwrite the video on neighboring clips, or leave a gap.

Given the rules previously described, shuffling clips is really easy, and you can do so in one of two ways.

To shuffle insert clips with adjacent clips in the Timeline:

- 1 Turn snapping on.
- 2 Select one or more consecutive clips you want to shuffle.
- 3 Press and hold the Command and Shift keys down and drag either the video or audio portion of the selected clips to the left or right.

So long as you move clips to the In or Out points of adjacent clips, they'll automatically switch places with the selection of clips you're dragging. Snapping will help make sure that you align clip(s) you're dragging with previously existing edit points until dropped in the desired location.



Before and after clip L being shuffled with clips I, K, and J in a scene to rearrange the sequence

To shuffle insert one clip into adjacent clips in the Timeline:

- 1 Turn snapping off.
- 2 Select one or more consecutive clips in the Timeline that you want to shuffle.
- 3 Press and hold the Command and Shift keys down and drag either the video or audio portion of the selected clips to the left or right.
- 4 The selection of clips you're dragging will be more easily inserted in the middle of adjacent clips as you drag with snapping turned off, and the cut portion of each clip will be moved into the gap that's left behind by the clip(s) you're dragging. Drop the clip into the desired location when you're finished.

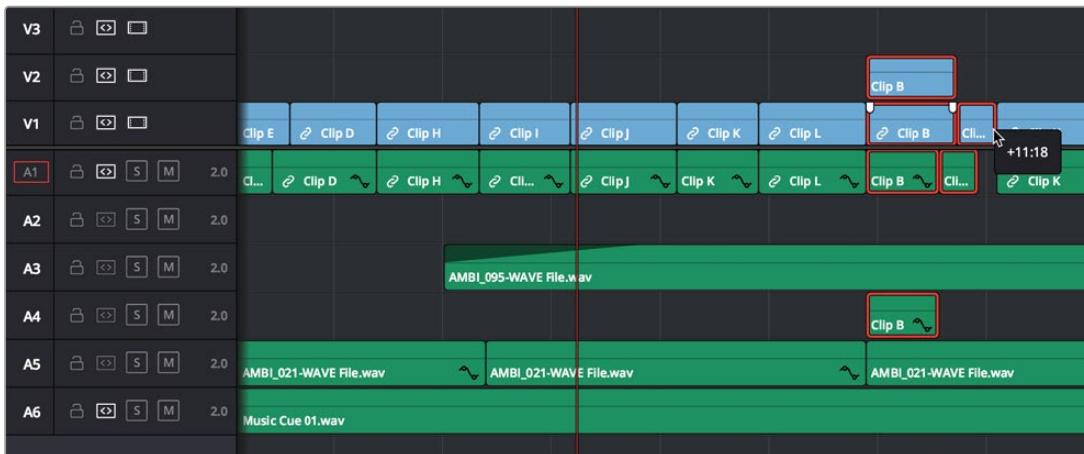
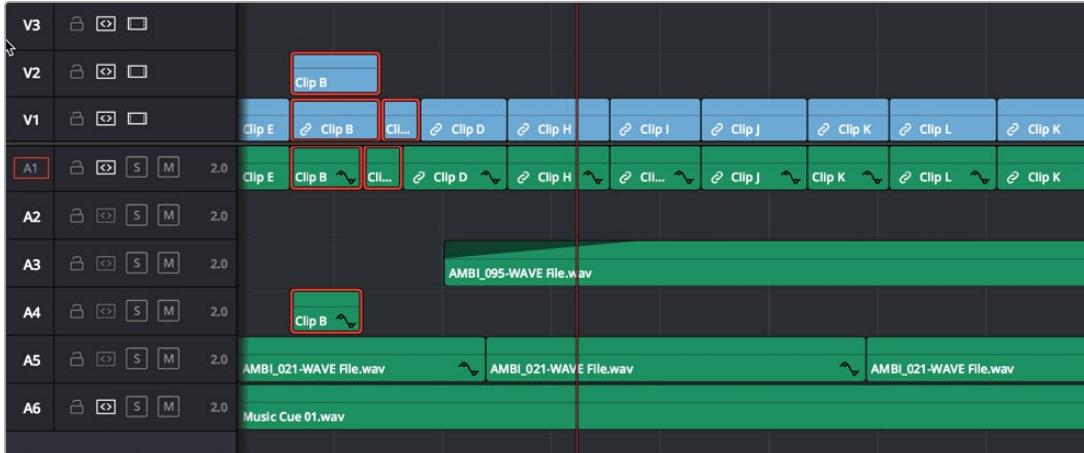


Before and after clip L being inserted into the middle of Clip K, which is split in half to make way for it

To shuffle insert multiple clips to another position in the Timeline:

- 1 Select all of the clips you want to move to another position on the Timeline.
- 2 Press and hold the Command and Shift keys, and drag the clips left or right. Make sure the item you click to drag is on the same track as the majority of clips you're rearranging; the item you click defines which track is used to guide the rearrangement of clips.

In the following example, the video item of Clip C is selected on track V1, so as it's dragged to the right, all clips on other tracks are rearranged according to the duration and location of clips B and C on track V1. As a result, clips on tracks other than V1 may be overwritten, or leave gaps, as necessary for the items on track V1 to be rearranged cleanly.



Before and after a group of clips being shuffled to the right. The clip that was clicked to drag defines how all other clips will be rearranged

To shuffle insert multiple clips from the Media Pool or Source Viewer into the Timeline:

- 1 Either select one or more clips in the Media Pool or open a clip in the Source Viewer.
- 2 Press and hold the Command and Shift keys, and drag the selection from the Media Pool or Source Viewer into the Timeline.
- 3 As you drag, the clips you're dragging will be inserted into the Timeline at the pointer location. Release the mouse to finish making the edit.

Splitting and Joining Clips

In many situations you may find yourself splitting clips (adding edits) in order to separate multiple clips that were inadvertently baked together, or to cut up clips into sections that you're planning on applying different effects to or grading differently.

Methods of splitting and joining clips:

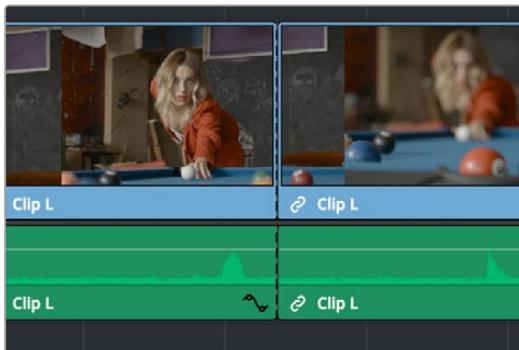
- **To split a clip once:** Drag the playhead to the frame where you want to split a clip, and press Command-Backslash (\) to split every clip on a track with Auto Select enabled.

- **To split many clips:** Click the Razor Edit mode button (or press B), and then click clips in the Timeline to split as many clips as you want.
- **To split clips using the DaVinci control panel on the Color page:** Move the playhead to the frame you want to split, then press SHIFT UP and SPLIT/UNDO on the T-bar panel.
- **To join clips using the DaVinci control panel on the Color page:** Move the playhead to the edit point you want to join, and press SHIFT UP and JOIN/REDO on the T-bar panel. Both clips must be from the same media file, and the frames to either side of the edit point need to be continuous for those clips to be joined.

TIP: Using the Blade Edit Mode or Split Clip command on a clip that's currently selected preserves the selection on the first half of the clip after cutting.

Through Edits

When you split a clip, a through edit appears to show that you currently have an edit with continuous timecode running from the outgoing to the incoming half. This is called a through edit, and is displayed with a dotted line running along its edge so you know that it's special.



A through edit seen in the Timeline

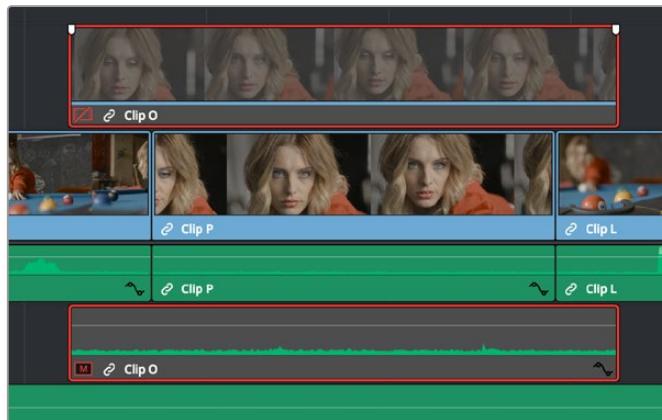
To eliminate a through edit, do one of the following:

- Select it in the Timeline, and press Delete.
- Right-click a through edit in the Timeline, and choose Delete Through Edit.

TIP: You can show an isolated list of every through edit in the Timeline by opening the Edit Index and choosing "Show Through Edits" in the Edit Index Option menu. Clicking any item in the list jumps the playhead to that through edit, making it easy to check all the through edits in a timeline to see if they're necessary or not.

Enabling and Disabling Clips and Tracks

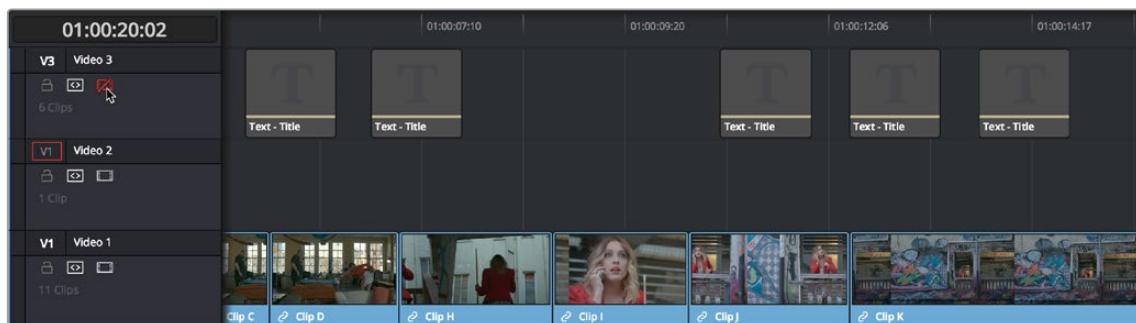
As you work in the Timeline, you'll find there are times when you want to disable clips that you don't want to appear during playback, without actually removing them from the edit. For example, you may decide to disable superimposed clips that are positioned as insert shots in the middle of a scene because of a client's notes, but you don't want to eliminate the clips because they might change their minds.



A disabled clip on track V2

In another example, you've edited a series of titles on track V3, so you need to disable track V3 in its entirety to output a textless version of the movie as a deliverable.

When a clip or track is disabled, clips within it appear dimmed, and these disabled clips don't appear in the Color page, and aren't output to tape or rendered to disk in the Deliver page until that track is re-enabled first.



Track V3 is disabled, making the Timeline textless as a result

To disable/enable one or more clips in the Timeline:

- Select one or more clips, then right-click the selection and check or uncheck Enable Clip in the contextual menu, or press D to toggle a clip's enabled state.

To disable/enable an entire track:

- Click the track enable button.

Copying and Pasting Clips in the Timeline

Clips can be cut, copied, and pasted in a variety of ways using standard keyboard shortcuts. You can cut or copy one clip or a selection of several, and you can also choose to copy or cut just the video or audio media of a clip. When pasting, you can paste to the same timeline, or to a different timeline if you want to move media from one to another.

Methods of doing simple cut, copy, and paste:

- **To cut one or more clips, leaving a gap:** Make a selection, and choose Edit > Cut (Command-X). The selected clip or clips are removed from the Timeline and stored in memory for pasting.
- **To ripple cut one or more clips and ripple the Timeline to close the gap:** Make a selection, and choose Edit > Ripple Cut (Command-Shift-X). The selected clip or clips are removed from the Timeline and stored in memory for pasting. All clips on tracks with Auto Select enabled will be rippled to the left to fill the gap left by the cut clips.
- **To copy one or more clips:** Make a selection, and choose Edit > Copy (Command-C). The selected clip or clips are left in the Timeline, but copies are stored in memory for pasting.
- **To paste one or more clips to the same track:** Move the playhead to the frame where you want the pasted selection to start, and then choose Edit > Paste (Command-V). By default, each copied clip is pasted onto the same track it was copied from. Pasted clips overwrite any clips in that track that are in the way. Pasted clips are automatically selected, ready for nudging left or right, or for other operations.
- **To paste one or more clips to a different track:** Pasting clips to a different track requires a slightly different procedure. Move the playhead to the frame where you want the pasted selection to start, then either Option-click any empty area on the track you want to paste the clip(s) to or Option-click the Auto Select control of that track to solo that track, and then choose Edit > Paste (Command-V). Pasted clips overwrite any clips in that track that are in the way. Pasted clips are automatically selected, ready for nudging left or right, or for other operations.

Paste Insert

Another paste command, Edit > Paste Insert (Command-Shift-V), lets you paste clips that you cut or copied via an insert edit, so that an edit is added at the position of the playhead to clips that are already in the Timeline, and all media to the right of the playhead is rippled farther right to make room for the clip or clips being pasted. As with all other ripple edits, only clips on tracks with their Auto Select control turned on are affected. Pasted clips are automatically selected, ready for nudging left or right, or for other operations.

Cut/Copy/Paste of Partial Clip Segments Using In and Out Points

You can use the Timeline's In and Out points to cut and copy partial segments of longer clips in various ways. This is a valuable technique for doing in-depth audio and dialog editing, although it's useful for copying partial segments of any kind of clip in the Timeline.

To cut or copy part of a clip to paste elsewhere:

- 1 Set In and Out points to isolate the part of the clip you want to cut or copy. You can use the Auto Select controls to include or omit clip segments on specific tracks while you do this.
- 2 Press Command-X to cut or Command-C to copy that clip segment.
- 3 Clear the In and Out points by pressing Option-X. Otherwise, you'll paste the clip segment right back into the same place it started.
- 4 Move the playhead to the frame of the Timeline you want the pasted clip to start, and use the Paste or Paste Insert commands to paste the clip segment there. Pasted clips are automatically selected, ready for nudging left or right, or for other operations.

You can also use In and Out points to paste only a partial segment of a much longer clip that you've cut or copied.

To paste only part of a clip:

- 1 Select a clip, and press Command-X to cut or Command-C to copy that clip.
- 2 Set In and Out points to identify the region of the Timeline you want to paste into.
- 3 Use the Paste or Paste Insert commands to paste only as much of the Cut or Copied clip as will fit between the In and Out points you've placed. Pasted clips are automatically selected, ready for nudging left or right, or for other operations.

Copying and Pasting Clips to a Different Track

If all Auto Select controls on all tracks are turned on, clips are always pasted back to the same track they were copied from, starting at the position of the playhead. This is valuable for the many instances where you'll find yourself copying and pasting clips you want to repeat, especially when doing audio editing.

However, if you want to paste the clips you cut or copied to a different track entirely, you need to use the Auto Select controls to specify which track you want to paste to.

Here are the rules:

- You can force paste what you copied to a specific track by Option-clicking that track's Auto Select control to solo it before pasting.
- When one or more Auto Select controls are disabled, then clips are pasted to the lowest-numbered track with an enabled Auto Select control.
- If you've copied clips on multiple tracks, clips on the lowest copied track will be pasted to the lowest Auto Select enabled track, and all other clips will be pasted to higher tracks, with new tracks automatically created, if necessary.
- If Auto Select is disabled on every single track, then a new track will be created above all other video tracks and/or below all other audio tracks, and the clip will be pasted into this new track, which has Auto Select turned on.

Audio Channels When Copying and Pasting Audio Clips

Copying and pasting audio has one other consideration. If you're force pasting a clip into a different track, the track you solo the Auto Select control of could possibly be set to an audio channel mapping that doesn't match the clips you're pasting there. An example of when this would happen is if you copy stereo audio clips from a stereo track and paste them to a mono audio track.

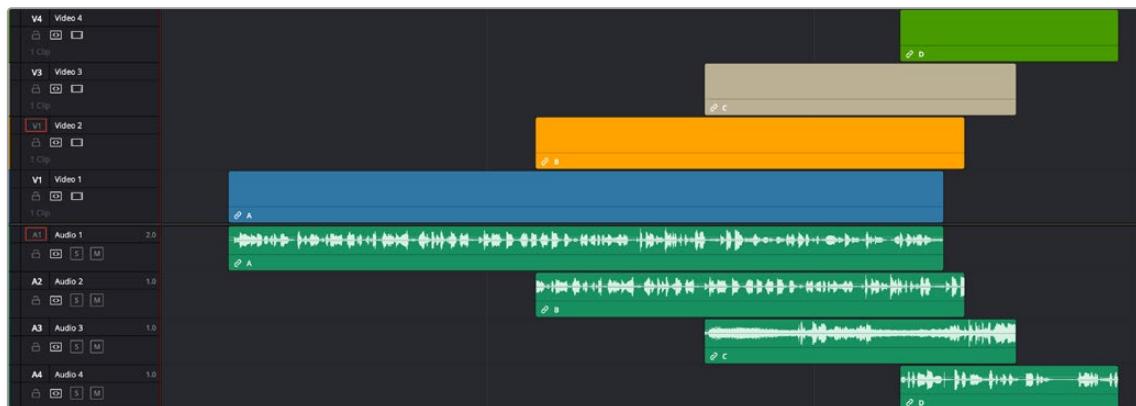
DaVinci Resolve allows you to do this, so you have the freedom of pasting audio clips to any track you want to. However, extra audio channels within clips that exceed the number of channels supported by the audio track they're on will be muted. Fortunately, this situation is easy to rectify. Simply right-click the track header of the problem audio track, and use the Change Track Type To submenu to change its channel mapping to one more appropriate to the clips you've pasted into it.

Auto Align Clips

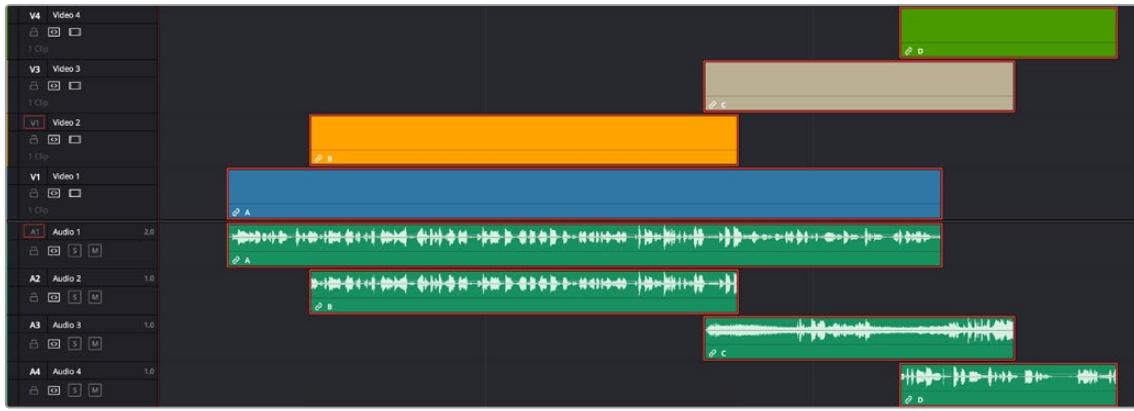
Auto Align Clips slides one or more selected clips to align with the timecode or audio waveforms of another clip that has matching timecode or audio. This function works for video clips, which can be aligned using timecode, and for audio clips, which can be aligned using either timecode or waveform matching. Waveform matching can also be used if you're working with audio/video clips.

You can only select one clip per video or audio track to align, and they all will align to whichever clip is on the lowest-numbered video or audio track. Clips selected that have no overlapping timecode or audio waveform will not be moved and left in their original position on the Timeline.

For example, clip A on track V1 overlaps with clip B on track V2, but not with clip C on track V3, or clip D on track V4. Selecting all clips and using Auto Align Edits will slide clip B to align with clip A, but clips C and D won't be moved because they don't overlap with clip A.

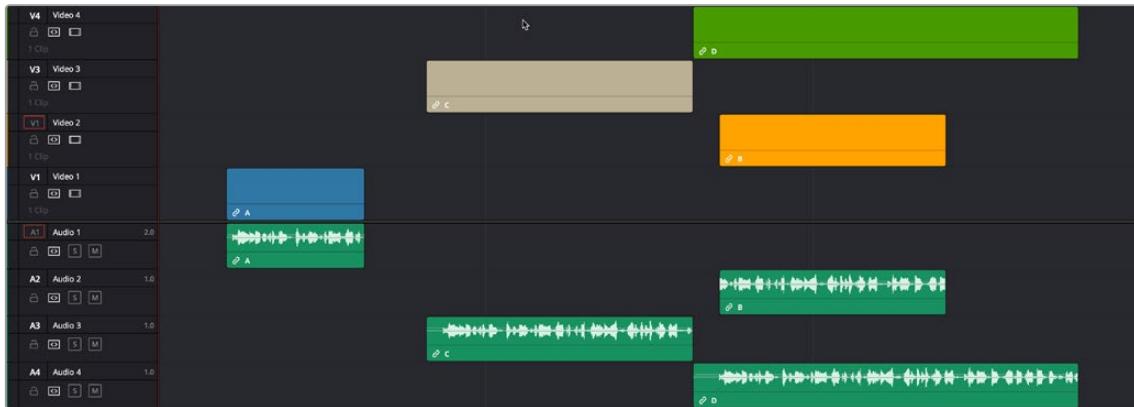


The original Timeline with clip A (blue) and clip B (orange) that have some overlapping audio but are out of sync

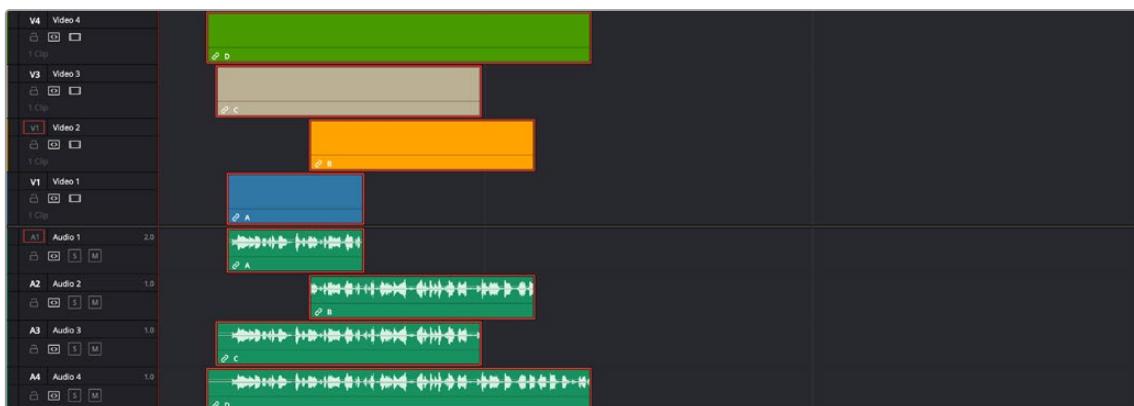


The same Timeline after the Auto Align command; clip B (orange) has been slipped to sync via audio waveform with clip A (blue). Clips C (tan) and D (green) were also selected, but because they had no overlapping timecode or audio, they remained in place.

In another example, clip A on track V1 overlaps with clips B, C, and D on tracks V2, V3, and V4 respectively. Selecting all clips and using Auto Align Edits will slide clips B, C, and D to be aligned with clip A.



The original Timeline with clip A (blue), and clip B (orange), C (tan), and D (green) all have overlapping audio, but are out of sync.



The same timeline after the Auto Align command. All clips are now in sync and the audio waveforms now all match. All the other clips moved to clip A's (blue) position because it was the lowest clip on the Timeline.

To use Auto Align clips:

- 1 Arrange the clips you want to align with one another on the Timeline so that there's one clip per track. All clips will sync to the clip on the lowest track number. All clips must have overlapping timecode or audio waveforms.
- 2 Select every clip that you want to align (only one per track).
- 3 Right-click one of the selected clips, and choose an option from the Auto Align Clips submenu, either "Based on Timecode," or "Based on Waveform."

If Timecode is selected, the operation will be instant. If Waveform is used, a progress bar will appear showing you how long it will take DaVinci Resolve to analyze the selected audio waveforms before your clips are aligned. If you've selected clips that can't be aligned, a warning box will appear and tell you which clips had errors.

For video, this can be useful for multi-camera editing situations where you want to align an insert with the action of an alternate angle. For audio, this is useful for situations where you have multiple recordings of the same audio that you want to align for further editing.

NOTE: Waveform matching won't work for re-recorded audio, such as dialog that's been re-recorded using the ADR tools of the Fairlight page, as the correspondence between two waveforms must be precise for a match to be found.

Duplicating Clips and Transitions in the Timeline

One or more clips can be duplicated by making a selection, and then Option-dragging the selected clips to another position and/or track in the Timeline. When duplicating clips in this way, you must hold the Option key down until you release the mouse button.

Individual selected transitions can also be duplicated by Option-dragging them to another edit point.

Smart Reframe (Studio Version Only)

The Smart Reframe feature in DaVinci Resolve makes it easier to quickly reframe material across extreme aspect ratio changes. It's useful for situations where you've shot a 16:9 horizontal video and find yourself needing to create a vertically-oriented 9:16 version for mobile phones and social media deliverables, or using 4:3 archival footage in a 2.39:1 widescreen movie. Smart Reframe can be used manually, or automatically executed using the DaVinci Resolve Neural Engine.

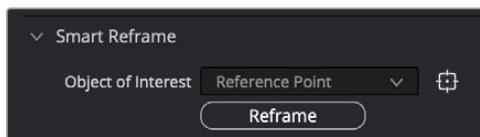


Smart Reframe in action, with the Reference Point bounding box active (right)

The Smart Reframe tool is found in the Sizing tab of the Inspector and is available in both the Cut and Edit pages.

To use the Smart Reframe tool:

- 1 Duplicate your timeline, right-click the Timeline and choose Timelines > Timeline Settings, and click Use Custom Settings to change the Timeline Resolution to the aspect ratio needed for delivery. Make sure that "Mismatched resolution files" is set to "Scale full frame with crop," and click OK.
- 2 Select one or more clips you want to reframe, and open the Inspector to the Sizing tab.
- 3 Open the Smart Reframe controls, leave the Object of Interest drop-down menu set to Auto (if you've selected more than one clip, Auto is the only setting available), and click "Reframe." DaVinci Resolve will analyze your footage and should automatically adjust each individual clip's position to a more aesthetically pleasing framing.
- 4 (Optional) If the "Auto" setting does not give you desirable results for a particular clip, you can manually select the main subject using the following steps.
 - a) To manually select the subject area, choose "Reference Point" from the Object of Interest drop-down menu, and click the target icon just to the right of the menu. This automatically sets the Viewer mode to Smart Reframe, exposing the onscreen controls for choosing a reference.
 - b) Drag the Reference Point bounding box around the main subject of interest in the frame. You may use the Transform controls directly above in the Inspector to move the source clip around if your subject is outside the current framing.
 - c) Click "Reframe."



The Inspector's Smart Reframe controls showing the manual reference point selected

DaVinci Resolve locks onto and, if necessary, tracks your subject using the reference you've selected, automatically panning and scanning the original clip as needed to keep the reference within the new aspect ratio. While involving a bit of manual adjustment, this function still dramatically reduces the time involved in pan and scanning footage by manually adjusting and keyframing the sizing controls.

Scene Cut Detection on the Timeline

If you need to break down a previously edited video into its component clips for re-editing or color correction, you can do so directly in the Timeline. Using the DaVinci Neural Engine, DaVinci Resolve can automatically analyze and split up an edited video into individual clips.

Timeline Scene Cut Detection is also available in the Cut page. If you prefer, you can continue to use the original Scene Cut Detection tool found in the Media Pool.

To use Scene Cut Detection on the Timeline:

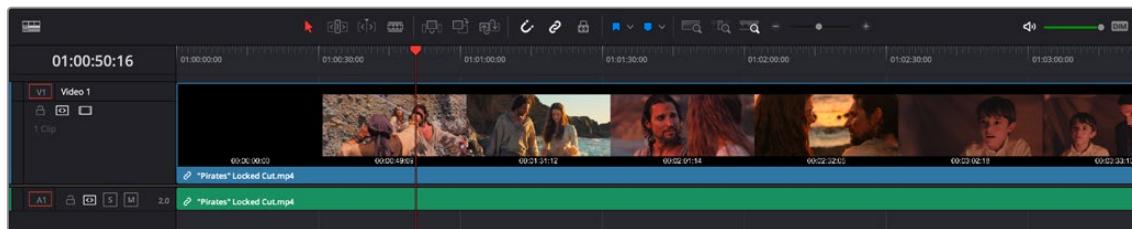
- 1 Select one or more clips you want to split on the Timeline. Alternately, you can limit Scene Cut Detection to just a portion of a clip by setting In and Out points on the Timeline around the section you want to analyze.
- 2 Choose Timeline > Detect Scene Cuts.

A dialogue box appears, “Detecting scene cuts in clips x of x.” This process can take some time, depending on the length, number, and complexity of the clips you’ve selected. When the Scene Cut Detection has finished, the clip you selected will be broken up into a number of through edits that now can be used as independent clips.

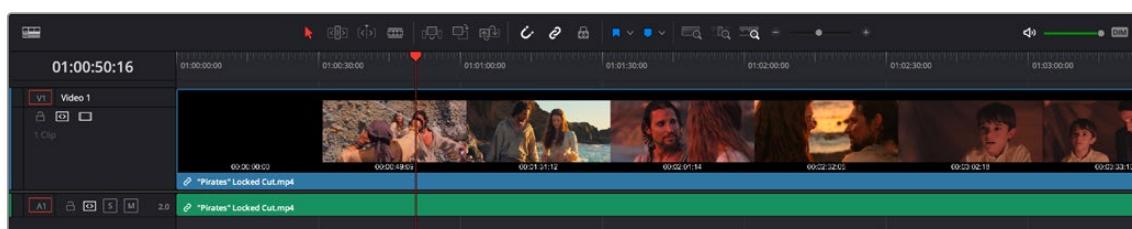
Checking and Fixing Your Results

If the Neural Engine has made an error, you can fix it manually by navigating to the cut using the Up and Down Arrow keys to go back and forth in the Timeline, and by then doing one of the following:

- **To remove a Cut:** Click the through edit to select it, and press the “Delete” key.
- **To make a New Cut:** Place the timeline indicator at the cut point, and choose Timeline > Split Clips (Command-\).



A single clip of a finished edit, consisting of multiple cuts before the Detect Scene Cuts command

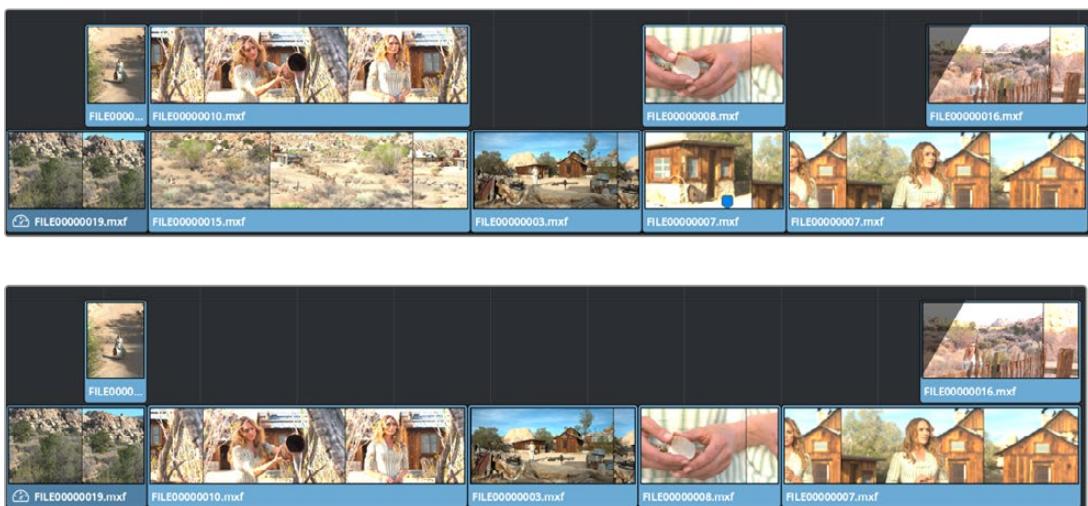


Multiple individual clips extracted from the edited clip via Detect Scene Cut; the operation has been contained by the In and Out points, and one of the resulting through edits has been highlighted in green.

Clean Up Video Tracks

While it's convenient to be able to edit overlapping clips on multiple video tracks to try slipping clips back and forth, or to stack multiple takes or versions of a VFX clip, there comes a time when all those unnecessary clips take a toll on the visual organization of your timeline, not to mention your colorist's sanity. For this reason, a trio of commands for cleaning up your timeline have been added to the Timeline > Clean Up Video Tracks menu. These are:

- **Flatten Unused Clips:** All superimposed clips with In and Out points that are aligned with clips below them are moved down to track V1, so long as they don't have any kind of opacity, composite mode, transition, or fade effect applied to them making them a compositing effect.
- **Disable Unused Clips:** All clips that are underneath superimposed clips that don't have any kind of opacity, composite mode, transition, or fade effect applied to them are disabled.
- **Change Unused Clips Color:** All clips that are underneath superimposed clips that don't have any kind of opacity, composite mode, transition, or fade effect applied to them have their color changed to whatever you select.



(Top) The original timeline, (Bottom) The Flatten Unused Clips command is used to move superimposed clips with In and Out points that match other clips underneath them to track V1 to simplify the Timeline for future work

Chapter 39

Three- and Four-Point Editing

A more controlled form of editing is to use three- and four-point editing to make a specific range of source media fit into a specific range of the Timeline.

This chapter covers the basics of three- and four-point editing, as well as the wide variety of edit commands that are available.

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Keyboard Shortcuts in This Chapter

Here's a list of keyboard shortcuts you might find helpful that relate to topics found in this chapter.

Key Shortcut	Function
Command-1	Choose Media Pool Bin list
Command-2	Choose Media Pool browser area
Arrow Keys	Move selection in the Media Pool Bin list or browser area to choose a bin or clip
Return or Enter	Open selected clip or timeline into the Source Viewer
Q	Toggle focus between Source and Timeline Viewers
I, O	Set In or Out point
Shift-I, O	Move playhead to In or Out point
Option-I, O	Delete In or Out point
Shift-A	Set In and Out points to match the current clip selection in the Timeline
X	Set In and Out points to fit the current clip at playhead in the Timeline
Option-X	Delete both In and Out points
Command-Shift-Up, Down Arrow	Move video destination control up or down to another track
Command-Option-Up, Down Arrow	Move audio destination control up or down to another track
Option-1 through 8	Set video destination control to that track number; press again to enable/disable
Command-Option-1 through 8	Set audio destination control to that track number; press again to enable/disable
Option-F1 through F8	Toggle video auto-select for that track number
Option-F9	Toggle all video auto-select controls off or on
Option-Command-F1 through F8	Toggle audio auto-select for that track number
Option-Command-F9	Toggle all audio auto-select controls off or on
Option-Shift-Q	Toggles "Switch to timeline after edit," to set whether focus stays on the Source Viewer or switches to the Timeline after you make an edit; on by default
F9	Insert Edit selected clip(s) from Media Pool or Source Viewer to the Timeline

Key Shortcut	Function
F10	Overwrite Edit selected clip(s) from Media Pool or Source Viewer to the Timeline
F11	Replace Edit the first of selected clip(s) from Media Pool or Source Viewer to the Timeline
F12	Place On Top Edit from Media Pool or Source Viewer to the Timeline
Shift-F10	Ripple Overwrite from Media Pool or Source Viewer to the Timeline
Shift-F11	Fit to Fill from Media Pool or Source Viewer to the Timeline
Shift-F12	Append To End Edit from Media Pool or Source Viewer to the Timeline
Undo	Command-Z
Redo	Command-Shift-Z

Introduction to Three-Point Editing

Three-point editing is a standard editorial method that's shared with many other post-production applications, so this procedure should feel familiar. The idea is that you need only set any combination of three In and Out points in the source clip and Timeline to edit a clip into your program at a specific time, and DaVinci Resolve automatically figures out the fourth edit point that's necessary to execute the edit. Three-point editing is most commonly accomplished using overwrite and insert edits.

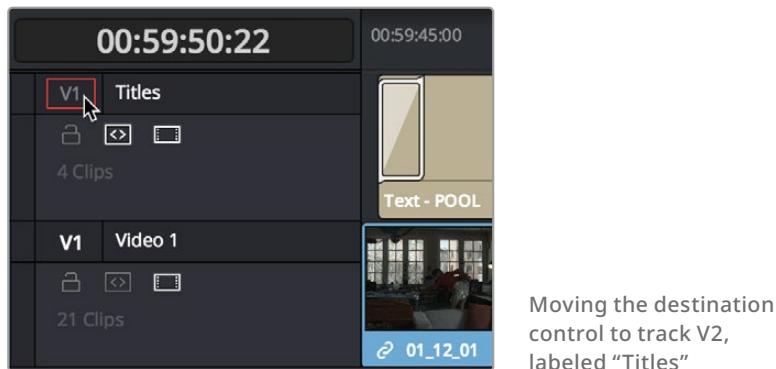
Choosing a Track to Edit and Using Destination Controls

The orange destination controls, found in the Timeline header area, let you specify which video and audio tracks you want incoming source clips to be edited to when you use editing methods other than drag and drop. No matter how many video or audio channels may be embedded within a single clip of media, only one video and one audio destination control is available. In the case of video, you can only expose one video channel of a clip at a time. In the case of audio, all audio channels for a given clip are embedded within a single Timeline track, making it a snap to edit stereo or other multi-channel audio sources together. For more information about working with audio, see *Chapter 44, "Working with Audio in the Edit Page."*

Setting the destination control of a track is a vital step in the process of creating an edit and is easy to do. You can set the video and audio destination controls to be separate tracks.

To assign the destination tracks of incoming source clips, do one of the following:

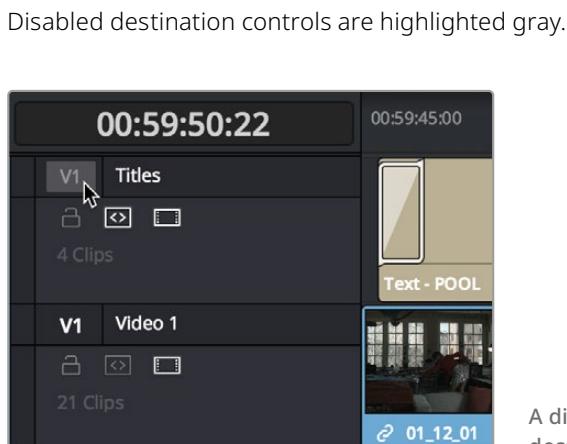
- Click the destination control of any unassigned track to enable that track as the destination.
- Drag the destination control to any unassigned track in the Timeline.
- Press Command-Shift Up Arrow and Down Arrow to move the Video destination control up and down among different video tracks, or press Command-Option Up Arrow and Down Arrow to move the Audio destination control up and down among different audio tracks.
- Press Option-1 through 8 to set a video destination, or press Option-Command-1 through 8 to set an audio destination on tracks 1 through 8.
- Press Option-Command-9 to set the audio destinations to all tracks.



You can also disable the Video or Audio destination controls in situations where you want to edit a source video clip into the Timeline without its audio, or vice versa.

To disable or reenable a destination control, do one of the following:

- Click an already assigned destination control to toggle it off and then on again.
- Pressing the “assign destination control” repeatedly for a given track (Option 1-8 for video, Option-Command-1-8 for audio) toggles the destination track on and off.

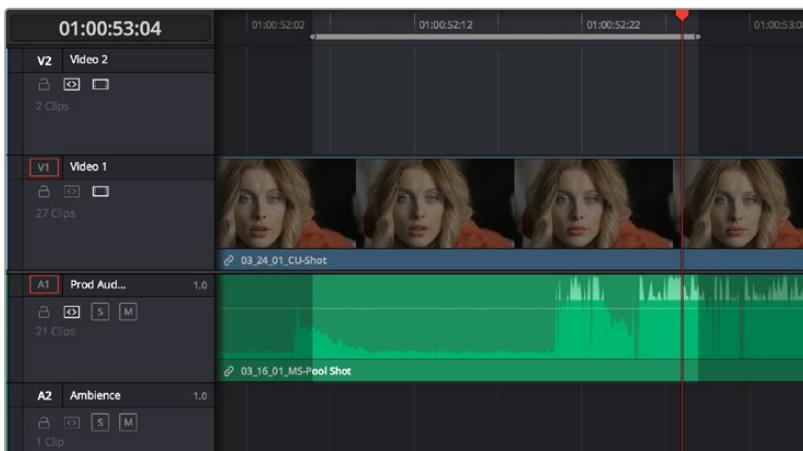


Setting In and Out Points in the Timeline

When you're setting up an edit to the Timeline, you can oftentimes get away with simply putting the Timeline playhead at the frame where you want to edit the incoming source clip. In the absence of In or Out points, the playhead is used as the In point. However, you can set up different kinds of edits by setting specific In and Out points to define different ranges of the Timeline.

Methods of setting and clearing In and Out points in the Timeline:

- **To set an In or Out point:** Select the Timeline or Timeline Viewer by clicking or pressing the Q key, then use the transport controls, jog bar, or control panel buttons to move the playhead, and press the I key to set an In point, or the O key to set an Out point.
- **To clear In or Out points:** With the Timeline Viewer selected, press Option-I to clear the current In point, or Option-O to clear the current Out point.
- **To clear both the In and Out points at once:** Press Option-X.



'In and Out points shown in the Timeline, with unmarked areas outside the selection dimmed'

Methods of moving In and Out points in the Timeline:

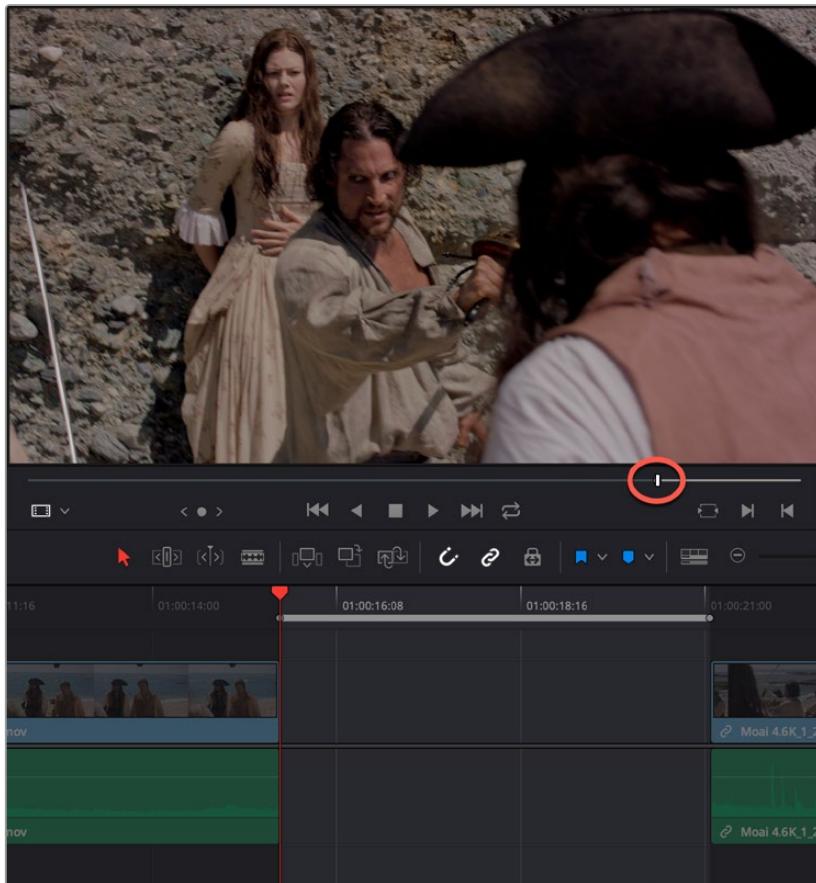
- Move the playhead, and then press the I or O keys to change the In or Out points to the new position of the playhead.
- Drag any In or Out point in the Timeline ruler to another position.

The area of the Timeline outside the region that's currently defined by In and Out points is dimmed, to call attention to the portion of the Timeline that will be affected by the next edit you'll make.

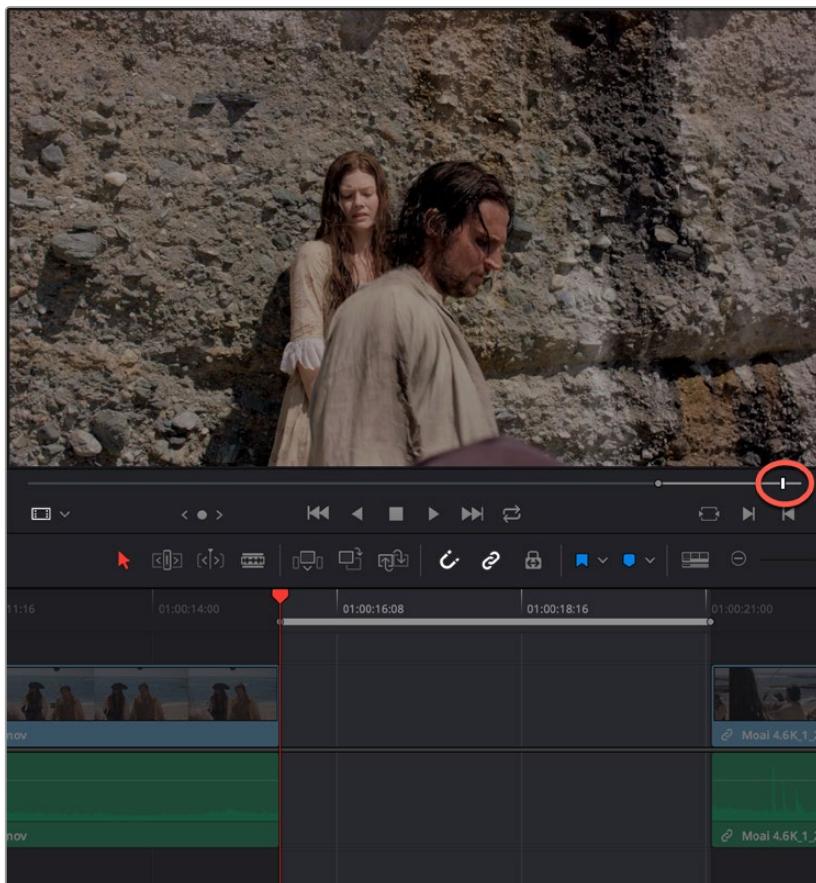
To move the playhead to an In or Out point in preparation for making an adjustment:

- Press Shift-I to immediately move the playhead to the current In point, or Shift-O to move the playhead to the current Out point.

The Go to In and Go to Out commands are capable of placing the playhead at the implicit (but unmarked) In and Out points defined by a three point edit you're setting up, even when Preview Marks have not been enabled. For example, if you mark In and Out points in the Timeline, and you then mark an In point for a clip in the Source Viewer, pressing Shift-O (Go to Out) automatically moves the Source Viewer playhead to the frame that will be the Out point of that clip were you to execute this edit.



In and Out points set in the Timeline and an In point set in the Source Viewer set up a three point edit



Using Go to Out to move the Source Viewer playhead to the implicit Out point defined by a three point edit

Mark Clip and Mark Current Selection

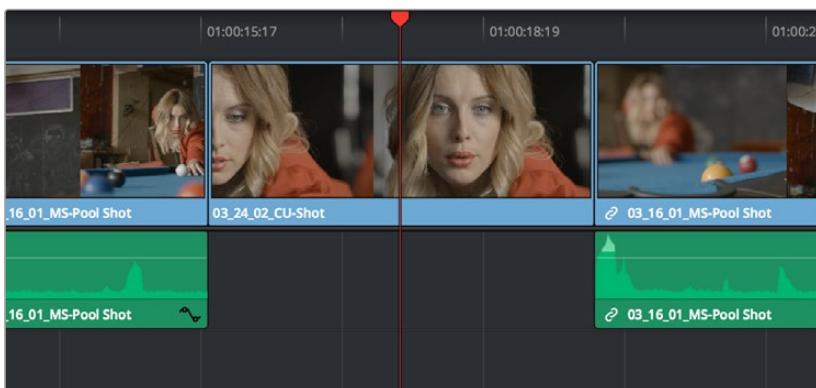
These commands are automatic ways of setting In and Out points in the Timeline both at once, using the timing of other clips. They're both exceptionally handy for defining the range of an incoming edit using clips that are already in the Timeline that you want to replace, or gaps in the Timeline that you want to fill.

In short, Mark Clip uses the first and last frame of a target clip or gap in the Timeline to automatically set Timeline In and Out points for editing. For example, if there's a shot in an edit that you want to replace with a different take of the same action, or there's a gap in a sequence of clips that you'd like to quickly fill with B-roll, you can use the Mark Clip command to help set this up.

Mark Current Selection uses the first and last frames of a range of selected clips to automatically set Timeline In and Out points for editing. A good example is when you have a series of clips in the Timeline, all of which you'd like to overwrite with a single incoming source clip, you can use the Mark Current Selection command.

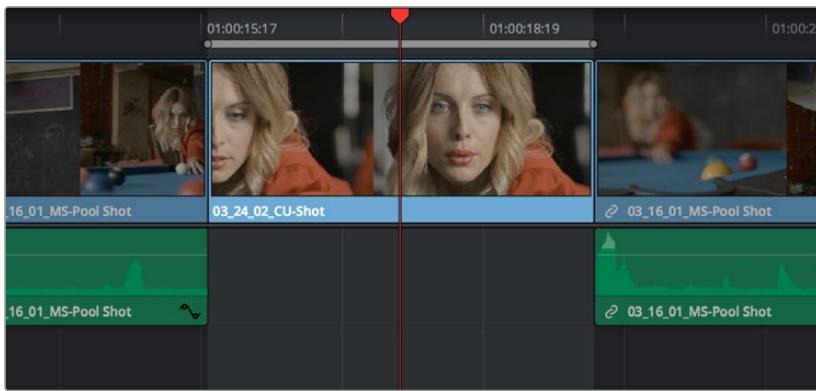
To use Mark Clip:

- 1 Move the playhead to intersect either a clip you want to use to set In and Out points, or a gap (empty area) between two other clips that you want to target. The playhead can be on any frame of this clip, it doesn't matter which.



Positioning the playhead at a clip you want to mark

- 2 If there are other clips on a multi-track timeline that overlap the clip you're targeting for this operation, then the clip on the lowest video track will be used as the target to set the In and Out points. If you want to target a clip on a higher track, then either disable the Auto Selection controls of all timelines underneath, or Option-click the Auto Selection control of the track with the clip you're targeting to solo it, which will force that track to be the target of this operation.
- 3 Press the X key to automatically set In and Out points that match the first and last frames of the target clip.

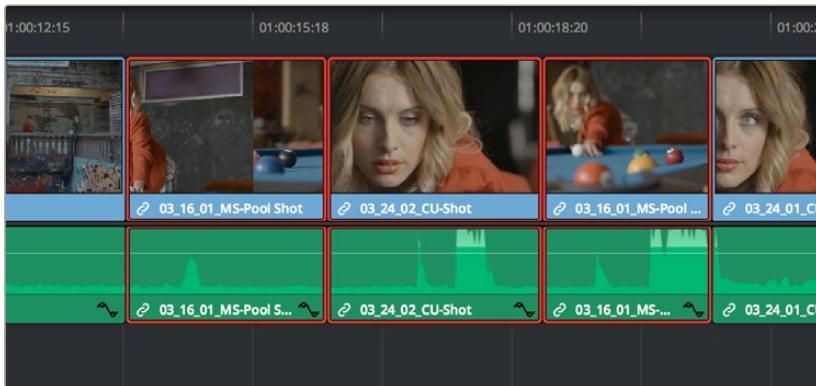


Using Mark Clip to set In and Out points that match a clip's duration

TIP: To clear both In and Out points, press Option-X, which is the opposite of this command.

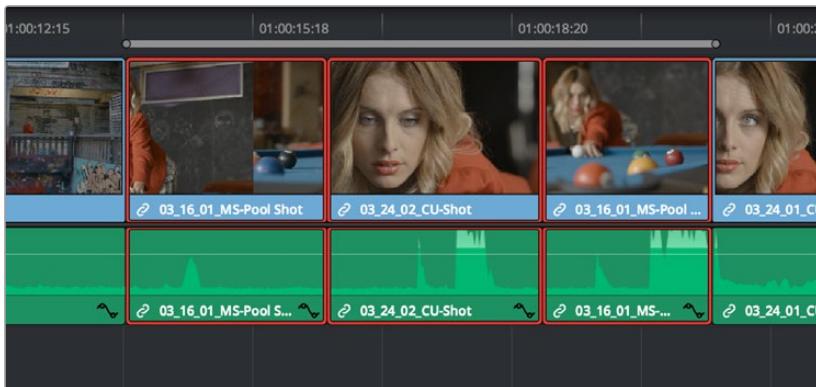
To use Mark Selection:

- 1 Select one or more clips in the Timeline.



Selecting clips you want to use as a range to mark In and Out points

- 2 Press Shift-A to automatically set In and Out points that match the first and last frames of the selection. A range of discontinuous clips will produce the same result as a range of continuous clips.



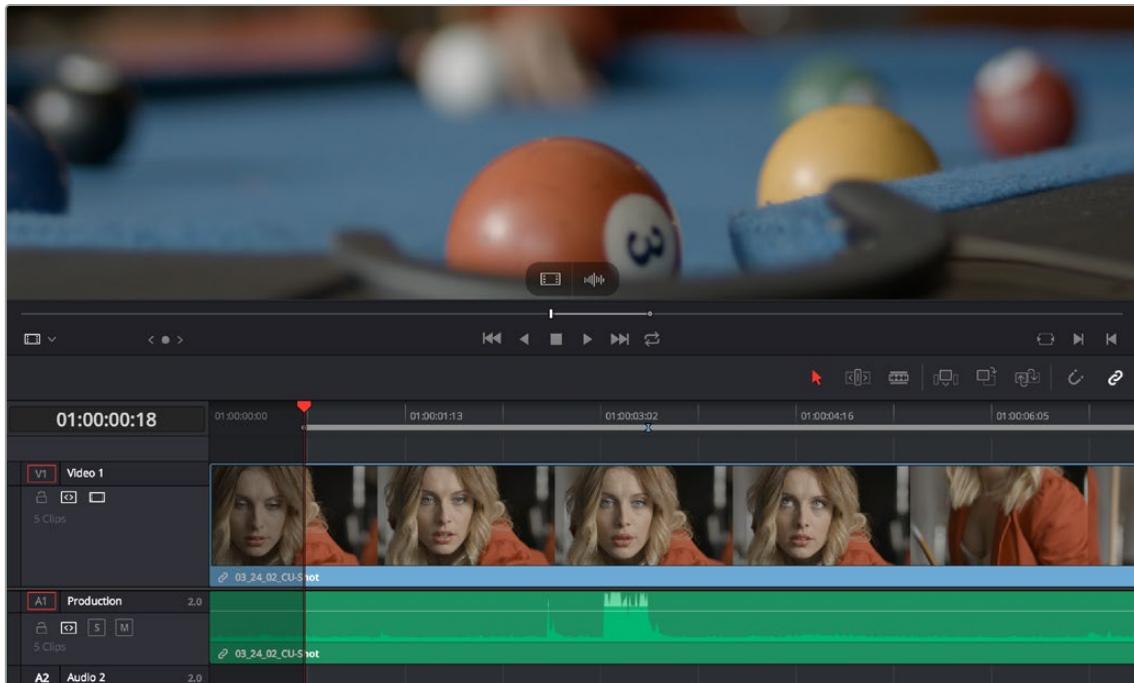
Marking a selection to set In and Out points

TIP: You can also mark gaps in the Timeline with Mark Selection.

Preview Marks During Three-Point Editing

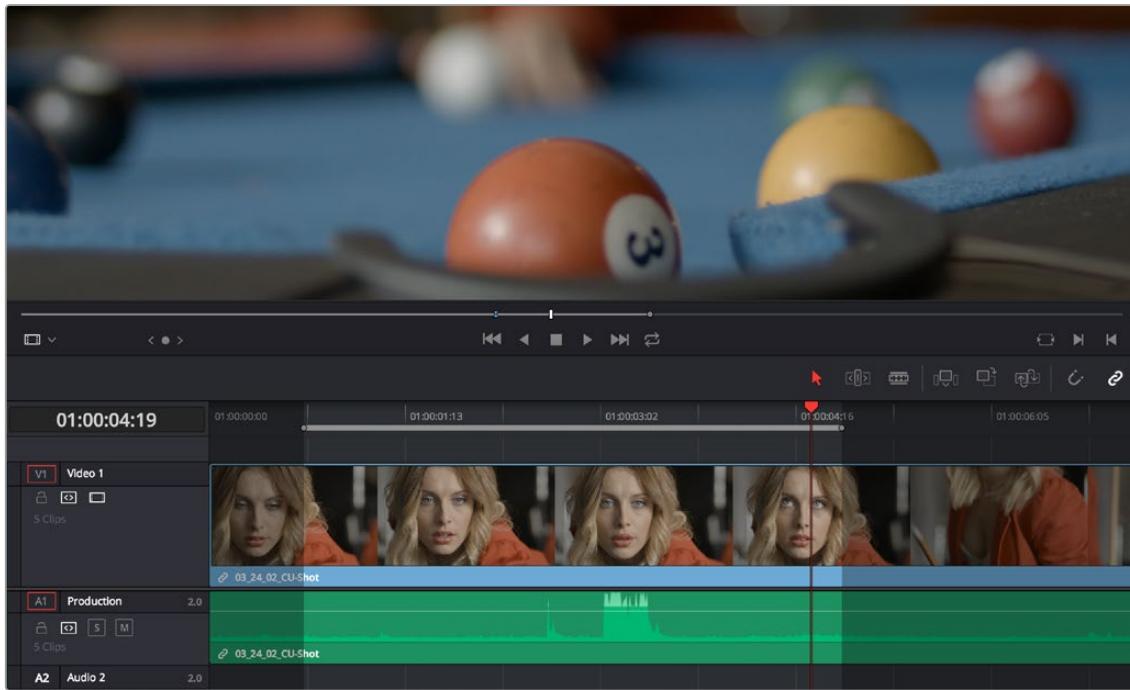
In order to help you see what will happen whenever you execute a three-point edit, preview marks appear in either the Source Viewer or the Timeline Ruler to let you know the exact duration of the Timeline that's about to be affected by the edit you're preparing to make. To prevent them from being a distraction, preview marks only appear once you've explicitly marked three edit points in the Source Viewer and Timeline, and they can be turned on and off by choosing View > Show Preview Marks.

For example, if you set In and Out points in the Source Viewer, and an In point in the Timeline, then a preview marker will appear in the Timeline Ruler to show the implied Out point in the Timeline of the edit you're about to make.



A preview marker in the Timeline shows the Timeline Out point being automatically calculated by DaVinci Resolve based on the In and Out points that are set in the Viewer, and the In point in the Timeline

On the other hand, if you set both In and Out points in the Timeline, and only an Out point in the Source Viewer, a preview marker appears in the jog bar of the Source Viewer to show you the implied In point, in the Source Viewer, of the edit you're about to make.

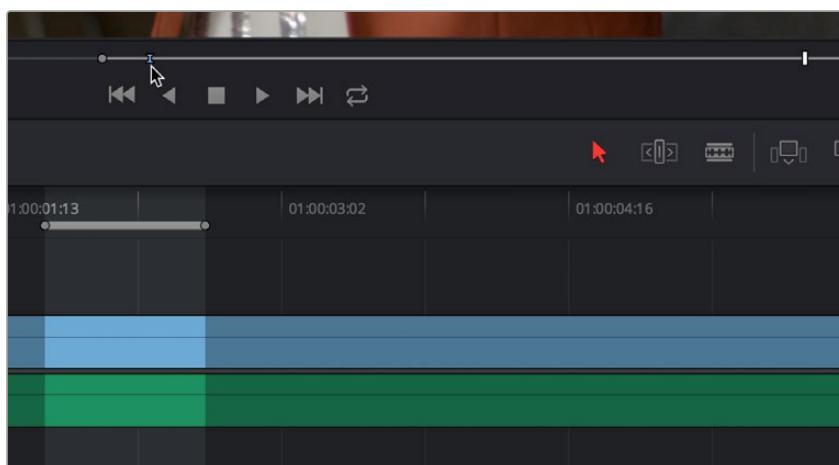


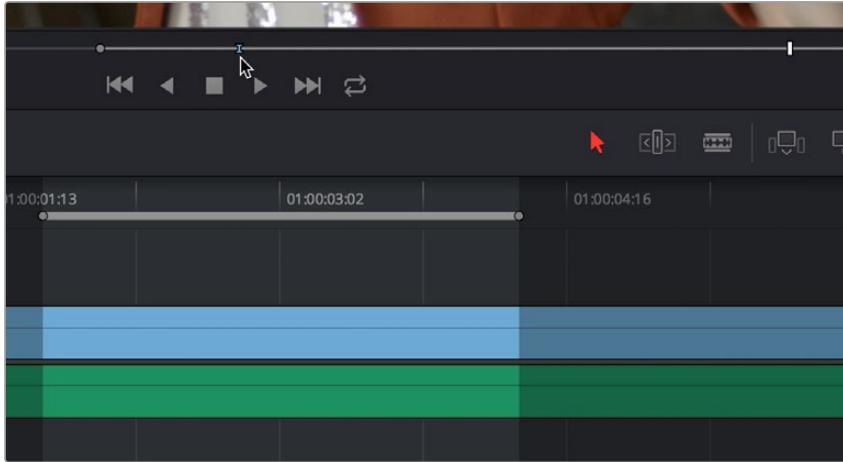
A preview marker in the Source Viewer shows the Source Viewer In point being automatically calculated by DaVinci Resolve based on the In and Out points that are set in the Timeline, and the In point in the Source Viewer

If you like, you can move the playhead to the position of the preview mark by using Shift-I if the preview mark is an In point, or Shift-O if the preview marker is an Out point.

Dragging Preview Marks to Change an Edit

You can drag preview marks to alter the edit you're about to make. When you drag a preview mark, the corresponding In or Out point that's opposite the Viewer with focus is altered to accommodate the new three-point edit you're setting up. For example, if you have an In point in the Source Viewer, and In and Out points set in the Timeline, a preview mark appears in the Source Viewer to show the Out point that will be used to edit the clip in the Source Viewer into the Timeline. However, you can drag this preview mark to the left in the Source Viewer, and the result will be that the Out point in the Timeline will move along with it, since you're retiming the edit.





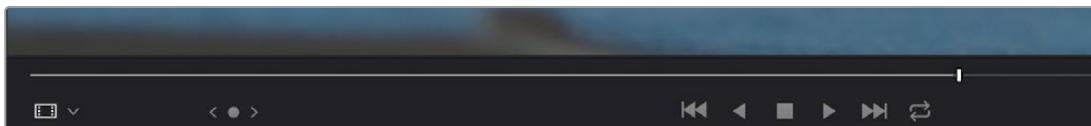
Dragging a preview mark in the Source Viewer changes the opposite edit point in the Timeline

The Rules of Three-Point Editing

In the previous examples, three-point editing was being used by virtue of source In and Out points being set to define a range of the source clip to be edited into the Timeline, and the Timeline playhead being used as the acting Timeline In point; three points defined the edit to be made. However, three-point editing is also very useful when you need to overwrite sections of a previously edited timeline with new source clips in a controlled manner, such as when adding an insert shot to a scene to cover a particular change you're making that would break continuity.

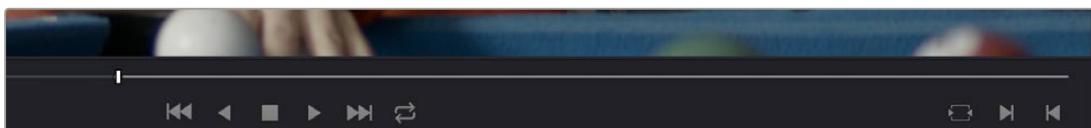
Depending on the combination of Source and Timeline In and Out points you set, the following rules govern three-point editing:

- **If there is no In point in the source clip:** The first frame of media will be used as the acting source In point. This can be seen by the thick bar that extends to the left of the Out point in the Source Viewer's jog bar.



A thick bar indicates which part of the source clip will be used in the absence of a Source In point

- **If there is no Out point in the source clip:** The last frame of media will be used as the acting source Out point. This can be seen by the thick bar that extends to the right of the In point in the Source Viewer's jog bar.



A thick bar indicates which part of the source clip will be used in the absence of a Source Out point

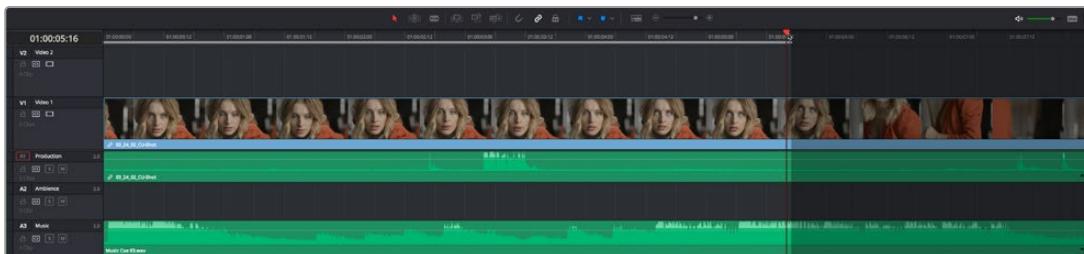
- **If there are no In or Out points in the Timeline:** The playhead will be used as the acting Timeline In point.

- **If you set a Timeline In point but no Timeline Out point:** The whole range from the In to Out points of the source clip is edited into the Timeline such that the Source In point is aligned with the Timeline In point. This can be seen by the thick bar that extends to the right of the In point in the Timeline Ruler.



A thick bar indicates where the Source clip will be edited in the absence of a Timeline Out point

- **If you set a Timeline Out point but no Timeline In point:** The incoming source clip will be backtimed so the Out point of the source clip is aligned with the Timeline Out point. This can be seen by the thick bar that extends to the left of the Out point in the Timeline Ruler.



A thick bar indicates a backtimed edit in the absence of a Timeline In point

- **If you set Timeline In and Out points but only a Source Out point:** In this case, the incoming source clip will also be backtimed so the Out point of the source clip is aligned with the Timeline Out point, with the Timeline edit points defining the duration of the source clip being edited.
- **If you set all four Source In and Out and Timeline In and Out edit points:** The Timeline edit points dictate the duration of source clip that is edited into the Timeline, and the frame at the Source In point is aligned with the Timeline In point, unless you perform a Fit to Fill or ripple overwrite edit, both of which can be done as four-point edits.

TIP: If you want to use all four Source and Timeline edit points to retime a source clip to fit into a specific range of the Timeline, use a Fit to Fill edit instead of an overwrite edit.

Editing Rules for Split In and Out Points

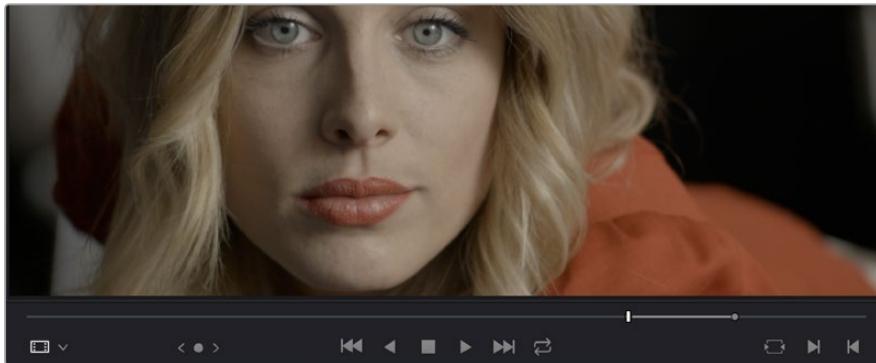
If you've created split In and Out points in the Source Viewer or Timeline, the following rules apply:

- **If the Source Viewer has split In and Out Points:** The leftmost split point of the incoming clip, whether video or audio, will be aligned with the playhead when the clip is edited; the other split point will be offset to the right.
- **If the Timeline has split In and Out Points:** The In point of the incoming clip will be aligned with the leftmost split point, whether video or audio; the accompanying audio or video Out point will be offset to the split point to the right.

Editing a Specific Range of the Source Clip Into the Timeline

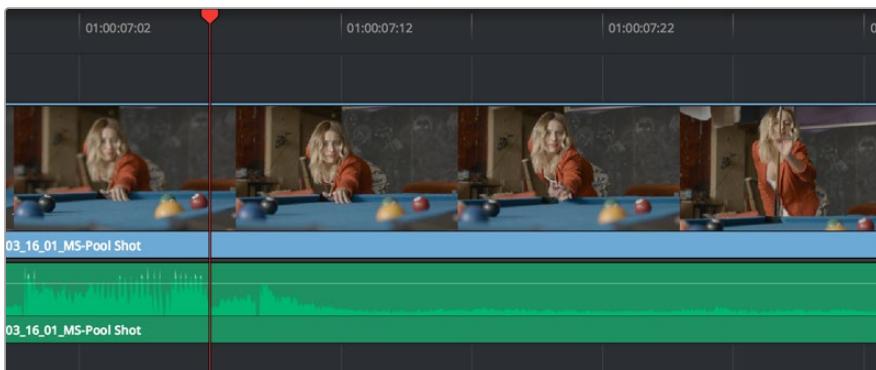
This section provides some common examples of three-point editing when performing edits in the middle of a previously edited timeline. In the following example, you have a specific range of source media that you need to edit into the Timeline, and you don't particularly care what gets overwritten in the Timeline by the incoming clip.

- 1 Set In and Out points in a source clip, either in the Media Pool or in the Source Viewer.



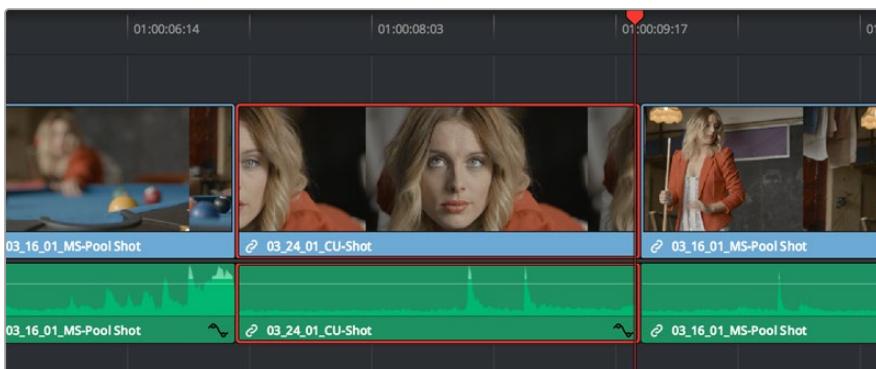
Setting source clip In and Out points

- 2 To set where you want the incoming clip to go, set the destination control to the tracks you want to edit onto, and then do one of the following:
 - Move the Timeline playhead to the frame you want to use as the Timeline In point for the edit.
 - Set a Timeline In point for the edit.



Using the playhead to act as a Timeline In point

- 3 To make the edit, click the Overwrite Clip button in the toolbar, press the F10 key, or drag a clip onto the appropriate overlay in the Timeline Viewer.

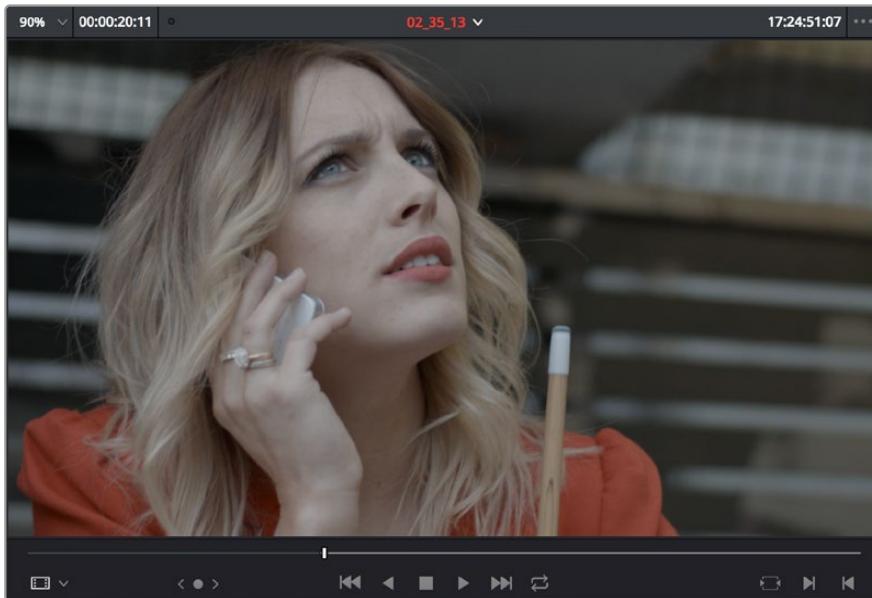


The resulting edit; the duration of the source clip defines the duration of the edit

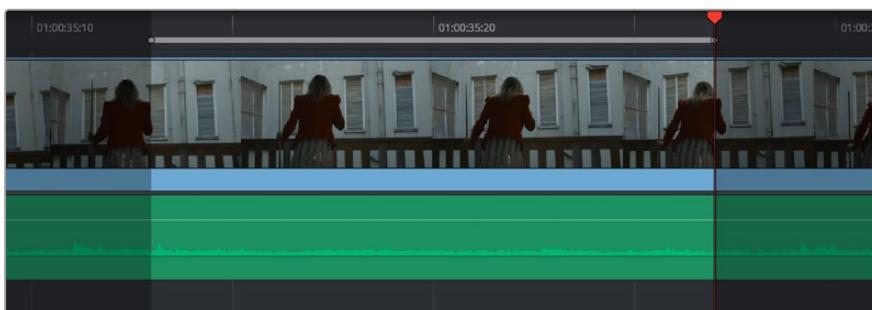
Editing Part of a Source Clip to Fit Into a Specific Range of the Timeline

In this example, you have a section of a clip or a gap in the edited sequence of clips in the Timeline that you want to fill with as much of the current source clip as it will take to “plug the hole.”

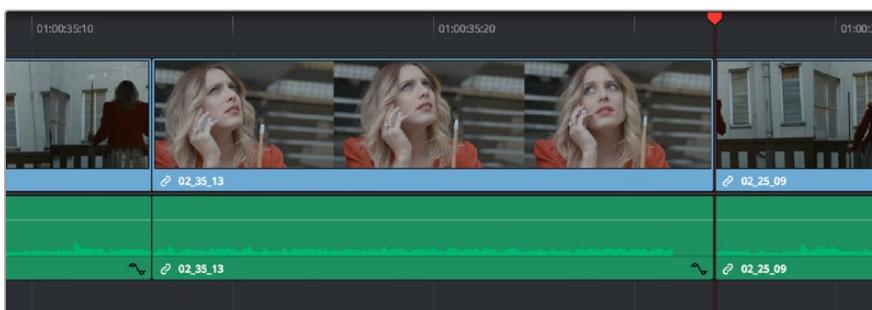
- 1 Set an In point in the source clip, if necessary, to define the first frame of the range of source media that you want to edit into the Timeline.



- 2 Set In and Out points in the Timeline to set both where you want the incoming clip to go, and how much of the incoming clip you want to use.



- 3 To make the edit, click the Overwrite Clip button in the toolbar, press the F10 key, or drag a clip onto the appropriate overlay in the Timeline Viewer.



Backtimed a Source Clip When Editing Into the Timeline

In this last example, you've got a specific moment in the second half of a source clip that you need to align with an Out point in the Timeline, such that the remaining duration of the incoming clip overwrites the edited sequence of clips from the right to the left. This is referred to as backtiming, when you're lining up a Source Out point with a Timeline Out point in order to make an edit, and can be set up one of two ways.

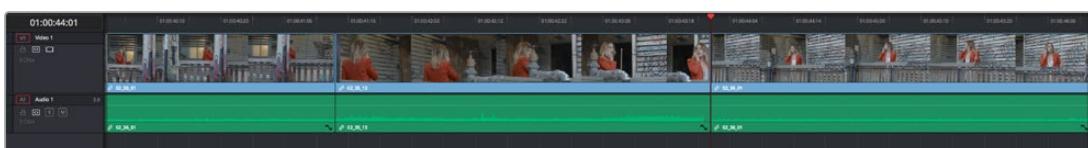
Backtimed method one:

- 1 Set In and Out points in the source clip, either in the Media Pool or in the Source Viewer.
- 2 Set an Out point in the Timeline, at the frame where you want the corresponding Out point of the incoming source clip to be aligned.



Setting up a backtimed match-on-action edit via In and Out points in the Source Viewer, and only an Out point in the Timeline

- 3 To make the edit, click the Overwrite Clip button in the toolbar, press the F10 key, or drag a clip onto the overwrite overlay in the Timeline Viewer.



The resulting edit, aligning the Out point of the source clip with the Out point of the Timeline

Backtimed method two:

- 1 Set an Out point in the source clip, either in the Media Pool or in the Source Viewer.
- 2 Set In and Out points in the Timeline to set both where you want the incoming clip to go, and how much of the incoming clip you want to use.



Setting up a backtimed edit by setting an Out point in the Source Viewer, and In and Out points in the Timeline to define the duration of the edit

- 3 To make the edit, click the Overwrite Clip button in the toolbar, press the F10 key, or drag a clip onto the appropriate overlay in the Timeline Viewer.



The resulting edit, aligning the Out point of the source clip with the Out point of the Timeline

Switch Focus to Timeline After Edit

A setting in the Edit menu, “Switch focus to timeline after edit” (Option-Shift-Q), lets you set whether or not DaVinci Resolve changes the application focus from the Source Viewer to the Timeline Viewer/Timeline every time you make an edit. This setting is on by default.

For example, if you’re assembling clips from many different source files into the Timeline, and trimming the results as you go, leaving this option on may save you time. In this case, after every edit, the focus switches from the Source Viewer to the Timeline, so you can quickly select the clip or edit point you want to trim and make your adjustments before loading the next clip into the Source Viewer in preparation for the next edit.

On the other hand, if you’re editing several pieces from a long interview clip into the Timeline, you may want to turn this setting off to make it easy to continue playing forward in the Source Viewer, setting In and Out points and editing clips into the Timeline as you go. After every edit, focus remains on the Source Viewer, so you can continue making edits from the same source clip without interruption.

Different Types of Three- and Four-Point Edits

This section covers the different types of edits that are available for cutting source clips into the currently open Timeline.

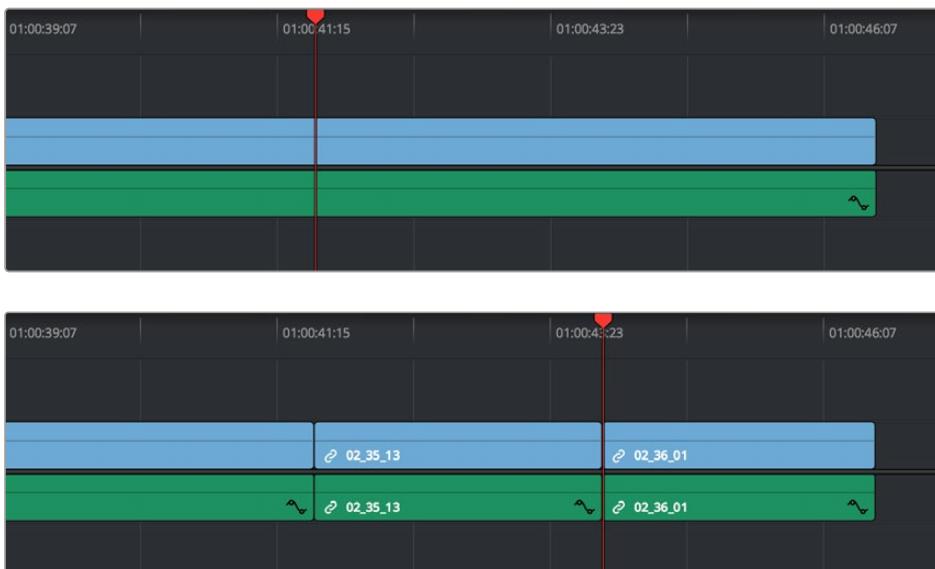
Overwrite Edits

The most common type of edit you'll make, an overwrite edit eliminates whatever media was in the Timeline previously with the incoming source clip taking the place of whatever was there. Overwrite edits are commonly used when initially assembling clips, or doing three-point editing.

Overwrite edits do not ripple the Timeline.

To overwrite one or more clips in the Timeline:

- 1 Move the playhead to the frame of the Timeline where you want to insert a clip.
- 2 Click the appropriate audio and video destination controls of the tracks you want to edit the incoming source clip onto. If necessary, create new tracks.
- 3 Select a single clip in the Media Pool to open it into the Source Viewer, then set In and Out points to define the range of media you want to insert.
- 4 To make the edit, choose Edit > Overwrite, click the Overwrite Clip button in the toolbar, press the F10 key, or drag a clip onto the Overwrite overlay in the Timeline Viewer.



Before and after an overwrite edit, the Timeline duration stays the same

The selected clips in the Media Pool are overwrite edited to the selected track starting at the position of the playhead, eliminating whatever was there originally while adding incoming clip. No other clips are rippled during this operation.

Insert Edits

An insert edit splits whatever media is already in the Timeline at the position of the playhead, and pushes that media to the right to make room for the incoming clip.

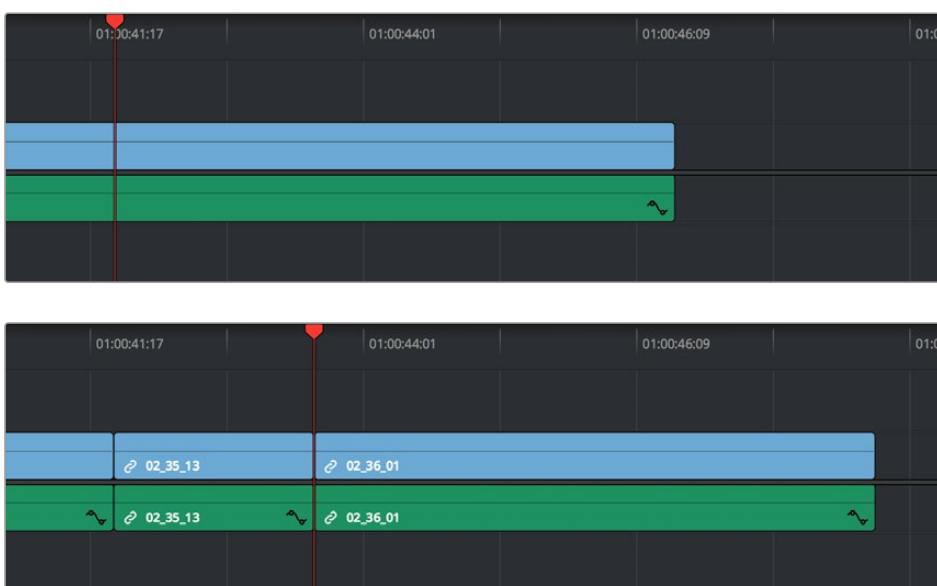
Insert edits have the effect of rippling almost all clips in the Timeline that are to the right of the insert edit point you're making, pushing them farther to the right by the duration of the incoming source clip. However, clips in any tracks of the Timeline that overlap to the left of the insert edit point aren't rippled, and remain in place.

For example, if you're insert editing a clip into the middle of a sequence of clips in track V1 and A1 of the Timeline, and there's also a clip of music edited into track A2 that overlaps well to the left of the insert edit point, the music clip remains where it is, but the other clips on track V1 and A1 that are to the right of your edit point are pushed to the right.

To insert edit one or more clips into the Timeline:

- 1 Move the playhead to the frame of the Timeline where you want to insert a clip.
- 2 Click the appropriate audio and video destination controls of the tracks you want to edit the incoming source clip onto. If necessary, create new tracks.
- 3 If necessary, set In and Out points in the clip or clips you want to insert edit into the Timeline using the controls of the Media Pool or the Source Viewer.
- 4 Do one of the following:
 - Select one or more clips in the Media Pool, right-click one of the selected clips, and choose "Insert Selected Clips to Timeline."
 - Choose Edit > Insert, click the Insert Edit button in the toolbar, press the F9 key, or drag any clip onto the Insert overlay in the Timeline Viewer.

The selected clips are insert edited to the selected track at the position of the playhead, pushing all other media in the destination track back by the total duration of the selected clips, except for clips on other tracks that overlap to the left of the edit point (as seen by the overlapping music clip in the example below).



Before and after an insert edit, the Timeline gets longer as non-overlapping clips to the left of the edit point are rippled to the right

Replace Edits

Replace edits are a unique three-point edit type that aligns the frame at the Source Viewer playhead with the frame at the Timeline playhead when the edit is executed. This is the fastest edit type to use when you need to align an action at a specific frame of video, or a sound at a specific frame of audio, to a particular frame's action or sound in the video or audio of the Timeline.

The fastest way of using the replace edit is to not bother setting either In or Out points in the Source Viewer, and to either use the duration of an existing clip intersecting the Timeline to define the edit, or a pair of timeline In/Out points specifying either a section of a clip you want to overwrite, or an empty section of the Timeline to which you want to edit.

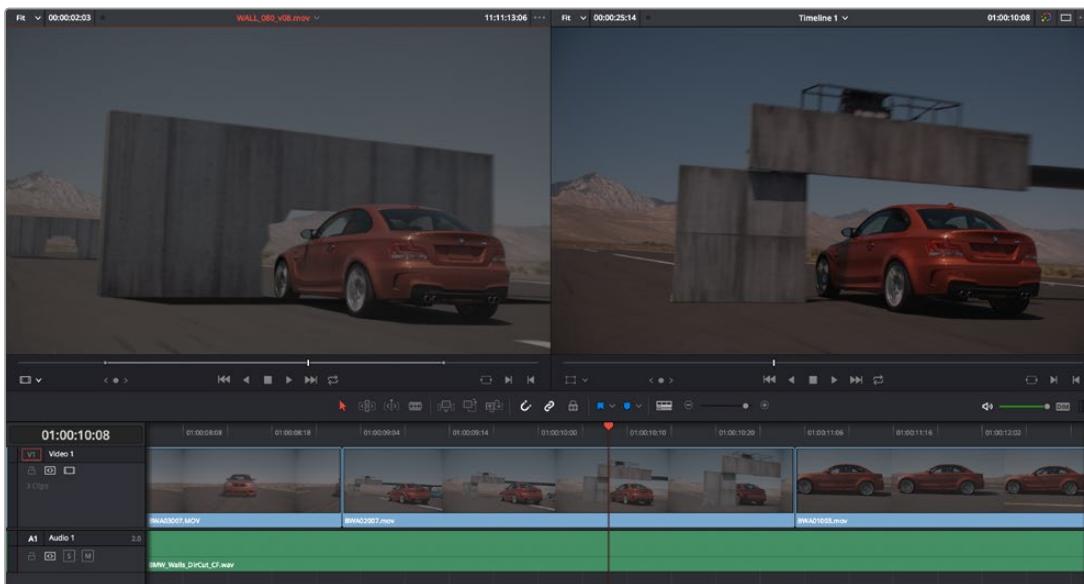
Replace edits do not ripple the Timeline.

Replace Edits to Replace Existing Clips in the Timeline

A replace edit automatically replaces an existing clip in the Timeline with a clip in the Source Viewer, so long as that clip overlaps the playhead and is on a track with its destination control enabled. When you make a replace edit in this way, DaVinci Resolve automatically uses the duration of the Timeline clip to define the duration of the incoming media, and the positions of the Viewer and Timeline playheads to line up how the incoming media should be placed. This is an extremely fast edit to make, since you needn't use any In or Out points at all.

To replace a clip in the Timeline:

- 1 Move the playhead in the Timeline to the clip that you want to replace, and align it with a frame that you want to line up with a frame in the clip you'll be replace editing into the Timeline.
- 2 Click the appropriate audio and video destination controls of the track containing the clip you want to replace.
- 3 Open a clip into the Source Viewer.
- 4 Move the playhead in the Source Viewer to the frame that you want to line up with the frame at the position of the playhead in the Timeline.



In the Source Viewer to the left is a VFX clip we want to edit into the Timeline to replace the existing Timeline clip, shown in the Timeline Viewer at right

In the example shown above, the original clip that was shot on location of a car driving past a slab of real concrete (shown in the Timeline Viewer at right) is going to be replaced by a VFX shot of a concrete wall with a small hole for the car to drive through (shown in the Source Viewer at left). The playhead in the Source Viewer is aligned on the very same frame as the playhead in the Timeline Viewer, which can be seen by the identical position of the white stripe on the road in the lower right-hand corner of the picture.

- 5 Now that the playheads are aligned on the frames that must match one another in both the Source and Timeline Viewers, choose Edit > Replace, click the Replace Clip button in the toolbar, press F11, or drag any clip onto the Replace overlay in the Timeline Viewer.



The resulting replace edit, in which the original timeline clip is replaced by the incoming Source Viewer clip by aligning the frames at each playhead

The camera original clip in the Timeline is now replaced with the VFX source clip from the Media Pool, with the source frame at the Source Viewer playhead aligned with the frame at the Timeline playhead.

Replace Edits to Edit Clips Into Empty Tracks

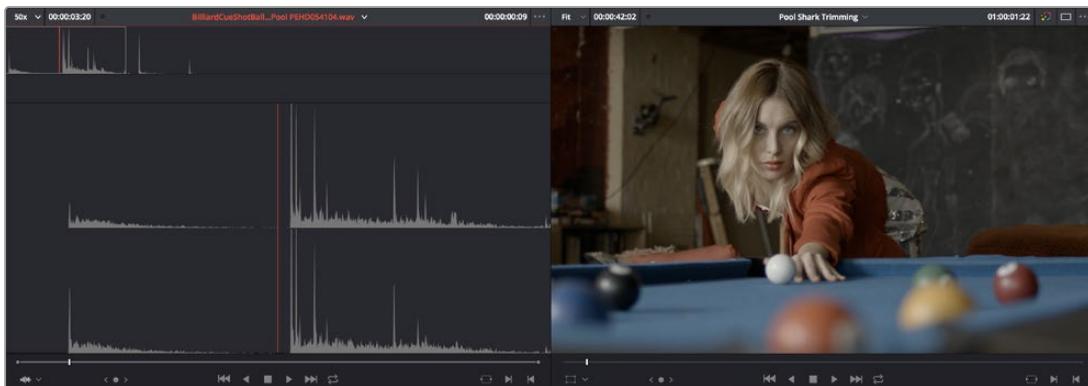
You can also use a replace edit to edit a clip into an empty track of the Timeline so that the frame at the position of the Source playhead is aligned with the Timeline playhead, and the In and Out points of the incoming clip fall where they may. This is useful when you want to “spot” a particular action of an alternate take or a cue in a sound effect to a specific frame of the Timeline.

To use replace edit to spot a sound effect or action video clip into the Timeline:

- 1 Move the playhead in the Timeline to the clip that contains the moment you want to align the new incoming audio or video clip with, and position it on the exact frame that you want to line up with a frame of the clip you’re going to edit into the Timeline.
- 2 Click the appropriate audio and video destination controls of the empty track you want to edit the incoming clip into.
- 3 Open a clip into the Source Viewer.
- 4 Move the playhead in the Source Viewer to the frame that you want to line up with the frame at the position of the playhead in the Timeline. This may be the sample of a sound effect that corresponds to the action in a particular frame of your program’s video, or a frame of video that corresponds to a particular sound in your program’s audio.

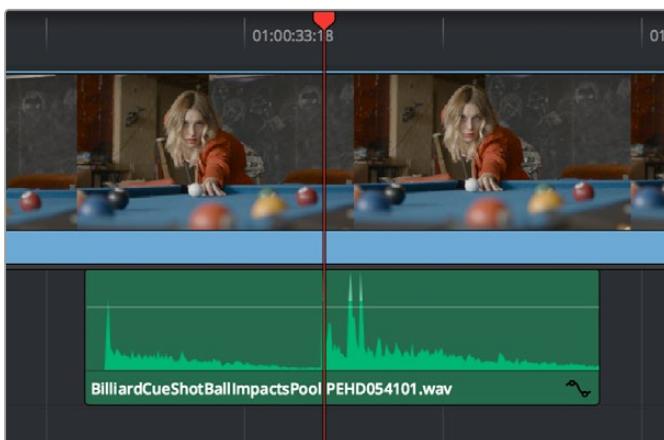
In the example shown below, the beginning of an audio cue of a billiard ball being hit is being lined up with the frame in which the cue ball is first hit in the video.

- 5 If necessary, set In and Out points in the Timeline to restrict how much of the incoming clip will be edited. Otherwise, the entire source clip will be edited into the Timeline.



In the Source Viewer to the left is an SFX clip we want to edit into the Timeline to match the visuals of a cue ball being hit, shown in the Timeline Viewer at right

- 6 Now that the playheads are aligned on the frames that must match one another in both the Source and Timeline Viewers, choose Edit > Replace, click the Replace Clip button in the toolbar, press F11, or drag any clip onto the Replace overlay in the Timeline Viewer.

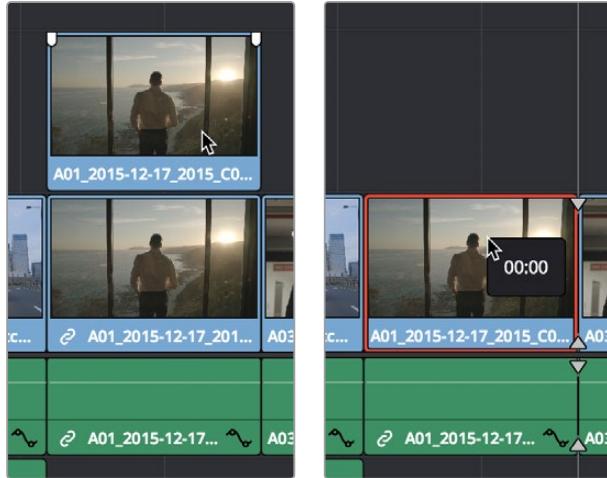


The resulting replace edit,
in which the incoming
Source Viewer clip is aligned
perfectly with the video

The SFX source clip has now been edited into the specified audio track, with the source frame at the Source Viewer playhead perfectly aligned with the frame at the Timeline playhead so that the cue ball hit is in sync with the visuals.

Replace Edit Using Clips Already in the Timeline

To facilitate workflows where multiple clips are stacked in the Timeline to manually track different takes or versions of stock footage, VFX clips, or other versionable media, there's a method of drag and drop replace editing that copies the grade of the clip being replaced to the clip you're replacing it with at the same time, so that newer versions of effects can inherit the same grade as the previous version of the effect being replaced. This only works for clips that have already been edited into the Timeline and that are superimposed (over or under) other clips in the Timeline, such as in the following screenshot. Be aware that this technique can also be used for multiple selected clips on the Timeline to do several replace edits all at once.



(Left) Before replace editing a clip in the Timeline, (Right) After Command-dragging a clip over one under it in the Timeline to replace edit the one below with the one above

To replace edit one clip that's stacked on the Timeline into another:

- 1 Select one or more clips that are already on the Timeline. Typically these will be clips that are superimposed over other clips.
- 2 Hold the command key down while dragging one superimposed clip on top of another to overwrite a clip and copy its grade to the clip you're overwriting it with.

NOTE: This won't work with clips you're editing into the Timeline from the Media Pool or Source Viewer.

Fit to Fill

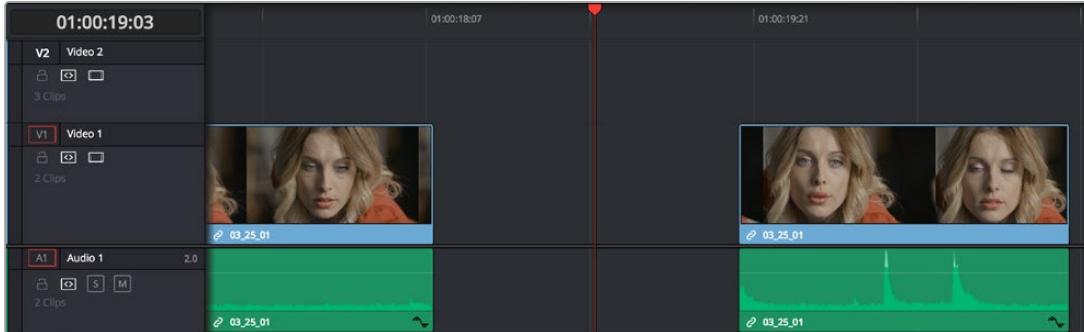
Fit to fill edits are the only edit type that actually use all four edit points, and it's the only edit type that retimes clips at the same time as they're being edited. By setting In and Out points in the incoming source clip, and another pair of In and Out points in the Timeline, you can stretch or compress the timing of the specified range of source media to cover the entire specified range of the Timeline. In the process, the speed ratio of the clip changes so the clip plays in either fast or slow motion.

Fit to fill edits are especially valuable when you have a source clip in which the action is slightly slow, and you just want to speed it up by squeezing it into a shorter duration of the Timeline. They're also incredibly handy in situations when you have a gap in an edited sequence of clips to fill with a source clip that's just not long enough, but in which slightly slower motion won't be noticeable.

Fit to fill edits do not ripple the Timeline.

To use fit to fill to edit a clip into the Timeline:

- 1 Do one of the following to define where in the Timeline to edit the incoming clip:
 - a) You can set both In and Out points in the Timeline, to define the duration you want to fill with the incoming source clip as a three-point edit.
 - b) You can clear the Timeline In and Out points (pressing Option-X), so that you can instead use the duration of whichever clip or gap intersects the playhead on the track with the destination controls assigned to them. In the following screenshot, the clip can easily be edited to take the place of the gap by positioning the playhead anywhere within it.



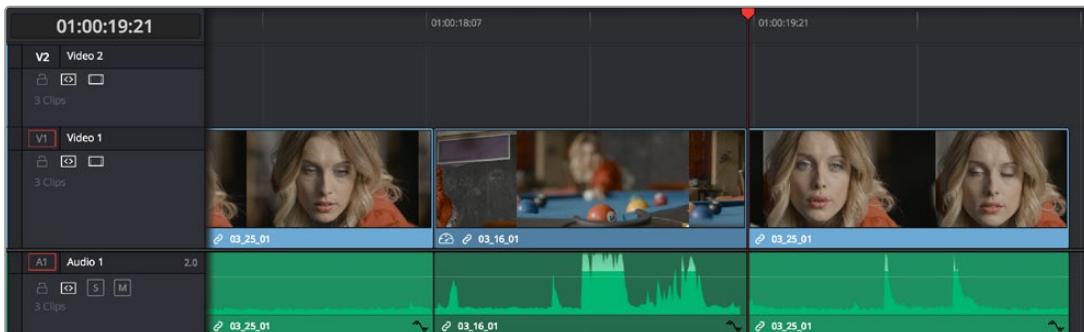
Setting timeline In and Out points to mark a gap

- 2 Next, you'll need to set both In and Out points in the Source Viewer to define a longer or shorter source clip that you want to fill into the available space. In this example, we have a very short section of the source clip defined that, because of the matching action in the Timeline, must be fit into the larger gap seen above.



Setting In and Out points in a source clip to define a shorter duration segment that you want to completely fill the gap

- 3 Click the audio and video destination controls of the tracks you want to edit the incoming source clip onto. If necessary, create new tracks.
- 4 Choose Edit > Fit to Fill, drag any clip onto the Fit to Fill overlay in the Timeline Viewer, or press Shift-F11.



The resulting edit; the shorter source clip is retimed to fit into the longer timeline gap

The incoming source clip is retimed, as necessary, to fit into the specified duration of the Timeline. This can be seen by the retiming badge that appears within the clip that's just been edited into the Timeline.

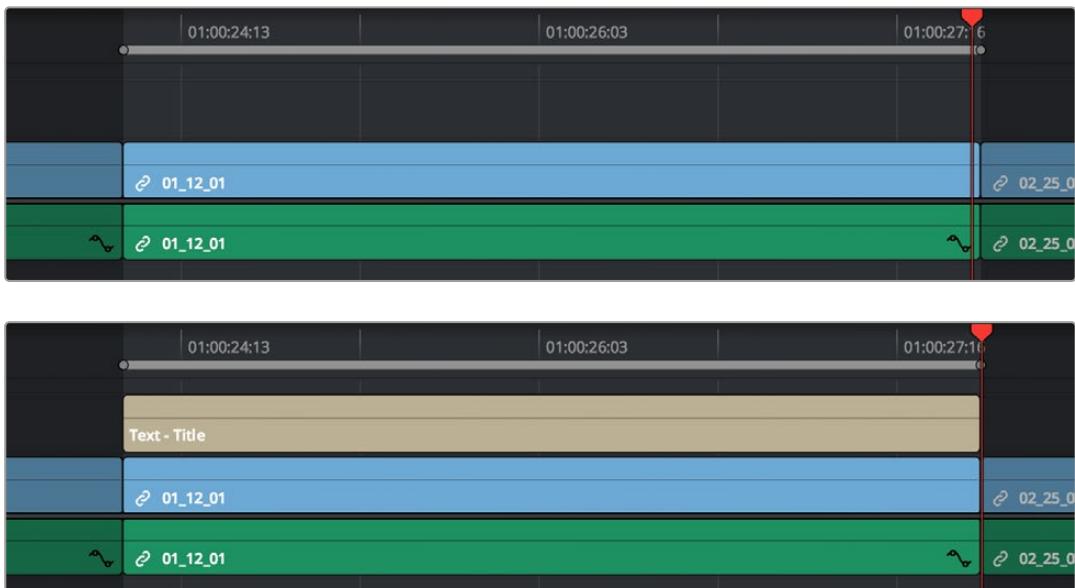
Place on Top

Place on top edits automatically superimpose clips onto the first empty track above (for video clips) or below (for audio clips) any other clips in the Timeline that either intersect the playhead or fall in between the currently set Timeline In and Out points, regardless of the current track specified by the destination controls. It's designed to make it easy to superimpose titles and other clips you want to composite over another clip, or to add additional versions of clips such as VFX on top of previous versions that you want to preserve.

Place on top edits create new timeline tracks if necessary, and do not ripple the Timeline.

To use place on top to edit a clip into the Timeline:

- 1 To choose where in the Timeline the clip will be “placed on top,” do one of the following:
Move the playhead to intersect the clip you want to edit the incoming source clip on top of.
Set In and Out points in the Timeline to define the duration within which you want to place the incoming source on top.
- 2 Set In and Out points in a source clip that you want to edit.
- 3 Choose Edit > Place on Top, drag any clip onto the Place on Top overlay in the Timeline Viewer, or press F12.



Before and after using place on top, the incoming text generator is superimposed to a track above the clip at the position of the playhead

Incoming video clips will be edited to the topmost video track so they are above any previously existing video in the Timeline. Incoming audio clips are edited to the bottom-most audio track so they are below any previously existing audio. If necessary, new video and/or audio tracks will be created automatically to hold the new incoming clip.

Ripple Overwrite

Ripple Overwrite is a four-point edit that's useful when you can identify a segment of the Timeline you want to overwrite, but the incoming clip is of a different duration and you want DaVinci Resolve to automatically ripple the Timeline to accommodate the difference.

You can use the Ripple Overwrite command one of two different ways:

- You can overwrite an entire clip in the Timeline with another clip of different length.
- You can overwrite a section of the Timeline marked with In and Out points with a another clip of different length.

In both cases, all clips to the right of the clip or timeline section being overwritten are rippled to the right or left to make room or fill the gap. Because of this, the ripple overwrite edit will most likely change the overall duration of your edited sequence of clips.

Using Ripple Overwrite on an Entire Clip in the Timeline

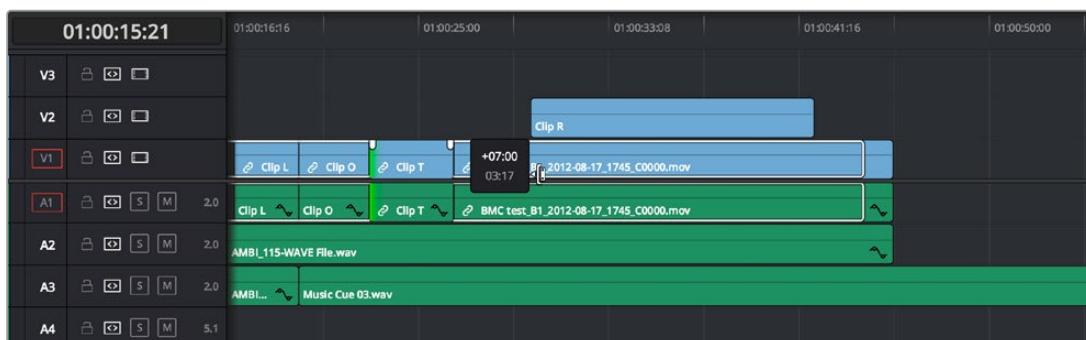
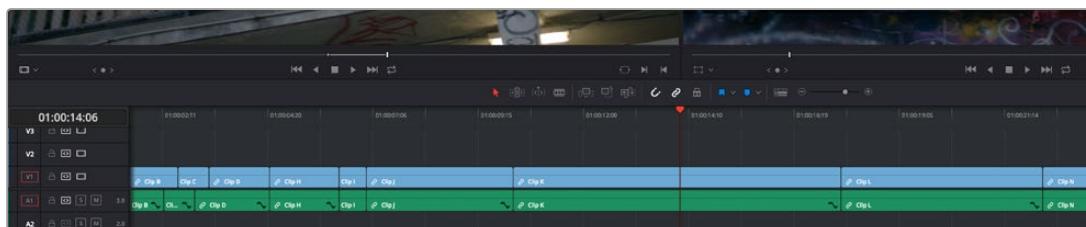
Using ripple overwrite as an automatic four-point edit, you can overwrite whichever clip in the Timeline intersects the playhead on the tracks defined by the destination controls, in its entirety, with the incoming clip. For this to work, there must be no In or Out points set in the Timeline.

After performing a ripple overwrite in this way, the original timeline clip is eliminated and the incoming clip takes its place, and all clips to the right of the clip being replaced are either (a) rippled to the right if the incoming clip is longer than the original timeline clip, or (b) rippled to the left if the incoming clip is shorter than the original timeline clip. All of this is done in a single step.

This is useful in situations where you want to quickly switch one clip in the Timeline with another of unequal duration and have the Timeline automatically make room to allow this all in one step.

To use ripple overwrite to replace an entire clip in the Timeline with another source clip:

- 1 Move the playhead in the Timeline to intersect the clip that you want to replace; the playhead's exact position is not important.
- 2 Click the appropriate audio and video destination controls of the track containing the clip you want to replace, and press Option-X to eliminate any In and Out points there might be in the Timeline.
- 3 Open a clip into the Source Viewer, and set In and/or Out points as necessary to define how much of the clip you want to edit into the Timeline.
- 4 To execute the edit, choose Edit > Ripple Overwrite, drag the clip to the Ripple Overwrite overlay of the Timeline Viewer, or press Shift-F10.



Before and after of using ripple overwrite with no Timeline In or Out points; Clip K at the position of the playhead is replaced in its entirety by the short segment of Clip U from the Source Viewer; all clips with In points to the right are rippled to the left to fill the gap

Using Ripple Overwrite on a Section of the Timeline Defined by In/Out Points

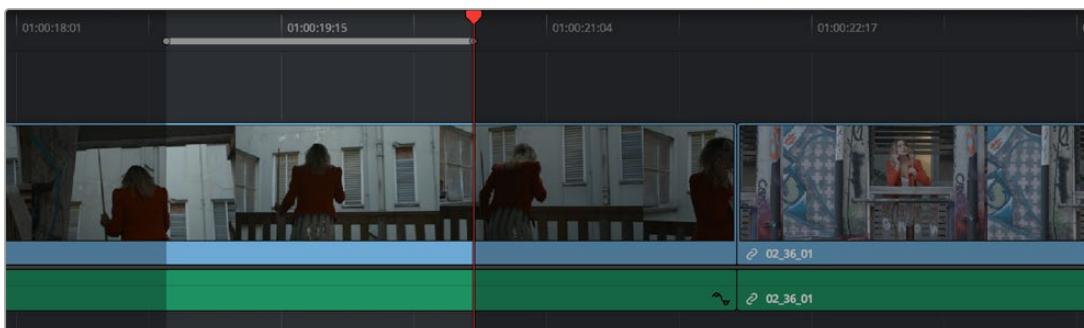
You can also use ripple overwrite as an explicit four-point edit, to overwrite a section of the Timeline that's marked with In and Out points with an incoming clip that's also marked with In and Out points that is of unequal duration.

After performing a ripple overwrite in this way, the section of the Timeline marked with In and Out points is eliminated and the incoming clip takes its place, and all clips to the right of the clip being replaced are either (a) rippled to the right if the incoming clip is longer than the original timeline clip, or (b) rippled to the left if the incoming clip is shorter than the original timeline clip. All of this is done in a single step.

A good example of when this can be useful is when you're cutting a close-up of an actor performing a particular action into a medium shot of the actor performing the same action that's already in the Timeline, and the action you're matching is of different durations in each of the shots.

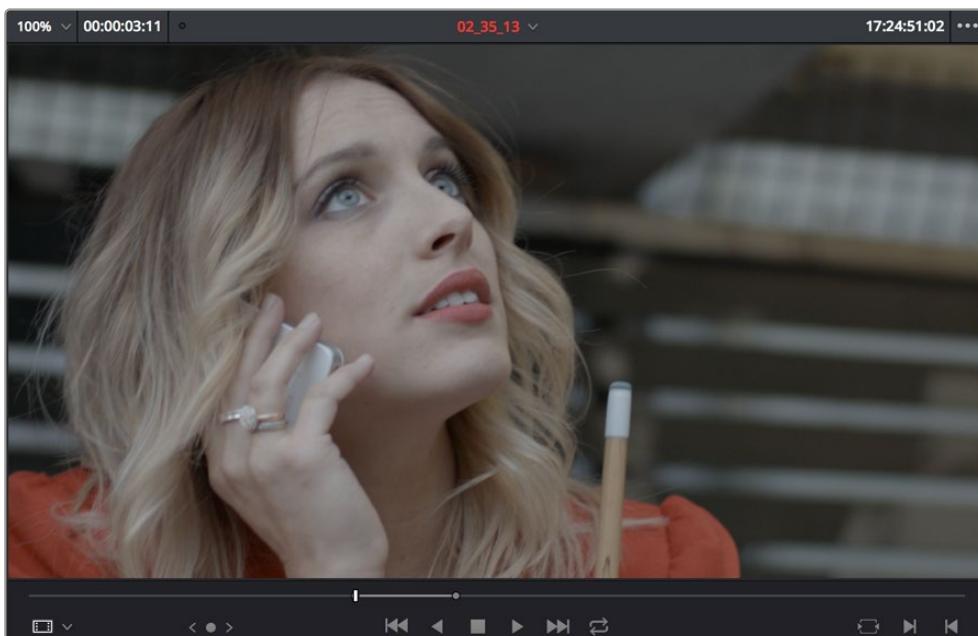
To use ripple overwrite to replace a section of the Timeline with another source clip:

- 1 Set In and Out points in the Timeline to mark what part of the clip or clips you want to overwrite. You must set both In and Out points for this to work as expected. In this example, the part of the clip where the woman leans forward is marked.



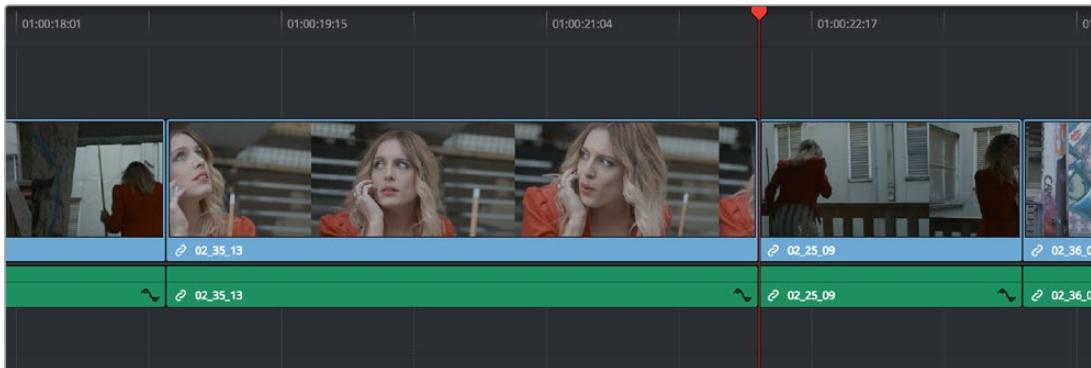
Setting In and Out points to identify an action in the Timeline that you want to overwrite with another clip that has a matching action

- 2 Open a clip into the Source Viewer, and set In and/or Out points as necessary to define how much of the clip you want to edit into the Timeline. In this example, a section of the woman's close up where she leans forward in a way that matches the same movement in the wider shot is marked.



Setting In and Out points to identify an action in a source clip that you want to overwrite the action you've marked in the Timeline. It's a matching action, but the timing might be different, and that's okay with this kind of edit.

- 3** To execute the edit, choose Edit > Ripple Overwrite, drag the clip to the Ripple Overwrite overlay of the Timeline Viewer, or press Shift-F10. As a result, the section of the timeline that was marked in step 1 is overwritten by the section of the source clip marked in step 2, and all clips to the right of this edit in the Timeline are rippled to the right to make room for the much longer source clip. The final result is an edit where the movements match nicely.



After the ripple overwrite, the part of the Timeline clip marked with In and Out points has been overwritten by the part of the Source clip marked with In and Out points, and all clips to the right of this edit in the Timeline are rippled left or right as necessary

Append to End

Append to end always puts the edited clip at the very end of the current Timeline. It's a very useful edit type when you're quickly stringing together a series of clips.

To use append to end to edit a clip into the Timeline:

- 1 Set In and Out points in a source clip that you want to add to the end of the current Timeline. If necessary, change the sort order of the Media Pool to put these clips into the order in which you want them to be added to the Timeline.
- 2 Click the audio and video destination controls of the tracks you want to edit the incoming source clip onto. If necessary, create new tracks.
- 3 Choose Edit > Append to End of Timeline, drag the clip to the Append at end overlay of the Timeline Viewer, or press Shift-F12.

Incoming video clips are added after the very end of the last clip in the Timeline.

Insert Selected Clips to Timeline Using Timecode

Clips can be edited directly from the Media Pool into a timeline, such that each clip's source timecode is aligned with an identical record timecode value in the Timeline. This can be useful for long form multi-camera events, like weddings or concerts, where all cameras are linked by the same timecode to ensure all edits are perfectly synced. This function matches the Source Overwrite edit on the Cut page.

IMPORTANT: The timecode of the Timeline must overlap the timecode of the clip(s) for this edit to function. This can be set in the Start Timecode field of the New Timeline settings.

To insert selected clips to timeline using timecode:

- 1 Select one or more clips to edit into the Timeline in the Media Pool. If there are In and Out points set on the clip, the edit will respect those boundaries. If no In/Out points are set, each selected clip's full duration will be edited in its entirety.
- 2 Set a destination control to determine which track in the Timeline you want to edit to.
- 3 Right-click one of the selected clips and choose "Insert Selected Clips to Timeline Using Timecode" from the drop-down menu.
- 4 All of the selected clips will be overwritten into the Timeline at their appropriate timecode locations onto the destination track.

IMPORTANT: If multiple selected clips have overlapping timecode, no edit will occur.

Insert Selected Clips to Timeline With Handles

"Insert Selected Clips to Timeline With Handles" is a command that's available from the Media Pool contextual menu for editing one or more selected clips to the currently open timeline, such that the default handle length is subtracted from the beginning and end of each clip. The goal is to make it easy to string together a series of clips that you want to connect using transitions by automatically changing the In and Out points of each clip being edited into the Timeline in order to add handles.

To use insert selected clips to timeline with handles to edit one or more clips into the Timeline:

- 1 Select one or more clips in the Media Pool that you want to add to the Timeline. If necessary, change the sort order of the Media Pool to put these clips into the order in which you want them to be added to the Timeline.
- 2 Click the audio and video destination controls of the tracks you want to edit the incoming source clip onto, and position the playhead where you want the incoming clips to start. If necessary, create new tracks.
- 3 Right-click one of the selected clips in the Media Pool and choose "Insert selected clips to timeline with handles" from the contextual menu.

The selected clips are added to the Timeline starting at the position of the playhead.

To change the length of handles that are removed, open the Editing panel of the User Preferences and change the "Default handles length" setting. Handles will not be added in either of the following two cases:

- If any of the selected clips in the Media Pool already have handles because of In and Out points that you've set, then additional handles won't be added.
- If the duration of the frames to be removed to create handles in this operation is greater than the duration of one or more of the clips you've selected in the Media Pool, then handles won't be added at all.

Three-Point Editing From the Media Pool

You can also execute three-point edits directly from the Media Pool, with no need to use the Source Viewer.

Example: Assembling Clips Into the Timeline From the Media Pool

If you want, you can also edit clips directly into the Timeline from the Media Pool using a variety of commands. This can be a fast way of appending clips to the end of the Timeline (although you can also perform insert edits this way).

To edit one or more clips from the Media Pool to the Timeline:

- 1 If necessary, set In and Out points for each of the clips you want to edit into the Timeline using either the Media pool thumbnails (in Thumbnail view), the Media Pool Filmstrip Viewer (in List view), or by opening each one into the Source Viewer. For each method, press I to set an In point, and O to set an Out point.
- 2 Change the sort order of the Media Pool's browser area to put the clips into the order in which you want them to appear. In Thumbnail view you can use the Sort Order menu, but in List view you can click the header of any metadata column to sort by that column's data.
- 3 Position the playhead to where you want to edit the clips.
- 4 Click, drag, use the Command-Option and Command-Shift Up and Down Arrow Key shortcuts, or use the Option-1-8 and Command-Option-1-8 key shortcuts to assign the video and audio destination controls to the tracks you want to edit the video and audio of the incoming clip(s) to. Click any destination control itself to disable it if you want to edit clips into the Timeline as audio or video only.
- 5 Select one or more clips you want to edit. Insert, overwrite, place on top, ripple overwrite, and append at end edits are all capable of editing multiple clips at once, while replace and fit to fill edits can only edit one clip at a time, and will only edit the first of multiple selected clips into the Timeline.
- 6 To perform the edit, do one of the following:
 - Drag the selected clips to the Timeline Viewer and drop them on an editing overlay to execute that edit type.
 - Right-click one or more selected clips in the Media Pool, and choose "Insert Selected Clips to Timeline," or "Append Selected Clips to Timeline."

The selected clip(s) are edited into the Timeline.

Chapter 40

Marking and Finding Clips in the Timeline

As you work on your project, you'll find it useful to identify important information about each clip, and about significant moments in each timeline, using a combination of Flags, Markers, and clip Label colors.

These can be applied to source clips in the Media Pool, or to clips that have already been edited into timelines. In the case of markers, these can also be added to the Timeline ruler itself to help you keep track of important moments or notes, and to help you with snapping. You'll also find yourself modifying clips in different ways, unlinking and relinking the audio and video of different clips, enabling and disabling clips in the timeline.

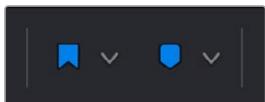
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Using Flags

Flags are meant to mark an entire clip, and they also flag every other clip in the Timeline that shares the same Media Pool source clip, making this a handy way of quickly identifying which clips in a given timeline come from the same Media Pool source.



The Flag and Marker buttons and pop-ups.

You can apply multiple flags to clips, with a variety of colors to choose from. In addition to flagging specific media files, flags can be useful for timeline filtering in the Color page, sorting by column in the Media Pool, and a variety of other operations.

Methods for flagging clips:

- **To flag a clip using the toolbar:** Select one or more clips, and either click the Flag button to flag that clip with the current color, or click the Flag drop-down in the toolbar to choose a different color and then click the Flag button. In the Edit page, flags appear in the Timeline superimposed in the name bar of each clip.
- **To flag a clip:** Select one or more clips, and Choose Mark > Add Flag > Current Selected (G) to add a markers of a specific color directly to clips and the Timeline. The individual flag color commands can be assigned specific keyboard shortcuts if you want to be able to place a specific flag color at a keystroke.
- **To flag a clip in the Source Viewer:** Open a clip in the Source Viewer, and while the Source Viewer has focus, choose Mark > Add Flag > Current Selected (G). The individual flag color commands can be assigned specific keyboard shortcuts if you want to be able to place a specific flag color at a keystroke.

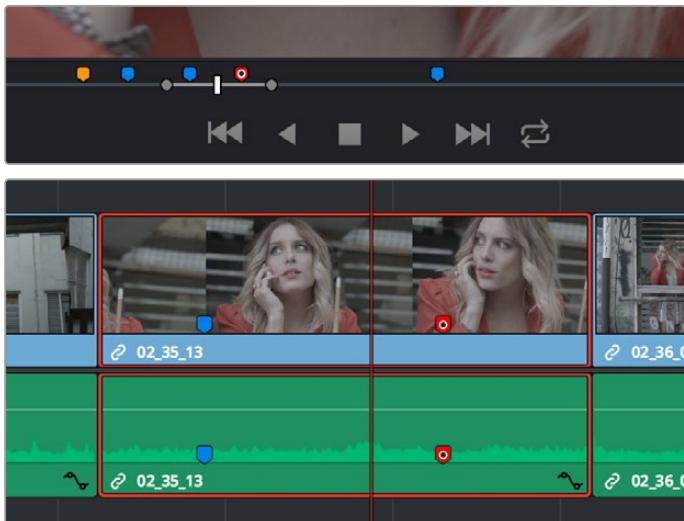
- **To remove all flags from a clip:** Select one or more clips with flags you want to remove, then click the Flag drop-down in the toolbar, and choose the top “Clear All” option.
- **To show or hide a particular color of flags:** Choose a color of flag to hide from the View > Show Flags submenu, or choose View > Show Flags > All to show them all.
- **To filter all flagged clips in the Edit Index:** Click the Option menu of the Edit Index and choose Show Flags. Each flagged clip appears in a list, with a column showing the color(s) of the flags applied to each entry in the list.

Using Markers

Markers are used to call attention to a particular frame within a specific clip. Markers can be individually colored, and can have customized name and note text. Whenever you enter text into a marker, that marker displays a small dot that indicates there’s more information inside of it. Once placed, markers snap to In and Out points, edit points, the playhead, and other markers whenever snapping is enabled, making it easy to use markers to “measure” edits and trims that you make in the Timeline.

Adding Markers to Clips

You can place markers on the jog bar of source clips in the Source Viewer (or in the Media page Viewer), and on clips that are selected within a timeline.



(Top) Markers placed on a source clip,
(Bottom) Markers placed on a clip in the Timeline

When you add markers to a source clip, those markers also appear in the Media Pool as hierarchically disclosable items attached to that clip in List view (markers are not visible in Thumbnail view). More information about using markers in the Media Pool’s List view appears later in this chapter.

Clip Name	Scene	Shot	Take
03_16_01_MS-Pool Shot	03	16	01
SLATE	03	16	01
Walks In	03	16	01
Takes Aim	03	16	01
Shot	03	16	01
Contact	03	16	01
Rack Focus Smile	03	16	01
Chalks Cue	03	16	01
03_20_01_MS-Pool Table	03	20	01

Markers can be viewed as separate clips identified by marker name when the Media Pool is set to List view

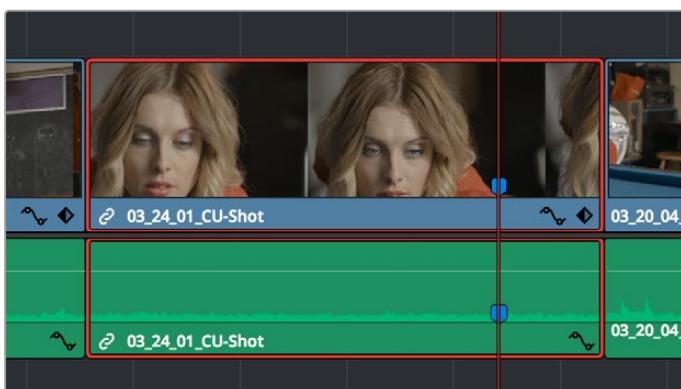
The following procedures describe how to add markers to clips and timelines in DaVinci Resolve.

To mark a source clip in the Source Viewer or Media Page Viewer, do one of the following:

- To place a marker without doing anything else, move the playhead to the frame you want to mark, and then press M.
- To place a marker and immediately open the marker dialog to enter a name or note within it during playback, press Command-M (or press M twice). Playback pauses until you enter the text you want to and close the marker dialog again, at which point playback continues.
- Move the playhead to the frame you want to mark, then right-click in the jog bar and choose a marker color from the Add Marker submenu of the contextual menu.

To mark a clip in the Timeline, do one of the following:

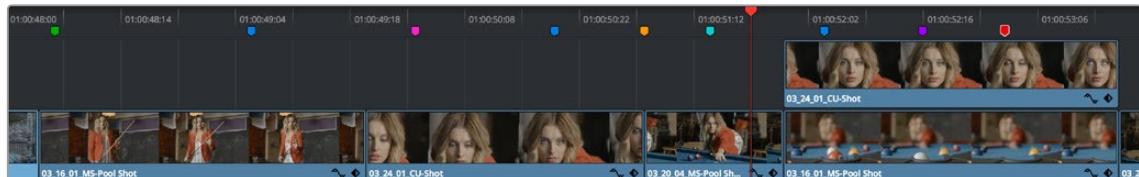
- Select one or more clips you want to mark, then move the playhead to the frame of a selected clip in the Timeline, and click the Marker button in the toolbar (or press M) to place a marker at that frame, using the current color (if multiple overlapping clips are selected, you'll add a marker to all clips).
- To place a marker during playback and immediately open the marker dialog to enter a name or note within it, select one or more clips you want to mark, play through the selection until you want to place a mark, then press Command-M (or press M twice). Playback pauses until you enter some text and close the marker dialog again, at which point playback continues.
- Select one or more clips you want to mark, and then click the Marker drop-down to choose a different color, and click the Marker button.



Markers appear in the Timeline at the top of the title bar of the clip to which they're applied

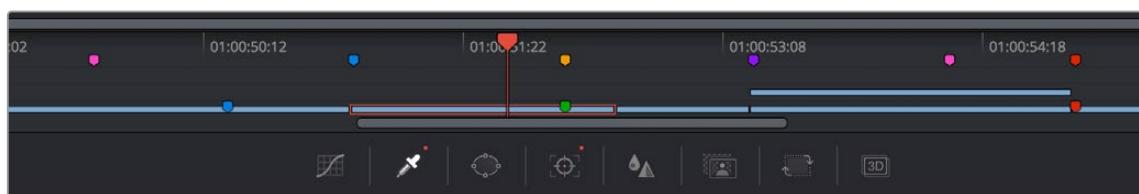
Adding Markers to Timelines

You can also place markers of any color into the Timeline ruler to denote specific times for future reference, or add notes about issues you want to keep track of.



Timeline markers placed for future reference

You should note that all markers placed on clips or in the Timeline also appear within the Mini-Timeline of the Color page, making it easy to place notes for later reference when grading.

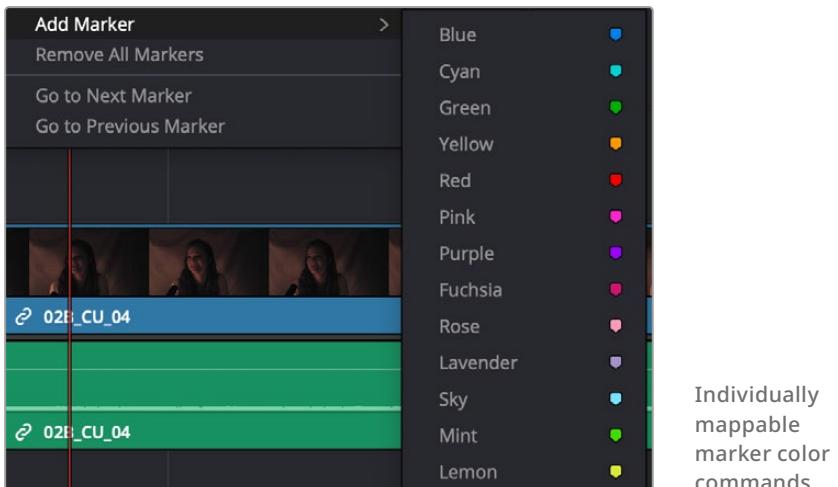


Clip and Timeline markers as seen in the Mini-Timeline of the Color page

Once you've added one or more markers placed on clips, snap to clip In and Out points, edit points, the playhead, and other markers whenever snapping is enabled.

To mark the Timeline itself, make sure all clips are deselected, and do one of the following:

- Press M.
- Click the Marker button to place a marker of the currently selected color in the Timeline ruler.
- To place a marker during playback and immediately open the marker dialog to enter a name or note within it, select one or more clips you want to mark, then press Command-M (or press M twice). Playback pauses until you enter some text and close the marker dialog again, at which point playback continues.
- Click the Marker drop-down to choose a different color, and click the Marker button.
- Right-click in the Timeline ruler and choose a marker color from the Add Marker submenu of the contextual menu.
- Choose Mark > Add Marker > Current Color (M) to add the current marker color. Alternatively, you can choose Mark > Add Marker > Blue/Cyan/Green/and so on to add a marker of a specific color directly to clips or the Timeline. These commands can be assigned specific keyboard shortcuts if you want to be able to place a specific marker color at a keystroke.

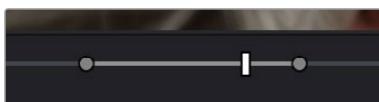


Saving In and Out Point Ranges As Markers with Duration

You can also create markers with duration to keep track of any region of a clip or timeline that you've defined with In and Out points. This lets you identify multiple regions of a clip that you might later want to edit into a program.

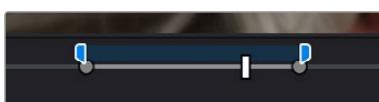
To turn In and Out points into a marker with duration:

- 1 Set In and Out points in the Source Viewer jog bar to identify a region you want to log for future reference.



Marking In and Out points in preparation to log that section of the clip

- 2 Do one of the following:
 - Right-click the jog bar and choose Convert In and Out to Duration Marker
 - A marker with duration appears above the In and Out points. To edit its name or notes, double-click the marker, press Shift-M, or choose Mark > Modify Marker.



A marker with duration is created from the In and Out points

In this way, you can log several regions within a single clip for future use.



A clip with multiple logged sections identified via markers with duration

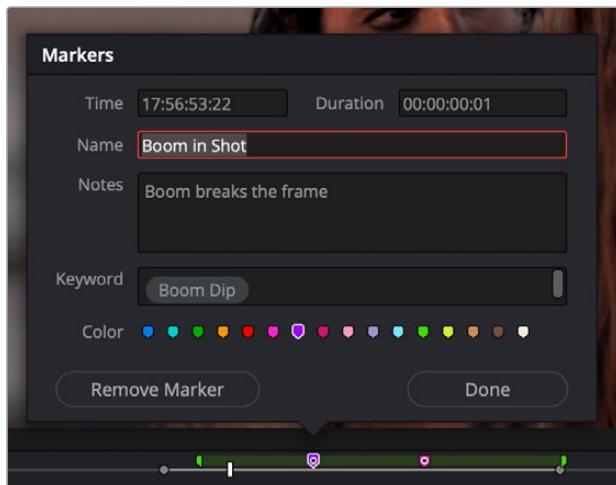
This is an extremely useful logging technique for two reasons. First, markers with duration can be searched for in the Media Pool using the All Fields, Marker Name, and Marker Notes Filter by options. Second, they can be filtered with Smart Bins using the Marker Name and Marker Notes Media Pool Properties options.

Editing Marker Information and Keywords

Once you've added some markers, you may want to edit their contents to make them more useful.

To open a marker's edit dialog to alter its properties:

- 1 Do one of the following:
 - Press Command-M to add a marker during playback and immediately open its edit dialog.
 - Double-click any marker you want to edit.
 - Move the playhead to the frame containing the marker you want to annotate using Shift-Up Arrow/Down Arrow and press M.
 - Select a marker anywhere in the Source Viewer or Timeline, and press Shift-M.
- 2 When the marker dialog opens, you can modify several properties in separate fields. For fast editing, you can press Tab to select the next field, or you can press Shift-Tab to select the previous field.



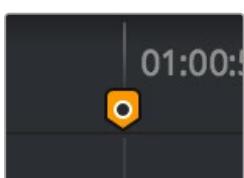
Editable properties in the Marker dialog

- **Time:** The frame the marker is positioned at relative to that clip or timeline. This is editable, so you can numerically change a marker's position.
- **Duration:** Optional; the length of a marker that's been assigned a duration. This is also editable, so you can numerically assign a duration to a marker or alter a marker that already has duration.
- **Name:** The name of the marker, defaults to the number of that marker in the order it was added (Marker 1, Marker 2, etc.).
- **Notes:** A field where you can enter any information you want to keep track of.
- **Color:** A series of buttons for choosing the color of the marker.

- **Keyword:** A keyword field lets you keyword markers in the same way you can keyword clips in the Metadata Editor, which can be a powerful way of identifying sections of clips you want to find later in Smart Bins or Search operations. Typing text in the Keyword field automatically searches the dictionary for matching keywords. Press Return to accept a found keyword (you can choose from a list using the Arrow keys), or press the Up Arrow key back to the Keyword field to manually enter your own new variation instead. For more information about using and editing Keywords, see *Chapter 16, “Using Variables and Keywords.”*
- **Remove Marker:** Deletes that marker.
- **Done:** Closes the marker edit dialog.

3 When you’re finished, click Done.

Once you add notes to a marker, a small symbol appears on top of that marker to show you it has information.



A small dot on a marker shows that it contains notes

Changing Marker Timing

Once you’ve placed one or more markers, there are a variety of ways you can move them around to better line up with important events in source footage or the Timeline, or delete them once they’re no longer useful. Additionally, you can enable or disable the ability to have markers ripple along with other clips in areas of the Timeline that are affected by rippling operations.

To move one or more markers in the Timeline or Source Viewer:

- Click a marker or Command-click multiple markers you want to move, and drag them to a new location.
- Drag a bounding box from the Timeline up into the Timeline ruler to select multiple markers, and drag them to a new location.
- Open a marker’s edit dialog and manually edit the time and duration timecode fields to numerically move that marker, or to create a marker with a specific duration. Furthermore, the timecode in these fields can be copied from or pasted to.

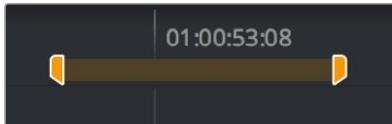
To enable marker rippling:

- Choose Timeline > Ripple Timeline Markers. When checked, all markers to the right of a clip being ripple edited, trimmed, or ripple deleted will ripple to the left along with the rest of the Timeline. You can turn this behavior off and on at will.

To modify marker duration:

- Option-drag any marker to the right or left to create a marker with duration.
- Move the playhead to the frame containing the marker you want to modify and press M, or double-click the marker you want to edit, then type a number into the duration field, and click Done.

- Markers with duration appear as a bar in the Timeline ruler or jog bar of the Source Viewer. Drag the middle of a marker with duration to move it, or drag the left or right edge to change its duration.
- To eliminate a marker's duration, set its numeric duration to 00:00:00:00 in the marker dialog, or drag either end so that it merges with the other as a single marker.



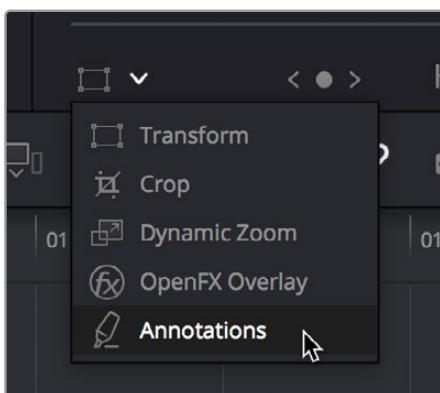
A marker with duration in the Timeline

Methods of deleting markers:

- **To remove one or more markers using the mouse:** Click to select a marker, or Command-click to select multiple markers, and press the Delete key. You can also double-click a marker to open its dialog, and click the Delete button.
- **To remove a marker using the keyboard:** Move the playhead to the marker you want to delete, and press Option-M.
- **To remove all markers from a clip:** Select one or more clips with markers you want to remove, then either press the Backspace key, or click the Marker drop-down in the Toolbar, and choose Clear All.
- **To remove all markers from the Timeline:** With all clips deselected, choose Clear All from the marker drop-down menu in the Toolbar, or right-click the Timeline ruler, and choose Remove All Markers from the contextual menu.

Drawn Annotations on the Viewer

It's now possible to use the Annotations mode of the Timeline Viewer to draw arrows and strokes of different weights and colors directly on the video frame, in order to point out or highlight things that need to be fixed. These annotations are stored within markers, similarly to marker names and notes. To start, simply choose Annotations mode from the Timeline Viewer mode drop-down menu.



Choosing Annotations from the Viewer Mode drop-down menu

Once in Annotations mode, an Annotations toolbar appears showing the following options:



The Annotations toolbar in the Viewer



Draw tool with line weight drop-down: Click the Draw tool to be able to freeform draw on the Viewer. Click the Line Weight drop-down to choose from one of three line weights to draw with.



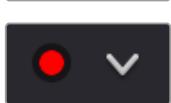
Arrow tool: Click the Arrow tool to draw straight-line arrows pointing at features you want to call attention to. Arrows are always drawn at the same weight, regardless of the weight selected for the Line tool.



Line Tool: Click the Line tool to draw straight lines on the Viewer.



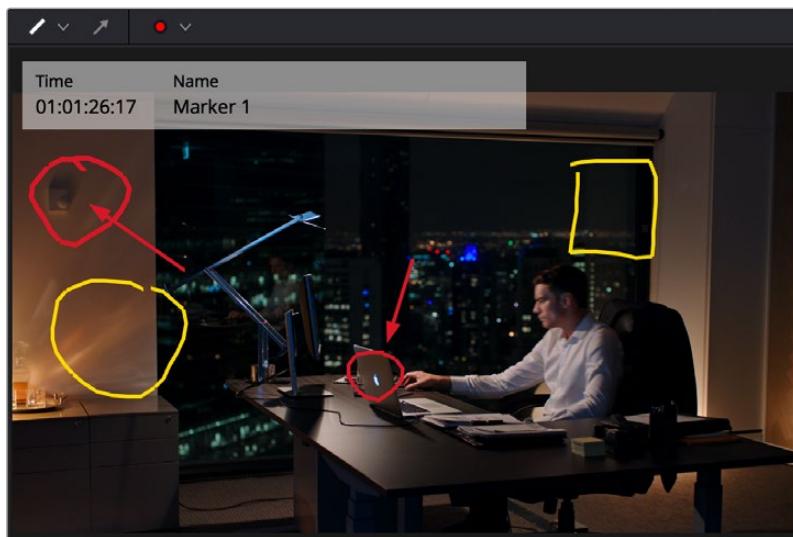
Rectangle Tool: Click the Rectangle tool to draw boxes on the Viewer.



Color drop-down: Choose a color for drawing or lines.

Methods of making and editing annotations:

- **To create an annotation:** Simply enable Annotations mode, then park the playhead on any frame of the Timeline and start drawing. A marker will automatically be added to the Timeline at that frame, and that marker contains the annotation data. If you park the playhead over a preexisting timeline marker, annotations will be added to that marker.
- **To edit a stroke or arrow you've already created:** Move the pointer over a stroke or arrow and click to select it, then choose a new line weight or color from the appropriate drop-down menu, or drag that stroke or arrow to a new location to move it.
- **To delete a stroke or arrow:** Move the pointer over a stroke or arrow and click to select it, then press the Delete or Backspace keys.



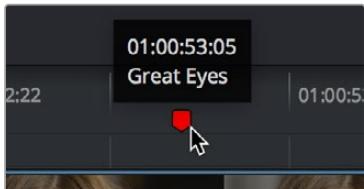
Drawing annotations to highlight feedback

Reading Marker Information

Once you've added a number of markers with custom information, there are two ways of viewing this information without having to open the marker dialog.

To read marker notes using your pointer:

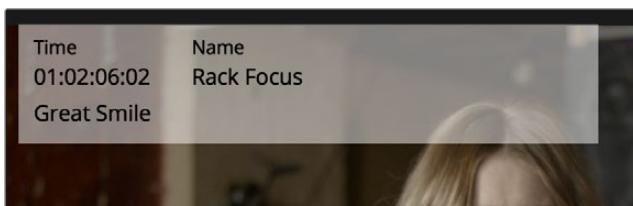
- Double-click a marker to open its marker dialog.
- Move the pointer over any marker in the Source Viewer or Timeline to see a tooltip showing that marker's information.



Moving the pointer over a marker displays its information in a tooltip

To read marker information in the Source and/or Timeline viewers:

- 1 Open the Source or Timeline Viewer's option menu, and turn on Show Marker Overlays.
- 2 Stop playback, and move the playhead to a marker. That marker's information is displayed in the Viewer, superimposed.



Marker information shown in the Source Viewer

Using Markers for Navigation

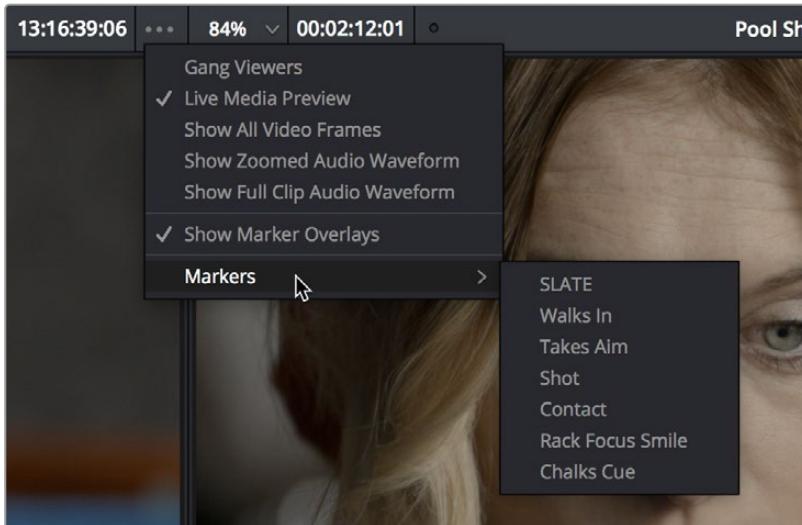
Markers can be used to aid navigation, via two keyboard shortcuts that let you jump the playhead from marker to marker. When moving the playhead among markers, Clip and Timeline markers are mixed together.

To move the playhead to the next or previous marker:

- Press Shift-Up Arrow to move the playhead to the next marker to the left in the Timeline.
 - Press Shift-Down Arrow to move the playhead to the next marker to the right in the Timeline.
- The marker under the playhead is then automatically selected.

To move the playhead to a specific marker using the Source or Timeline Viewer's Marker list:

- For a source clip or timeline with multiple markers, you can move the playhead immediately to a specific marker by opening the Source or Timeline Viewer's Option menu, and choosing a marker from the Markers submenu, which exposes all the markers that are available in that Viewer, by name and note.



All markers in the currently open clip as seen in the Source Viewer Option menu Markers list

Using Timeline Markers for Chapters

Certain file types, like QuickTime, allow chapter-based navigation in the final video. This allows the viewer to skip back and forth through the video landing at exact points specified by the video's creator. This chapter-based navigation is especially useful in instructional videos or long presentations. Chapter points in DaVinci Resolve are set by timeline markers.

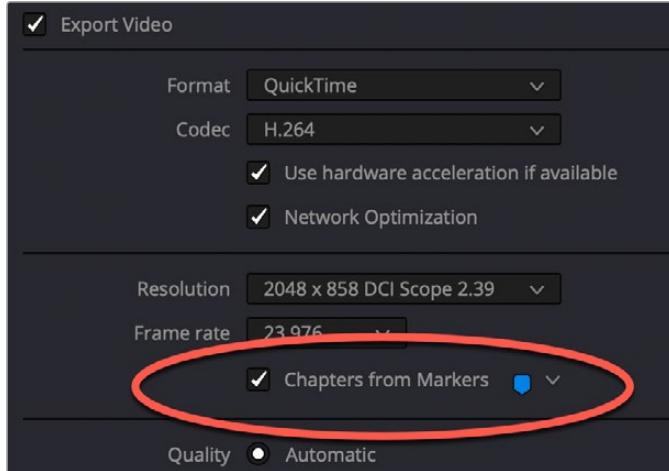
Currently only the QuickTime and MP4 formats support chapter markers in DaVinci Resolve.

To create a chapter marker in the Timeline:

- Put the playhead at the spot in the Timeline you wish to make a chapter point, and choose Add Marker (M).
- Edit the marker by double-clicking on it, or by selecting Modify Marker (Command-M).
- Edit the Name field to create the chapter name that will show up in the player.
- Select a color for the marker. All chapter markers must be assigned the same color.

To export embedded chapter markers in a QuickTime movie:

- In the Deliver page, select Quicktime or MP4 as the Format in the Video Panel.
- Check the box next to Chapters from Markers, and select the chapter marker color you chose earlier from the drop-down menu.



The Chapters from Markers checkbox in the QuickTime Export Video settings of the Deliver page

Using Markers in the Marker Index

You can use the Marker Index to easily view, edit, and organize all your timeline and clip markers in one convenient location. The Marker Index can be found by clicking on the Index panel, and selecting the Markers tab.

Methods of working with markers in the Marker Index:

- **To filter markers in the Marker Index:** Click the Option menu of the Marker Index and choose Show All or Show Only to choose a specific color. Each clip with a matching marker appears in a list, with columns corresponding to the color(s), information, and notes of each timeline and clip marker. Columns can be sorted in ascending or descending order by clicking on the column header. Individual columns can be turned on or off by right-clicking on the column header, and checking or unchecking the column name.
- **To move the playhead to the position of a marker in the Marker Index:** Double-click that marker's entry in the list.
- **To edit marker information:** You can change the values of a marker by clicking in the Name, Notes, or Keyword fields, and modifying the text field. Other values are not editable in the Marker Index and should be changed in the timeline marker's Edit dialog.
- **To search for a specific marker:** Click on the search icon (magnifying glass), and type in your search terms. Currently the search only queries the Marker Name column; you can not search by notes and keywords.
- **To switch between Thumbnail and List view:** Click on either the Thumbnail or List View icons in the top bar of the Marker Index.

#	Frame	Name	Start TC	End TC	Duration	Color	Notes	Keyword
1		Boom in Shot	01:00:02:04	01:00:02:05	00:00:00:01	Blue	Slightly zoom in to remove boom!	
2		Wrong direction	01:00:18:15	01:00:18:16	00:00:00:01	Purple	What happened here?	
3		Wrong Frame Rate?	01:01:04:00	01:01:04:01	00:00:00:01	Red	Isn't this supposed to be 25fps?	

The Marker Index in List View mode lets you edit and organize all your timeline's markers in one place.

Exposing Markers in Lists

You can also use the Edit Index to filter out a list of markers appearing within the current Timeline. You can filter all markers at once, in which case columns expose the notes and colors applied to each marker. You can also filter by a specific marker color if you only want to see one type of marker.

Methods of working with markers in the Edit Index:

- **To filter all clips with markers in the Edit Index:** Click the Option menu of the Edit Index and choose Show Markers > All or choose a specific color. Each clip with a matching marker appears in a list, with columns corresponding to the color(s) and notes of each Timeline and Clip marker.
- **To move the playhead to the position of a marker in the Edit Index:** Click that marker's entry in the list.
- **To show hidden marker columns:** Right-click any column header, and turn on either Color or Notes to reveal that column. If necessary, columns can be rearranged by dragging them left or right.

You also have the option to export lists of markers as an EDL, a .txt, or .csv file.

Exporting lists of markers:

- **To export Timeline markers as an EDL:** Right-click that timeline in the Media Pool, and choose Timelines > Export > Timeline Markers to EDL. Choose a location and export format from the Export Edit Index dialog, and click Save. Each Timeline marker is listed in the resulting EDL, with any notes included along with a duration, where applicable.
- **To export all filtered markers in the Edit Index as a .txt or .csv file:** After you choose Show Markers in the Edit Index option menu, then right-click that timeline in the Media Pool, and choose Timelines > Export > Edit Index. Choose a location and export format from the Export Edit Index dialog, and click Save.

Using Markers in the Media Pool

Once you've added one or more markers to source clips in the Media Pool, you can use them for editing in a considerably more direct way than just using them to move the playhead around. Markers can be exposed in the List view of the Media Pool, and once exposed, they can be opened into the Source Viewer, edited into the Media Pool, or turned into subclips just like any other clip.

To show markers in the Media Pool:

- Set the Media Pool to List view, then click the disclosure button to the left of the clip with markers you want to work with. They appear as a hierarchical list underneath the clip to which they're attached.
- Use the Right Arrow key to open a clip's marker hierarchy. Use the Up and Down arrows to select a particular marker. Use the Left Arrow key to close the clip's marker hierarchy.

Clip Name	Scene	Shot	Take
03_16_01_MS-Pool Shot	03	16	01
└ SLATE	03	16	01
└ Walks In	03	16	01
└ Takes Aim	03	16	01
└ Shot	03	16	01
└ Contact	03	16	01
└ Rack Focus Smile	03	16	01
└ Chalks Cue	03	16	01
03_20_01_MS-Pool Table	03	20	01

Markers exposed in the Media Pool in List view

To open a marker in the Media Pool into the Source Viewer:

- Double-click any marker to open that clip into the Source Viewer with the playhead at the position of that marker.

To edit a clip defined by the marker into the Timeline:

- Drag any marker into the Timeline. A clip will be edited into the Timeline with the In point defined as the frame at the marker, and the Out point defined by either (a) the frame before the next marker in that clip, or (b) the duration of that marker if the duration is greater than the default 1 frame.

To turn a marker in the Media Pool into a subclip:

- Select one or more markers, and drag the selection into another region of the Media Pool, or into another Bin, and a sub clip will be generated with the clip start defined as the frame at the marker, and the clip end defined by either (a) the frame before the next marker in that clip, or (b) the duration of that marker if the duration is greater than the default 1 frame.

To add metadata to a marker subclip in the Media Pool:

- Select a marker subclip in the Media Pool and then edit the name, notes, keywords and color fields in the Media Metadata panel.

Hiding Markers By Color

View > Show Markers enables users to either show and hide markers based on color, or show them all at once. An example of when this is useful is when you're using the color of markers to send information to specific artists, such as green for Fairlight mixing notes, or orange for Fusion page compositing notes. Users on those pages can then hide all other markers except for the color they're interested in, enabling them to visually prioritize only the markers they care about.

Deleting Markers By Color

Mark > Delete All Markers lets users remove all markers of a specific color all at once, or remove all markers altogether.

Renaming Clips in the Timeline

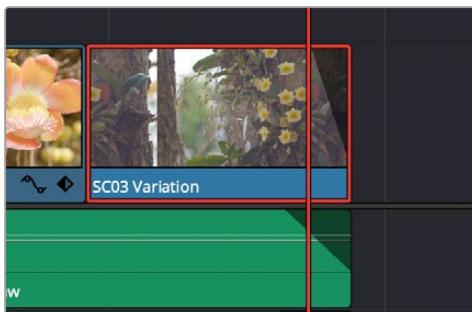
For organizational purposes, you can create custom clip names that are tied to a specific timeline. This can be useful to display information about a clip that is persistent, readily apparent, and does not require you to click on a flag or marker to view. Clips renamed in this manner are only changed in the current timeline, and do not modify the Clip Name in the Media Pool.

You can rename clips on the Timeline by using the File Inspector and entering a new name in the Name field.



Renaming a clip in the File Inspector's Name field

The new name will show in the Timeline track at bottom of the clip.



The new clip name shown in the Timeline.

IMPORTANT: Changing a clip name in the Timeline only affects the instance of the clip in that specific Timeline. It does not rename the original Clip Name in the Media Pool, nor does it rename that same clip that may exist in other timelines. If you want to rename a clip across your entire DaVinci Resolve project, modify the Clip Name in the Media Pool instead.

TIP: If you want to use a custom clip name on more than one timeline, you can copy and paste the clip between timelines, and the pasted clip will retain its custom name. However both clip names will be independent from each other from that point forward.

Color Labeling Clips in the Timeline

By default, different clips have specific colors that identify each type of clip. Furthermore, clips with effects applied to them (adjustments in the Inspector, volume level changes, speed changes, and so on), appear as a darker shade of their default color to help you identify at a glance which clips have been modified.

The following table lists what these default colors are.

Clip Type	Color
Video Clip	Steel Blue
Audio Clip	Light Green
Generator	Light Purple
Text	Beige
Clip with effects	Shaded darker

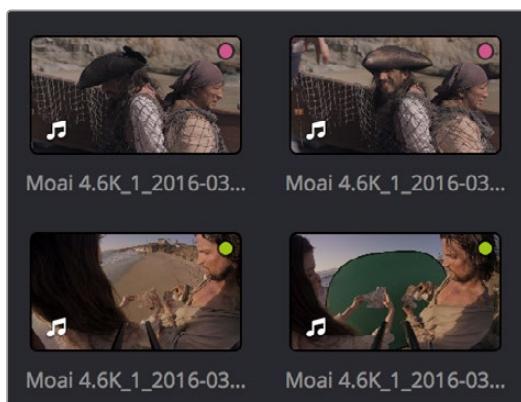
Custom Clip Colors

Additionally, you can assign one of 16 colors to clips. Each clip can only have a single color assigned to it. Also, unlike flags, clip colors are clip-specific, so assigning a clip color to one use of a clip in the Timeline has no effect on any other clips that share the same source media in the Media Pool.

Clip Color Appearance

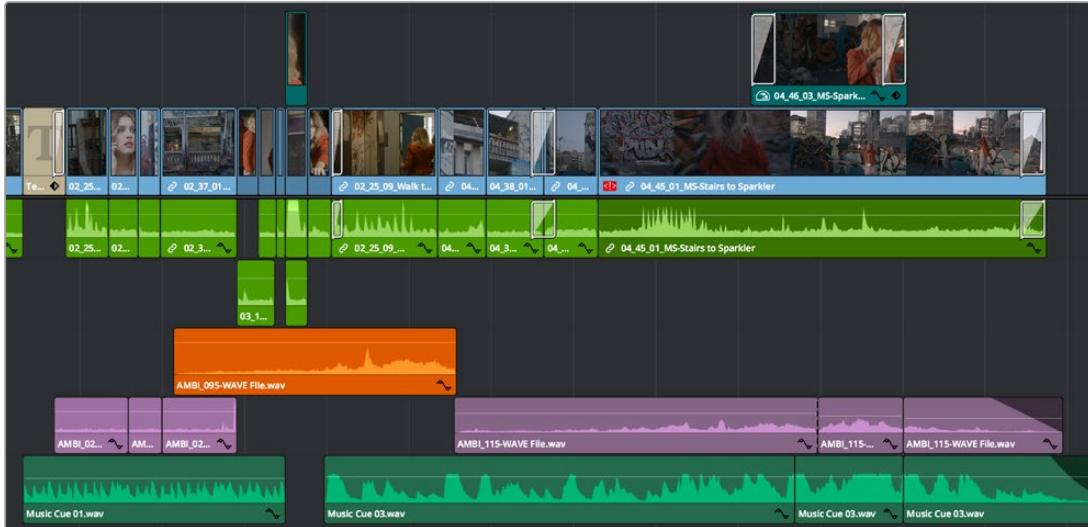
How these colors appear depends on the location of the clip. There are two options:

- Clip thumbnails in the Media Pool or the Thumbnail timeline of the Color page show a small colored dot at the upper-right-hand corner of the thumbnail.



Thumbnails with label colors
 showing as dots in the corner

- Clips in the Timeline are tinted everywhere but the thumbnail area of video clips. If you edit a clip into a track that has itself been colored, the clip color overrides the track color.



A timeline with audio clips that have been tinted to identify what they are to the editor

NOTE: Clip colors are distinct from flags, which appear as badges in the Timeline, Media Pool, and Color page.

Assigning Clip Colors

Clip colors can be assigned in many different areas of DaVinci Resolve.

To assign a clip color to one or more clips, do one of the following:

- Use the Media page to assign clip colors to clips in the Media Pool using the Shot & Scene preset in the Metadata Editor. Clip colors do not appear in the Media Pool. Clip colors can be removed by clicking the X to the left of the Clip Color buttons in the Metadata Editor.
- Right-click one or more selected clips in the Timeline, and choose a color from the Clip Color submenu of the contextual menu. Clip colors can be removed by choosing Default Color from this same submenu.
- Colorists can right-click one or more selected clip thumbnails in the Color page and choose a color from the Clip Color submenu of the contextual menu. Clip colors can be removed by choosing Default Color from this same submenu.

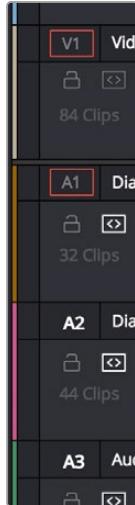
Track Colors

Another method of visually organizing clips is the use of track colors. Each track can be color coded with one of 16 different colors. These color codes also appear in the Fairlight page, where they also correspond to the Edit page Mixer, and to the Fairlight page Mixer and Audio Meters.

To choose a new color for any track:

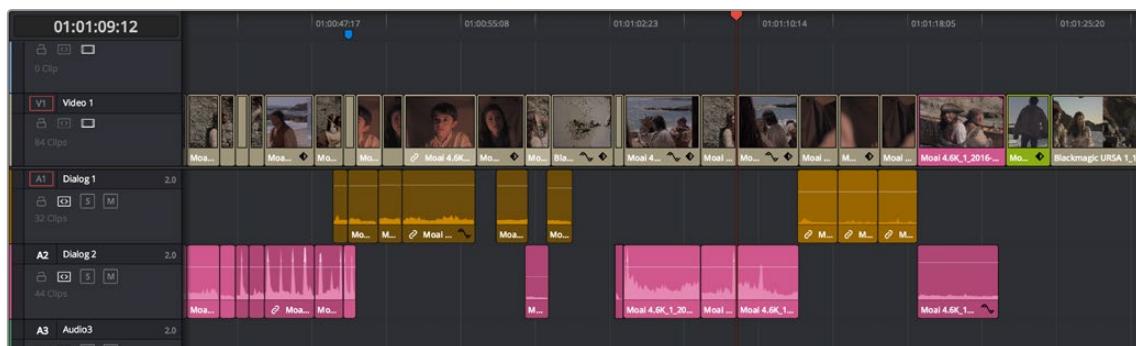
When you assign a color to a track, that track's color appears in a thin strip to the left of that track's header controls.

- Right-click the track header and choose a color from the Change Track Color submenu.



Color-coded timeline tracks

All clips that you place onto that track will appear with that color, unless they've been assigned an individual clip color, in which case the individual clip color overrides the track color. This makes track colors a great method of visual organization, because you don't have to do any advance preparation; the very act of placing a clip on a specific track color codes it according to that track's designated purpose.



A timeline with color-coded tracks automatically tints the clips on each track; individual colored clips on V1 can be seen at left

Finding Clips, Media, Markers, Gaps, and Timelines

DaVinci Resolve has several methods of locating clips, markers, and gaps, to help you troubleshoot problem timelines, or to find media that you want to edit into a timeline differently.

Finding Clips in the Timeline

DaVinci Resolve makes it easy to find one or more clips in the Timeline that correspond to specific criteria using the Edit Index.

To find a clip in the Timeline:

- 1 Open the Edit Index.
- 2 Click the magnifying glass button to open the search controls.
- 3 Choose a criteria from the Filter By drop-down menu.
- 4 Type a search term in the Search field at the top right of the Edit Index.

As soon as you start typing, all edit events that don't match the search criteria are temporarily hidden. To show all of the clips in the Edit Index again, click the X at the right of the search field.

- 5 Click any event in the Edit Index to move the playhead to that clip in the Timeline.

Finding Offline Clips in the Timeline

It's also easy to use the Edit Index to find all of the offline clips that may be in the Timeline.

To locate offline media in the current Timeline via the Edit Index:

- 1 Open the Edit Index.
- 2 Click the Option menu of the Edit Index and choose Show Offline Clips Only.
- 3 The Edit Index is filtered to only show the offline clips in the currently open Timeline, and you can click any item on the list to jump the playhead to that particular clip in the Timeline.
- 4 Click any event in the Edit Index to move the playhead to that clip in the Timeline.

Finding Edit Index Events Using Clips in the Timeline

You can also locate specific Edit Index events using the Timeline playhead.

To locate a clip in the Edit Index from the Timeline:

- Move the Timeline playhead to intersect a clip you want to find in the Edit Index. That clip's corresponding event (or events if the playhead intersects multiple clips) are automatically highlighted in the Edit Index.
- To move the playhead to a clip in the Timeline via the Edit Index.
- Click any event in the Edit Index to move the Timeline playhead to the In point of that clip.

Finding Clips

As you work, there are a variety of methods you can use to find clips in the Media Pool or your file system.

Methods of finding clips in the Media Pool or File System:

- **To find a clip in the Media Pool:** Open the Media Pool, and use the drop-down menu next to the Search button to choose whether to search through all bins in the current project, or just look at the currently selected bin or bins in the Bin List. If necessary, select the bin or bins that you want to search, and click the magnifying glass button to open the search controls. Optionally choose a criteria from the Filter By drop-down menu, then type a search term in the Search field. As soon as you start typing, all clips that don't match the search criteria are temporarily hidden.
- **To locate a Timeline clip in the Media Pool:** Right-click any clip in the Timeline, and choose Find in Media Pool. That clip appears highlighted in the Media Pool.

- **To locate a Source Viewer clip in the Media Pool:** With any clip open in the Source Viewer, press Option-F.
- **To locate a media file in the Finder from the Media Pool:** Right-click any clip in the Media Pool and choose Reveal in Finder. A Finder window, or its equivalent in Windows and Linux, opens to the directory with that clip, which appears highlighted.
- **To find the audio clip that a video clip has been synced to:** Right-click a video clip that's been synced to audio, and choose "Reveal synced audio in Media Pool" from the contextual menu. The bin holding the synced audio clip is opened and that clip is selected.

Finding Clips Using Markers or Flags

If you're using markers to keep track of notes, issues, or items on your to-do list, there are a few different ways of finding and moving among them.

Methods of finding markers or flags:

- **To find all markers or flags via the Edit Index:** Click the Option menu of the Edit Index and choose Show Markers or Show Flags. Each clip with one or more markers appears in a list, with columns corresponding to the color(s) and notes of each timeline and clip marker.
- **To find a specific marker or flag in the Edit Index:** Click the magnifying glass button in the Edit Index, choose Notes in the Filter by drop-down, and type a search term in the Search field.
- **To move the playhead to the next marker forward or previous:** Choose Playback > Previous Marker (Shift-Up Arrow) or Next Marker (Shift-Down Arrow).

Finding Gaps

Gaps, or spaces between two clips on the Timeline, appear by default as black. Unwanted gaps may appear as black flashes while your program plays back, and are generally to be avoided. DaVinci Resolve makes it easy to find gaps in specific tracks of your timeline.

To find gaps in the Timeline:

- 1 Make sure that the Auto Select control is enabled on any track you want to search for gaps. Turn Autoselect off on any tracks you don't want to search for gaps (for example, title tracks where gaps are to be expected).
- 2 Do one of the following:
 - Choose Playback > Previous Gap or press Option-Command-Semicolon.
 - Choose Playback > Next Gap or press Option-Command-Apostrophe.

The playhead will automatically move to the first frame of the next gap in the Timeline.

To delete gaps in the Timeline:

- 1 Make sure that the Auto Select control is enabled on any track you want to delete gaps. Turn Autoselect off on any tracks you don't want to delete gaps (for example, title tracks where gaps are to be expected).
- 2 Choose Edit > Delete Gaps. If you want to limit the range of the deleted gaps this command respects both In/Out ranges and clip selections on the Timeline.

Finding the Currently Open Timeline in the Media Pool

If you're not using one of the available methods for organizing timelines separately from clips, it can be easy to lose track of where your timeline happens to be. To find the currently open Timeline in the Media Pool, choose Timeline > Find Current Timeline in Media Pool.

Finding Media Using Match Frame Operations

Match frame operations are a terrific time saver when you need to match the original source clip to a clip in the Timeline, or when you want to use a clip in the Source Viewer to find that same clip in the Timeline. With a single command, you can match one clip to another in order to set up a new edit to take care of a variety of tasks.

Matching From the Timeline

A classic example of using Match Frame is when you originally edited a video clip into the Timeline without its corresponding audio, and you later decide you want that audio in the Timeline after all. An easy fix is to move the playhead in the Timeline to intersect the clip you need to fix, and use the Match Frame command to automatically load the original source media for that clip into the Source Viewer, setting Source In and Out points that match those of the Timeline clip, and putting the Source playhead at the same frame as the Timeline playhead. At that point, you can simply edit the source audio and video back into the Timeline to overwrite the video-only clip you started with, confident that you're editing exactly the same range of media at the same place.

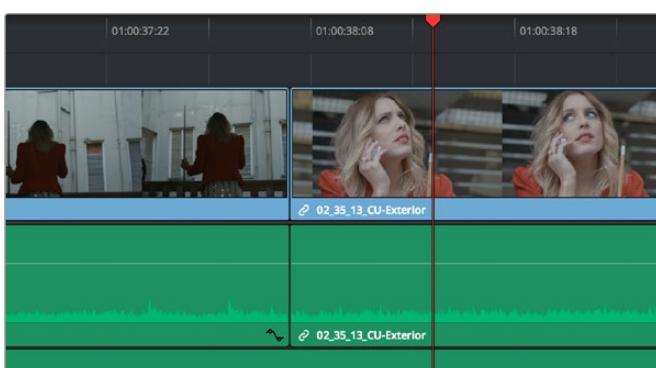
Using the pointer to Match Frame from the Timeline to find a source clip:

- Hold the Option key down and double-click the clip in the Timeline.

The original source media for that clip is automatically loaded into the Source Viewer, with In and Out points that match those of the targeted Timeline clip; the Source playhead is at the same frame as the Timeline playhead.

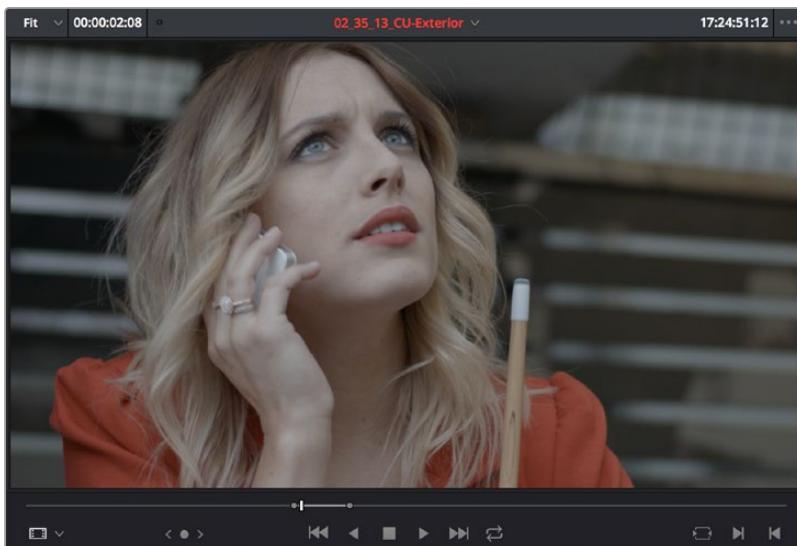
Using keyboard shortcuts or Viewer controls to Match Frame from the Timeline to find a source clip:

- 1 Move the Timeline playhead to intersect the clip you want to target.



Placing the playhead over a clip to Match Frame

- 2 If there are other clips on a multi-track timeline that overlap the clip you're targeting for this operation, then the clip on the highest video track will be used as the target for Match Frame operations. If you want to target a clip on a lower track, you can click on the specific clip under the playhead to highlight it. Alternatively you can disable the Auto Selection controls of all timelines above, or Option-click the Auto Selection control of the track with the clip you're targeting to solo it.
- 3 Press the F key, or click the Match Frame button at the bottom right of the Timeline Viewer (it's at the left of the In and Out buttons).



The frame that's matched to the frame at the playhead in the Timeline; In and Out points are set to match those of the clip in the Timeline

The original source media for that clip is automatically loaded into the Source Viewer, with In and Out points that match those of the targeted Timeline clip; the Source playhead is at the same frame as the Timeline playhead.

Matching From a Source Clip

Match Frame also works in the opposite direction. You can open a source clip into the Source Viewer that you know corresponds to a clip in the Timeline, and then you can use Match Frame to automatically find any clip in the Timeline that corresponds to media found within the source clip.

To use Match Frame in the Source Viewer to find a clip in the Timeline:

- 1 Open a clip in the Source Viewer that includes a range of media that's already been edited into the Timeline. If no part of the source clip has been edited into the Timeline, source match framing won't work.
- 2 Move the Source Viewer playhead to a frame that you want to find in the Timeline. Again, if the frame at the position of the playhead in the Source Viewer hasn't already been edited into the Timeline, the Source Match Frame command won't work.
- 3 Click the Match Frame button at the bottom right of the Source Viewer (it's at the left of the In and Out buttons), or press the F key.

The Timeline playhead automatically moves to the clip and frame after the current playhead position that matches the clip in the Source Viewer.

Finding a Clip in the Media Pool Using a Timeline Clip

There are two ways you can use a clip in the Timeline to find a clip in the Media Pool.

Using a Clip in the Source Viewer to Find a Media Pool Clip

To locate the original clip in the Media Pool that corresponds to a clip in the Timeline:

- 1 Open a Timeline clip into the Source Viewer by doing one of the following:
 - Double-click a clip in the Timeline.
 - Move the playhead to a clip in the Timeline, press Shift-V to select it, then press the Return key.
- 2 Press Option-F to locate the source clip corresponding to the clip that's open in the Source Viewer in the Media Pool. That clip appears highlighted in the Media Pool.

Using a Clip in the Timeline to Find a Media Pool Clip

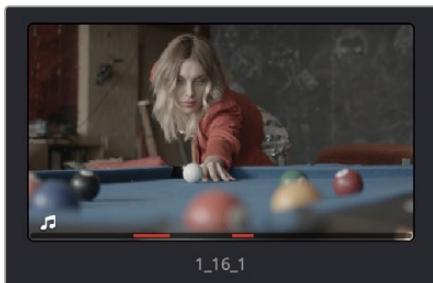
To locate a Timeline clip's corresponding clip in the Media Pool, right-click any clip in the Timeline, and choose Find in Media Pool from the contextual menu. That clip appears highlighted in the Media Pool.

Tracking Media Usage

As clips are added to timelines, two mechanisms come into play for keeping track of which clips are used in which timelines.

Thumbnail Clip Usage Indicators

Whenever you open a timeline, all thumbnails in the Media Pool automatically update to show highlighted usage bars to let you know which parts of that clip are used in that timeline.



Two colored highlights at the bottom of the thumbnail indicate which parts of a clip are used by the currently open Timeline

If you right-click on a thumbnail that shows usage, a Usage submenu shows you a list of each instance of that clip in the currently open Timeline. Choosing an instance from this list jumps the playhead to that clip in the Timeline.

List View Clip Usage Column

A Usage column can be optionally shown in the Media Pool while in List view. By default, this column is empty, but if you right-click in the Media Pool and choose the Update Usage command, the project is analyzed, and every use of that clip in every timeline of the entire project is logged in this column.



Timeline	Usage	Frame Range
00:19:02	4	45
00:53:01	8	12
00:25:13	4	61
00:14:07		34
00:28:03		67
00:30:07	8	72
00:21:12	4	51
00:26:05	8	62

A Usage column shows how many times a clip is used in every timeline, after analysis

NOTE: The usage column increments for each clip item that appears in the Timeline. This means that if a clip consists of one video item and one audio item linked together, the usage column will show the number 2.

Chapter 41

Multicam Editing

If you're working with media that was shot simultaneously using multiple cameras, then you can use the Multicam Editing tools in DaVinci Resolve to create multicam clips that can be edited using a visual switcher. Additional controls let you change the angles of multicam clips that have already been edited into the Timeline.

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Introduction to Multicam Editing

If you're working on a program where a performance, interview, or event was recorded using multiple simultaneous cameras, DaVinci Resolve has multi-camera editing tools; multicam editing for short. Editing using these tools is a three part process:

- First, you have to create multicam clips from the individual camera angles (called "ISOs," or isolated cameras).
- Second, you need to put the multicam clips you've created into a timeline.
- Third, you turn on the Multicam Viewer, and then you're ready to start cutting and switching among angles, as if you were a live multi-camera director.

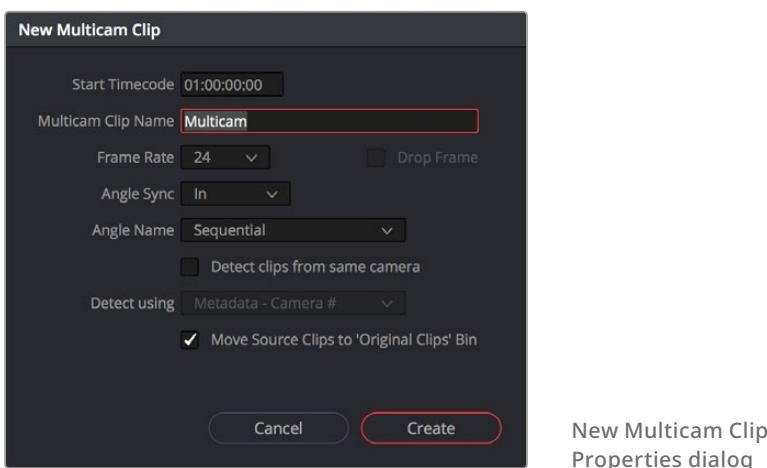
This section describes all of these steps, and the various options available for each of them.

Creating and Modifying Multicam Clips

Before you do anything else, you need to create one or more multicam clips.

To create a multicam clip:

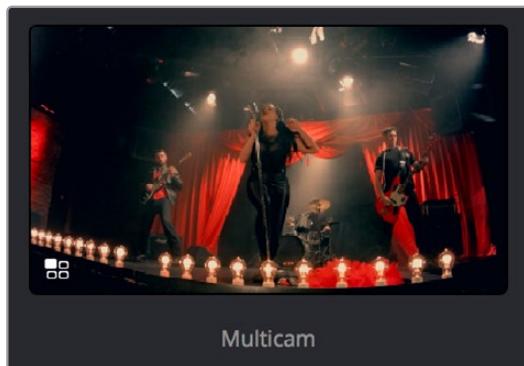
- 1 Import all the ISO (isolated camera) clips that correspond to the multi-camera performance or event that you'll be editing into the Media Pool.
- 2 Select all the clips that you need to sync together, right-click the selection, and choose "Create Multicam Clip Using Selected Clips."
- 3 When the New Multicam Clip Properties dialog opens, choose from the following options:



New Multicam Clip Properties dialog

- **Start Timecode:** Presents the start timecode of the new multicam clip you're about to create, which is determined by either the timecode value of the sync point if Angle Sync is defined by timecode, or by the sync point timecode value of the clip with the earliest timecode if Angle Sync is defined by waveform.
- **Multicam Clip Name:** Use to choose a more descriptive name than "Multicam 1" for the multicam clip you're about to create.

- **Frame Rate:** Automatically lists the frame rate associated with the clips you selected.
 - **Angle Sync:** The method used to synchronize all of the different angles. If you’re manually syncing all of the angles, you can use In or Out points that you set within each clip. If matching timecode was jam synced to each camera recording an angle, you can choose Timecode for a fast sync that’s as accurate as the timecode is. If each camera had a microphone with which to simultaneously record the location audio, you can choose Sound to use the shape of each audio waveform to align all of the angles.
 - **Angle Name:** The method used to name each angle within the multicam clip being created. The angles can have Sequential numbering, use Angle or Camera metadata, or use the Clip or File name.
 - **Detect clips from same camera:** Turning on this checkbox results in multiple clips that are identified as being from the same camera being put into the same angle track of the resulting multicam clip being created. It also enables the “Detect using” drop-down menu.
 - **Detect Using:** The metadata used to determine which clips come from the same camera. You can choose from Camera #, Angle, Reel Number, Reel Name, and Roll/Card #, which are user-editable in the Metadata Editor of the Media page, or you can choose Reel Name which is automatically or manually derived using either the Conform Options of the General Options panel of the Project Settings, or the Name panel of the Clip Attributes window. For more information on the Conform Options, see *Chapter 4, “System and User Preferences.”*
 - **Move Source Clips to “Original Clips” Bin:** A checkbox that lets you move all of the original ISO clips into an Original Clips bin to get them out of the way after the multicam clip has been created.
- 4 When you’re done choosing options, click Create. Depending on the Angle Sync method you chose, a waveform analysis might generate a progress bar, and then the new multicam clip is created in whichever bin is currently selected in the Media Pool. Multicam clips appear with a multicam badge in the lower left-hand corner of the clip thumbnail.



A multicam clip showing its badge in the Media Pool

Converting Compound Clips or Timelines to Multicam Clips

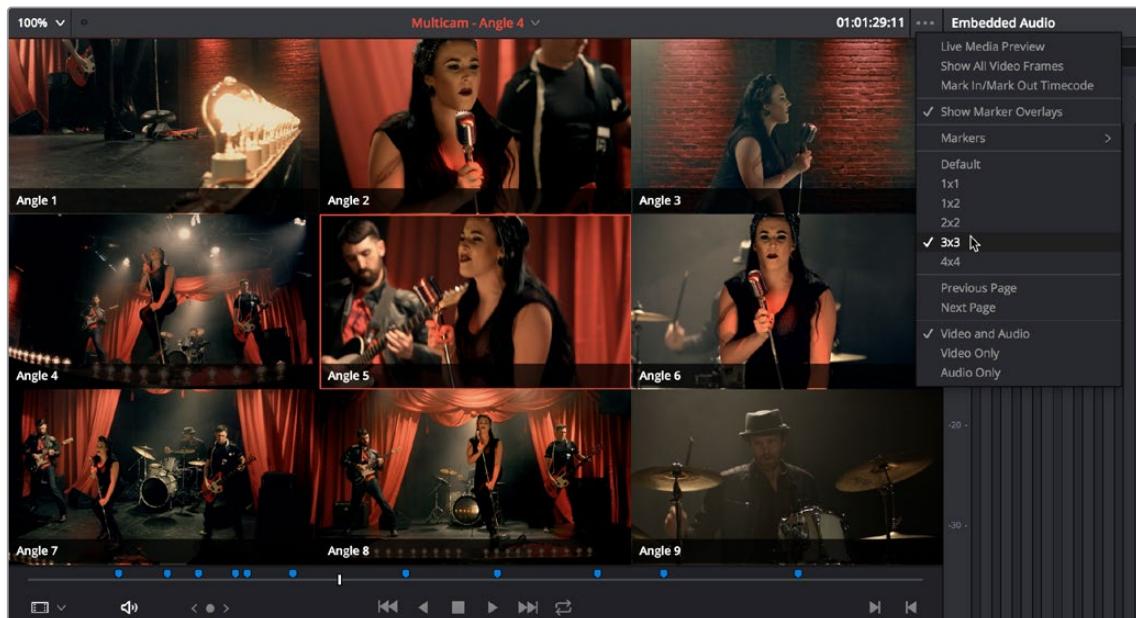
You can convert compound clips and timelines into multicam clips for easier editing using the Edit page’s Multicam Editing interface. This conversion is a one-way process. You cannot reconvert a multicam clip back to a timeline or compound clip. If you wish to preserve the original timeline or compound clip, make sure to duplicate it first, and then convert the copy.

To convert a compound clip or timeline to a Multicam clip:

- Right-click on the clip or timeline in the Media Pool and choose “Convert Compound Clips (Timelines) to Multicam Clips” from the drop down menu.

Logging and Editing Multicam Clips

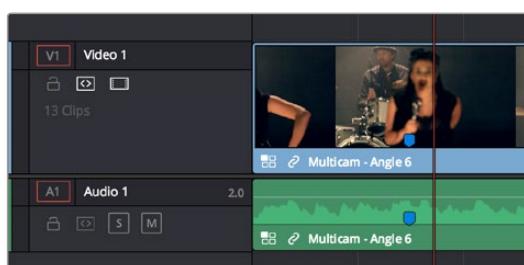
Once you create one or more multicam clips, you can view them in the Media page or in the Source Viewer of the Edit page, and add markers to them (all angles share the same markers) to prepare for the multicam edit you’re planning on performing. When viewing multicam clips in the Media page, you can choose how many angles to show in the viewer via the Viewer Option menu.



Markers set in a multicam clip in the Media page to prepare for editing

Setting up a Timeline for Multicam Editing

Once you’ve created one or more multicam clips, preparing them for editing is as simple as editing them into the Timeline, either by dragging and dropping the multicam clip to the Timeline from the Media Pool, or by opening the multicam clip into the Source Viewer, and then using any of the available editing methods to cut it into the Timeline from there. Once edited, they appear in the Timeline like any other clip, just with a multicam badge to the left of the clip name.

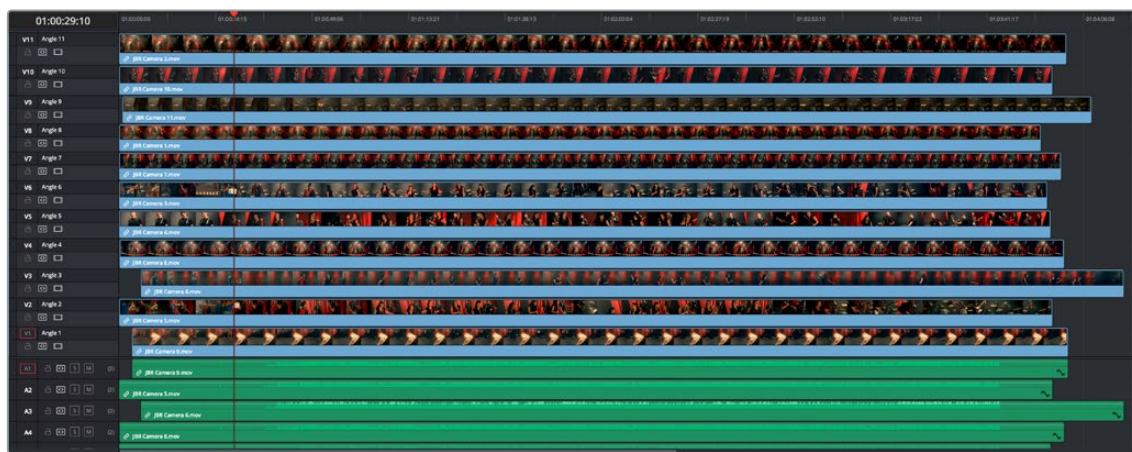


Multicam clip badge in the Timeline

When you perform a multicam edit, DaVinci Resolve plays the entire audio mix while you're editing, so if you want to take the opportunity to edit a master audio mix file or additional piece of music to play along with the multicam clip, you can do so.

Opening and Altering Multicam Clips

After you've created a multicam clip and put it into a timeline, you can modify it in a variety of ways by right-clicking it in the Media Pool and choosing "Open in Timeline." This replaces the contents of the Timeline with a vertical stack of superimposed angles, one per track, each of which is offset from the beginning of the Timeline to align with one another.

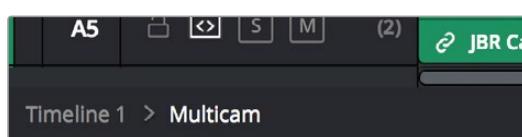


An open multicam clip appears like a timeline with a vertical stack of clips

With the multicam clip open, you can make a variety of changes in preparation for editing:

- You can slide a multicam clip left or right to alter its sync (selecting an angle and using the Period (.) and Comma (,) "nudge" keyboard shortcuts can be a good way of doing this).
- You can delete the track of an angle you don't need (right-click the track header and choose Delete Track).
- You can rearrange tracks to rearrange the order in which angles appear (right-click any track header and choose Move Track Up or Move Track Down).
- You can rename tracks to change the angle name that appears by default in the Multicam Viewer and that will also appear in the Timeline when you do cut and switch editing.
- You can disable audio or video tracks that correspond to angles you don't want to see, but don't want to eliminate, either.
- You can grade each multicam angle separately (discussed later in this section).

When you've finished altering the contents of the multicam clip, you can close it using the path control at the bottom left-hand corner of the Timeline. Click the name of the edited timeline to go back, in preparation for the next steps.

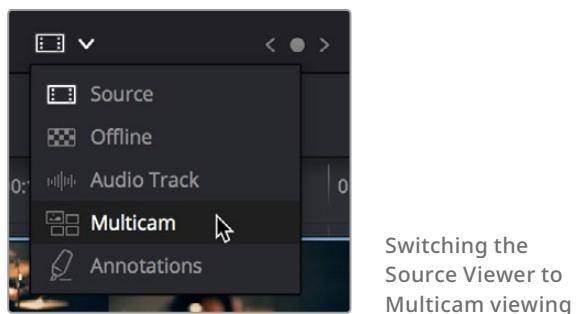


A path control lets you exit the multicam clip

Performing a Multicam Edit

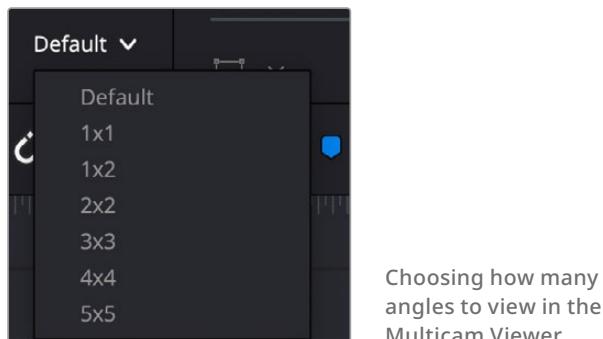
After you've created one or more multicam clips and edited them into a timeline, actually executing a multicam edit is simple.

- 1 Open the Timeline you created to hold the multicam clip or clips comprising your edit, and position the playhead where you want to start editing.
- 2 Choose Multicam from the Source Viewer mode drop-down.



The Source Viewer changes to display all of the different angles within that clip as switching controls.

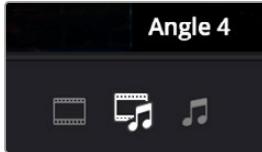
- 3 Choose how many angles you want to display from the drop-down menu at the bottom right of the Source Viewer. If you're using a computer that's not very fast, you may need to reduce the number of angles you're viewing to maintain real time playback.



If there are more angles within the multicam clip intersecting the playhead in the Timeline than the Multicam Viewer is set to show, then page controls appear to the left of this drop-down menu that let you choose which set of angles you want to view.

You can move to another page of angles by doing one of the following:

- Click any dot to jump to that page of angles.
 - Click the arrows to move among next/previous sets of angles.
 - Choose Edit > Multicam > Previous Page (Option-Shift-Left Arrow) or Next Page (Option-Shift-Right Arrow).
- 4 Choose whether you want to switch both the audio and video, just the video, or just the audio using the Audio/Video selection buttons at the bottom center of the Multicam Viewer. You can also choose Edit > Multicam > Video and Audio (Option-Shift-[), Video Only (Option-Shift-]), Audio Only (Option-Shift-\).



Buttons for choosing whether to switch the video, the audio, or both

- 5 Start playback, and while watching the program play, do one of the following:
 - Click any angle in the Multicam Viewer to insert a cut in the Timeline and switch to that angle. As you cut-and-switch, the cuts immediately appear in the Timeline while you play onward.
 - Option-click any angle to switch the angle used by the current clip without adding a cut. This is useful if you later regret the angle you cut to and just want to switch the entire segment since the last cut you made. This can also be accomplished by choosing Edit > Multicam > Previous Angle (Command-Shift-Left Arrow) or Next Angle (Command-Shift-Right Arrow).

As you play, the entire mix in the Timeline will play along with what you're switching, so you can work in context.



A timeline while it's being edited using cut and switch

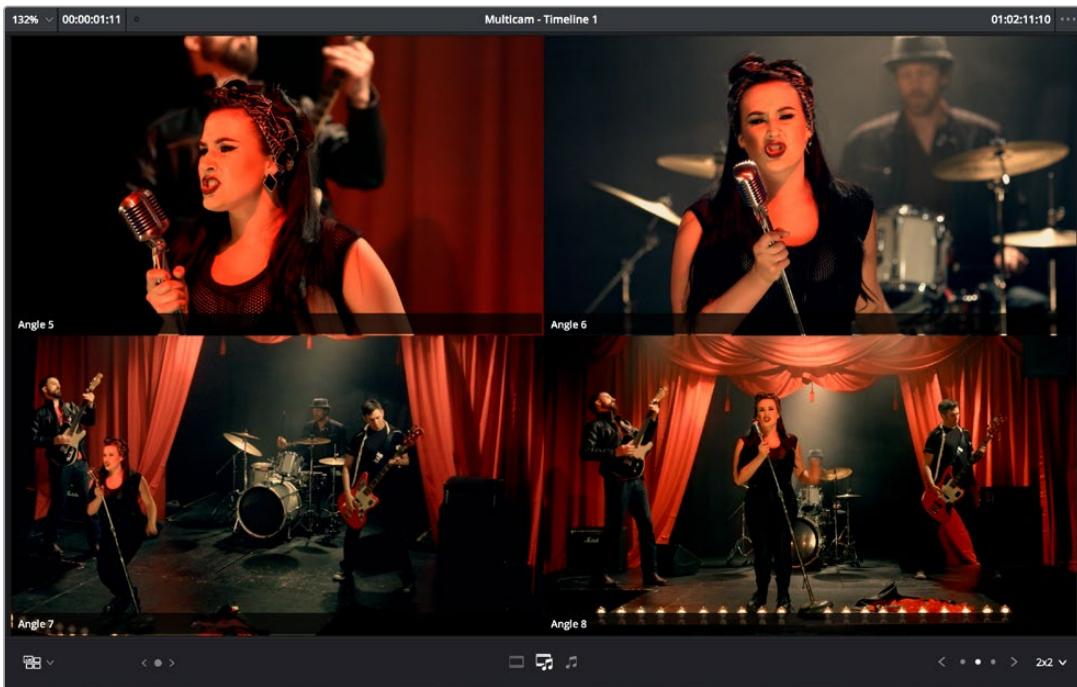
- 6 When you're ready to stop multicam editing, simply stop playback. If you want to start trimming the Timeline to fine-tune what you've done, choose Source from the Source Viewer mode dropdown, and you can re-edit and trim the multicam clips in the Timeline just like any others.

Multicam Controls in the Source Viewer

The Source Viewer, in Multicam mode, has four sets of controls that let you set up and execute multicam editing.

- **Multicam Angle buttons:** Each multicam angle displayed in the Source Viewer is a button that lists the angle name underneath. Clicking any of these buttons inserts a cut and switches the angle of the next clip, while Option-clicking changes the angle of the clip at the position of the playhead without adding a cut.
- **Audio/Video Selection buttons:** Clicking any of these buttons inserts a cut and switches the angle of the next clip, while Option-clicking changes the angle of the clip at the position of the playhead without adding a cut.
- **Multicam display drop-down:** Lets you choose how many angles to view while switching. Depending on your workstation's performance, reducing the number of angles can improve playback performance while you edit. You can choose from a grid of 1x1, 1x2, 2x2, 3x3, or 4x4 angles to view.

- **Multicam Page buttons:** If there are more angles within the multicam clip intersecting the playhead in the Timeline than the Multicam Viewer is set to show (via the multicam display drop-down), then page controls appear that let you choose which set of angles you want to view. Click any dot to jump to that page of angles, or click the arrows to move among next/previous sets of angles.



The Source Viewer showing Multicam switching controls

Multicam Keyboard Controls

There's also a full set of keyboard shortcuts that can be used for multicam editing.

- **Multicam Cut:** (Clip > Multicam Cut submenu) Pressing the 1 through 9 number keys performs a cut-and-switch operation, the same as if you'd clicked on an angle button of a multicam clip in the Source Viewer.
- **Multicam Switch:** (Clip > Multicam Switch submenu) Pressing Option-1 through 9 performs a switch operation, the same as if you'd Option-clicked an angle button of a multicam clip in the Source Viewer.
- **Previous/Next Angle:** (Edit > Multicam submenu) Pressing Command-Shift-Left or Right Arrow lets you switch to the previous or next angle. These controls will also loop back around to the first or last angles in the multicam clip.
- **Audio/Video Switching:** (Edit > Multicam submenu) Pressing Option-Shift-[sets the Multicam Viewer to cut or switch both Video and Audio at the same time. Pressing Option-Shift-] sets the Multicam Viewer to cut or switch Video only. Pressing Option-Shift-\ sets the Multicam Viewer to cut or switch Audio only.
- **Previous/Next Page:** (Edit > Multicam submenu) Pressing Option-Shift-Left or Right Arrow lets you move to the previous or next page of multicam angles, if there are more angles than can be displayed in the Viewer's current multi-angle setting.

Editing Multicam Clips in the Timeline

When it comes to editing and trimming, there's no functional difference between multicam clips and any other kind of clip. Because you're technically adding through edits to a single clip, you have the option or deleting any edit by selecting it and pressing the Delete key.

But multicam clips are special in that you always have the option of switching angles, either using the Multicam Viewer, or right in the Timeline via each clip's contextual menu.

To switch the angle of any multicam clip in the Timeline:

- Right-click any clip and choose a new angle from the “Switch Multicam Clip Angle” submenu. This also allows you to change angles without needing to use the Multicam Viewer.

In the event that you want to eliminate all unused angles from a multicam clip and “flatten” it to simply be a single clip in the Timeline, there's a command for that.

To flatten a multicam clip in the Timeline:

- Right-click any clip and choose Flatten Multicam Clip from the contextual menu. Select either Copying Multicam Grades to copy the existing color grade to all other angles, or Retaining Grades from Angles to keep any color grades done on individual angles. All unused angles are deleted, the clip becomes shorter if it included black tails because of another unused angle, and you end up with a single ordinary clip in the Timeline.

To Match Frame to the angle of any multicam clip in the Timeline:

- Place the playhead over the frame in the Timeline you want to match and press F. The exact frame of the multicam clip referenced will appear in the Source Viewer with the appropriate angle already selected.

To Match Frame to the multicam clip in the Source Viewer:

- Open the multicam clip in the Source Viewer. Navigate to the frame you want to find using the jog bar and press F. The playhead in the Timeline will move to the exact frame of the multicam clip referenced in the Source Viewer. If the frame you selected is not in the Timeline, when you press F nothing will happen.

To edit an angle of any multicam clip directly from the Source Viewer:

- You can click and drag any multicam angle directly from the Source Viewer to the Timeline. The length of the clip is bounded by the In and Out point selection of the clip.

Referencing a Line Cut

You may sometimes be provided with what's called a “line cut” from a production.

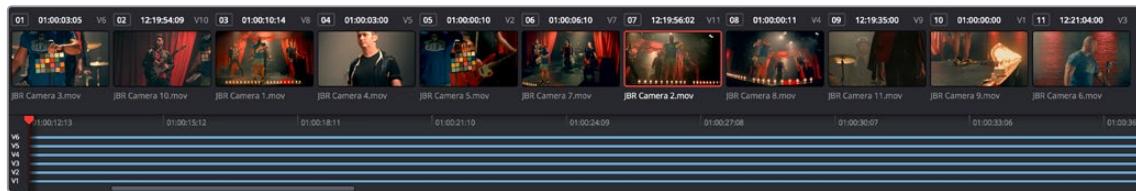
This is a pre-edited version of the program, cut live with the switcher and recorded during the performance or event, that's meant to be used as a reference for what you're doing.

If you want to reference a line cut that's been given to you as a movie file, you can add it as an Offline Reference Movie, and compare it to the Timeline using the Offline Reference Movie mode of the Source Viewer in the Edit page. For more information on using an Offline video to compare with a timeline in the Edit page, see *Chapter 55, “Preparing Timelines for Import and Comparison.”*

Grading Multicam Clips

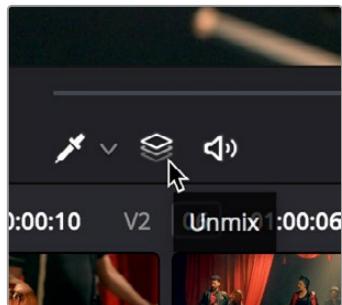
Multicam clips appear like any other clip in the Color page. However, each angle within a multicam clip has its own grade (unlike the Take Selector described later, in which all takes share the same grade). If you grade a multicam clip, you're actually editing the grade of the specific angle that's currently exposed in that clip.

If you want access all of the angles within a multicam clip for grading, right-click it and choose "Open in Timeline" to expose each angle within a superimposed stack. Then you can open the Color page and grade whatever angles you want, whether they're visible back in the Edit page or not. You might do this to make the different angles match one another better, or to pre-grade all of the angles to give them the look you want prior to multicam editing. You also need to use "Open in Timeline" in order to access and manipulate the camera RAW settings if your footage was shot in a RAW format.



An open multicam clip in the Color page exposes all of its angles for individual grading

Because opening multicam clips in the Timeline results in a vertical stack of superimposed clips, you'll want to turn on Unmix in the Color page viewer so that you can actually see the currently selected angle in the Thumbnail Timeline while you work.



The Unmix control lets
you see only one of a
superimposed stack of clips

When flattening a multicam clip, you can choose to grade individual angles or the multicam clip as a whole. In the Edit page, select Flatten Multicam Clip and either Copying Multicam Grades to copy the existing color grade to all other angles, or Retaining Grades from Angles to keep any color grades done on individual angles.

When you're done grading, go back to the Edit page, and use the path control at the bottom left-hand corner of the Timeline to return to your edited Multicam timeline.

Chapter 42

Take Selectors, Compound Clips, and Nested Timelines

This chapter covers a variety of different ways you can turn multiple clips into a single object in the Timeline, to accommodate a variety of different editing tasks.

Take Selectors, compound clips, and nested timelines all appear as a single clip in the Timeline, but they all organize multiple clips in different ways. Take Selectors let you organize multiple clips vertically, making it easy to associate clips with one another so you can easily switch among them. Compound clips and nested timelines let you organize multiple clips horizontally, so that you can manage long or short sequences of clips within an edit as a single clip, when convenient.

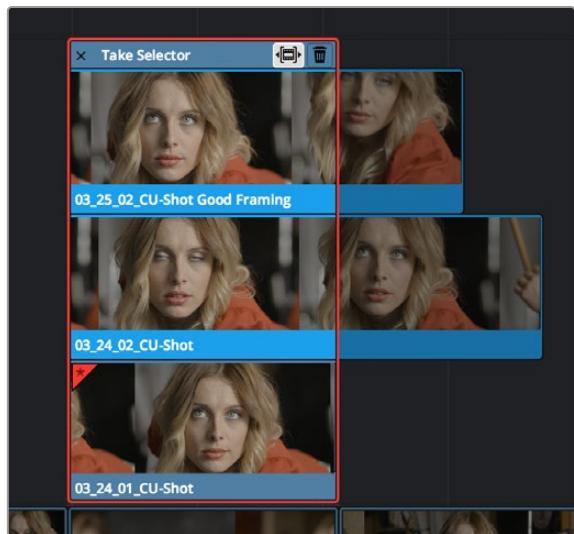
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Take Selectors

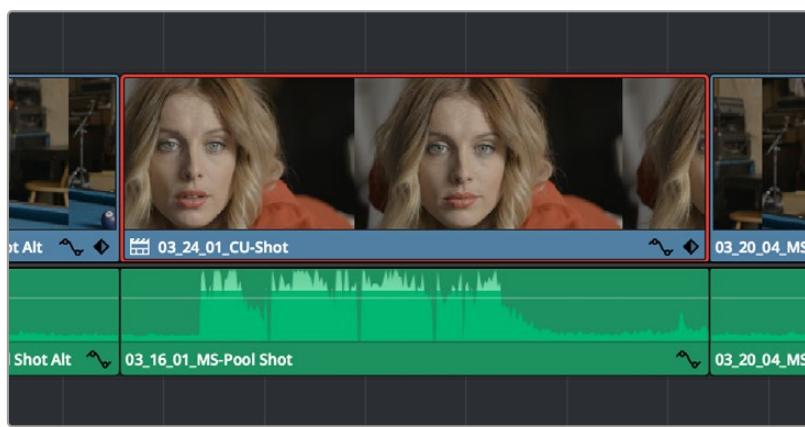
Take Selectors in DaVinci Resolve provide a way for you to manage multiple takes or versions of a particular clip in the Timeline. They're ideal for storing multiple useful takes for scenes where you or the client can't quite decide which one is the best, or for maintaining multiple versions of VFX clips that are going through different iterations.

When you place a number of clips inside a Take Selector, only one clip appears in the Timeline, but you can open that Take Selector and switch to any other take or version that's stored within to switch which clip appears in the Timeline whenever you want.



A Take Selector, shown open, with several alternate takes placed within

Take selectors are easy to create and use and populate. Once you've placed a number of clips inside the Take Selector, you can drag any take to slip that clip's range of media to synchronize it with the other takes, or click a take to choose that clip within the Take Selector to appear in the Timeline, before closing the Take Selector to confirm your change.



When closed, a Take Selector appears as a regular clip with a badge

When closed, multi-take clips can be edited, trimmed, composited, graded, and rendered like any other single clip in the Timeline. A Take Selector badge appears to the left of the name of a clip to which it's applied to show its status; double-clicking this badge opens the Take Selector so you can adjust its contents.

Methods of using Take Selectors:

- **To create a Take Selector:** Right-click any clip that's not a title or generator, and choose Take Selector from the contextual menu. The Take Selector interface appears, disabling the rest of the Timeline temporarily while you work with the Take Selector's contents.
- **To populate a Take Selector:** Drag any clip from the Media Pool into the Take Selector, and it appears "stacked" on top of the original clip in the Timeline.
- **To choose the current take:** Click any clip within the Take Selector so that it's highlighted, and then click the close button at the upper-left corner of the Take Selector. When next you open the Take Selector, the current clip appears at the bottom of the stack, with a star at the upper-left corner. Absent a choice, the current take will default to the last clip added to the Take Selector.
- **To set a Take Selector to ripple the Timeline when a longer or shorter take is selected:** Click the Ripple Take button, at the upper right-hand corner of the Take Selector panel, to the left of the trash can button. With this turned on, selecting a take that's longer or shorter than the current take will ripple the Timeline. With this turned off, selecting a take that's longer or shorter will either overwrite the next clip to the right, or leave a gap.
- **To slip a clip within the Take Selector:** Drag any clip to the left or right to slip the range of media that appears within the Take Selector's duration in the Timeline. This is useful for synchronizing other takes to fit the same narrative beat as the first take you used.
- **To remove a clip from a Take Selector:** Click the clip you want to remove to select it, then click the trash can button at the upper-right corner of the Take Selector. That take disappears from the Take Selector.
- **To close a Take Selector:** Click the X close button, or press the escape key. Whichever take was selected is now the clip that appears in the Timeline.
- **To reopen a Take Selector:** Double-click the Take Selector badge at the left of a clip's name, or right-click a multi-take clip and choose Take Selector from the contextual menu.
- **To eliminate a Take Selector leaving only the take you want:** Close the Take Selector, if open, then right-click that clip in the Timeline and choose Finalize Take from the contextual menu.

Compositing and Grading Take Selectors

Since compound clips act like a single clip in the Timeline, they appear as a single MediaIn node in the Fusion page, and you grade them as you would any other single clip in the Color page. However, for Take Selectors, the composite or grade is applied to the Take Selector itself; when you switch to any other take, it appears with the same composition and grade.

NOTE: Any keyframing you do is relative to the Timeline of the overall Take Selector. This means that if you create a keyframed effect in either the Fusion or Color pages using take 1, and you then switch to takes 2, 3, or 4, the timing might not be exactly the same and you might need to make some adjustments.

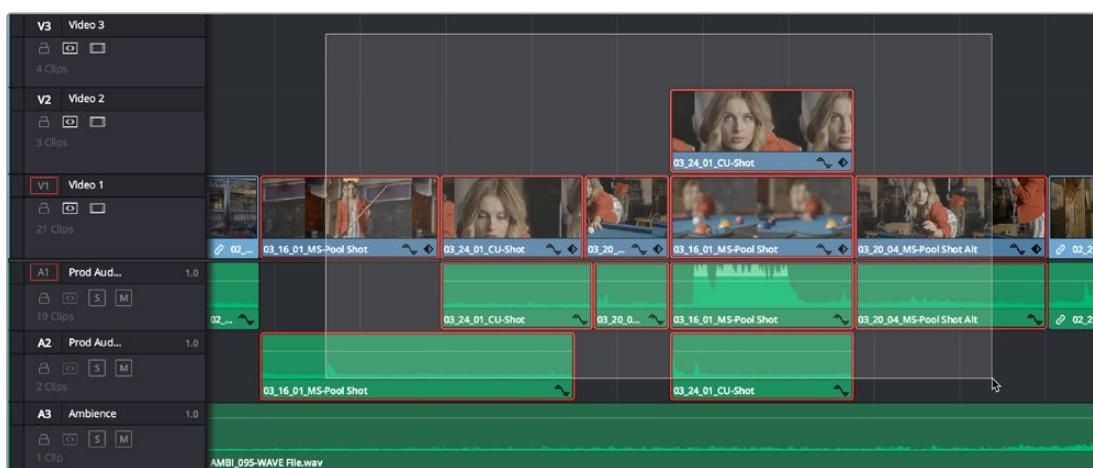
Compound Clips

You can select a series of clips in the Timeline, be they edited one after the other in serial or superimposed and stacked in parallel, and turn them into a compound clip, which is a single clip in the Timeline that's actually comprised of many other audio and video clips embedded inside. This allows you to work with a block of clips as if it were a single unit, governed by a single set of Inspector controls, and able to be connected to another clip in your timeline by a single transition.

Editing a compound clip works the same as editing any other type of clip. They can be edited, trimmed, and deleted using all the same methods. In addition, compound clips can be renamed, and decomposed back into their component clips right in the Timeline.

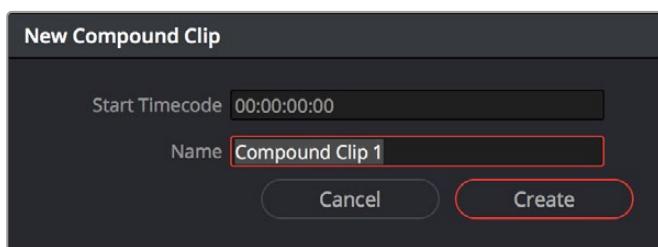
To create a compound clip by selection:

- 1 Select a range of clips.



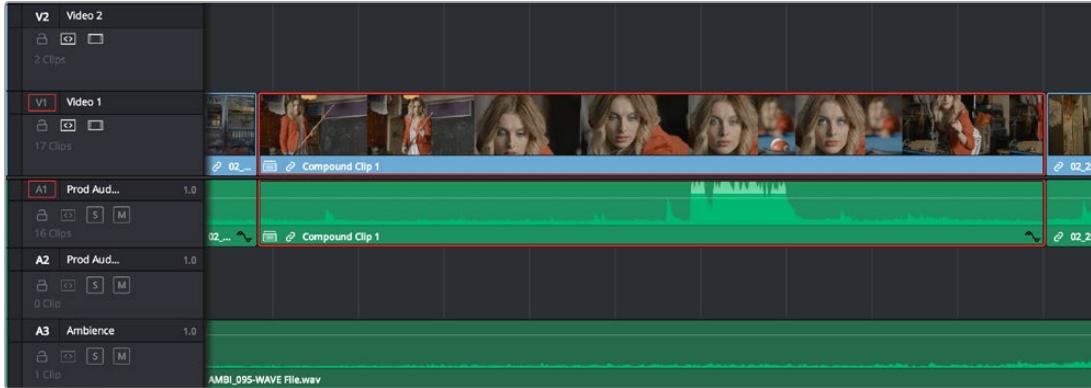
Selecting a range of clips to turn into a compound clip

- 2 Right-click one of the selected clips and choose New Compound Clip.
- 3 Enter an optional start timecode and a name, and click Create.



The New Compound Clip Properties dialog

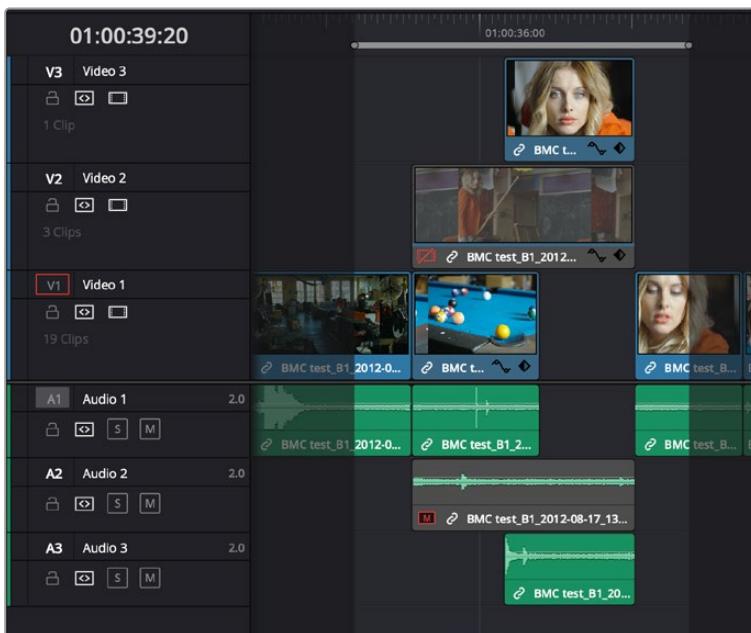
A compound clip is created which takes the place of the original clips you selected on the Timeline. Additionally, a copy of that compound clip appears in the currently selected bin of the Media Pool.



The resulting compound clip

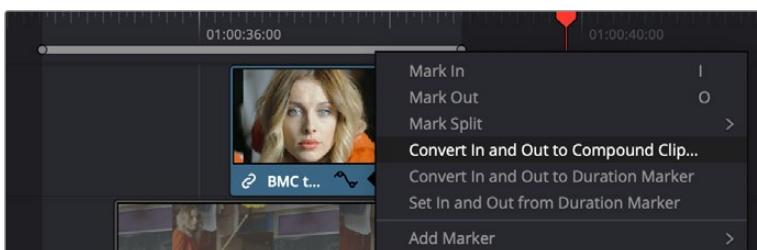
To create a compound clip by In-Out range:

- 1 Select a range of clips using In and Out points on the Timeline. This allows you to select partial sections of a clip to add to the compound, rather than the whole clip. All tracks between the In-Out range will be included, even if the track is disabled or auto select is off.



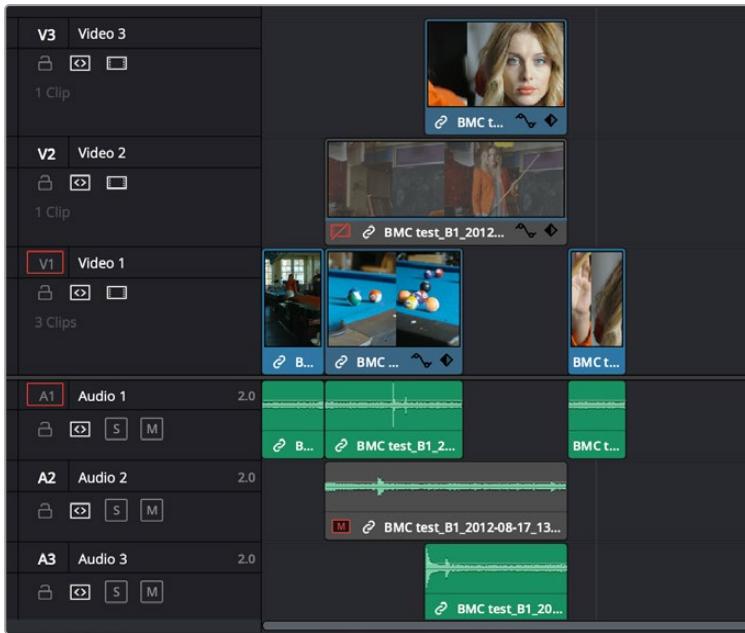
Selecting a range of clips based on In and Out points to turn into a compound clip. Note that this selection includes only parts of the first and last clips in the range.

- 2 Right-click on the timeline range and choose Convert In and Out to Compound Clip.



Right clicking on the In-Out range (gray bar) on the Timeline brings up the context menu.

- 3 Enter an optional start timecode and a name, and click Create.



The resulting bounds of the compound clip showing only the media included in the exact In-Out range.

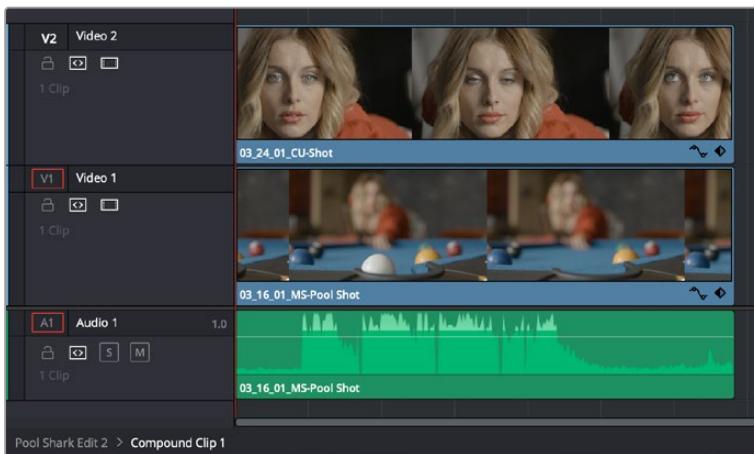
To rename a compound clip:

- Click the name of the compound clip twice in the Media Pool to select the name text. Type a new name, and press the Return key to accept the change.

To edit a compound clip:

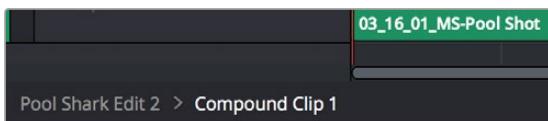
- 1 Right-click any compound clip and choose Open in Timeline from the contextual menu.

The Timeline updates with the contents of the compound clip, which you can re-edit at your discretion.



An open compound clip in the Timeline

- 2 To return to the original timeline when you're finished, double-click the name of the enclosing timeline in the path control at the bottom left-hand corner of the Timeline.



The path control you can use to close the compound clip

To decompose a compound clip into its individual clips in the Timeline:

- Right-click any compound clip and choose Decompose in Place from the contextual menu.
The compound clip is replaced by the individual clips it was made from.

To edit a compound clip from the Media Pool to the Timeline as individual clips:

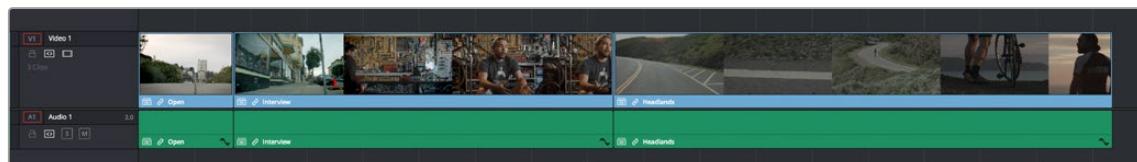
- 1 Choose Edit > Decompose Compound Clips on Edit so the menu item is checked.
- 2 Use any editing command except for Fit to Fill or Place on Top to edit a compound clip from the Media Pool or Source Viewer to the Timeline to edit it as a sequence of individual, decomposed clips.

Compositing With and Grading Compound Clips

Since compound clips act like a single clip in the Timeline, they appear as a single MediaIn node in the Fusion page, and you can grade them as a single clip in the Color page. However, if you want to individually apply effects, adjust the RAW camera settings, or grade the original clips inside the compound clip, you can use the Open in Timeline command to access its constituent clips, and then open the Fusion or Color pages, where you'll find each of the individual clips available for separate compositing or grading. When you're done, go back to the Edit page and close the compound clip, and you'll go back to seeing it as a single clip whenever you open the Fusion and Color pages.

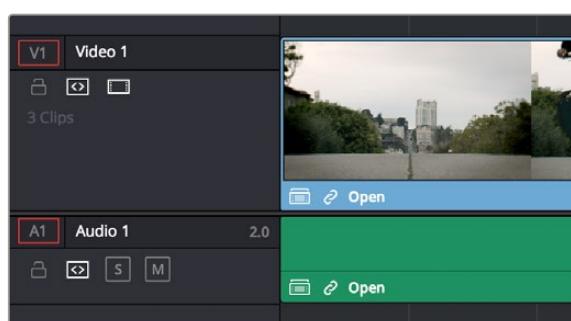
Nested Timelines

Timelines, and sections of timelines, can be edited inside other timelines, either partially or whole. For example, if you've edited a program in scenes or reels such that each reel is contained in a separate timeline, you can edit all of the timelines together, one after the other, into a single timeline to assemble them into a final program.



Multiple timelines edited together into a single sequence

Nested timeline clips appear with a special badge to the left of the timeline name.



The badge that indicates a nested timeline

Timelines can be edited like any other clip, you can select one or more timelines and drag and drop them into another timeline, drag them onto the Timeline Viewer editing overlay, or use the toolbar editing buttons or keyboard shortcuts to edit them, just as you would any other clip.

Additionally, you can select multiple timelines in the Media Pool, right-click them, and choose Create Timeline Using Selected Clips to quickly assemble a group of timelines into a nested sequence.

The one exception is that you must drag and drop a timeline into the Viewer if you want to use it to set In and Out points, since double-clicking a timeline, or selecting a timeline and pressing Return simply opens it into the Timeline Editor. However, you can set In and Out points for timelines in the Filmstrip of the Media Pool, or you can edit a timeline into another timeline in its entirety, and then trim the head and tail down to just what you need. Double-clicking a nested timeline opens it into the Source Viewer for trimming, exactly like any other clip.

Re-Editing a Nested Timeline

If you want to edit the contents of a nested timeline, you can right-click it and choose Open in Timeline. Unlike compound clips, no path control appears when you do this, because you've simply opened the original timeline. To go back to the previous timeline, find and double-click it in the Media Pool, or choose it from the Timeline drop-down at the top of the Timeline Viewer.

Editing an original timeline does nothing to change the duration of nested instances of that timeline inside other timelines. If you trim or delete clips in the original timeline that appear in nested instances of that timeline, then those areas of the nested timeline simply go black.

Swapping the Contents of the Source Viewer and Timeline

When editing the partial contents of one timeline into another, it can be useful to see the contents of a timeline that's open in the Source Viewer in the Timeline Editor. To do so, choose Timeline > Swap Timeline and Source Viewer (Command-Page Up). This puts the timeline that was open in the Source Viewer into the Timeline Editor, and the timeline that was in the Timeline Editor into the Source Viewer. This makes it easier to mark In and Out points while seeing the exact boundaries of clips, prior to pressing Command-Page Up to swap the contents of the Source Viewer and Timeline Editor once again in preparation for executing the next edit.

Editing Source Media From a Timeline or Compound Clip

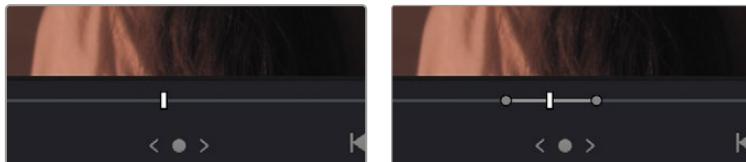
If you have a timeline that has clips you want to edit into another timeline, but as source clips and not as nested timeline segments, you can turn on Edit > Decompose Compound Clips on Edit.

This a mode determines whether a timeline is edited into another timeline as a nested timeline, or immediately decomposed into its constituent source clips. Turning this mode on lets you edit source clips from a timeline using drag and drop, 3-point edits, or whatever other method you find convenient. To go back to editing nested timelines, turn Edit > Decompose Compound Clips on Edit off.

This mode is especially useful for workflows where you're assembling "selects" timelines with the best moments of various interviews or performances, which you later want to edit as sources into the actual program you're editing.

Marking Clips in Timelines Loaded into the Source Viewer

While you're editing Source Media from a timeline that's loaded into the Source Viewer, you can use the Mark Clip (the X key) to set Viewer In and Out points that match the start and end of whatever clip intersects the playhead within that timeline. This makes it easy to edit one clip from a Timeline in the Viewer into your program, all by itself.



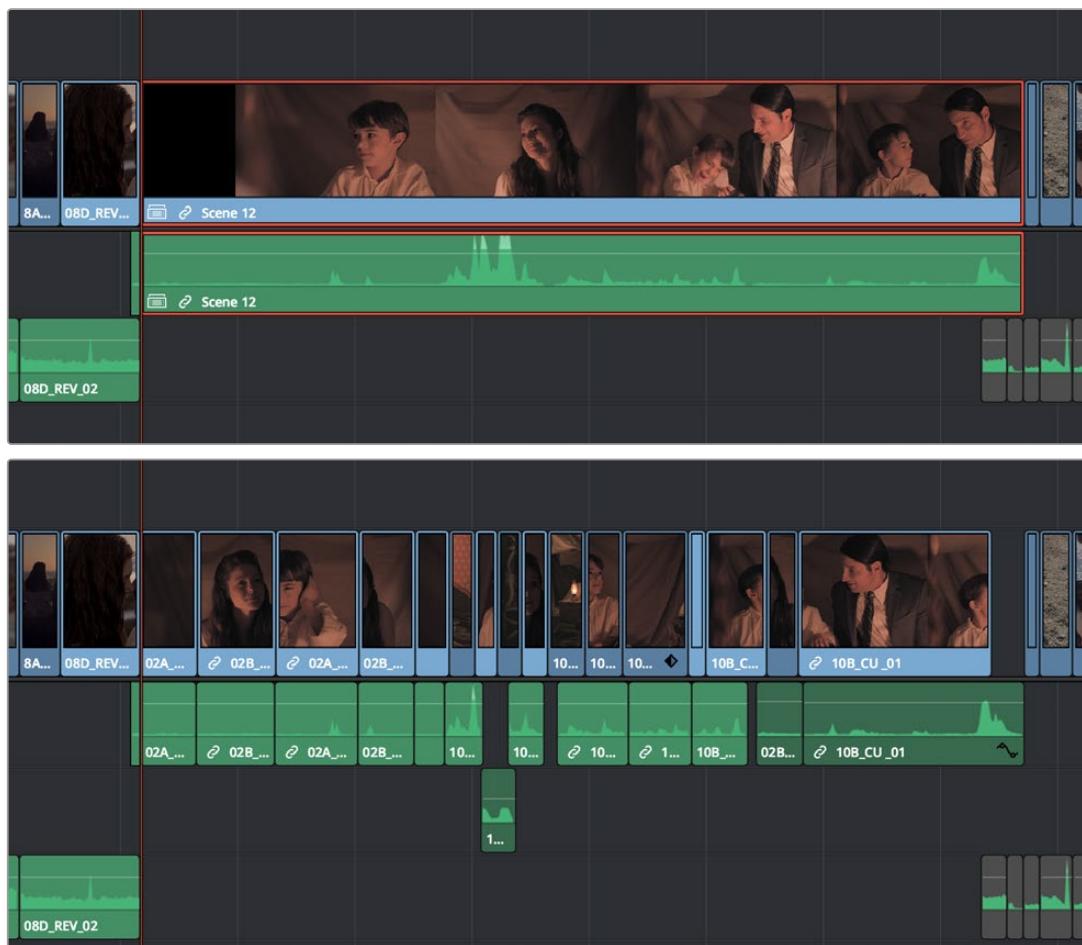
(Left) A timeline in the Source Viewer, (Right) Pressing X marks In and Out points for the clip at the playhead, ready for editing

Decomposing Nested Timelines

There are two main ways you can turn a nested timeline back into its constituent clips.

Decomposing in Place

To decompose a nested timeline that's already been edited into another timeline, right-click it and choose Decompose in Place. You can also do this for multiple selected nested timelines, all at once.



(Top) A nested timeline, (Bottom) The result of using Decompose In Place

If the decomposed clip has more audio, video, or subtitle tracks as a result, then additional tracks will be added to the Timeline to make room. If this is a problem, you can rearrange the clips

Decomposing Nested Timelines While Editing

If you want to edit an entire timeline into another timeline solely as the source clips, you can turn on Edit > Decompose Compound Clips on Edit, and then edit that timeline into your program using whatever method you find convenient, as described previously in this chapter.

Compositing and Grading Nested Timelines

Similarly to compound clips, nested timelines act like a single clip in the Timeline; they appear as a single MediaIn node in the Fusion page for compositing, and you can grade them as a single clip in the Color page. However, if you want to individually add effects to or grade the original clips inside a nested timeline, you can either open that timeline from the Media Pool, or right-click that clip and choose Open in Timeline in order to access its constituent clips for compositing or grading.

Audio Buses in Nested Timelines

When you nest a timeline inside of another timeline that has buses set up for mixing in the Fairlight page, all Sub and Aux routings work as intended within the nested timeline, which exposes all channels of Main 1 in the enclosing timeline. In this sense, the audio of the nested timeline can be considered to be a submix that outputs its resulting audio to the audio track it's edited onto. For more information about Buses and audio mixing in general, see Part 13, "Fairlight."

Converting Compound Clips or Timelines to Multicam Clips

It's possible to convert compound clips and timelines into multicam clips for easier editing using the Edit page's Multicam Editing interface. This conversion is a one-way process. You cannot reconvert a multicam clip back to a timeline or compound clip. If you wish to preserve the original timeline or compound clip, make sure to duplicate it first, and then convert the copy. For more information, see *Chapter 41, "Multicam Editing."*

To convert a compound clip or timeline to a Multicam clip:

- Right-click on the clip or timeline in the Media Pool and choose "Convert Compound Clips (Timelines) to Multicam Clips" from the drop down menu.

Chapter 43

Trimming

Most editors would agree that trimming is half the job of editing.

While you can make many kinds of changes in the Timeline using the selection and razor blade tools, there is a dedicated Trim mode in which you can perform more sophisticated trim operations in fewer steps using either the mouse or keyboard shortcuts, depending on how you like to work. Mastering DaVinci Resolve's trimming operations will save you time when doing the necessary work of fine-tuning your edit.

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Keyboard Shortcuts in This Chapter

Here's a list of keyboard shortcuts you might find helpful that relate to topics found in this chapter.

Key Shortcut	Function
T	Trim mode, ripples edits and slips or slides clips
A	Selection mode, resizes edits and moves clips
Command-L and J	"Fast trim" dynamically trims the selection at 100% forward and reverse speeds
W	Dynamic trim or resize mode, uses JKL to trim the selection
S	Toggles between Slip and Slide mode when a clip is selected in Trim mode
V	Selects the edit point closest to the playhead and moves the playhead there
Shift-V	Selects the clip or gap that intersects the playhead
Shift (modifier)	A modifier that temporarily disables the 2- and 4-up display that appears when trimming edits and clips with either the pointer or keyboard shortcuts.
Shift-Q	Toggles Enable Preview During Editing to control visibility of the 2- and 4-up displays

Key Shortcut	Function
Option-F1 through F9	Toggles Auto Select for video tracks 1 through 9
Command-Option F1 through F9	Toggles Auto Select for audio tracks 1 through 9
U	Toggles edit point selection among the outgoing, centered, or incoming part of the edit
Comma, Period	"Nudge" keys to move a selected edit or clip left or right a frame at a time
Shift-Comma, Period	"Fast Nudge" keys to move a selected edit or clip left or right 5 frames at a time (customizable)
/	Play around current selection
Command-/	Toggles looped playback off and on
Down Arrow, Up Arrow	Moves both the playhead and selection to the next or previous edit point
E	Extend edit to resize or ripple selected edit points to the position of the playhead
Shift-Left, Right Bracket ([,])	Trim Start to Playhead and Trim End to Playhead to trim a clip at the position of the playhead and leave a gap (unless you're in Trim mode so the gap will be closed)
Shift-Command-Left, Right Bracket ([,])	Ripple Trim Start to Playhead and Ripple Trim End to Playhead to trim a clip at the position of the playhead and close the gap
Command-Shift-X	Ripple cut selection; close gap left by cut clip(s)
Command-C	Copy selected clips
Command-V	Paste clips
Command-Shift-V	Paste insert clips

Summarizing Trim Operations

Before going into the different methods of trimming that are available, users who are new to editing might benefit from a quick summary of what each trimming operation actually does. Each trim operation is designed to let you move edits and clips in relation to whichever clips are around them, by performing several operations at once. The five primary methods of trimming are:

- **Resize:** Shortens or lengthens the end of an outgoing clip or the beginning of an incoming clip, while either overwriting a neighboring clip or leaving a gap behind as necessary. While this isn't usually included in a discussion of "trim" operations, it's actually the simplest kind of trimming you can do.
- **Roll:** Moves an edit point to the left or right by either shortening the outgoing clip while lengthening the incoming clip, or vice versa. Roll edits do not change the duration of the overall Timeline.

- **Ripple:** Shortens or lengthens the end of an outgoing clip or the beginning of an incoming clip, while simultaneously moving all clips either to the right in the Timeline (if you’re rippling to lengthen a clip) or left in the Timeline (if you’re rippling to shorten a clip) to fill the gap or prevent overwriting that would otherwise occur if you were doing a resize operation. Ripple edits do change the duration of the overall Timeline and can alter the sync relation between different tracks if you’re not careful.
- **Slip:** Keeps a clip in the same place in the Timeline, while changing the range of media that appears in that spot. Slip edits do not change the duration of the overall Timeline.
- **Slide:** Keeps a clip’s range of media the same, but moves that clip to the left or right by either shortening the outgoing clip to its left while lengthening the incoming clip to its right, or vice versa.

Selection-Based Trimming Using the Trim Tool

Trim mode differs from Selection mode in that operations that would move clips with the Selection tool will either slip or slide clips with the Trim tool. Other operations that would resize edits with the Selection tool instead ripple the Timeline to automatically close gaps when using the Trim tool. The following sections describe the various trim operations that are available, both when using the mouse, and when using the keyboard.

To enter Trim Edit mode:

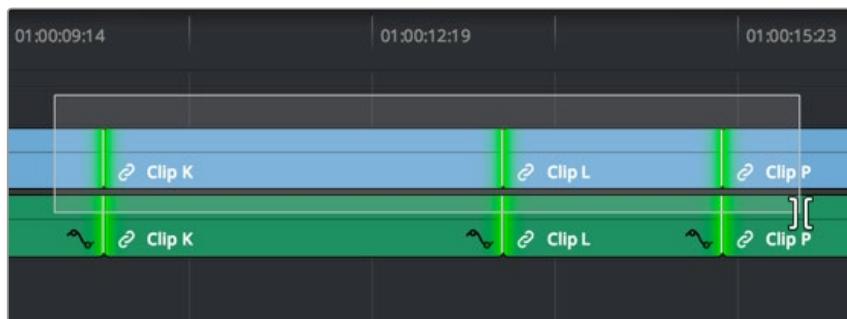
- Click the Trim Edit button, or press the T key.

How the Trim Tool Differs From the Selection Tool

Aside from the actual trimming operations that are available, there are a few other important differences between the Trim tool and the Selection tool.

Selecting Edit Points

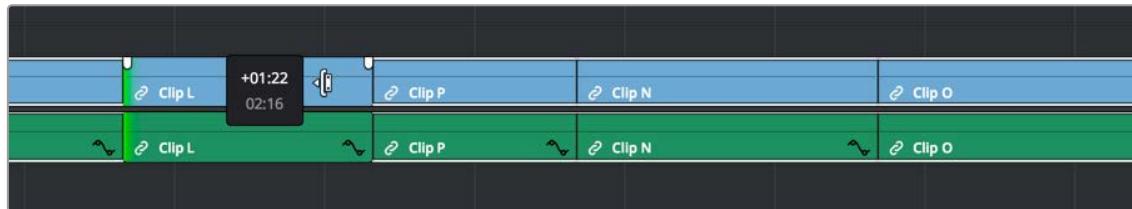
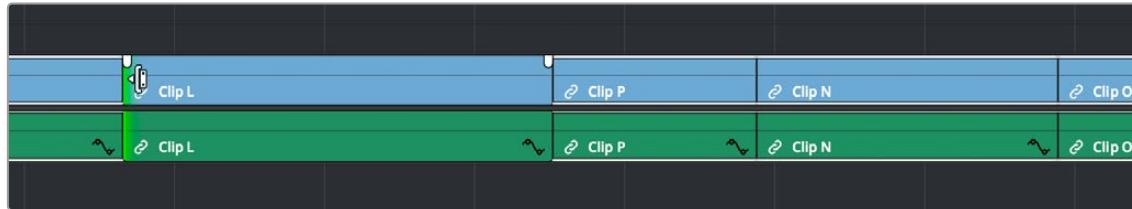
When the Trim tool is selected, dragging a bounding box over a series of clips in the Timeline selects the edit points to join clips together, instead of the clips themselves. This makes it fast and easy to select multiple edit points that you want to operate on simultaneously.



Selecting edit points in the Timeline using the Trim tool

Rippling the Timeline With Different Operations

When the Trim tool is selected, other commands and controls that would ordinarily resize a clip or clips and leave gaps in the Timeline instead move (ripple) clips that are to the right of the clip or edit you're trimming over to the left to prevent gaps whenever clips or edits are moved or resized.

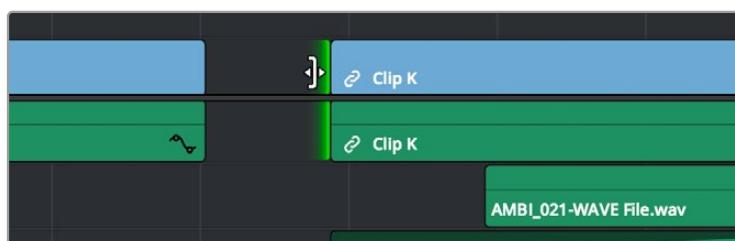


Rippling the incoming edit point of Clip L to resize it and prevent a gap from appearing by moving all clips that are to the right (Clips P, L, and N) over to the left

For example, the Retime controls, the Extend and Trim Start/End commands, and the Nudge keyboard shortcuts all work differently depending on whether you're using the Selection or Trim tools. This lets you use one set of tools to do different operations, depending on what you need to do.

Rippling Gap

You can also use the Trim tool (or other trim operations described later in this chapter) to ripple the start and end of a gap in the Timeline. Rippling a gap lets you grow or shrink the gap while moving the portion of the Timeline to the right of the gap forward or backward in time. Whenever you ripple against gap, a 2-up display appears that lets you see both the clip you're trimming and whatever superimposed clips may be showing through that gap.



Using the Trim tool to ripple the Out point of a gap to narrow it

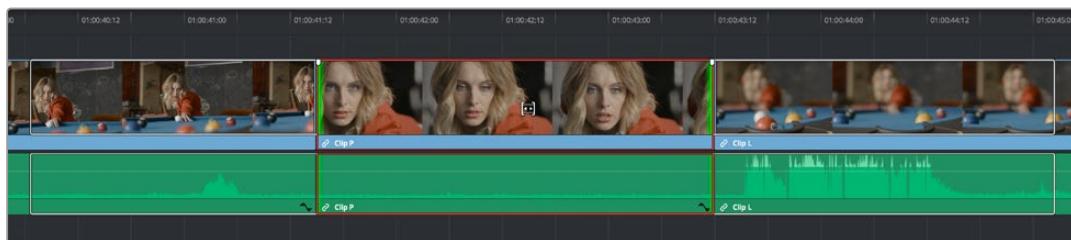
TIP: You can temporarily toggle between the selection (A) and trim tools (T) while using these operators to see their effects. Releasing the key will return you to the originally selected mode.

Using the Trim Tool With the Mouse

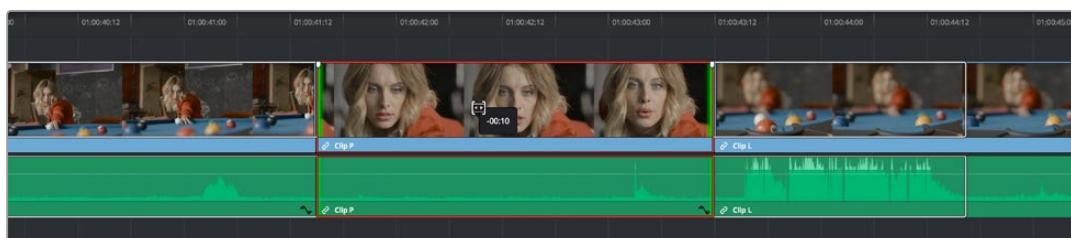
When trimming using the mouse, you can perform every kind of trim operation that's available using a single tool, simply by clicking the Trim mode/tool button, and then dragging on the appropriate area of a clip in the Timeline.

Methods of trimming with the mouse in Trim Edit mode:

- **To slip a clip:** To slip a clip's range of content without changing its position in the Timeline, click the middle top region of a clip, and then drag to the left or right to "slip" the clip to contain a different range of frames. A dashed overlay shows the total duration of media available for you to slip with, which moves left and right as you drag.



Clicking the top clip area before a slip, an overlay shows the clip's available range of media



After dragging to slip, clips don't move, but the slipped clip's range of media has changed

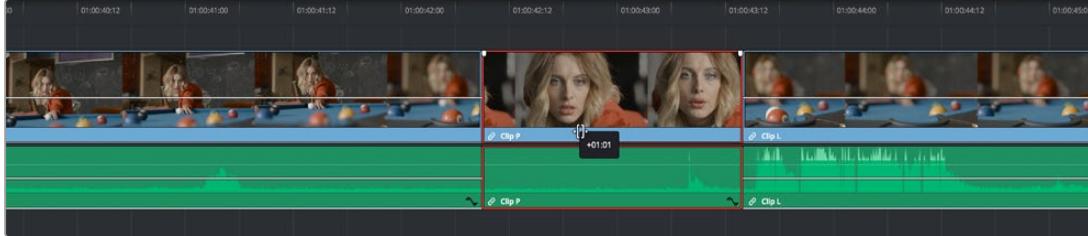
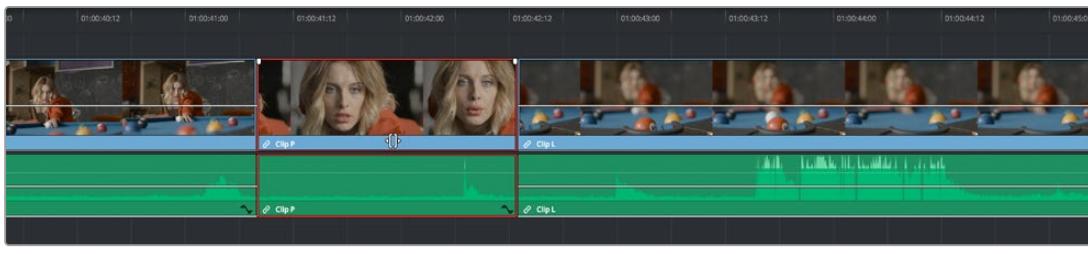
When slipping clips, a 4-up display shows all relevant outgoing and incoming frames, so you can compare the continuity of action from one clip to the next. During a slip, the top two frames update to show you the new incoming and outgoing frames of the clip being slipped, relative to the unchanging outgoing frame of the clip to the left and incoming frame of the clip to the right.

TIP: You can temporarily disable this four-up display by pressing the Shift key while you slip so that you only see the frame at the position of the playhead. This makes it possible for you to see which frame passes the playhead by as you ripple the Timeline. You can toggle this two-up display off completely by selecting View > Enable Multiview Edit Preview.



Four-up display when slipping a clip

- **To slide a clip:** To slide a clip, moving it to another position in the Timeline while simultaneously adjusting the Out point of the previous clip and the In point of the next clip to accommodate the change in position of the current clip being dragged, click the bottom-middle name bar of the clip and drag it to another position.



After dragging to slide, the selected clip is at a new location, surrounding clips filled the gap

When sliding clips, a 4-up display shows all relevant outgoing and incoming frames, so you can compare the continuity of action from one clip to the next. During a slide, the bottom two frames update to show you the new outgoing frame of the clip to the left, and the new incoming frame of the clip to the right of the clip being slid.

TIP: You can temporarily disable this four-up display by pressing the Shift key while you slide so that you only see the frame at the position of the playhead. This makes it possible for you to see which frame passes the playhead by as you ripple the Timeline. You can toggle this two-up display off completely by choosing View > Enable Multiview Edit Preview.



4-up display when sliding a clip

- **To roll an edit point:** To roll an edit, moving the Out point of the outgoing clip and the In point of the incoming clip at the same time, drag an edit point between two clips to the left or right. (Roll edits can also be done in Selection mode.)



Selected edit point before roll



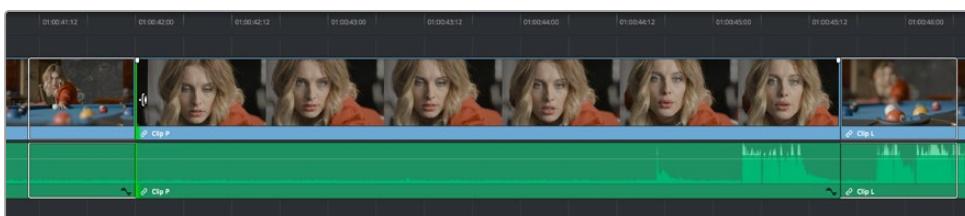
Edit point moved farther to the right, both adjacent clips resized to prevent gap

When rolling an edit, a 2-up display shows the changing continuity of action from the outgoing frame of the clip to the left to the incoming frame of the clip to the right, and you will hear the audio scrubbing of the right clip.



Two-up display when rolling an edit

- **Ripple edit:** To ripple the outgoing or incoming part of an edit to add or remove media to a clip while simultaneously moving all other clips at the left in the Timeline to make room, click the Trim tool, and drag an edit point to a new position in the Timeline.



Selected outgoing half of an edit point before ripple



Rippled clip is shorter, the rest of the Timeline has moved left to fill the gap

When rippling an edit, a 2-up display shows the continuity of action from the outgoing frame of the clip to the left to the incoming frame of the clip to the right. Which frame updates depends on which side of the edit you're rippling.

TIP: You can temporarily disable this two-up display by pressing the Shift key while you ripple so that you only see the frame at the position of the playhead. This makes it possible for you to see which frame passes the playhead by as you ripple the Timeline. You can toggle this two-up display off completely by selecting View > Enable Multiview Edit Preview.



Two-up display when rippling an edit

Turning Off the Heads Up Display While You Trim

If you press the Shift key while performing most drag and trim operations, you can suspend the multi-frame heads up displays that appear in the Timeline window in order to focus on the frame that intersects the playhead.

To toggle the two- and four-frame heads up displays off or on:

- Choose View > Enable Multiview Edit Preview.

Trim Tool Operations With the Keyboard

You can also perform every trim operation more precisely using the Nudge keyboard shortcuts.

To trim with the keyboard:

- 1 Press T to select the Trim tool.
- 2 To trim the selection, do one of the following:
 - **To slide a clip:** Press Shift-V to select a clip, and press the Comma key to slip it one frame to the left, or the Period to slip it one frame to the right. Shift-Comma and Shift-Period slips the clip in 5-frame increments.
 - **To slip a clip:** Press Shift-V to select a clip, then press the S key to toggle to Slip mode (pressing S again toggles back to Slide mode) and press Comma or Period to slide its contents to the left or right. Shift-Comma and Shift-Period slides the contents in 5-frame increments.
 - **To roll an edit:** Press V to select an edit point, then press the Comma key to nudge it one frame to the left, or the Period to nudge it one frame to the right. Shift-Comma and Shift-Period rolls the edit in 5-frame increments.
 - **To ripple an edit:** Press V to select an edit point, then press U to select either the incoming or outgoing side of the edit by itself. Then, press the Comma key to ripple the selected In or Out point of the clip to the left, or the Period to ripple it one frame to the right. Shift-Comma and Shift-Period ripples in 5-frame increments.

- 3** If you want to suspend the 2- or 4-up display that appears in the Timeline Viewer while trimming, you can Choose View > Enable Multiview Edit Preview to toggle the trimming displays off and on.

TIP: When holding down the Shift key while nudging to do a “fast nudge,” the duration of the nudge is customizable in the Editing panel of the User Preferences. By default it’s five frames, but you can set it to whatever you want.

Important Trimming Keyboard Shortcuts

When trimming using the keyboard, the following keyboard shortcuts are important for you to remember. Most of these commands, and many more that haven’t been assigned to keyboard shortcuts, can also be found in the Trim menu. You can remap many of these commands to different keyboard shortcuts using the Keyboard Mapping panel of the User Preferences. For more information, see *Chapter 4, “System and User Preferences.”*

Key Shortcut	Function
T	Trim mode, ripples edits and slips or slides clips.
A	Selection mode, resizes edits and moves clips.
Command-L and J	Fast trim commands, lets you dynamically trim the selection at 100% forward and reverse speeds.
W	Dynamic trim or resize mode, uses JKL to trim the selection.
S	Toggles between Slip and Slide mode when a clip is selected in Trim mode.
V	Selects the edit point closest to the playhead, and moves the playhead there.
Shift-V	Selects the clip or gap that intersects the playhead. If there are superimposed clips, turn off the Auto Select controls of tracks containing clips you don’t want to select.
Shift	A modifier that temporarily disables the 2- and 4-up display that appears when trimming edits and clips with either the pointer or keyboard shortcuts.
Option-F1 through F9	Toggles Auto Select for video tracks 1 through 9, making it possible to restrict certain selection and trim operations performed with the keyboard.
Command-Option F1 through F9	Toggles Auto Select for audio tracks 1 through 9, making it possible to restrict certain selection and trim operations performed with the keyboard.
U	Toggles the currently selected edit point among the outgoing, centered, or incoming part of the edit.

Key Shortcut	Function
Option-U	Toggles the currently selected edit point or clip among Video+Audio, Video Only, or Audio Only.
Comma (,)	After you've made a selection, nudges selected edits or clips one frame to the left. Shift-Comma nudges 5 frames (the duration is customizable in the Editing panel of the User Preferences).
Period (.)	After you've made a selection, nudges selected edits or clips one frame to the right. Shift-Period nudges 5 frames (the duration is customizable in the Editing panel of the User Preferences).
Forward-Slash (/)	This command works contextually depending on what's selected in the Timeline. Plays a section of the Timeline from x frames before to y frames after (a) the playhead (if nothing's selected), (b) the currently selected edit point, (c) the currently selected clip, (d) a selection of multiple clips. This command is useful for previewing how the current selection plays within the context of the clips immediately surrounding it. The pre-roll and post-roll time is customizable in the Editing panel of the User Preferences.
Command-/	Toggles looped playback off and on.
Down Arrow, Up Arrow	Moves both the playhead and selection state to the next or previous edit point. If multiple clips or edits are superimposed, the first clip on the lowest numbered track will be selected first, then the next clip up, and so on until the topmost superimposed clip is selected, before selecting the next clip in the Timeline.
E	Extend edit. Resizes or ripples selected edit points to the current position of the playhead.
Shift-[Trim Start. Resizes (Selection) or ripples (Trim) the In point of all clips on auto-select-enabled tracks that intersect the playhead to the position of the playhead.
Shift-]	Trim End. Resizes (Selection) or ripples (Trim) the Out point of all clips on auto-select-enabled tracks that intersect the playhead to the position of the playhead.
Shift-Command-[Ripple Trim Start. Regardless of whether Selection or Trim mode is enabled, always ripples the In point of clips on auto-select-enabled tracks that intersect the playhead to the position of the playhead.
Shift-Command-]	Ripple Trim End. Regardless of whether Selection or Trim mode is enabled, always ripples the Out point of clips on auto-select-enabled tracks that intersect the playhead to the position of the playhead.

IMPORTANT: While the Slip, Roll, and Slide tools will change the sync relationship of the clips you're adjusting with a matching soundtrack, the rest of the Timeline won't be affected. Using Ripple can alter the overall sync relationship of large portions of your timeline and its matching soundtrack, so you should use it with extreme care.

Trimming Using Timecode Entry

You can also use absolute or relative timecode entry to trim clips and edits. What is trimmed depends on the selection you've made prior to entering timecode. If you want to use timecode to trim the selection forward relative to its current position, be sure to type an equal sign or plus (= or +) before the timecode value; to trim the selection backward relatively, type minus (-) before the timecode value.

- **To roll an edit:** Select the center of an edit point, enter a timecode value, and press Return.
- **To ripple an edit:** Select either the outgoing or incoming half of an edit point, enter a timecode value, and press Return.
- **To slip a clip:** Select a clip, and press S if necessary to switch to Slip mode, enter a timecode value, and press Return.
- **To slide a clip:** Select a clip, and press S if necessary to toggle to Slide mode, enter a timecode value, and press Return.

How to Enter Timecode Values

When entering timecode, type each pair of hour, minute, second, and frame values from left to right, with a period representing a pair of zeros for fast entry. The numbers you enter appear in the Timecode field at the upper left-hand corner of the Viewer with focus. When you're finished typing, press the Return key to execute the Timecode command. The rules for timecode entry are as follows:

- The rightmost pair of timecode values (or period) you enter is always the frame number.
- A period to the left or to the right of any number you type is considered to be a pair of zeroes.
- A single period between two numbers is considered to either be a single zero or ignored if it's between two pairs of numbers.
- Any untyped pairs of values to the left of what you enter are assumed to be whatever those values were prior to the timecode you entered; this makes it easy to type partial timecode values even when the Timeline starts at hour one.
- It's not necessary to enter colons or semicolons.

Absolute timecode is entered simply by typing in a timecode value. So long as no clips or edit points are selected when you press the Return key, the playhead will move to that timecode value. If an edit point or clip is selected, those will be moved or trimmed to the corresponding timecode value, if possible. Here are some examples of absolute timecode entry using this method:

Original TC Value	User-Typed Value	New TC Value
01:10:10:10	15245218	15:24:52:18
01:10:10:10	2..	01:02:00:00
01:10:10:10	15	01:10:10:15
01:10:10:10	12	01:10:10:12
01:10:10:10	1.2	01:10:01:02
01:10:10:10	115..	01:15:00:00
01:10:10:10	23...	23:00:00:00

Relative timecode is entered by starting the timecode value with a plus (+) or minus (-). Adding a plus results in the value you type being added to the current timecode value for purposes of offsetting the playhead or moving a selection. Adding a minus will subtract the value you type from the current timecode value.

Here are two examples of relative timecode entry:

+20. 00:00:20:00 is added to the current timecode value.
-5 00:00:00:05 is subtracted from the current timecode value.

Commands to Make Selections and Trim

A series of commands in the Trim menu make it fast to automatically select the In or Out point of the clip that's nearest to the current position of the playhead, and go into either Selection or Trim mode in preparation for resizing or ripple trimming that edit point. These commands are:

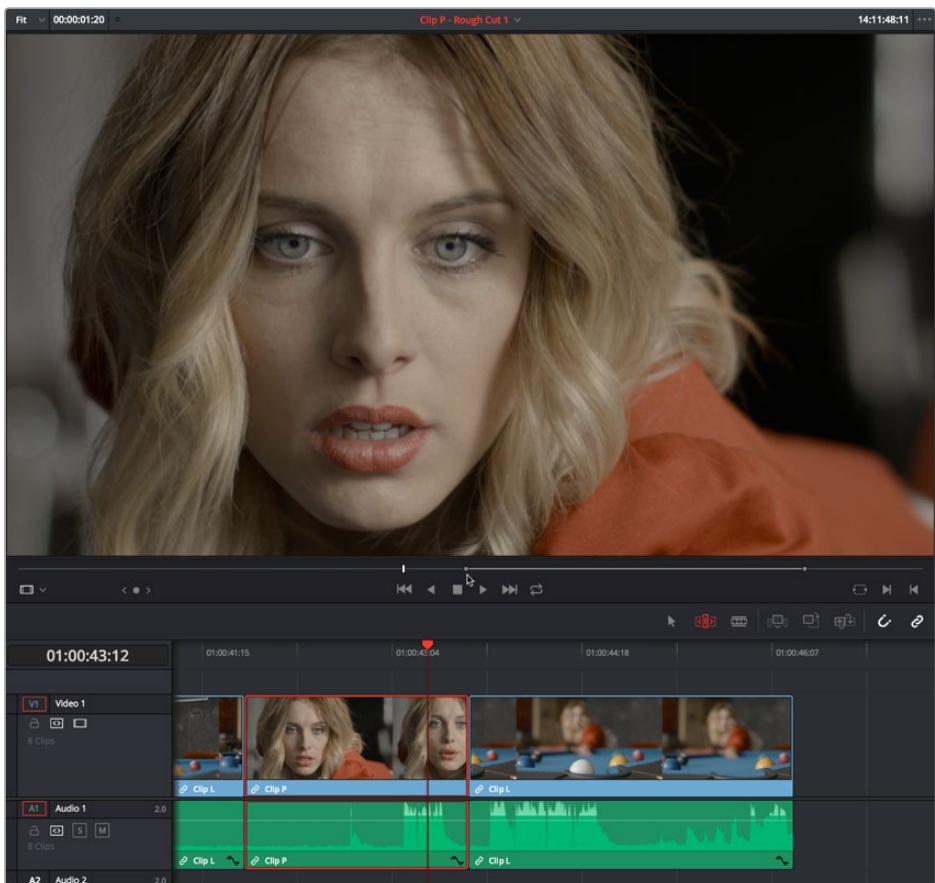
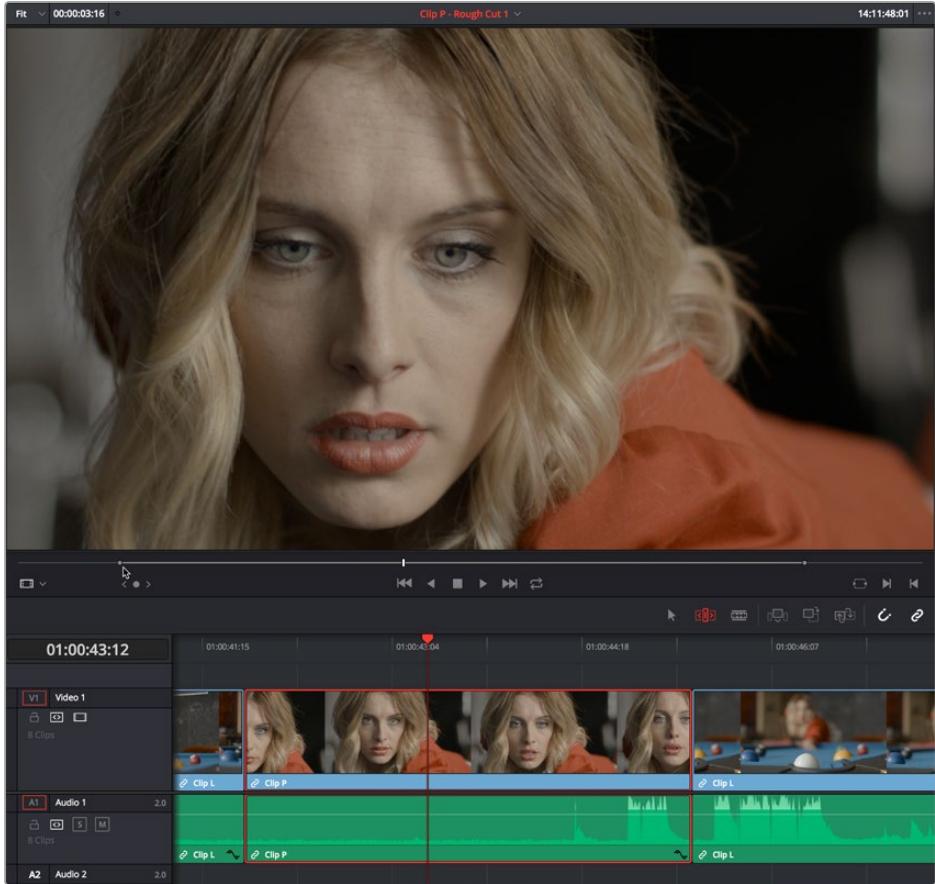
- Select Nearest Edit to Resize In
- Select Nearest Edit to Resize Out
- Select Nearest Edit to Ripple In
- Select Nearest Edit to Ripple Out
- Select Nearest Edit to Roll
- Select Nearest Clip to Move
- Select Nearest Clip to Slip
- Select Nearest Clip to Slide

These commands are similar to using the Edit Selection (V) or Clip Selection (Shift-V) keyboard shortcuts along with those for choosing the Selection (A) or Trim tool (T) both at once, to get you ready for trimming in the way that you want. However, they have the added benefit of, in some cases, letting you specifically choose the In or Out points of the clip nearest the current position of the playhead.

These commands don't have keyboard shortcuts by default, but if you prefer this way of working, you can assign them to keyboard shortcuts of your choosing using the Keyboard Customization tool (Option - Command - K).

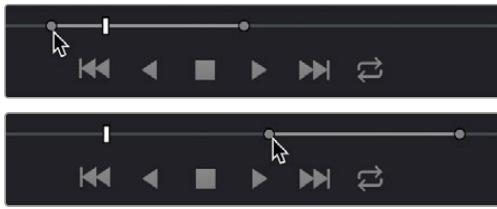
Trimming Clips in the Source Viewer

Additionally, you can double-click a clip in the Timeline to open it into the Source Viewer for trimming. When the Selection tool is selected, you can drag the In and Out markers, or use the playhead and I and O keyboard shortcuts to resize that clip in the Timeline. With the Trim tool selected, you can ripple the In and Out points of the clip.



A Timeline clip being ripple-resized by opening it into the Source Viewer dragging its In point using the Trim tool

You can slip the contents of the clip by holding the Shift key down and dragging either the In or Out point.



A Timeline clip being slipped by opening it into the Source Viewer and Shift-dragging its In point using the Trim tool

NOTE: To open a match frame of a clip that's part of an edited sequence into the Source Viewer using the mouse, hold the Option key down while double-clicking a clip in the Timeline.

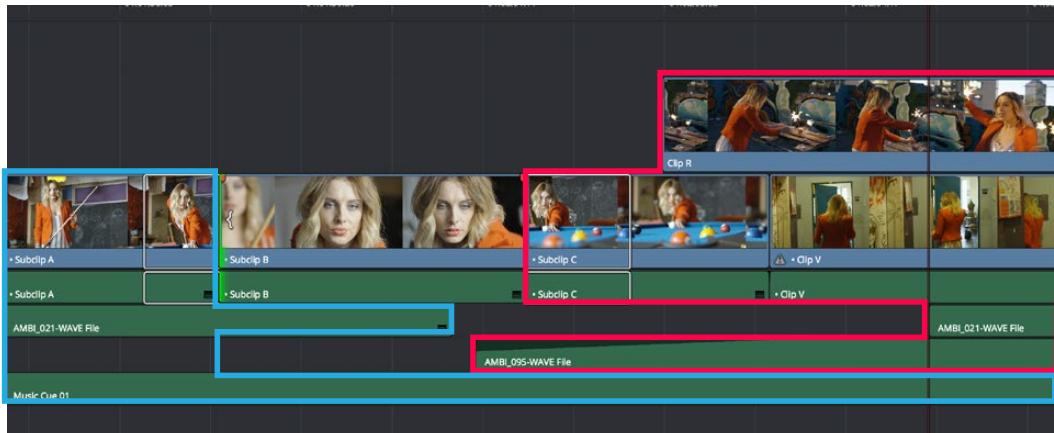
Ripple Editing Rules

Ripple operations are the only trim functions that change the duration of the overall Timeline, and that can potentially alter the sync relationship between multiple clips on different tracks. This makes them incredibly useful, but it's important to understand which parts of the Timeline will move as part of a ripple operation, and which parts won't.

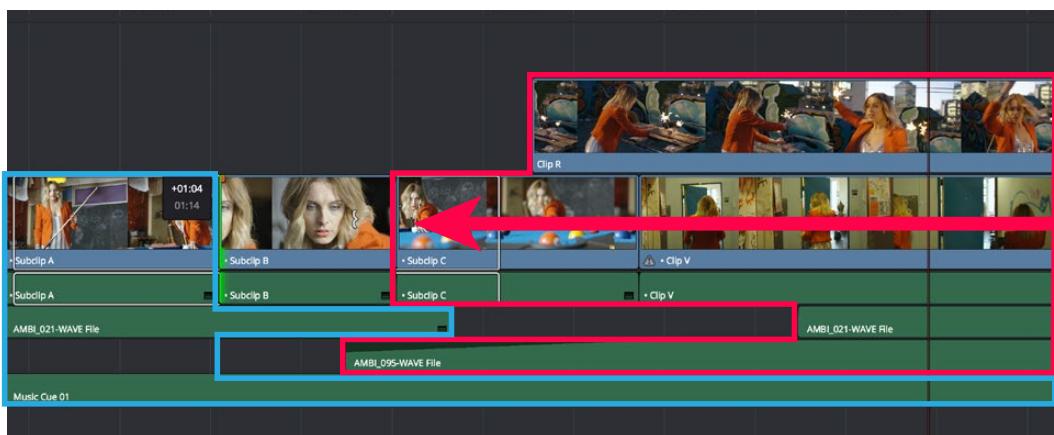
The following operations ripple the Timeline:

- Ripple deleting a clip or gap (Forward-Delete)
- Ripple cutting a clip (Shift-Command-X)
- Rippling one or more edits or gaps using the Trim tool (press T to choose the Trim tool)
- Using the Extend Edit (E), Trim Start (Shift-[), or Trim End (Shift-]) commands in Trim mode
- Using the Ripple Start (Command-Shift-[) or Ripple End (Command-Shift-]) commands in any mode
- Performing an insert edit (F9) or ripple overwrite edit (Shift-F10)
- Using the Retime controls to speed up or slow down a clip in Trim mode
- Using the Change Speed dialog with the Ripple Sequence checkbox turned on
- Changing clips in a Take Selector with the Ripple control enabled

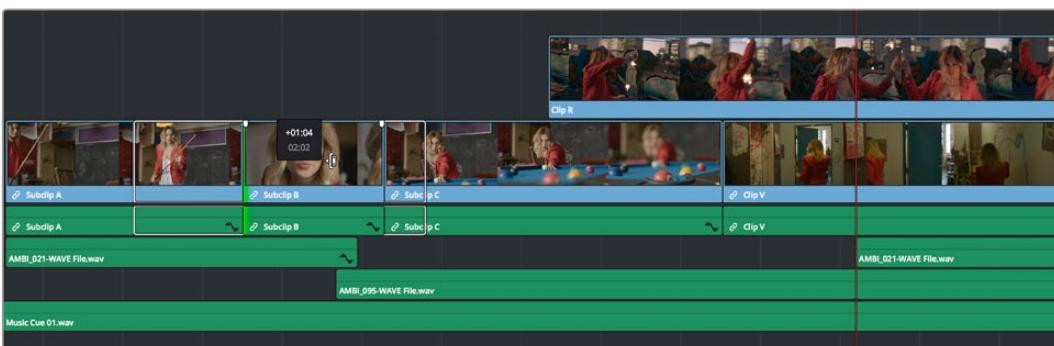
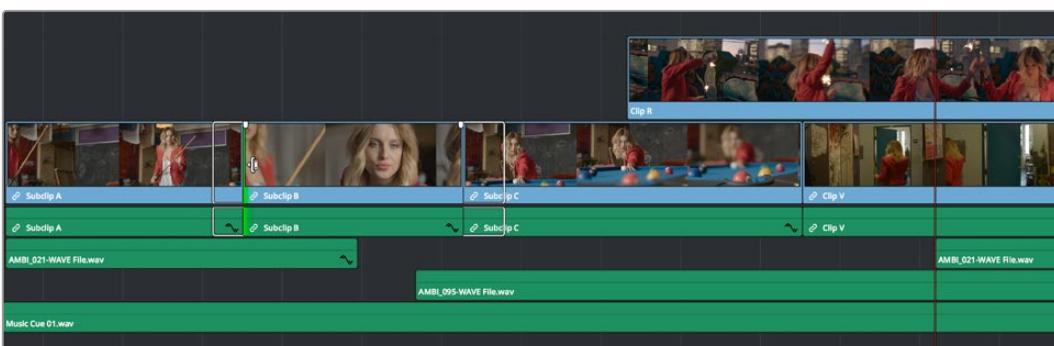
During a ripple edit, superimposed clips with an In point that's to the left of the edit point or clip being rippled are not moved. This can be seen in the previous example via the audio clip at the bottom of the Timeline, which stays in place even as the clips on track V1 and A1 are rippled. All clips with In points to the right of the edit point or clip being rippled move left to follow the trim operation you're making.



Before Ripple



After Ripple



The rules of timeline rippling illustrated. All clips with In points to the left of Subclip B (the clip being rippled) are left in place (area in blue), while all clips to the right of the edit being rippled are moved by the duration of the ripple operation (in red)

This simple rule means that, if you’re in the habit of building sequences of clips from left to right, long overlapping superimpositions such as titles, graphics, and music clips will stay in place while you’re rippling various clips within a montage that you’re editing in relation to these longer clips.

However, there’s one exception to this rule. It is often the case that split edits, where linked audio and video are cut at different places, create a situation where the audio In point of a pair of linked audio and video items precedes a video In point that you want to ripple. In other words, the audio In point extends to the left of the video In point, which ordinarily would trigger the rule that clips with edit points to the left of a rippled edit point won’t be moved, which would throw the audio and video of this item out of sync. In this case, you probably want to maintain sync, so all items that are linked to a clip being rippled always ripple along with it, even if they do have In points that extend to the left of the edit point being rippled.

Using Auto Select Controls to Control Trimming

The Auto Select buttons on each track in the Timeline control a host of different operations, but while they’re deceptively powerful, they’re also among the most misunderstood controls of the Timeline. When a track’s Auto Select control is on, clips on that track are automatically included in three different types of operations:

- Operations that affect clips intersecting the position of the playhead
- Operations that affect clips intersecting a region defined by timeline In and Out points
- Operations that ripple clips to the right of an affected clip on the Timeline

When a track’s Auto Select control is off, clips on that track are ignored by those same categories of operations, unless you manually select one or more clips or edit points.

The next three sections go into detail on how the Auto Select buttons help you control the trimming operations described in this chapter, particularly when it comes to operations that ripple the Timeline, and the kinds of “playhead-targeted” trim operations described later in this chapter. For more information on using the Auto Select controls to define selections and control other editing operations, see *Chapter 36, “Editing Basics.”*

Using Auto Select to Control Which Clips Are Trimmed

One of the principal uses of the Auto Select controls is to let keyboard shortcut-driven editors choose which specific clips on which tracks will be affected by an operation that would otherwise affect every superimposed clip at the position of the playhead or encompassed by In and Out points set in the timeline.

For example, if multiple clips are superimposed in V1, V2, and V3, and A1, A2, and A3, all six tracks have their Auto Select controls turned on, and you park the playhead over one of them and use the Trim End command in Selection mode, then all six superimposed clips will be trimmed.



Trimming all clips at the position of the playhead

However, if you only want to trim the clip in track V3, then you can solo the Auto Select control of V3 by Option-clicking it, and then when you use the Trim End command, the clip on V3 is the only one that's trimmed, the other clips are ignored.



Trimming only the clip in V3 by soloing the V3 Auto Select controls

Using Manual Selections to Control Which Clips Are Trimmed

It's important to know that manual selections you make in the Timeline that highlight specific clips always take precedence over whatever the Auto Select controls are set to. For example, if Auto Select is turned on for tracks V1, V2, and V3, but you've selected a clip on track V1, only the selected clip will be still be affected by whatever operation you decide to perform. For example, if you use Trim End, the clip on track V1 will be affected.



Manual selection of a clip on track V1 overrides the Auto Select controls on all tracks

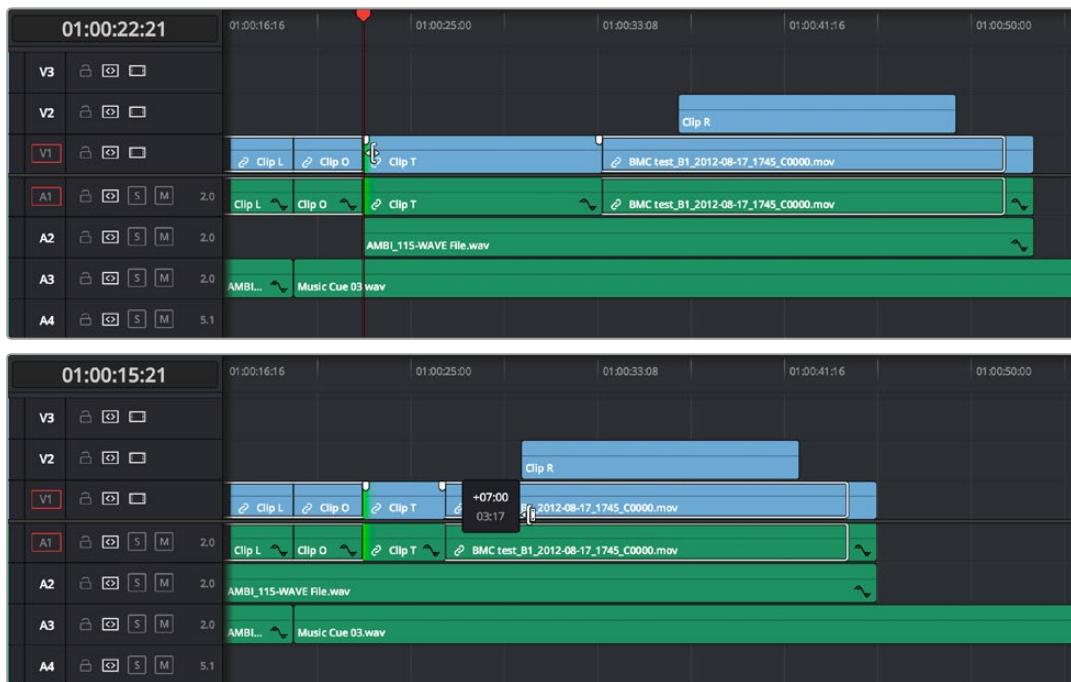
Using Auto Select to Control Which Tracks Are Rippled

Each track's Auto Select control is also used to control how trimming and editing operations that ripple the Timeline affect timelines with multiple tracks and superimposed clips. Using Auto Select controls, you can turn off rippling on specific tracks, while leaving it on for others.

For ease of use, you'll typically want to leave Auto Select on for all tracks when rippling clips, to ensure that all the parts of your timeline stay in sync with one another. However, when the occasion requires, the Auto Select controls provide the option to suspend rippling on specific tracks while allowing rippling on others.

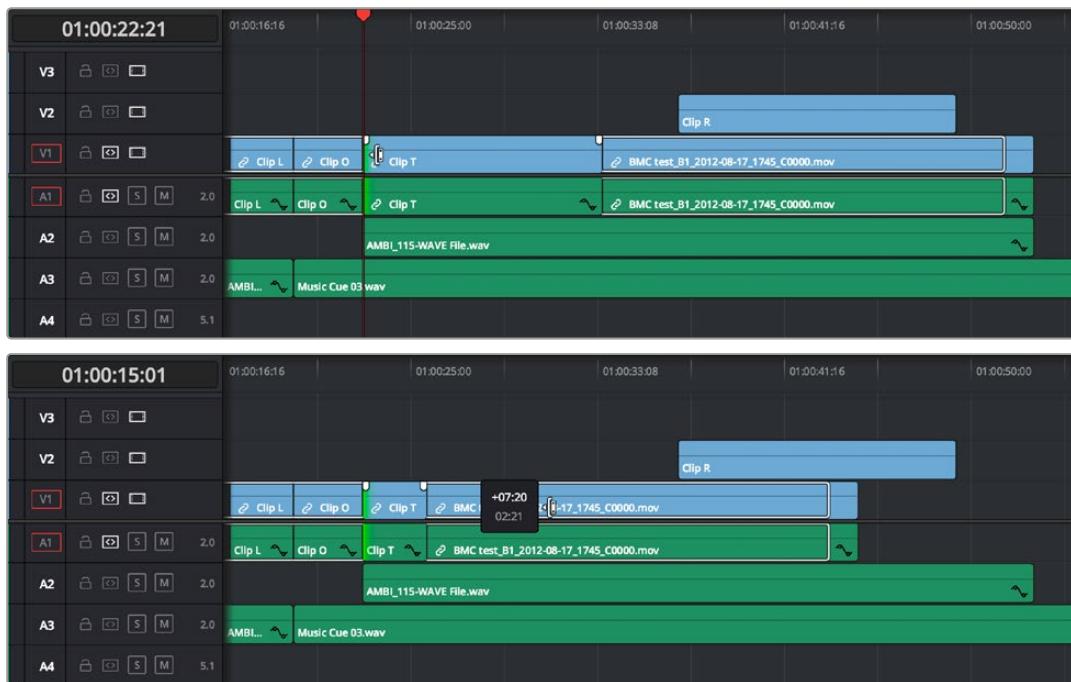
The rules are simple:

- **Tracks with Auto Select enabled:** Ripple editing or ripple deleting affects all clips to the right of the clip or clips on that track being trimmed.



Before and After, clip to the right of Clip T on tracks V2, V1, A1, and A2 are rippling because those tracks' Auto Select controls are enabled

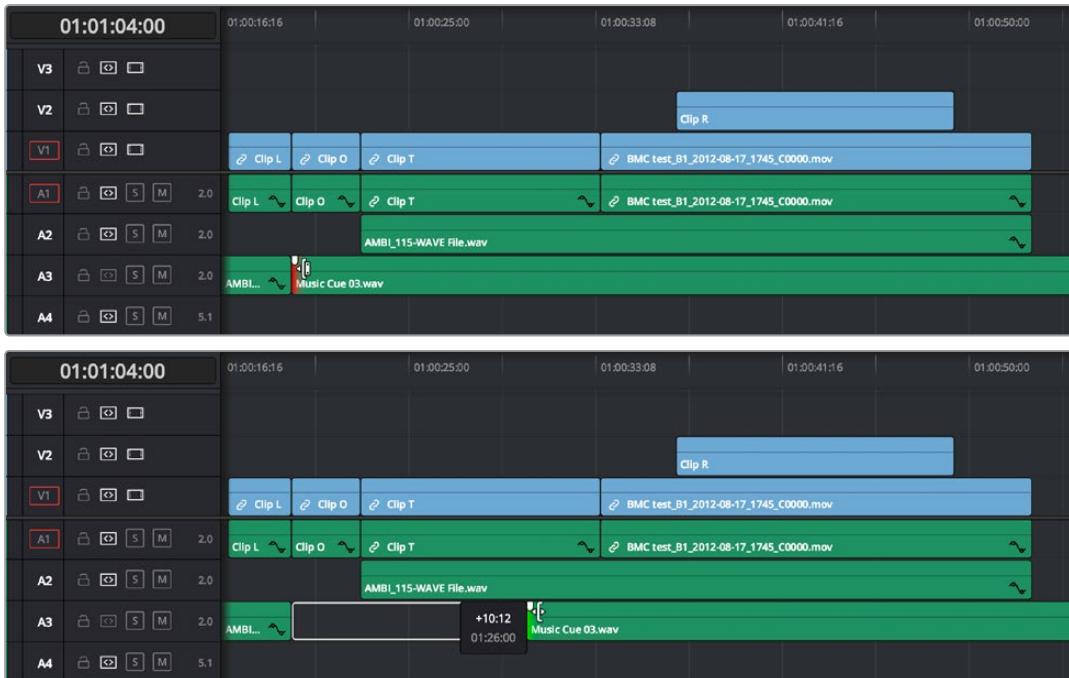
- **Tracks with Auto Select disabled:** Ripple editing is disabled on these tracks.



Before and After, clip to the right of Clip T on tracks V1 and A1 are rippling because those tracks' Auto Select controls are enabled, but clips on tracks V2 and A2 aren't rippling because those tracks' Auto Select controls are disabled

Another set of rules govern what happens when you select clips or edits for trimming on tracks with Auto Select disabled:

- **Selected Tracks with Auto Select turned off with an edit selection:** If you select the outgoing or incoming half of an edit on a track that has Auto Select off, the result will be a resize operation. Ripple deleting clips leaves a gap.



Before and After, clips to the right of Music Cue 03 on tracks V1, V2, A1, and A2 are rippling because Auto Select is enabled on those tracks, but because the clip being trimmed on track A3 has Auto Select disabled, it doesn't ripple, instead resizing to open up a gap

Trimming Multiple Edits or Clips at Once

DaVinci Resolve lets you select multiple edit points or clips for certain trimming operations, making it possible to trim multiple edits and clips at the same time. In simple cases, this makes it easy to resize, ripple, slip, and slide several superimposed clips at the same time, which is a real convenience, or you can select the In point of every title generator in a credit sequence at once in preparation for shortening or lengthening them all at once. In more complicated cases, this lets you create more complicated trimming scenarios, such as multi-track asymmetric trimming, to quickly take care of difficult tasks.

No matter how ambitious a trim operation you want to set up, the procedure is exactly the same as for an ordinary trim operation. Just make sure you follow these three general steps, and you'll be good:

- 1 Choose Selection mode, and select the edit points or clips you want to trim. To make multiple selections, click once to select the first item, then Command-click each subsequent item you want to add to the selection. You can select as many clips and/or edit points on as many tracks as you like.

- 2 To ripple, slip, or slide the entire selection at once, choose Trim mode. To resize or move each selected item at once, continue using Selection mode.
- 3 Use the mouse, keyboard shortcuts, or timecode entry to execute the trimming operation, just as you would if a single edit point or clip were selected.

The following sections describe each of the special-case multi-selection trim operations that are possible, along with each one's special rules and limitations.

Resizing and Rolling Multiple Edit Points

You can resize or roll multiple edit selections at once. In this way, you can adjust the edit points of multiple superimposed clips all together. Trimming multiple edit points essentially lets you "gang" them so that all selected edits move together as one.

- To resize multiple clips at once, select the left (outgoing) or right (incoming) half of each edit point you need to adjust, then use the Selection tool to drag those edit points to resize them all.
- To roll multiple clips at once, select every edit point you need to adjust right at the center, so that both the incoming and outgoing halves of each edit point are selected, then use either the Selection or Trim tools to drag those edit points to roll them all.

NOTE: You cannot combine ripple and roll operations at the same time.

Rippling Multiple Edit Points

It's also possible to select multiple incoming or outgoing edit points on either superimposed video tracks, or on the same video track, in order to ripple them all at once. A good example of when you'd want to ripple multiple clips on the same track is if you've got an end credit sequence of 14 text generators, and you'd like to shorten the entire sequence by a particular amount. This example can be seen below.

When you ripple trim multiple edits on the same track, how many frames are trimmed in a particular trim depends on what method you use to do your trimming.

- If you use the Trim tool via dragging in the Timeline, then you can choose to ripple the entire selection of edits by an arbitrary duration, for example, shortening or lengthening the entire selection by eight frames. To do this, DaVinci Resolve performs your multi-selection trim operation one edit at a time, removing a frame at a time from each selected edit from the left to the right as you trim, until either you stop the operation, or every single selected edit has had a frame removed, at which point DaVinci Resolve begins trimming the second frame from each selected edit from the left to the right, and then the third, and so on, until you stop trimming. Working this way, you can use the mouse to trim any number of clips to fit into any duration.
- You can also choose to ripple each selected edit by the same amount, for example removing three frames from each of the selected edits, all at once. To do so, hold the Command key down while dragging selected edits with the Trim tool, or use Dynamic JKL trimming, or trim by entering relative timecode values, or use the nudge keys (Period and Comma).

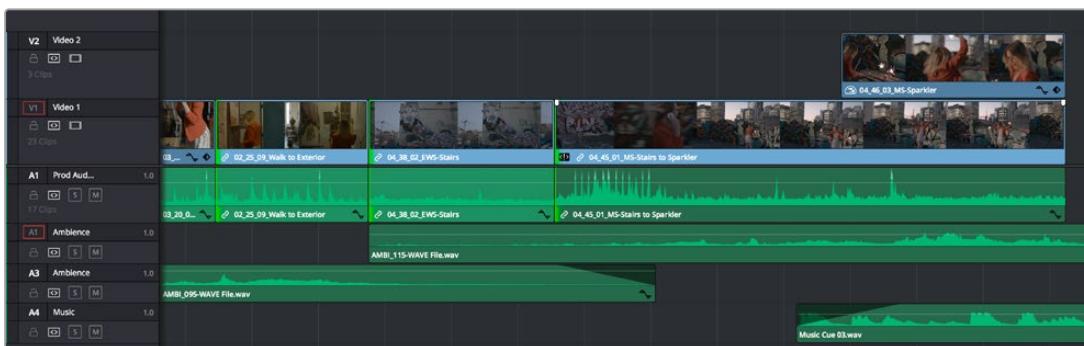
To ripple trim multiple edits on the same track:

- 1 Click the Trim tool, and drag a bounding box in the Timeline to select all 14 edits.
- 2 Press the U key to select the incoming half of each selected edit.
- 3 Use whichever trimming method you prefer to ripple the sequence to be shorter or longer.
Dragging using the Trim tool lets you trim by an arbitrary number of frames, while holding the Command key down while dragging with the Trim tool, using timecode entry to trim, using the Comma and Period nudge keys, or using Dynamic JKL trimming lets you trim every selected edit by the same number of frames.

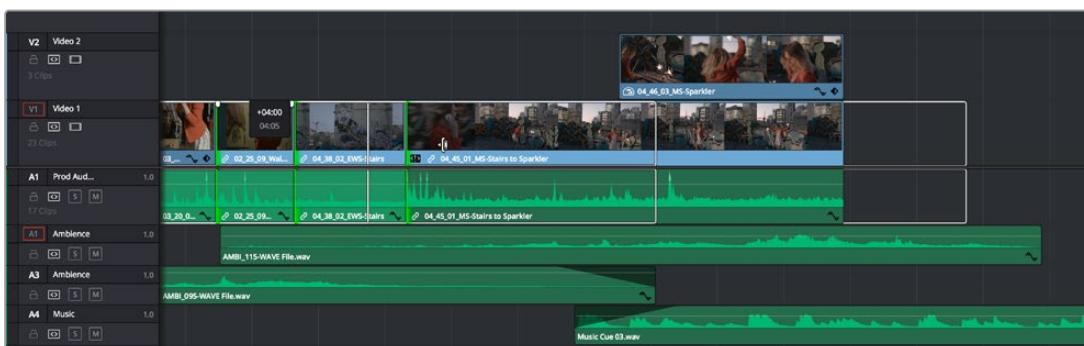


(Before) Selecting 14 incoming credits edit points, (After) Trimming them all at once

In the following example, the incoming edit of three clips in the following montage are selected and simultaneously rippled using the Trim tool. Notice that each overlapping clip ripples along with the nearest selected edit that's to the left of it; this means that the superimposed clip in track V2 and the audio clip in track A4 ripples along with the third selected edit, while the audio clip in track A2 ripples along with the second selected edit. Since the audio clip in track A3 starts to the left of the first selected edit, it does not ripple.



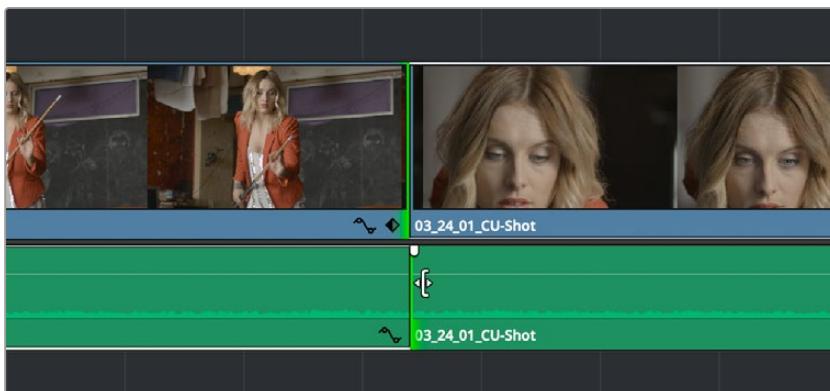
Selecting three incoming edit points,



Trimming them all at once

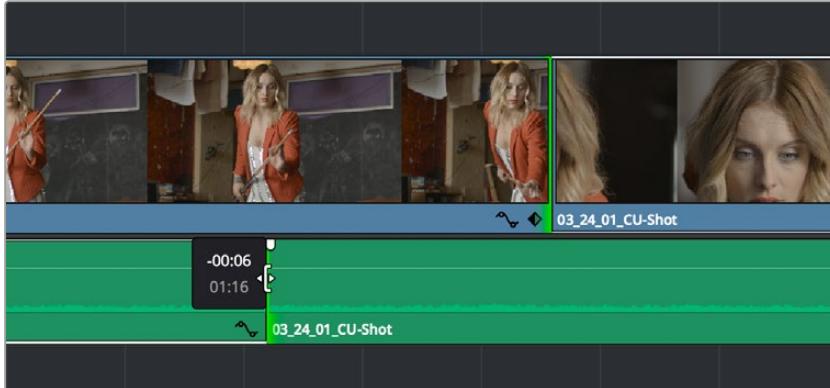
Asymmetric Trimming

Asymmetric resize or ripple trimming can also be done to multiple clips, with one selection per track allowable on as many tracks as you require. To asymmetrically trim two or more clips, select an outgoing edit point on one track, and then Command-click an incoming edit on another track.



Selecting opposite outgoing video and incoming audio edit points in preparation for performing an asymmetric ripple trim

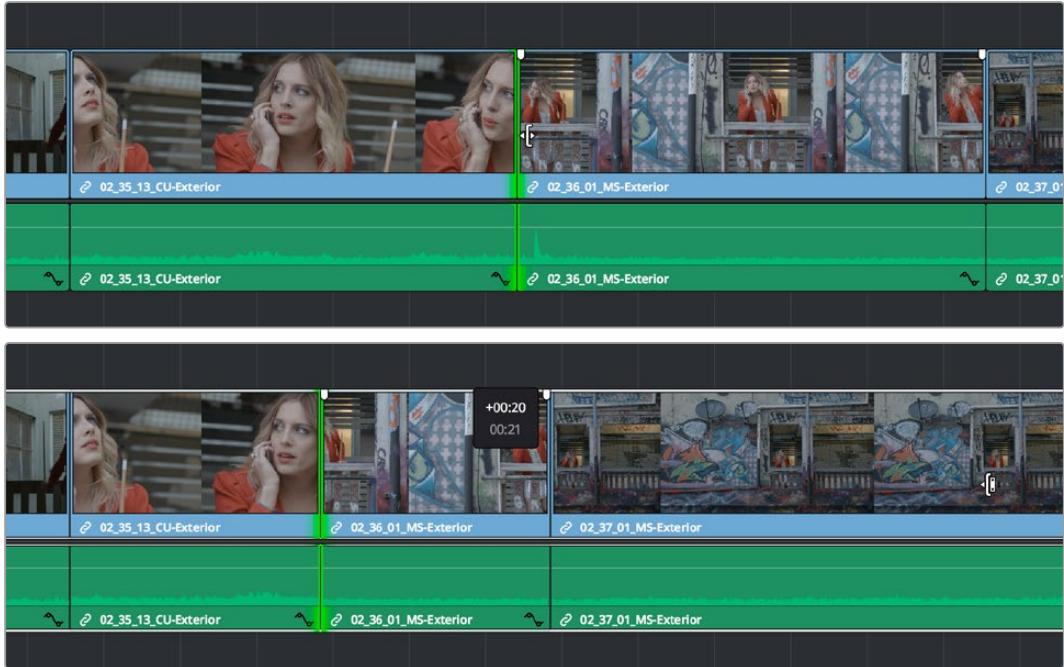
To select the outgoing video edit of one clip and the incoming audio edit of the next clip in preparation for making a split edit, you can Option-click the outgoing video edit to suspend linked selection, and then Command-click the incoming audio edit to add it individually to the selection. Now when you drag, nudge, or use timecode to trim, each selected edit point will move in the opposite direction.



Dragging to perform an asymmetric ripple trim to create a split edit using the Trim tool

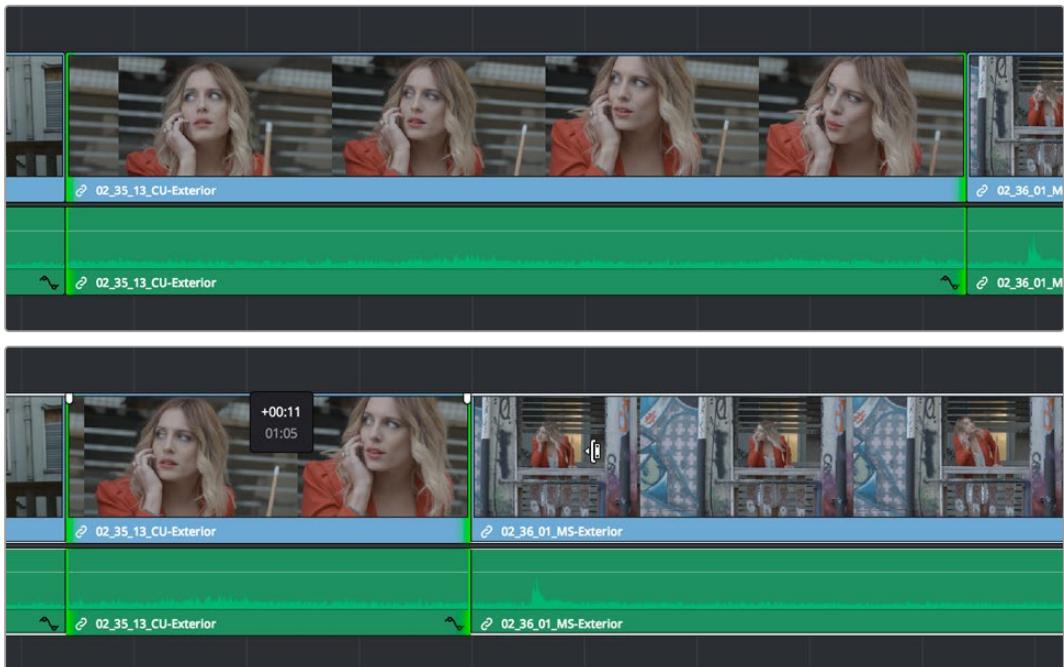
DaVinci Resolve allows you to do asymmetric trims to multiple edits in the same video and/or audio track. There are two compelling reasons for doing so:

Select the outgoing half of an edit point (the left side), then Command-click to select the incoming half of the same edit point (the right side) separately. This will not perform a roll edit, but will allow you to either use the Selection tool to resize both edit points away from each other to create a gap, or use the Trim tool to ripple both sides of the edit to shorten both clips while tightening up the Timeline at the same time.



Before and After ripple trimming both the incoming and outgoing halves of an edit to shorten the duration of both clips at once

You can also select the In and Out points of a clip in the Timeline at the same time, and use the Trim tool to ripple both the beginning and end of the clip closer to the center, shortening the clip while preserving the content in the middle, while tightening up the Timeline.

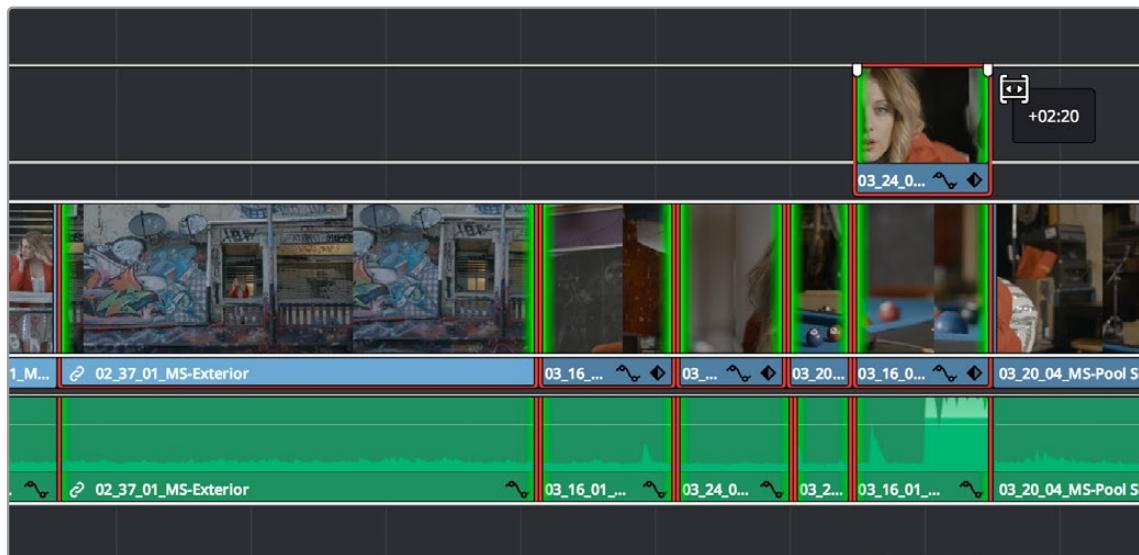


Before and After ripple trimming both the In and Out points of a clip at the same time, shortening the clip by removing heads and tails, and preserving the action in the middle

In short, you can use nearly any combination of edit selections you need to simultaneously trim multiple clips in the same track, in multiple tracks, whatever you need to do to save time. Furthermore, asymmetric trimming can be done in either Selection or Trim mode, either to open and close gaps, or to move edit points to overlap one another to create split edits.

Slipping Multiple Clips

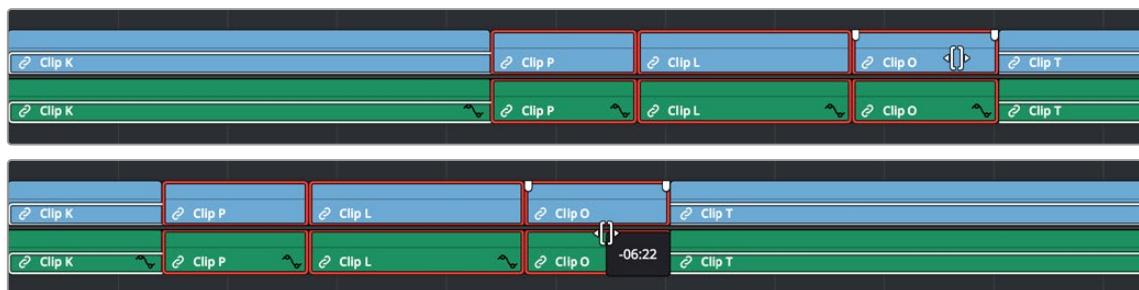
You can simultaneously slip any number of selected clips (so long as they have handles) on any combination of tracks by selecting the clips you want to slip, then choosing the Trim tool, and dragging their name bars or using the Comma and Period keys to nudge the selection.



Dragging to slip multiple selected clips at once

Sliding Multiple Clips

You can select as many clips as you like in preparation for a slide operation. If you select multiple contiguous clips, they slide together as one.



(Before) Selecting four clips to slide, (After) All four clips slid to the right using the mouse

Keyboard Trimming During Looped Playback

A great technique for editors who like to do precision trimming using the Nudge commands is the ability to enable looped-playback so that the Play Around command (Forward Slash) will loop continuously around the edit point you're trimming as you nudge one or five frames at a time to fine-tune the cut.

To trim while looping:

- 1 Move the playhead near the edit point you want to trim, and press V to select it.
- 2 Press the U to choose which side of the edit you want to select in order to ripple or roll it, and/or Option-U to choose whether you want to trim video+audio, the video only, or the audio only.
- 3 Press Command-Forward Slash (/) to enable looped playback.
- 4 Press Forward Slash (/) to play around the current selection. With looping on, playback will continue until you stop it. Pre-roll and post-roll can be changed in the Edit panel of the User Preferences.
- 5 During looped playback, press the Comma (,) and Period (.) keys to trim the selection back or forward by a single frame, or Shift-Comma and Shift-Period to trim the selection in 5-frame increments. If you do this during the post-roll of looped playback, the loop immediately replays from the beginning so you waste no time seeing the result.
- 6 When you're finished, press the Spacebar or K key to stop playback.

TIP: When holding down the Shift key while nudging to do a “fast nudge,” the duration of the nudge is customizable in the Editing panel of the User Preferences. By default it's five frames, but you can set it to whatever you want.

Dynamic JKL Trimming

One of DaVinci Resolve's most interactive trimming features is the ability to dynamically resize, ripple, roll, slip, slide, or move selected edit points and clips using the JKL transport control keyboard shortcuts. This means that you can make an appropriate selection in the Timeline (edit points to resize, ripple, or roll, or clips to slip or slide) then trim them during playback, while monitoring audio and watching the video.

Trimming while viewing the selected clip or edit point playing back has the advantage of letting you get emotionally involved in what you're watching, as well as experiencing the timing of a clip as it plays, in order to help you get a better feel for how, exactly, you need to trim a particular cut.

While you're dynamically trimming, you see the same two-up or four-up display, the same Timeline overlays, and the same dynamically updating Timeline that appear when you use the Trim tool with the mouse. The only difference is that you're trimming while your program plays.

There are two methods of doing dynamic trimming:

- **Quick Trim:** You can select one or more edit points or clips, and immediately trim it by pressing Command-J or Command-L to trim back or trim forward. This is a fast way of dynamically trimming, but you can only trim forward and backward at 100 percent speed or greater.
- **Turning on Dynamic mode:** If you want to do more detailed work, you can press the W key to enable Dynamic mode (or choose Trim > Dynamic Trim Mode), at which point you are in a special mode where the JKL shortcuts only trim the current selection, whatever it happens to be. However, this mode also gives you additional options for controlling which part of the selection, in the case of multiple selection trims, you want to monitor for audio/video playback.

TIP: If nothing is selected while you're in Dynamic Trim mode, JKL simply plays through the Timeline, as usual.

Quick Trimming

If you're in a hurry and you can accomplish the trim you want via real time or faster playback, then pressing the Command key while using the J or L keyboard shortcuts lets you dynamically trim any selection in the Timeline, with audio/video playback.

To dynamically trim using **Command-J** or **Command-L**:

- **To dynamically roll an edit:** In either Selection or Trim mode, select the center of one or more edit points, and hold the Command key down while using J or L to move the selection around.
- **To dynamically ripple an edit:** Choose Trim mode, select the outgoing or incoming half of one or more edit points, and hold the Command key down while using J or L to move the selection around.
- **To dynamically resize an edit:** Choose Selection mode, select the outgoing or incoming half of one or more edit points, and hold the Command key down while using J or L to move the selection around.
- **To dynamically move a clip:** Choose Selection mode, select one or more clips, and hold the Command key down while using J or L to move the selection around.
- **To dynamically slip or slide a clip:** Choose Trim mode, select one or more clips to slip, or a single clip to slide, press S to toggle between Slip or Slide modes, then hold the Command key down while using J or L to execute either slip or slide operations.

If you're trimming multiple selections, you can control which edit point you monitor during the trim operation by positioning the playhead at one of the selected edit points.

TIP: When you're finished with a "quick trim" operation and you want to see how that edit plays, you can press the Forward Slash key (/) to play around the current selection to quickly preview that section of the Timeline.

Dynamic Trimming (or "JKL Trimming")

If you want to also have the option of trimming using the JKL shortcut keys in slow motion or frame by frame, in addition to trimming at 100% or greater playback speeds, then you'll need to enable Dynamic Trim mode.

To use **Dynamic mode** to dynamically trim one or more selected clips or edits:

- 1 It's not necessary to make a selection prior to enabling Dynamic mode for trimming, since the act of entering Dynamic mode automatically selects the closest edit point to the playhead. However, if you want to use Dynamic mode to make a complex trim operation, you can select any combination of edit points to resize, ripple, or roll, or you can select one or more clips that you want to slip or slide (using the S key to toggle between slipping and sliding).

- 2** Press W to enter Dynamic mode, or click the Dynamic tool in the toolbar. If nothing is selected in the Timeline, then the edit point that's nearest to the playhead will be automatically selected. If you've already made a selection, that selection will remain and be used for trimming.

Once you've entered Dynamic mode, the Dynamic Trim tool in the toolbar turns yellow to let you know that you're in Dynamic mode, and the icon shows you whether you're in Slip or Slide mode for trimming. Additionally, the playhead turns yellow to serve as a constant reminder that you're in Dynamic mode, in which all you can do is trim clips.



The Dynamic tool highlights in the toolbar to let you know you're in Dynamic mode; this tool also indicates whether you're in Slip (Left) or Slide (Right) mode

- 3** Choose the type of operation you want to perform by clicking either the Selection tool (or pressing A) or the Trim tool (or pressing T):

— **In Selection mode:**

- You can dynamically resize or roll edits if you've selected one or more edit points in the Timeline.
- You can move or slip clips if you've selected one or more clips in the Timeline. You can choose whether to move or slip selected clips by pressing the S key, or by right-clicking the Dynamic trim tool in the toolbar and choosing Slip or Slide from the drop-down menu.

— **In Trim mode:**

- You can dynamically ripple or roll edits if you've selected one or more clips in the Timeline.
- You can slide or slip clips if you've selected one or more clips in the Timeline. You can choose whether to slide or slip selected clips by pressing the S key, or by right-clicking the Dynamic trim tool in the toolbar and choosing Slip or Slide from the drop-down menu.

- 4** If you've selected multiple edit points or clips, then you can use the Left and Right arrow keys in Dynamic mode to move the playhead to the selected edit point you want to monitor while you're trimming. If the playhead isn't aligned with a selected edit point, then it will jump to the nearest selected edit point once trimming commences.

- 5** Use any combination of the JKL keyboard shortcuts to initiate playback and trimming, including:

- J+K or K+L to trim in slow motion, with slow motion audio playback
- Pressing K while tapping J or L to trim a frame at a time
- Pressing J or L to trim with real time playback
- Pressing J or L repeatedly to trim in fast-reverse or fast-forward, at a variety of speeds

As you dynamically trim, all audio clips in all audio tracks will play back as the playhead scrolls across them, so you can hear your entire mix as you're trimming.

- 6 After you've made a trim, pressing the Spacebar initiates Play Around Current Selection so you can see how that trim plays.

In Dynamic mode, the Spacebar only executes a Play Around Current Selection operation, rather than play forward as it usually does. What is played by Play Around Current Selection depends on what is selected; a selected edit plays around just that edit, a selected clip plays around the whole clip, multiple clips or edits play around the total selection, including the current Pre-Roll and Post-Roll settings in the Editing panel of the User Preferences.

- 7 When you're finished, you can use the Up and Down Arrow keys to move both the selection and playhead to another edit point or clip you'd like to trim, or you can press W again to toggle Dynamic mode off.

You always want to be sure to turn Dynamic mode off when you're done, because otherwise using JKL will continue trimming selections whenever one or more edits or clips are selected, instead of playing the Timeline.

NOTE: While Dynamic mode is enabled, you can use JKL for playback if no clips or edit points are selected (press Command-Shift-A to deselect all). However, if anything in the Timeline is selected, then JKL will trim the selection as described above.

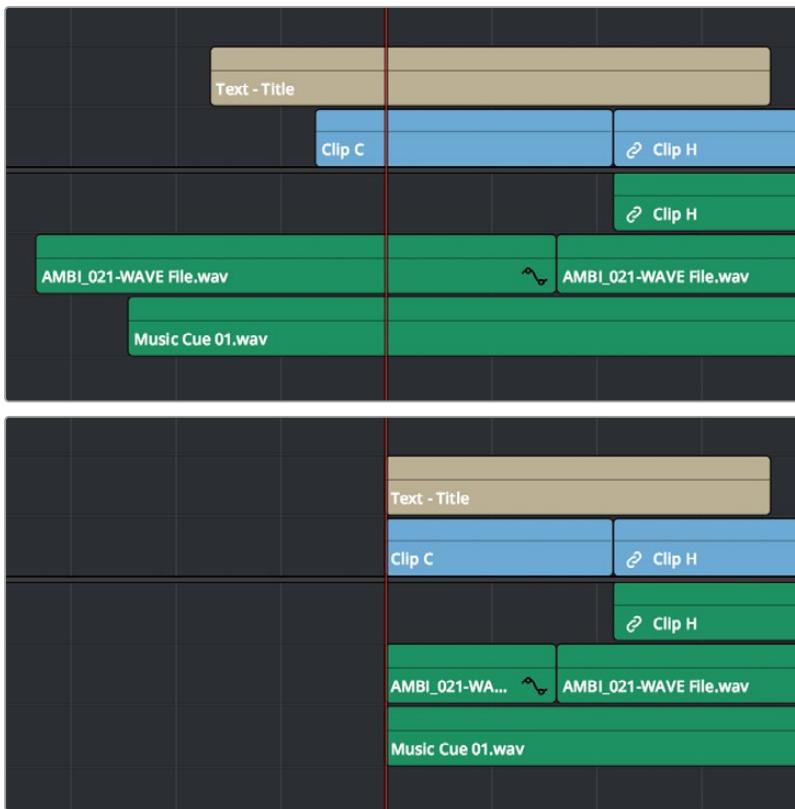
Trim Operations that are Targeted Using the Playhead

The following series of Trim editing commands let you trim clips and edits in different ways using the position of the playhead to guide the result.

Trim Start and Trim End

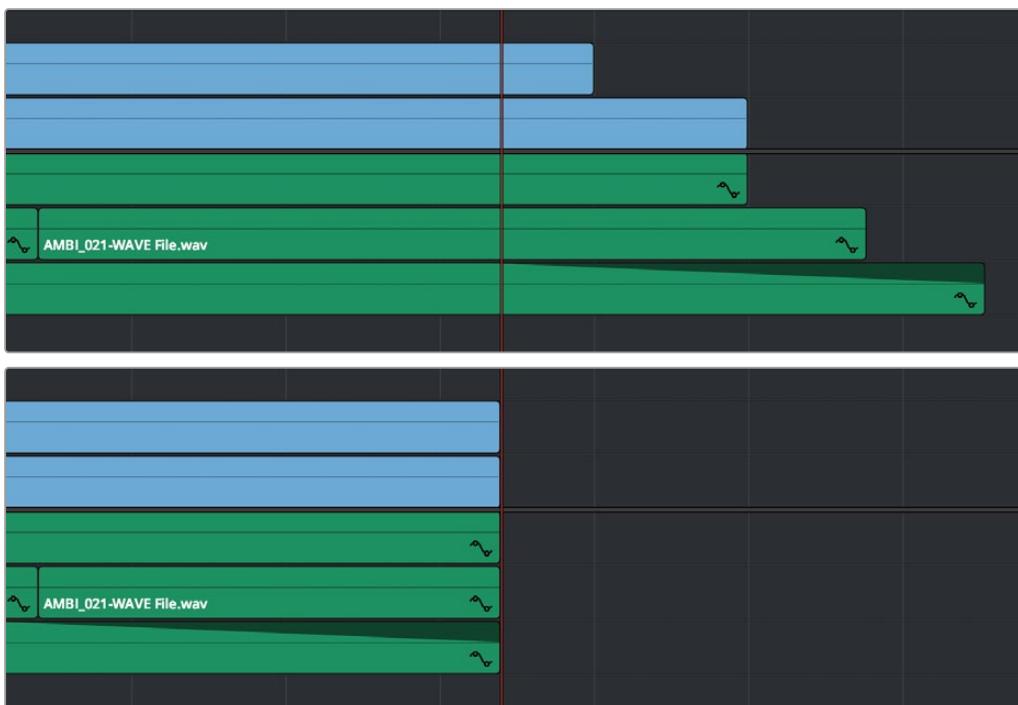
The Trim > Trim Start (Shift-[) and Trim End (Shift-]) commands let you move the In or Out point of all clips that intersect the playhead as either a ripple operation (in Trim mode) or a resize operation (in Selection mode). You do not need to make a selection to use Trim Start and Trim End, making these commands fast to use in the right situation. A classic use of Trim End is when you have several superimposed clips of different lengths that you want to either start or end at the same time.

- Trim Start resizes or ripples (depending on what mode you're in) all clips that intersect the playhead, so that each clip's In point is moved to the current playhead position.



Before and after a Trim Start operation, all clips that intersect the playhead are trimmed

- Trim End resizes or ripples intersecting clips so that each intersecting clip's Out point is moved to the current playhead position.



Before and after a Trim End operation, all clips that intersect the playhead are trimmed; clips that don't intersect the playhead are not affected

Clips that don't intersect the playhead are not affected. Furthermore, you can exclude clips on specific tracks from this operation by disabling the Auto Select controls on those tracks.

Resize, Ripple, and Roll Start and End Commands

Another set of commands in the Trim menu lets you combine the Trim Start and Trim End functions with the act of choosing either Selection or Trim mode, and the ability to resize, ripple, or roll, all with single commands.

- Resize Start to Playhead
- Resize End to Playhead
- Ripple Start to Playhead (Command-Shift-[)
- Ripple End to Playhead (Command-Shift-])
- Roll Start to Playhead
- Roll End to Playhead

Just as with Trim Start and Trim End, these commands use the Timeline Auto Select controls to determine, of all clips intersecting the playhead, which clips on which tracks to trim. Many of these commands don't have keyboard shortcuts by default, but if you prefer this way of working, you can assign them to keyboard shortcuts of your choosing using the Keyboard Mapping Customization tool (Option - Command - K).

Slip and Slide Playhead to In and Out Commands

Yet another set of commands in the Trim menu lets you slip a clip from the frame at the current position of the Playhead to the In or Out point of that clip.

- Slip Playhead to In
- Slip Playhead to Out

TIP: The Slip Playhead to In command functions identically to using the extend edit while the playhead intersects a selected clip.

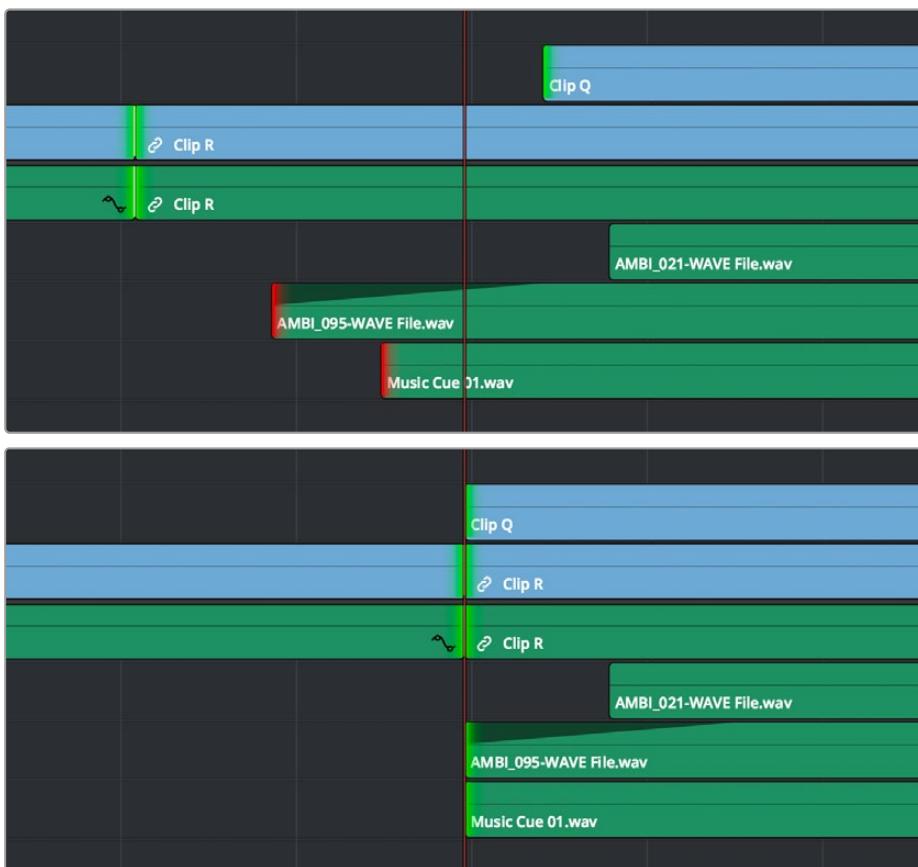
Just as with Trim Start and Trim End, these commands use the Timeline Auto Select controls to determine, of all clips intersecting the playhead, which clips on which tracks to trim. These commands don't have keyboard shortcuts by default, but if you prefer this way of working, you can assign them to keyboard shortcuts of your choosing using the Keyboard Mapping Customization tool (Option - Command - K).

Extend Edits

The Extend Edit command (choose Trim > Extend Edit, or press E) lets you resize or ripple one or more selected edit points or clips. Unlike Trim Start and Trim End, it doesn't matter if the playhead intersects clips when doing an extend edit.

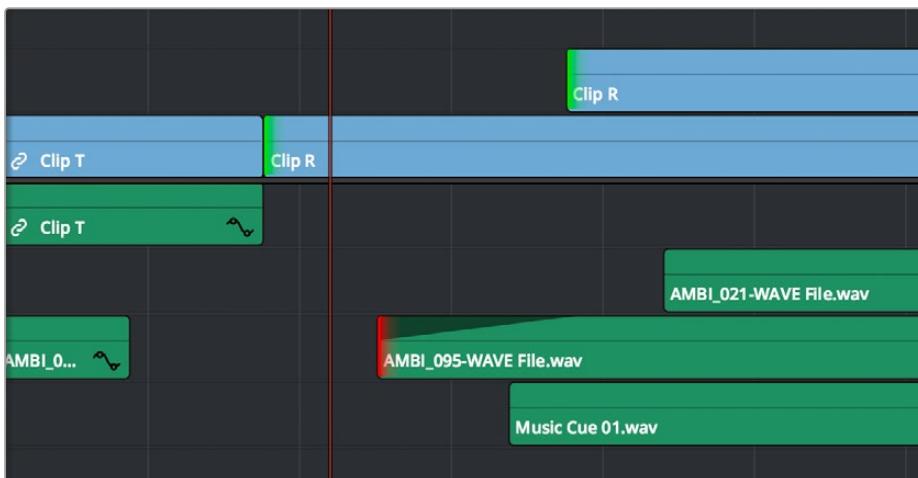
Extend Editing Edit Points

Make one selection per track of any combination of In or Out points, and press the E key to move those edit points to the current position of the playhead.



Before and after a multi-track extend edit performed in Selection mode. Before, the red selections indicate that you've selected the first frame of media for those clips. After, the selections turn green to indicate that there's additional frames at the head of the edit for trimming.

In Trim mode, selected edit points will ripple instead of resizing affected clips. However, to simplify multi-track extend edit operations when using the Trim tool, the lowest numbered video track with auto-select enabled defines the amount by which the extend edit will ripple the rest of the Timeline; all selected edit points on other tracks are simply resized to the position of the playhead.





Before and after a multi-track extend edit performed in Trim mode; you can see that the lowest numbered track with a selection defines how far the Timeline will be rippled

Using Extend Edits to Slide Clips

You can also use the Extend Edit command to slide the contents of a single selected clip using either the Selection or Ripple tools. Simply select a clip, position the playhead over the frame of that clip you want to slip to the In point of that clip's position in the Timeline, and press E to perform the slip. You can even do this during playback if you want to watch the clip play and press E to slip that frame back when the moment feels right.



Using the extend edit to slip a clip in the Timeline, the red marker shows that the frame at the playhead is slipped back to the In point of that clip in the Timeline

Chapter 44

Working with Audio in the Edit Page

DaVinci Resolve has a solid set of features for editing, mixing, and mastering audio in your programs right in the Edit page.

Whether you're adjusting synced audio for dailies, finessing the levels of an edited project you're assembling, mixing a program for output, or importing and laying in audio mix files from the sound designer to output for mastering, DaVinci Resolve has Level, Pan, and Channel Assignment controls to control your audio output for both monitoring and delivery, automated fader recording at both the track and clip level for mixing, and VST and Audio Unit audio filter support for mastering audio tracks and channels using industry-standard noise reduction, compression, EQ, and other filters. And, if all that's not enough for you, you can export to Pro Tools in the Delivery page to hand off your program and its audio in a state ready for further work.

When you've finished doing the editorial audio work in your program, and you want to really drill into your program's audio for detailed audio editing and mixing, you can use the audio-specific tools of the Fairlight page. For more information, see *Chapter 166, "Using the Fairlight Page."*

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Audio in the Edit vs. Fairlight Pages

While the Fairlight page provides dedicated audio editing and mixing capabilities that are suitable for sweetening the audio of your program once it's been edited, the Edit page has extensive audio capabilities of its own. This enables editors to edit and refine audio clips, set levels, and do simple mixes as they assemble the program in the first place. However, once things have been edited together, you're meant to go freely back and forth between the Edit and Fairlight page as you refine your work, using whichever environment is most suitable for the task at hand.

Compatible Audio Formats

DaVinci Resolve is compatible with WAVE, Broadcast WAVE, AIFF, MP3, AAC (M4A), CAF, iOS Voice Memo (macOS only), both MTS and QuickTime containers that use the AC3 audio format, and Enhanced AC-3 (macOS and Windows only). DaVinci Resolve is compatible with audio at sample rates including 32, 44.1, 48, 88.2, 96, and 192 kHz.

Assigning Audio Channels in the Media Pool

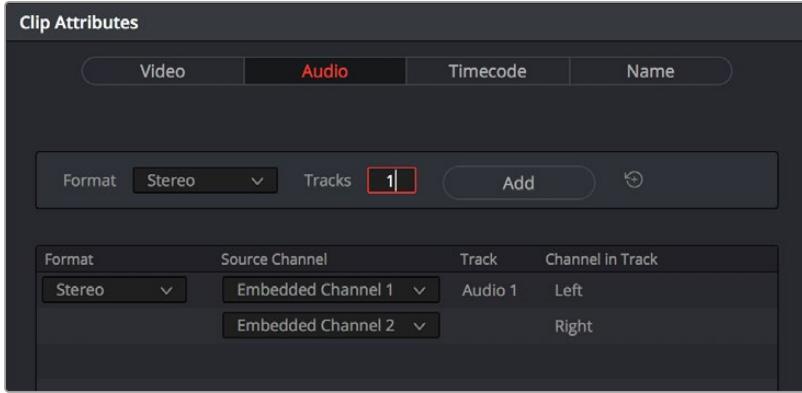
When you first import audio into the Media Pool, it's a good idea to make sure that whatever channels those files contain are assigned correctly before you start editing clips into the Timeline. In other words, you want to make sure that stereo files are set to be stereo clips, that 5.1 and 7.1 files are set to be surround clips, and that multi-channel files are set to expose however many tracks you want to edit separately in your program. Clip channel assignments are made in the Audio panel of the Clip Attributes window.

This is particularly important when clips have more than two channels of audio. For example, production sound recordists might record three, six, or even more audio channels, corresponding to multiple microphones used on set to simultaneously record different actors plus a mixdown track. In this case, you need to define how many of these channels you want to play (or mute), and how many audio items you want to appear in the Edit and Fairlight page Timelines.

Mono, stereo, 5.1, and 7.1 clips are handled automatically, but multi-channel clips needing custom assignments in the Media Pool should be remapped as necessary using Clip Attributes, so that DaVinci Resolve can more easily place incoming audio clips into the correct track of the Timeline. You can alter the clip attributes for clips one at a time, or for multiple selected clips at once. For more information on these settings, see *Chapter 22, "Modifying Clips and Clip Attributes."*

How to Assign Audio Channels

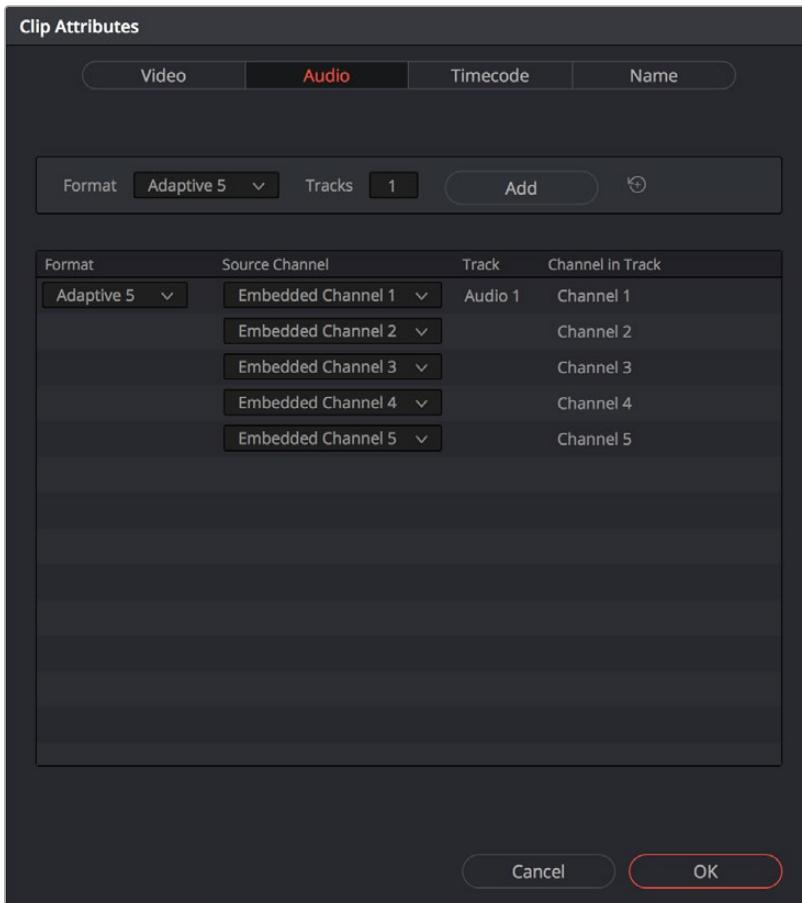
Each clip with audio has the following options in the Audio panel of the Clip Attributes window:



The controls available for adding tracks with which to remap channels

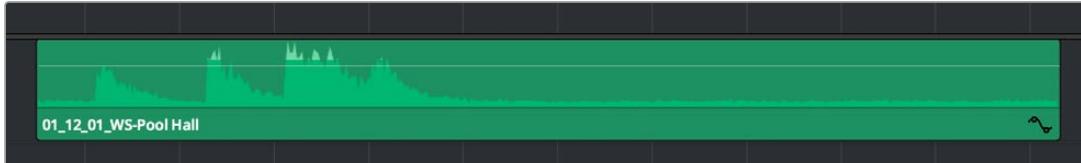
A set of controls at the top of the Track/Channel list lets you add additional tracks to a clip. Adding additional tracks to a clip let you remap that clip's available channels to appear as additional items in the timeline when you edit it, one item per track with an unmuted channel.

How you handle audio in your timeline is up to you. In the case of production audio consisting of five channels, four for different microphones plus one mixdown channel, you might use Clip Attributes to map all channels to a single track.



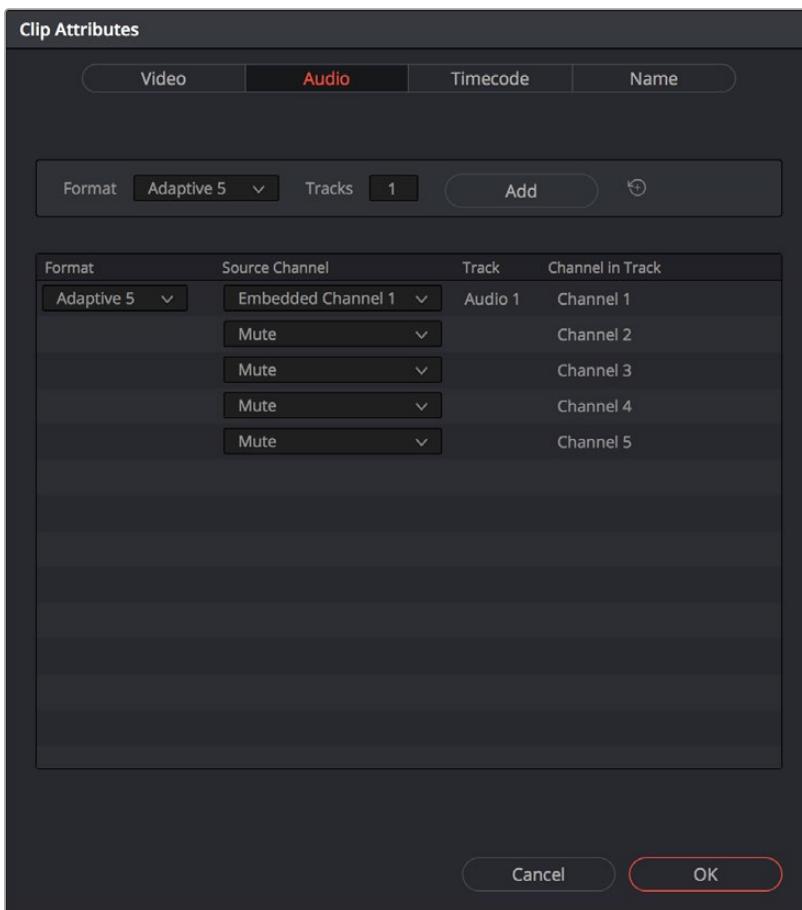
The Audio panel of the Clip Attributes window
for a single-track clip with four channels

With this mapping, this audio clip exposes only one item on one track in the Edit page Timeline, or five lanes within a single track in the Fairlight page Timeline. Either way, this mapping exposes a single editable unit.



A single audio channel exposed in the Timeline

Optionally, you could choose to mute the four individual microphone channels and only monitor the top mixdown channel. This can be accomplished by setting channels 2-5 to mute. Muted channels are always retained, just not heard, and you can turn them back on whenever you like using by right-clicking a clip in the Timeline and choosing Clip Attributes to get back to these controls for the specific timeline clip you've edited.

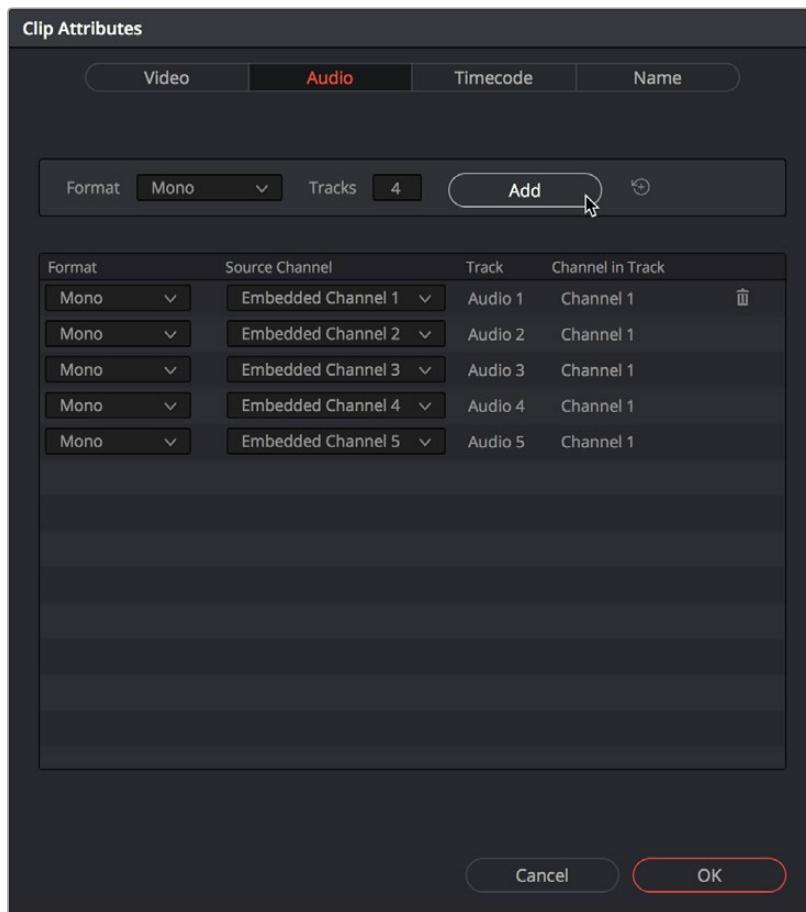


The Audio panel of the Clip Attributes window for a clip with four channels muted

NOTE: If you export audio clips with muted tracks to Pro Tools in the Deliver page, the muted channels are exported as well.

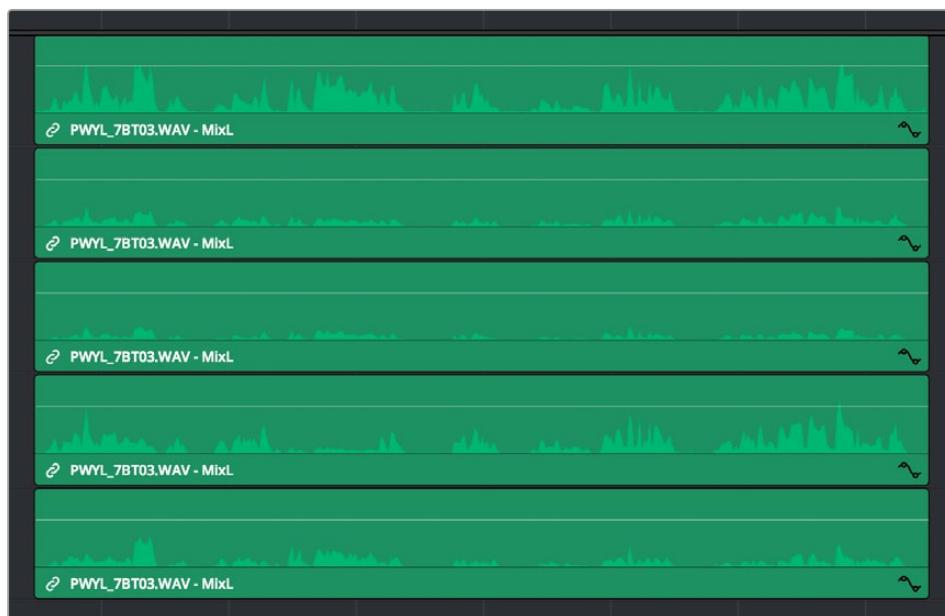
Alternately, you might elect to set these clips up with five separate audio tracks with a single audio channel each, in order to expose each channel separately in the Timeline for independent editing. First, set the top track to be Mono using Embedded Channel 1. Then, using the Add channel controls at the top of the channels list, you can set Tracks to 4, format to Mono, and click Add to create four

additional tracks in addition to the one track that clip had originally. Remapping channels 2-5 to these new tracks will result in the track mapping seen in the following screenshot.



The Audio panel of the Clip Attributes window after adding four channels

Editing such a clip into the Timeline results in five linked audio items appearing on five separate audio tracks, each of which can be edited separately in the Timeline.

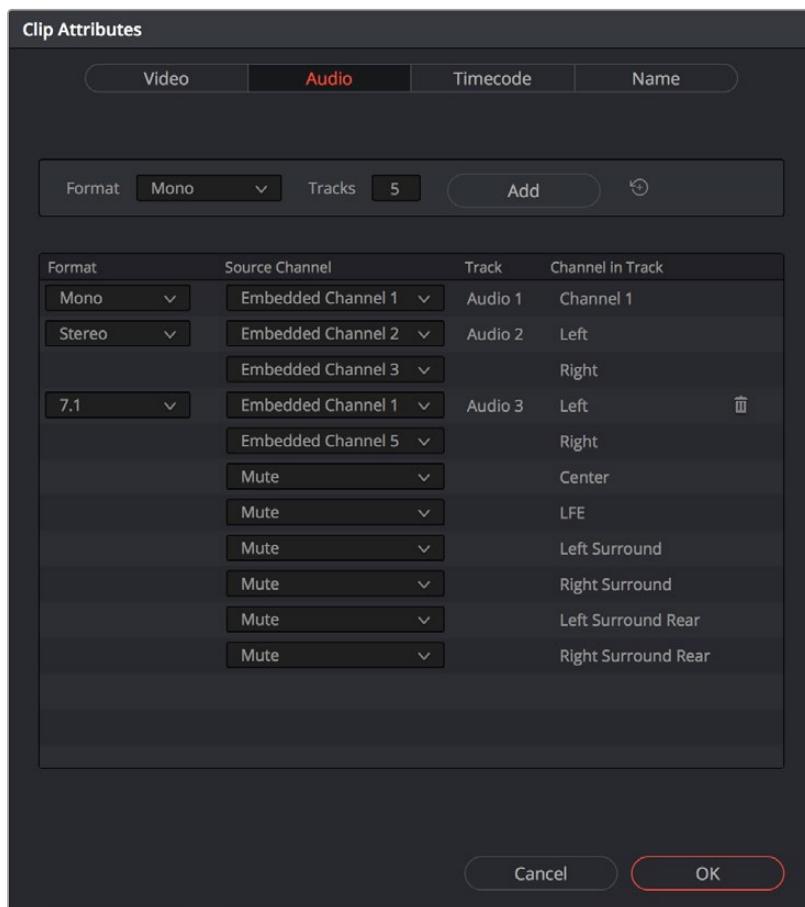


Each channel exposed as a separately editable clip in the Timeline

Support for Mixed Audio Track Formats from Source Clips

DaVinci Resolve also supports media with multiple audio tracks that have differently formatted channels embedded within them. For example, a clip with one stereo track, one 5.1 surround track, and six mono tracks can all be appropriately set up in the Audio panel of Clip Attributes after that clip has been imported.

The Audio panel of Clip Attributes now has controls over what format (Mono, Stereo, 5.1, 7.1, Adaptive) the channels embedded within a particular clip should be configured as. This means that you can set up clips with multiple tracks, each one using potentially different formats of audio employing different combinations of clips, which is handy for mastering.



Clip Attributes now lets you assign channels among different tracks with different channel assignments.

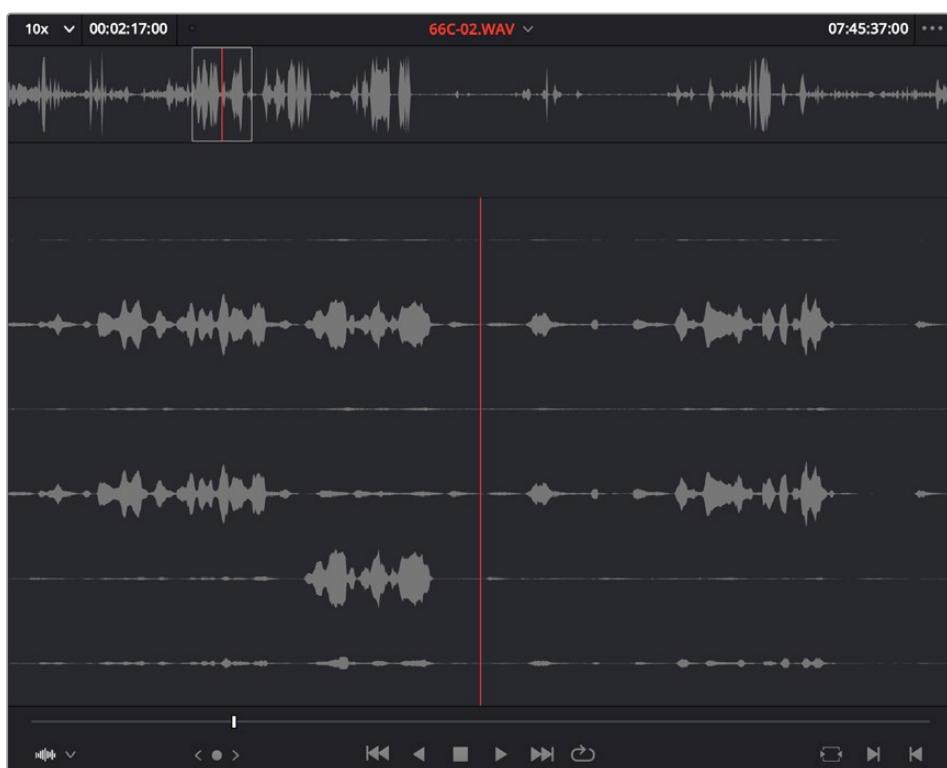
Editing Audio Into the Timeline

A separate set of audio tracks in the Edit page Timeline contain all of the audio that you edit into the Timeline, as well as any stand-alone audio files that might have been imported along with an AAF or XML file.

Editing Audio Using the Source Viewer

Opening an audio-only clip into the Source Viewer, or opening a clip with both video and audio and setting the Viewer to Audio Waveform results in a split view, with the complete waveform of the entire source clip shown in the top half, and a zoomed-in view of the waveform in the bottom half that can be set to zoom from 1x to 50x from the Zoom menu at the upper left-hand corner of the Source Viewer. This view makes it easy to drag the box at the top to find the section of audio you need relative to the entire clip, and yet still place In and Out points with great precision using the scrubber bar below.

This view shows every channel within each track of the current clip.



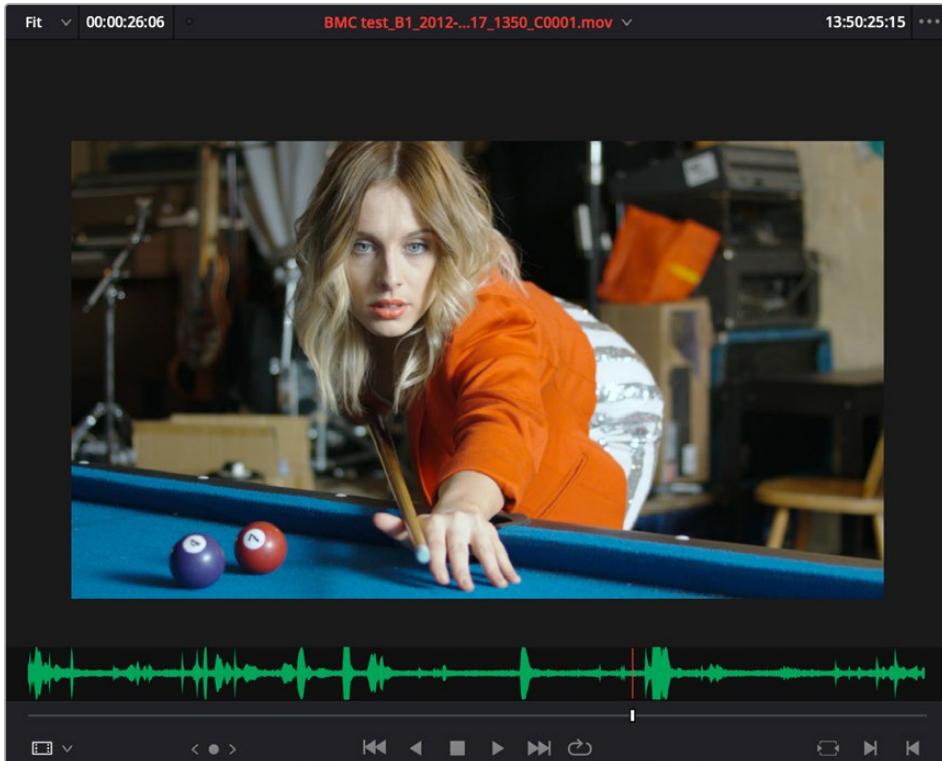
An audio clip opened into the Source Viewer

You can add markers and set In and Out points for audio clips just as you would for any other clip, in preparation for editing.

Simultaneous Audio Waveform Display in the Source Viewer

It's also possible to edit using audio waveforms even when the Source Viewer is set to Source. Two options in the Option Menu let you see a superimposed audio waveform running along the bottom of the Viewer, over the video of the currently selected clip.

- **Show Current Frame Audio Waveform:** Shows a zoomed-in section of audio that scrolls as you play the clip. Useful for seeing dialog and music cues as you play through a clip.
- **Show Full Clip Audio Waveform:** Shows the audio waveform for the entire source media of that clip. The section of audio from the In to Out points you've set in the Source Viewer are highlighted. Useful for using the audio waveform to navigate throughout that clip using the waveform as a reference.



The Source Viewer with “Show Current Frame Audio Waveform” enabled, displaying the audio waveform along the bottom of the image

Using Multi-Channel Timeline Tracks

Multi-channel audio tracks in the Edit page Timeline are extremely convenient when you’re dealing with clips that are stereo, 5.1, 7.1, or have an arbitrary number of channels that were recorded in the field, as you can fit all of these channels as a single clip into a single track, that will be correctly mapped to your project’s outputs, and that can be edited conveniently as a single item in the Timeline.

However, when you open the Fairlight page you’ll see that although the overall number of audio tracks is identical to the Edit page, the Fairlight page shows the channels that are otherwise hidden on the Edit page as lanes within each track, which expose each channel as a visible audio item in the Timeline. In this way, editors can work with multi-channel audio without worrying about visual clutter, while audio editors and mixers can see every channel on every track to help them get their work done.

Getting back to audio tracks on the Edit page, there are different types of audio tracks just like there are different types of audio clips: Mono, Stereo, 5.1, 7.1, and Adaptive. While you can edit any kind of audio clip into any kind of audio track, all clip audio channels that exceed the number of channels possessed by a particular type of timeline track will be muted. For example, you’re allowed to edit a six-channel Adaptive audio clip into a Mono audio track, but only the first channel will play because the Mono track only outputs one channel.

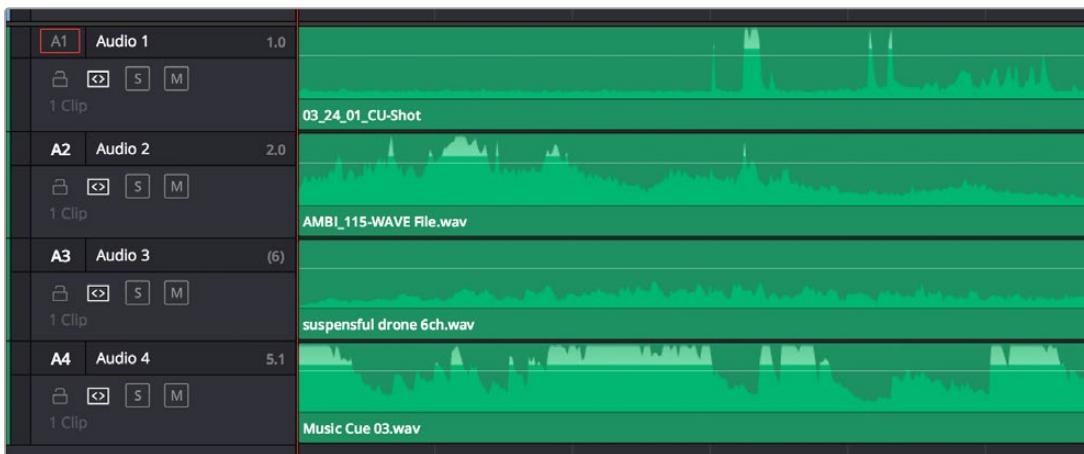
Because of this, it's a good idea to organize your timeline such that all clips appear on tracks that can accommodate the number of channels they have.

TIP: Editing an audio clip into the undefined gray area below existing audio tracks in the Timeline will result in the automatic creation of new audio tracks that are equal in number to the number of tracks the clip you're dragging has, and each new track will have audio mappings that match the incoming audio items.

Defining Timeline Audio Track Channels at Creation

When you first create a new audio track, you have to choose what kind of audio track it will be. Right-clicking in the bottom audio portion of the Timeline track header reveals a contextual sub-menu that lets you create one of three different kinds of audio tracks.

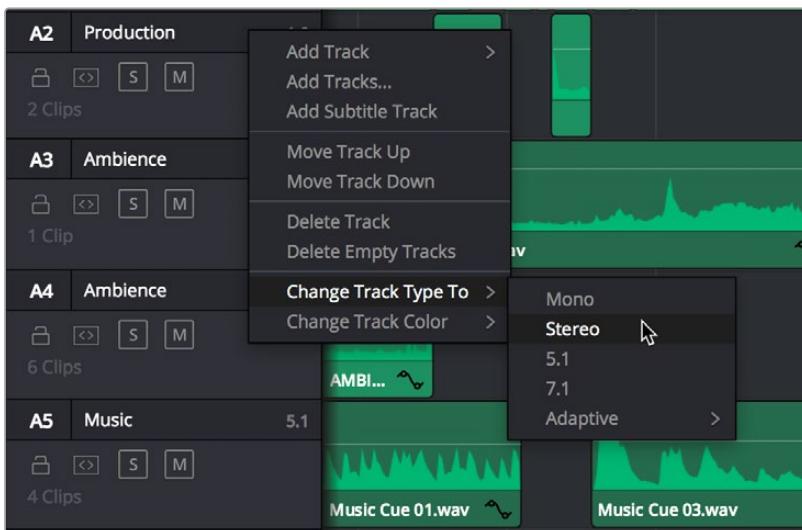
- **Mono:** Holds a single channel.
- **Stereo:** Holds stereo left and right channels. Stereo tracks can be panned.
- **5.1:** Holds the six channels corresponding to a 5.1 surround mix. For broadcast, SMPTE specifies Left, Right, Center, LFE, Left Surround, Right Surround. For cinema distribution these tracks are ordered Left, Center, Right, Surround Left, Surround Right, and LFE.
- **7.1:** Holds the eight channels corresponding to a 7.1 surround mix. For broadcast, SMPTE specifies Left, Right, Center, LFE, Left Surround, Right Surround, Back Surround Left, and Back Surround Right. For cinema distribution these tracks are ordered Left, Center, Right, Left Surround, Right Surround, LFE, Back Left Surround, and Back Right Surround.
- **Adaptive:** Capable of holding up to 24 audio channels. An adaptive audio track can hold clips with different combinations of channels, up to the maximum number of channels allowed within that track. The number of channels allowable on a particular Adaptive track is user-definable (1–24) at the time that track is created. If you edit a clip with more channels into an Adaptive track that was created to hold fewer channels, the extra channels are muted.



Four audio tracks with a variety of audio tracks shown. From the top down, Mono, Stereo, Adaptive, 5.1

Changing How Many Channels an Audio Track Has

If you had set up your timeline with one kind of audio track, but you discover you actually need a different kind, you can change any audio track's type at any time. Just right-click anywhere in that audio track's timeline header, and choose an option from the Change Track Type To submenu of the contextual menu.



Contextual menu for changing audio track types

Creating Timelines With Audio Mixer Presets

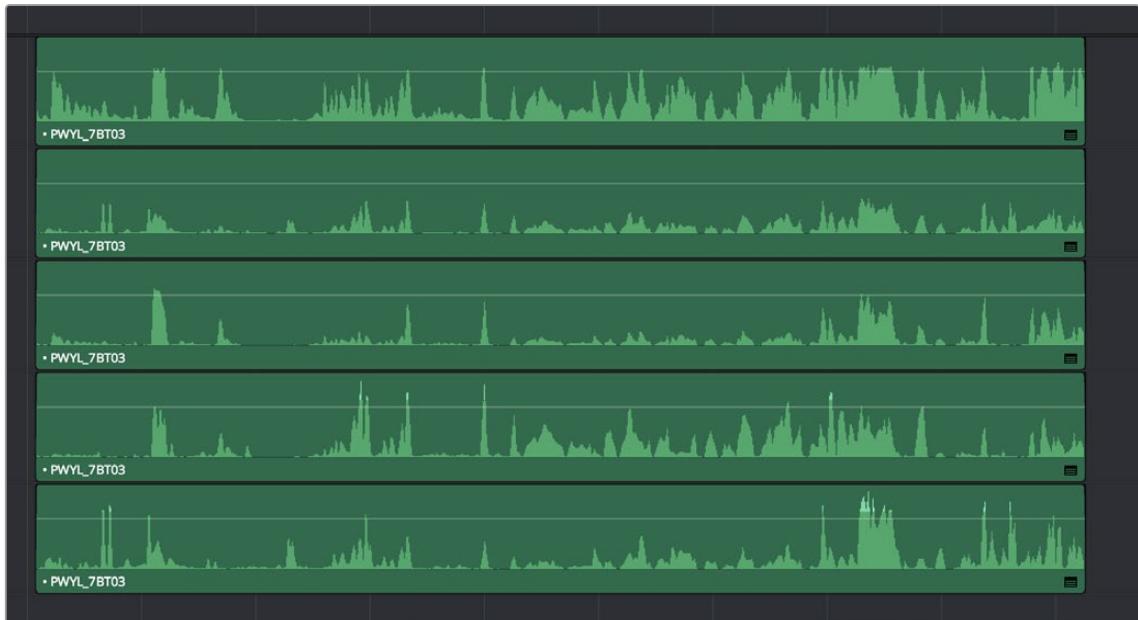
For advanced audio workflows and ease of use with Fairlight, you can now create a timeline with pre-assigned audio tracks using a previously created Fairlight Configuration preset. To use this function, create a new timeline, and check the "Use Fairlight Configuration Preset" box. A drop-down menu then appears, allowing you to select the specific preset for the Timeline.

You can create Fairlight Configuration presets using the Fairlight Presets Library, available from the Fairlight menu. For more information, see *Chapter 167, "Setting Up Tracks, Busses, and Patching."*

Editing Audio Clips Into the Timeline

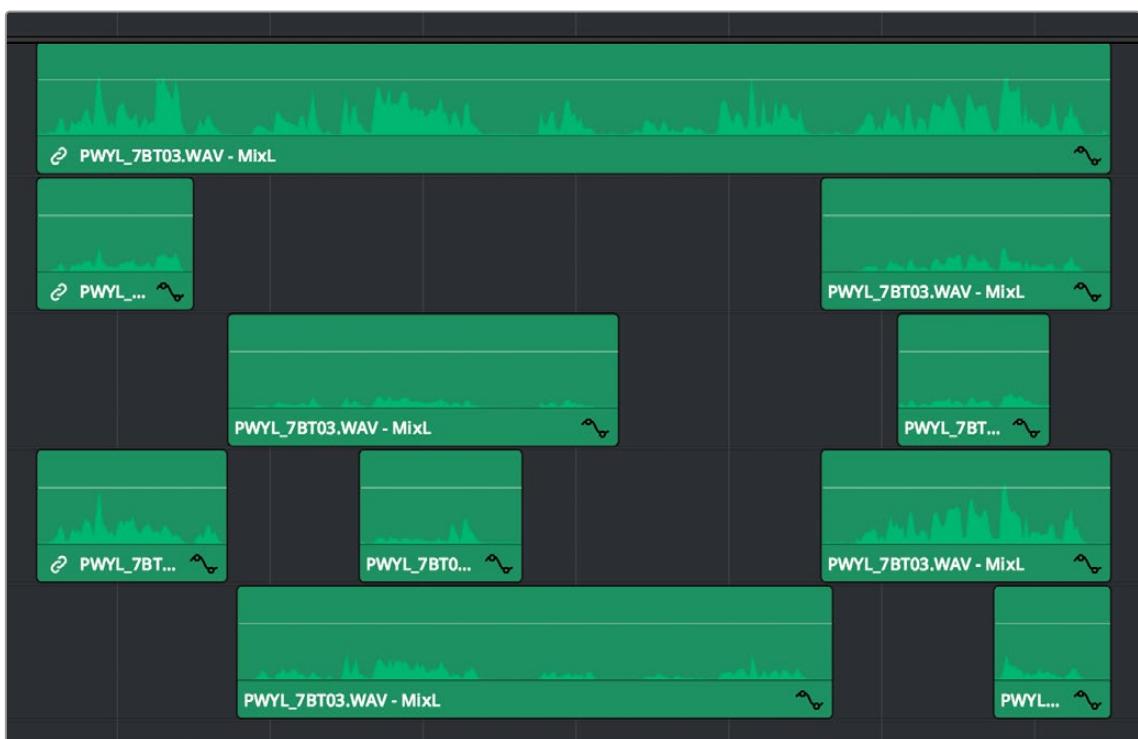
When you edit a video clip with accompanying audio, or an audio-only clip, into the Edit page Timeline, what you see depends on how the audio's internal tracks and channels were defined in the Media Pool, using Clip Attributes. If you've defined a clip to expose multiple tracks of audio, each exposing a different channel, then you exchange the convenience of managing multiple channels of audio as a single item for the freedom to individually edit each channel of audio separately, as individual clips in the Timeline.

For example, if you've been given a multi-channel recording that consists of two boom microphones, two separate lavaliere microphones, and a mixdown track that were recorded simultaneously, you can use the Audio panel of the Clip Attributes window to set that clip's audio up as 5-channel Adaptive audio with 5 tracks containing one channel each. Editing this into the Timeline, you end up with five separate audio items appearing in five tracks.



Editing a multi-channel production recording as five separate tracks of audio

This way, when you edit that clip into the Timeline, each audio channel appears as its own clip in its own audio track of the Timeline, which can be separately edited so you can edit the scene to isolate the best dialog from each microphone.



Editing multi-track audio to isolate the best dialog from each microphone

Changing Audio Clip Attributes After Editing

It's best to make decisions about which audio tracks and channels are assigned prior to beginning editing. This is because once you've edited a clip into a timeline, you can't use the Clip Attributes window to edit how many audio tracks and audio channels are exposed in the Timeline.

However, you can use Clip Attributes to change which channels are assigned and/or muted within the available tracks and channels you've edited into the Timeline. For example, if you're editing clips that have five channels of source audio (channels 1 and 2 are a stereo mix and channels 3 through 5 are three different microphones), you may have set your synced source clips to have one audio track and five audio channels, with channels 3–5 muted. Later you have a few clips that would sound much better if you only used channel 4, which is the isolated lavalier microphone for that actor, so you can select those clips and use the Audio panel of Clip Attributes to mute all channels but channel 4.

If, for whatever reason, you need to expose more audio tracks in the Timeline than you originally set an audio clip to use, you can do the following.

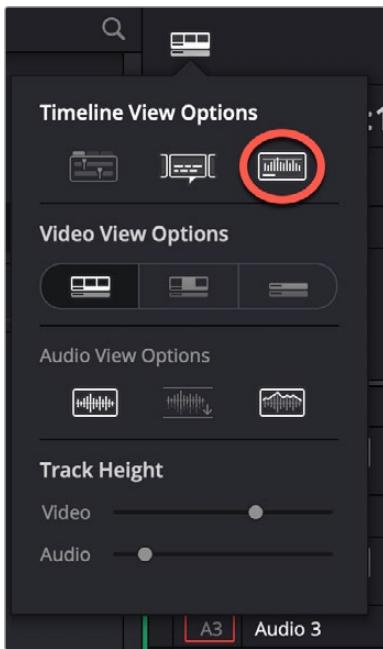
To re-edit an audio clip to expose more audio tracks than were originally available:

- 1 Right-click the clip you want to change the audio track mapping of in the Timeline, and choose Find in Media Pool from the contextual menu.
- 2 Right-click that clip in the Media Pool and choose Clip Attributes from the contextual menu.
- 3 Open the Audio panel of the Clip Attributes dialog, and choose how many audio tracks and audio channels you want to set that clip up with. Click OK.
- 4 Once that's done, edit the changed audio clip from the Media Pool to the Timeline to replace the original clip using whichever method makes sense.

Displaying Waveforms in the Timeline

The Timeline View options palette lets you turn Audio Waveform display on and off via a button at the top. The Audio View options let you define how you wish your waveforms to be presented on the Timeline.

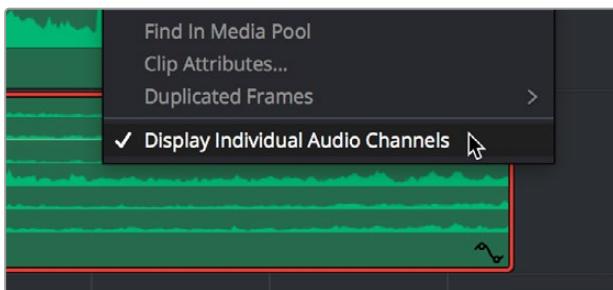
- **Audio View Options:** Three buttons govern the look of audio waveforms in the Timeline, when visible.
 - **Non-Rectified Waveform:** Lets you toggle between the waveform being drawn from the bottom of the audio track up, or centered and mirrored about itself.
 - **Full Waveform:** Hides the divider bar that keeps the waveform separate from the file name area of each audio clip, so the waveform occupies the full space of each audio bar in the Timeline.
 - **Waveform Border:** Draws a dark border around the edges of each waveform to make them easier to see.
- **Video track height slider:** Lets you resize the size of all video tracks at once, independently of the audio tracks.
- **Audio track height slider:** Lets you resize the size of all audio tracks at once, independently of the video tracks.



The Audio Waveform display option (circled in red) in the Timeline View dropdown. Audio View Options are (L-R) Non-Rectified Waveforms, Full Waveform, and Waveform Border.

While a single averaged audio waveform representing all the channels in that clip is shown by default, you can switch any clip to seeing each individual waveform in a vertical stack by right-clicking any audio clip and choosing Display Individual Audio Channels.

Whenever you cut an audio clip, you cut all audio channels with it. Audio channels that are embedded within a single track cannot be individually edited.



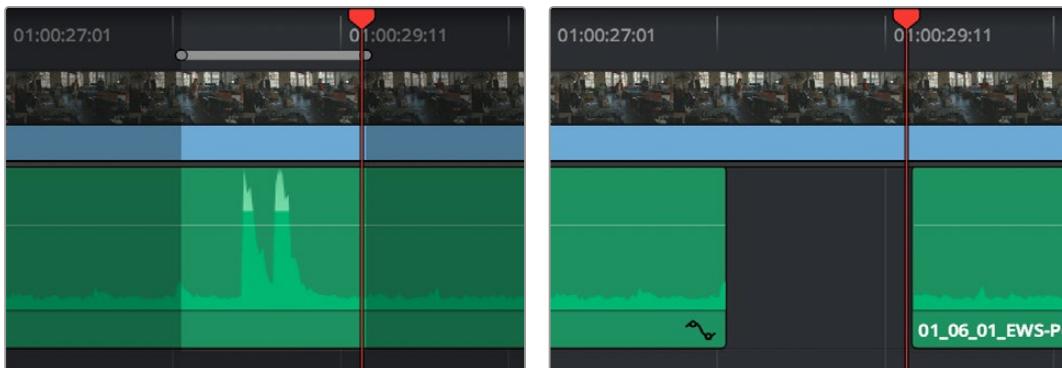
Enabling the display of multiple channel waveforms in the Timeline

Editing Audio In the Timeline Using In and Out Points

Audio clips can be edited using all of the commands and tools available for video clips. However, it's good to know that one of the most common techniques of editing audio in other environments is available in DaVinci Resolve, and that is the ability to identify a range of audio to cut, copy, or delete using Timeline In and Out points, so that you can easily eliminate, move, or duplicate partial sections of audio without having to use the Razor Edit or Split Clip commands.

To delete a section of audio using In and Out points:

- 1 Set In and Out points in the Timeline to identify the range of audio you want to eliminate. If necessary, turn off the Auto Select controls of tracks to omit overlapping audio clips you don't want to delete from this operation.
- 2 Press the Backspace key to delete the section of audio and leave a gap, or press the Forward Delete key to delete the section of audio and ripple the Timeline to close the gap.

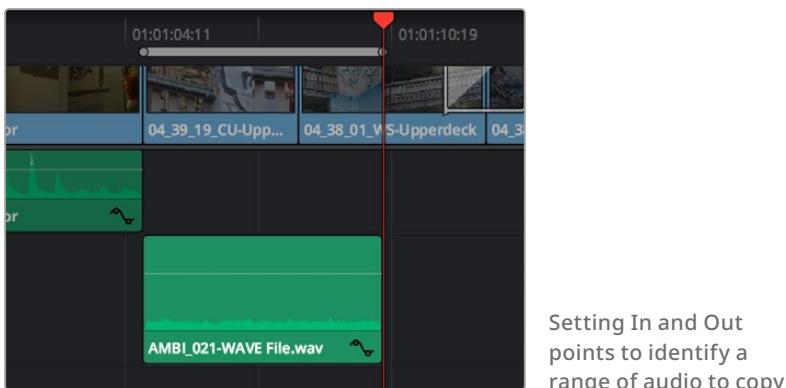


Setting In and Out points to identify a range of audio to delete

Deleting the audio using the Backspace key to leave a gap

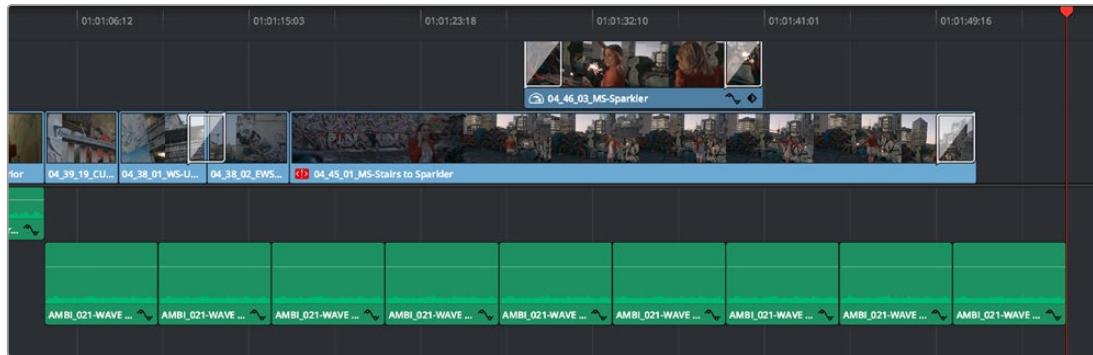
To copy a section of audio using In and Out points:

- 1 Set In and Out points in the Timeline to identify the range of audio you want to copy. If necessary, turn off the Auto Select controls of tracks with overlapping audio you don't want to copy; you can Option-click the Auto Select control of the audio track you're copying from to solo it, and you can Shift-click any video track's Auto Select control to turn them all off. In this example, we're copying some background ambience to continue building an ambience track.



Setting In and Out points to identify a range of audio to copy

- 2 Press Command-C to copy that section of audio.
- 3 Press Option-X to clear the Timeline In and Out points, and move the playhead to where you want to paste the copied section of audio.
- 4 Press Command-V to paste the copied audio. If you're looping a section of audio, you can paste many times to loop what you've copied.



Pasting the background ambience several times to loop it

Resizing Audio Clips in Subframe Increments

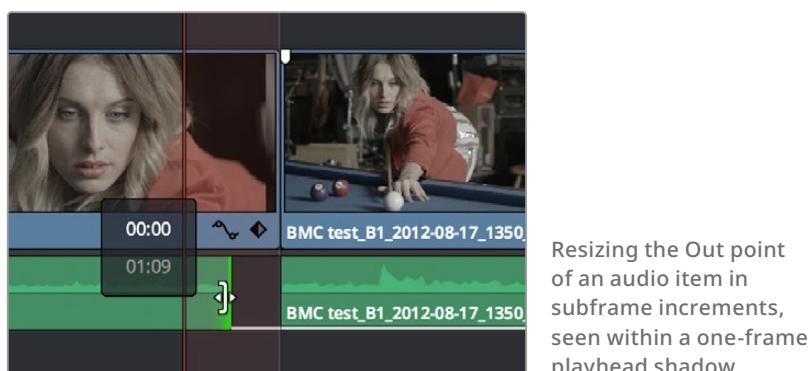
DaVinci Resolve lets you optionally make subframe audio adjustments to the In and Out points of audio clips in the Timeline.

Enabling and Disabling Subframe Editing

The “Align audio edits to frame boundaries” preference in the Editing panel of the DaVinci Resolve User Preferences lets you choose whether audio clip In and Out points align to whole frame boundaries, just like video clips. When this option is turned on, you cannot make subframe audio edits. When turned off (the default), you can.

Subframe Editing of In and Out Points

While you cannot move the playhead in subframe increments, you can resize audio clips in subframe increments by dragging an audio clip’s In or Out point in the Timeline, or by dragging an audio edit to perform a roll. This can be useful for trimming minute bits of audio such as pops, clicks, or vocalizations.



Know that if you have Linked Selection turned on and you’re trying to resize a selected Video+Audio pair of items, the whole-frame resizing required for video prevents you from being able to resize the audio separately. This is easily solved by Option-Clicking to select the linked audio item by itself, at which point you can subframe resize it freely.

Also, if snapping is enabled, it may be impossible to make a subframe adjustment if you're too close to another edit point, a marker, or the playhead. In this case, pressing the N key to turn snapping off will solve the problem.

Eliminating Subframe Audio Edits

If you've done a variety of subframe edits and you discover you need to eliminate these subframe adjustments, you can choose Timeline > . This moves each subframe edited In or Out point in the timeline to the nearest frame boundary.

Audio Settings in the Inspector

Each clip has some simple audio-related parameters in the Audio panel of the Inspector.

- **Volume:** Each clip has a single volume control that corresponds to the volume overlay over each audio clip.
- **Pan:** (Only exposed for clips) A simple Pan slider that controls stereo panning.
- **Pitch:** Lets you alter the pitch of a clip without changing the speed. Two sliders let you adjust clip pitch in semi tones (large adjustments, a twelfth of an octave) and cents (fine adjustments, 100th of a semi tone).
- **Equalizer:** Each clip also has a four-band EQ, complete with low-pass, high-pass, and parametric settings for fine tuning and problem-solving audio issues at the clip level.

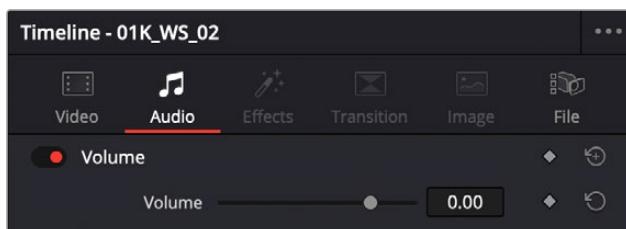
Additionally, when you apply other audio plugins from the Audio FX panel of the Effects Library, additional parameters and controls are exposed (covered towards the end of this chapter).

Setting Volume

Each audio clip, or audio item in the case of audio clips with linked audio on multiple tracks, has its own Volume level. This means that audio clips with multiple channels share a common Volume setting. There are several ways you can adjust these levels simply.

Adjusting Audio in the Inspector

Each clip has individual Volume parameters that are accessible in the Audio panel of the Inspector when one or more audio clips are selected.



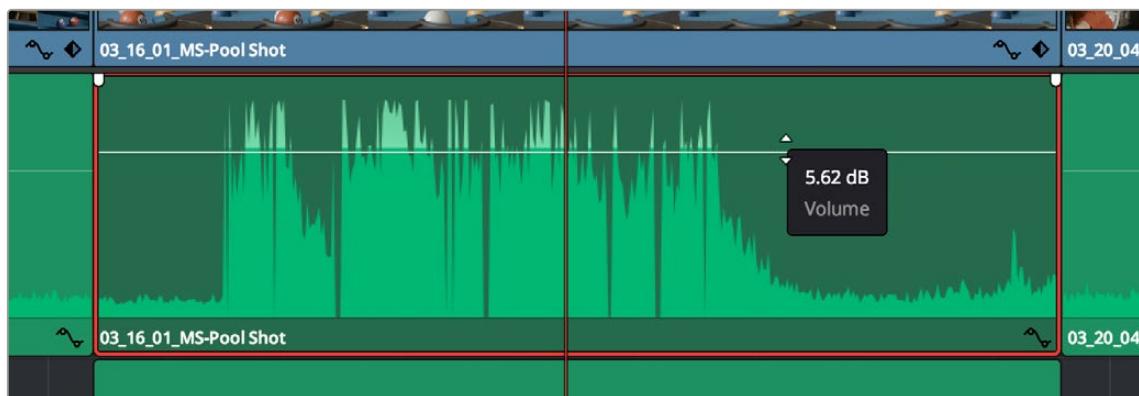
The Volume parameter available for audio clips in the Inspector

Selecting an audio clip in the Timeline and adjusting its volume only alters that clip, which lets you set basic levels for individual clips in your program. The Volume control affects every channel within that clip simultaneously.

If you select multiple clips in the Timeline, then adjusting the Volume sliders or virtual sliders for all of them simultaneously will make a relative adjustment to all of the clips, preserving their offsets from one another. If you want to set all clips to the same level, then making a numeric adjustment will set all selected clips to the same absolute level.

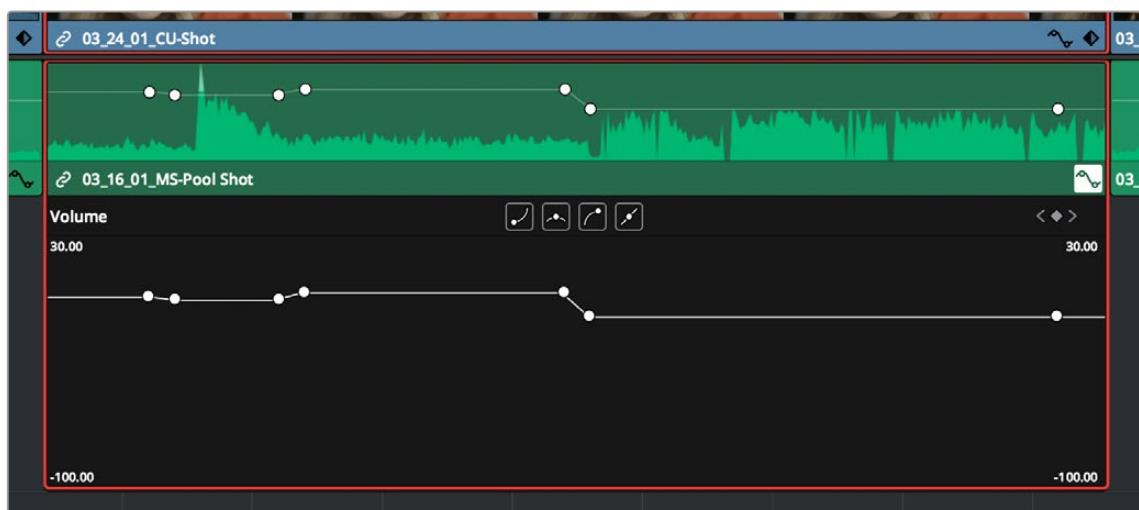
Adjusting Audio in the Timeline

Each clip (or item) of audio in the Timeline has a Volume overlay that lets you set that clip's level by simply dragging it up or down with the pointer. Holding the Shift key down while you drag allows finer adjustments. This overlay corresponds to the Volume parameter in the Inspector.



Dragging a Volume overlay to adjust the clip level

You can also click the Curve Editor button at the bottom right-hand corner of the audio clip, which opens the Audio Curve Editor. At the time of this writing, the only parameters you can edit in this Curve Editor is volume and pan.



Showing the Volume overlay in the Curve Editor

Adjusting Volume Using Keyboard Shortcuts

You can also adjust the volume of selected clips using keyboard shortcuts, even while the Timeline is playing. There are several ways you can set this up.

- **To adjust just one clip:** Select that clip, and use one of the commands for changing volume.
- **To adjust any clip at the position of the playhead:** Turn on Timeline > Selection Follows Playhead so that whichever clip intersects the playhead becomes selected, and use one of the commands for changing volume. If multiple clips are intersecting the playhead, the selected clip will be the one on the highest track.
- **To adjust multiple clips all together:** Select all of the clips you want to adjust, all at once, and use one of the commands for changing volume. If the clips you select have differing Volume levels, these differences will be maintained as you make your adjustments.

The commands for changing volume are as follows:

- **To change volume in increments of 1dB:** do one of the following:
 - Clip > Audio > Increase Audio Level 1dB (Option-Command-Equal)
 - Clip > Audio > Decrease Audio Level 1dB (Option-Command-Minus)
- **To change volume in increments of 3dB:** do one of the following:
 - Clip > Audio > Increase Audio Level 3dB (Option-Shift-Equal)
 - Clip > Audio > Decrease Audio Level 3dB (Option-Shift-Minus)

Normalize Audio Volume Command

The Normalize Audio Levels command automatically adjusts the level of clips to a specific target level, and you can choose the method used to analyze each audio clip's levels to determine how to normalize each clip's volume. Options include a variety of loudness normalization algorithms specific to various international standards, which are useful for balancing the perceived overall loudness of several clips to one another, regardless of transient levels throughout each clip. You can also do Peak normalization, with options for both Sample Peak and True Peak.

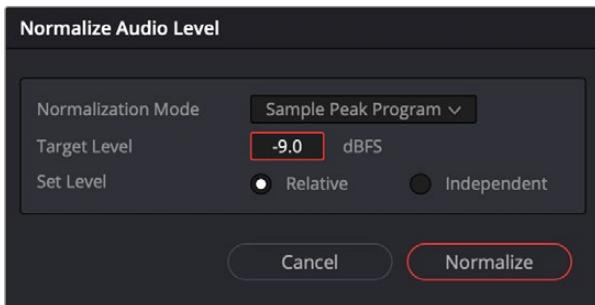
The various loudness options are designed to analyze an audio signal based on its perceived loudness to the listener, which results in a more accurate automatic balancing of different clips' audio levels to one another, regardless of transient peaks occurring throughout different clips.

The target peak meter now uses the BS.1774 standard for measuring maximum "true peak," which means that this meter is capable of measuring "inter-sample peaks," rather than only the peaks at each sample of a waveform. However, you still have the option to measure Sample Peak, which is the previous method of measuring the actual peak of the samples in a media file.

The change made by the Normalize Audio Volume command is only a volume adjustment; no dynamics are applied, so the result of using this command is that the loudest parts of each selected clip are going to match one another at the target level. This command is also available in the Fairlight page.

To normalize one or more selected audio clips:

- 1 Right-click one of the selected clips and choose Normalize Audio Levels. The Normalize Audio Level dialog appears.



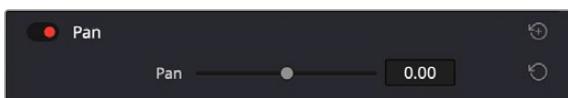
The Normalize Dialog in the Edit page

- 2 Choose the Normalization Mode you want to use. You can choose among a variety of standardized loudness measurement algorithms, or Sample Peak, or True Peak.
- 3 Choose the reference level that you want to set the peak volume of the selected clips to match.
- 4 Choose how you want to set the level of multiple selected clips:
 - When Set Level is set to Relative, all selected clips are treated as if they're one clip, so that the highest peak level of all selected clips is used to define the adjustment, and the volume of all selected clips is adjusted by the same amount. This is good if you have a series of clips, such as a dialog recording, where the levels are consistent with one another, and you want to normalize all of them together.
 - When Set Level is set to Independent, the peak level of each clip is used to define the adjustment to that clip, so that the volume of every selected clip is adjusted by an amount specific to that clip. The end result may be a set of very different volume adjustments intended to make the peak levels of each audio clip match one another. This is good if, for example, you're trying to balance a series of different sound effects with one another that have very different starting levels.

For more information about loudness normalization, see *Chapter 178, "Audio Meters and Audio Monitoring."*

Pan

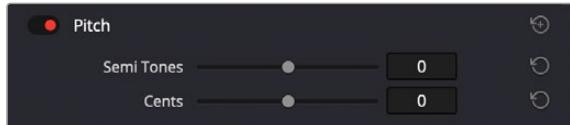
Each audio clip in the Timeline has a simple stereo Pan control that lets you pan that clip. While most professional mixes will restrict panning to the more robust panner found in the Fairlight page Mixer, this simple clip-based Pan control is useful for editors of visuals working in the Edit page to quickly create simple panning effects to aid in a craft edit. Dragging the slider lets you pan audio left to right. This control is centered at 0 by default.



Clip Pan Control

Pitch

Selecting a clip and opening the Inspector reveals a new set of Clip Pitch controls that lets you alter the pitch of a clip without changing the speed. Two sliders let you adjust clip pitch in semi tones (large adjustments, a twelfth of an octave) and cents (fine adjustments, 100th of a semi tone).

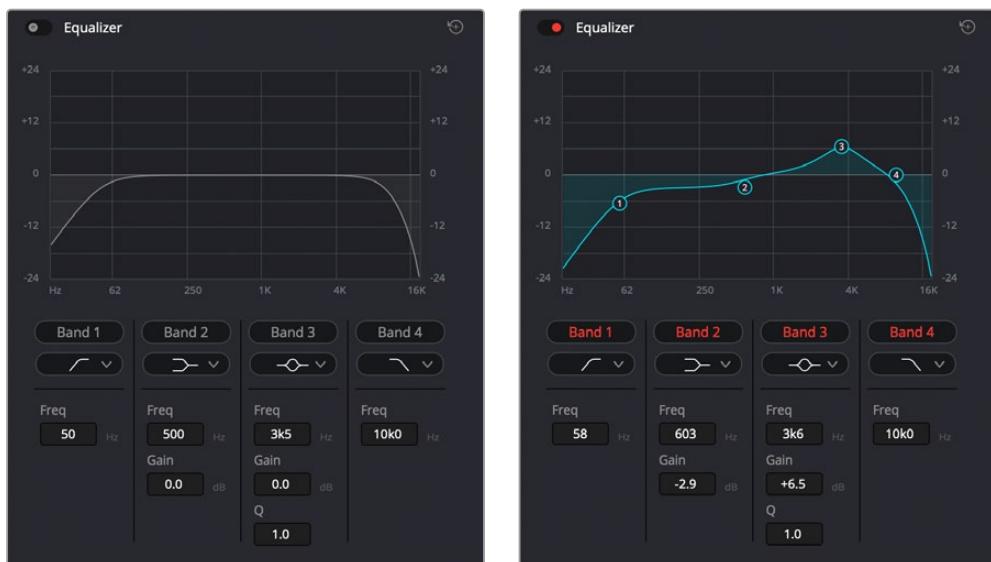


Clip Pitch control in the Inspector

Equalizer

Each audio clip in the Timeline has a four-band equalizer that has both graphical and numeric controls for boosting or attenuating different ranges of frequencies within that clip, before it even gets to the EQ built into the mixer. Each band has controls for the filter type (Bell, Lo-Shelf, Hi-Shelf, Notch), Frequency, Gain, and Q-factor (sharpness of the band), with the available controls for each band of EQ changing depending on the filter type.

When a channel strip's EQ is enabled, the EQ button displays the equalization curve that's being applied. This indicator cannot be adjusted; you must open the EQ window to make modifications.



The channel strip's EQ indicator, (Left) EQ is at detent, (Right) EQ is adjusted

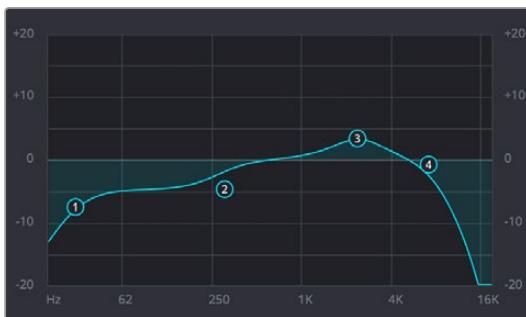
Master EQ Controls

The Equalizer window has the following overall controls:

- **Enable button:** Turns the overall EQ effect off and on, without resetting the controls.
- **Reset button:** Resets all controls of the EQ window to their defaults.

Graphical EQ controls

A graph at the top shows a curve with handles that correspond to each of the enabled EQ bands listed below. You can drag any numbered handle to boost or attenuate the range of frequencies governed by that band, using whatever type of equalization that band has been set to.



The EQ graph with user-draggable handles

Dragging the numbered handles on this graph in turn modifies the parameters of the corresponding band, and changing each band's parameters will also alter the EQ graph, which serves the additional purpose of providing a graphical representation of the equalization being applied to that track.

Bands 1 and 4

The outer two sets of band controls let you make high-pass and low-pass adjustments, if necessary.

- **Band enable button:** Turns each band of EQ on and off.
- **Band filter type:** Bands 1 and 4 can be switched among six specific filtering options for processing the lowest or highest frequencies in the signal. These include (from top to bottom): Lo-Pass, Lo-Shelf, Bell, Notch, Hi-Shelf, and Hi-Pass.
- **Freq:** Adjusts the center frequency of the EQ adjustment.

Bands 2 and 3

The middle two sets of band controls let you make a wide variety of equalization adjustments.

- **Band enable button:** Turns each band of EQ on and off.
- **Band filter type:** Bands 2–3 can be switched among four different filtering options (from top to bottom) Lo-Shelf, Bell, Notch, and Hi-Shelf.
- **Frequency:** Adjusts the center frequency of the EQ adjustment.
- **Gain:** Adjusts the amount by which the affected frequencies are affected. Negative values attenuate those frequencies, while positive values boost those frequencies.
- **Q Factor:** Adjusts the width of affected frequencies. Lower values include a wider range of frequencies; higher values include a narrower range of frequencies.

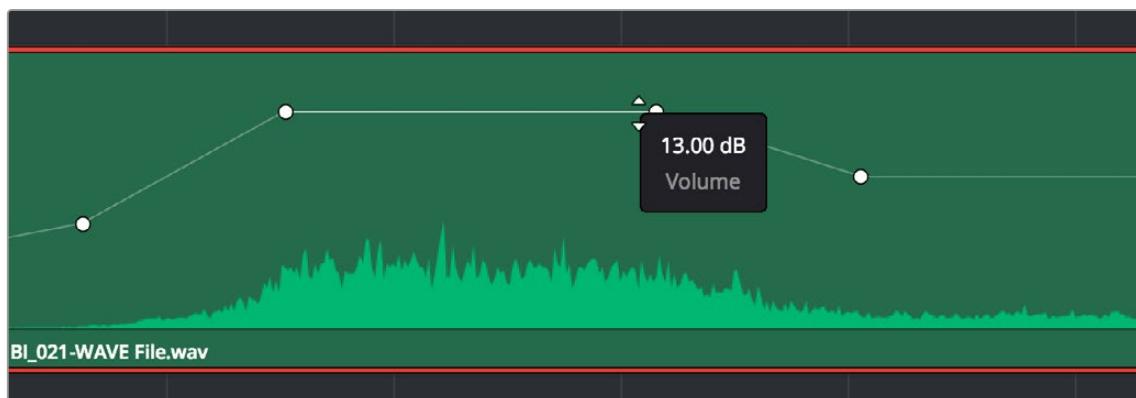
Keyframing Audio

There are two ways you can keyframe audio in the Edit page. You can use each audio clip's volume curve in the Timeline, or you can use the keyframe controls in the Inspector to animate the Volume parameter of individual clips as you would any other clip attribute, fading the level up or down, panning from left to right, or dynamically changing any one of a host of filter controls, in subframe increments, if necessary.

For more information on keyframing in the Inspector, see *Chapter 53, "Keyframing Effects in the Edit Page."* Any keyframes you create using the Keyframe controls of the Inspector automatically appear on the volume curve of that audio clip in the Timeline.

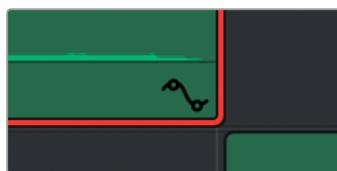
Overlay Controls for Volume

Each audio clip in the Timeline appears with a Volume overlay control on top of it, that by default starts out completely flat. Similar to such controls found in other applications, the level curve lets you alter each clip's levels, either overall, or dynamically using keyframes.



Volume curves adjusting the level of a clip's audio in the Timeline

Additionally, you can click any clip's Audio Curve Editor button, at the bottom right-hand corner of each audio clip, to open an audio-specific Curve Editor in which you can also keyframe volume.



The button for opening an audio clip's Curve Editor

How to Add and Adjust Volume Keyframes

Mixing audio by adding and adjusting individual keyframes can be a fast and effective way of balancing clip levels with one another, fixing level problems within a particular clip, or even creating simple mixes (although the mixing capabilities of the Fairlight page are considerably more robust). When manually editing any audio parameter curve, you can use the following procedures.

Methods of adding or selecting audio keyframes using the pointer:

- **To add keyframes to the Volume curve:** Hold the Option key down and click the curve to place a keyframe at that frame. You must add at least two keyframes to create an automated change in Volume.
- **To select one or more keyframes:** Click any keyframe to select it.
- **To select multiple discontiguous keyframes:** Command-click all keyframes you want to select, whether they're next to one another or not.
- **To select multiple contiguous keyframes:** Click the first keyframe you want to select, and then shift-click the last keyframe you want to select, and all keyframes between will also be selected.

Methods of adjusting keyframes in the Volume overlay (or curve) using the pointer:

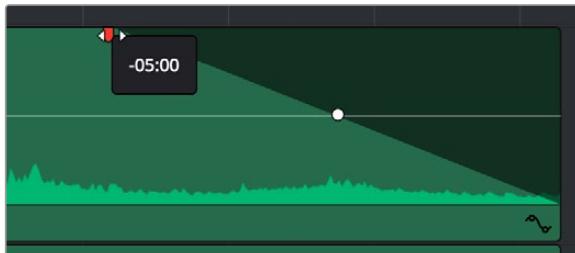
- **To adjust any curve segment:** Position the pointer over the overall segment for clips with no keyframes, or position it between any two keyframes, directly on top of the curve segment you want to raise or lower. When the Move cursor is displayed, click and drag up to raise the volume, or down to reduce the volume.
- **To adjust a keyframe in any direction:** Move the pointer over a keyframe so that the four-way cursor appears, and then click and drag up or down to change the volume, or side to side to change its timing. The timing of audio keyframes can be adjusted in subframe increments, for precision mixing.
- **To adjust a keyframe in only one direction:** Move the pointer over a keyframe so that the four-way cursor appears, press Shift, and click and drag in the intended direction of adjustment, either vertically to change the volume of the clip at that frame, or horizontally to move the keyframe to a different point in time. Once you start dragging a keyframe into a particular direction, keyframe movement is constrained in that direction until you release that keyframe. The timing of audio keyframes can be adjusted in subframe increments, for precision mixing.
- **To change one or more Linear keyframe to Ease In or Ease Out:** Eased keyframes create animated changes that begin slowly and accelerate to full speed, or slow down gradually to decelerate to a stop. This only works when you have two or more keyframes creating an animated effect. Select one or more keyframes, then right-click one of the selected keyframes and choose Ease In, Ease Out, or Ease In and Out, depending on which keyframe you're editing and the effect you want to create.
- **To change one or more eased keyframes to Linear:** Select one or more keyframes, then right-click one of the selected keyframes and choose Linear.

Methods of Cutting, Copying, Pasting, and Deleting keyframes:

- **To cut or copy, and paste one or more keyframes:** Make a selection of keyframes, and use the Cut (Command-X) or Copy (Command-C) key shortcuts. Then, move the playhead to where you want the first of the copied keyframes to start, and press Paste (Command-V).
- **To delete one or more control points from a curve:** Select the keyframe(s) you want to delete and press Backspace.

Audio Fade Handles

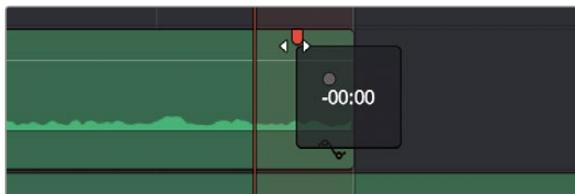
When you position the pointer directly over an audio clip, a pair of Audio Fade handles appear at the In and Out points. Dragging each of these handles towards the center of the clip lets you fade in the clip volume at the beginning of the clip, and fade out the clip volume at the end of the clip.



Audio Fade handles at either end of an audio clip

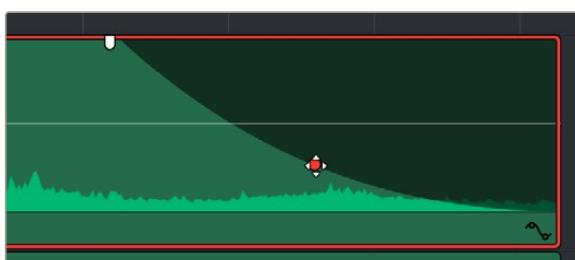
NOTE: When you import a Final Cut Pro X project, the fade handles for each clip automatically import as well.

Audio Fade Handles can also be adjusted in subframe increments, if necessary, to create a precise transition.



Adjusting an Audio Fade handle in subframe increments, seen within a one-frame playhead shadow

Once you've created a fade effect, you can adjust the curve of the fade by dragging the handle that appears right on top of the fader curve. Dragging the handle up and down affects the angle of the curve, and dragging the handle left and right affects the shape of the curve. In this way, you can create all manner of fade effects.



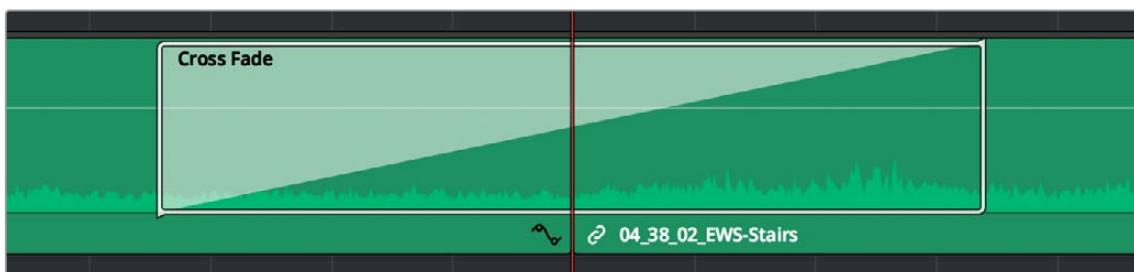
Adjusting the curve of the fade. Fade effects can be created and edited on both the Edit and Fairlight pages.

Audio Crossfades

When you select an edit point with both video and audio components, and Linked Selection is enabled so that both the video and audio edit points are selected, then when you apply a video transition to an edit, a crossfade is added to the audio.

You can add Cross Fade transitions to any edit point between two audio clips that have enough handles similarly to how you add video transitions, by dragging and dropping from the Effects Library, by right-clicking an edit and choosing an option from the contextual menu, or by selecting an audio edit point and choosing Timeline > Add Audio Only Transition (Shift-T).

Cross Fade transitions are a quick and easy way to fade the volume of the outgoing clip down while simultaneously fading the volume of the incoming clip up, letting you create a smooth aural transition between two audio clips. If you need to do precision editing, the start and end points of a crossfade can be edited in sub-frame increments.



An audio Cross Fade transition applied between two clips

You can double-click a Cross Fade transition to open it into the Inspector, revealing the following parameters:

- **Duration:** The duration of the transition, shown in both seconds and frames.
- **Alignment:** A drop-down that lets you choose the transition's position relative to the edit point it's applied to. Your choices are "End on Edit," "Center on Edit," and "Begin on Edit."
- **Transition style:** You can choose -3dB, 0dB, or +3dB to set both the Fade In and Fade Out levels to the same value. For more information on what these levels mean, see the following parameter.
- **Fade In/Fade Out levels:** There are three options that affect the incoming and outgoing halves of the Cross Fade effect independently. 0dB applies a linear fade (this is the default). +3dB applies a boosted curve; when applied to both Fade In and Fade Out, this can compensate for diminished levels in the middle of a Cross Fade. -3dB applies an attenuating curve, which deliberately lowers the level of the Cross Fade.

Crossfades can be created and edited on both the Edit and Fairlight pages.

TIP: If you need an asymmetrical crossfade, that's accomplished by "checkerboarding" clips on two tracks with overlapping handles at the beginning and end, and using the Fader handles to create exactly the timing and curves necessary to create the effect you require.

The Audio Mixer

The Audio Mixer on the Edit page is a simplified version of the Mixer on the Fairlight page, designed to provide a streamlined set of graphical controls you can use to set basic track levels (there is no track level fader automation on the Edit page), pan stereo audio at the track level, and mute and solo tracks as you work.

To open the Audio Mixer, do the following:

- Click the Mixer button on the Interface toolbar.



The Audio Mixer, with four channel strips corresponding to the four tracks in the Timeline

The Audio Mixer exposes a set of channel strips with controls that correspond to the tracks in the Timeline, and each channel strip displays a number of audio meters equal to the number of channels within that track. By default, a Main 1 channel strip appears all the way to the right that lets you adjust the overall level of the mix. However, if you add subs and mains on the Fairlight page, those will appear at the right of the mixer as well.

NOTE: You cannot record automation in the Edit page. Comprehensive mixing controls with full automation recording are found in the Fairlight page.

Audio Mixer Controls

Each track's channel strip has the following controls:

- **Track Color:** Each track can be differently color-coded to help you keep organized. These colors also appear in the timeline track header and the Fairlight page.
- **Track Number:** The number of the timeline audio track corresponding to each channel strip appears here.
- **Pan control:** Lets you pan a Mono track's audio from left to right, or invert a Stereo track's left and right audio channels, or do surround mixing.

- **Name:** The name of the audio track that channel strip corresponds to. If you've edited the audio track names in the Timeline, those names will appear here.
- **Solo:** Mutes all tracks other than ones that are soloed.
- **Mute:** Disables that audio track.
- **dB:** Shows you the volume, in decibels, that track is currently set to.
- **Fader:** Each track's vertical fader can be dragged with your mouse or other pointing device to adjust the volume of that track and perform automation recording. Dragging up increases volume, dragging down decreases volume.
- **Audio meters:** Audio meters to the right of each fader display the audio volume of all channels on that track during playback. Each channel strip has individual meters corresponding to the number of channels that track has been set to accommodate.

Mute and Solo Tracks For Output

When you use the Mute or Solo controls of the Audio Mixer, track audio is disabled both during playback and delivery for output. Make sure you have re-enabled any tracks you need before heading to the Deliver page. You can only modify mute and solo tracks on the Edit, Cut, and Fairlight pages.

Displaying Audio Meters

If you just want to see your program's levels, you can also switch to display the "Control Room" audio meters instead of the Mixer. How many audio meters appear depends on the current speaker configuration in the Video and Audio I/O panel of the System Preferences.

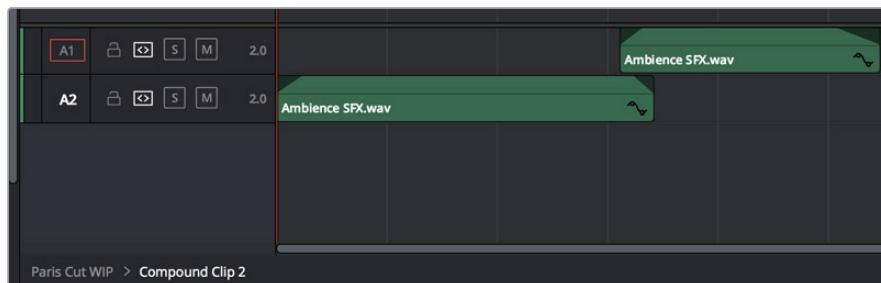
To show the Audio Meters:

- Click the Mixer button on the Interface toolbar to display the audio panel and then choose Meters from the option menu at the upper right-hand corner.

Audio Compound Clips

DaVinci Resolve supports audio compound clips, which are created just like any other compound clip, by selecting multiple audio clips, right-clicking one of them, and choosing New Compound Clip. Alternately, compound clips with video clips may now contain multiple audio items as well.

When compound clips containing audio are opened in the Edit or Fairlight pages by right-clicking an audio compound clip and choosing Open in Timeline, breadcrumb controls appear beneath the Timeline that let you exit the compound clip and get back to the master Timeline.



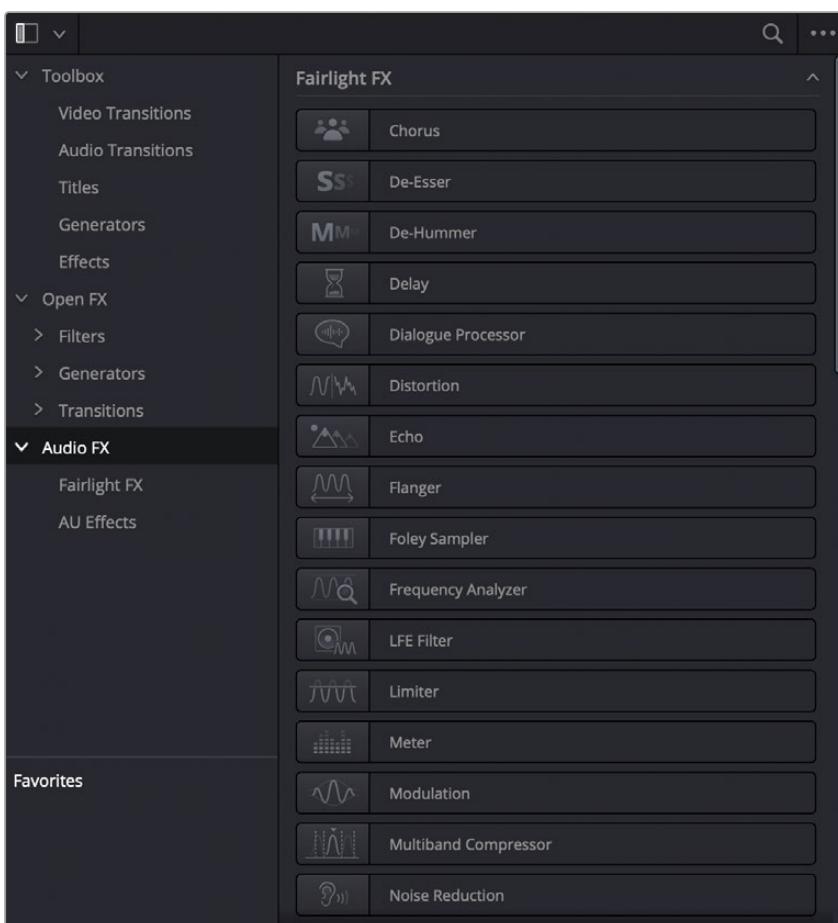
Opening an audio compound clip

Audio Playback for Variable Speed Clips

Video/audio clips with variable speed effects applied to them can now play either pitch-corrected or un-pitch-corrected variable speed audio. An option in the Speed menu of the Retime controls lets you choose whether or not the audio is pitch-corrected.

Using Audio Filters

DaVinci Resolve includes Fairlight FX, a set of DaVinci Resolve-specific audio plug-ins that run natively on macOS, Windows, and Linux, providing high-quality audio effects with professional features to all DaVinci Resolve users on all platforms. Additionally, DaVinci Resolve supports the use of third-party VST audio plug-ins on Mac OS X and Windows. On Mac OS X, DaVinci Resolve supports Audio Unit (AU) audio plug-ins. Once you install these effects on your workstation, they appear in the Audio FX panel of the Effects Library.



Audio filters in the Effects Library

Audio plug-ins let you apply effects to individual audio clips or entire tracks worth of audio, to add creative qualities such as echo or reverb, or to take care of mastering issues using noise reduction, compression, or EQ.

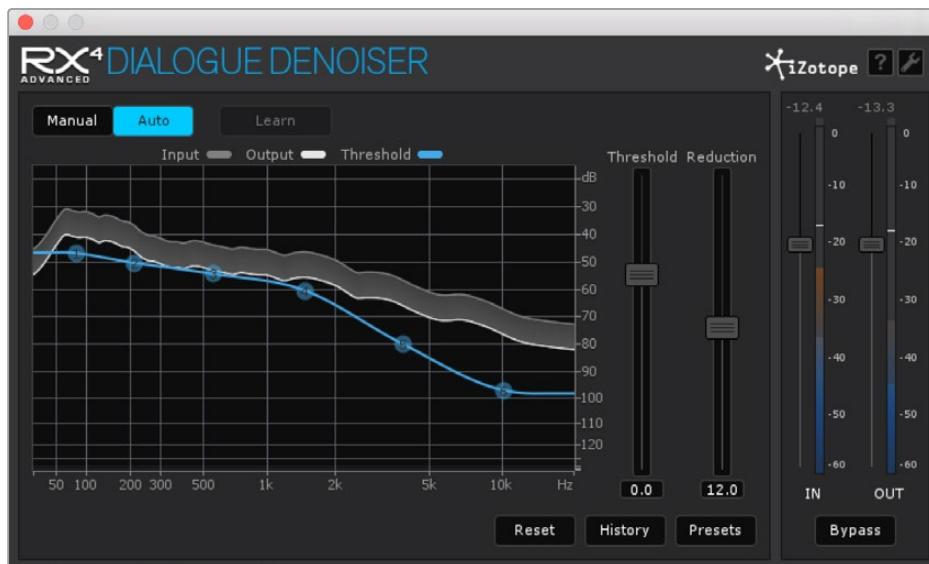
Methods of applying audio filters to clips in the Edit page:

- **To apply an audio filter to a clip:** Drag any filter from the Audio FX panel of the Effects Library onto the clip in the Timeline you want to apply it to.
- **To apply an audio filter to multiple clips:** Select all of the clips you want to apply an audio filter to, then drag any filter from the Audio FX panel of the Effects Library onto any of the selected clips.

To edit a clip's audio filters:

- Select that clip and open the Inspector. All audio filters applied to that clip appear under the Effects panel, in the Audio tab, with that filter's controls appearing directly in the Inspector.

Many VST and Audio Unit audio filters have a custom user interface that makes it much easier to manipulate that filter's controls. These can be opened from within DaVinci Resolve.



The custom audio filter interface for iZotope RX4

To expose a filter's custom controls:

- Click the Custom Control button (the button to the right of the trash can). The custom controls appear in a floating window. When you're finished adjusting the custom controls, close the window.



The button for opening a filter's custom control

Methods of working with audio filters in the Inspector:

- **To disable or re-enable a filter:** Click the toggle button at the far left of each filter's title bar.
- **To remove a filter:** Click the Trash Can button.

Once applied to a clip or track, audio filters can also be keyframed or automated just like volume and pan settings, to create dynamic audio effects that change over time.

Installing Audio Filters

VST effects aren't installed in a standard location, so it may sometimes be necessary to add a newly installed directory of VST plug-ins that you've just installed on your system. To help you deal with this, the Audio Plugins panel of the Preferences window has a list that lets you manually add and remove VST plug-in directories, if necessary.

Once you've added one or more VST directories to the list, a second list underneath shows all audio plug-ins that are available within these directories. Each plug-in on the list has a checkbox that shows whether or not it's currently enabled. Any VST plug-ins that cause DaVinci Resolve to crash while loading them during startup will be automatically disabled.

You can use this list to see which plug-ins have been disabled, for troubleshooting purposes, and to reenable such "blacklisted" plug-ins, by turning their checkboxes back on.

The Fairlight Page

The audio controls of the Edit page are geared more towards simple mixing to have sensible levels as you work putting a program together. For comprehensive audio sweetening, mixing, automation, and mastering controls, the Fairlight page is only one click away.

For more information, see Part 12, "Fairlight."

Pro Tools Export

It bears mentioning that, if the audio editing, mixing, and effects capabilities of DaVinci Resolve aren't enough for you to take care of the audio in your program, you can also export an AAF with audio and a reference movie to Pro Tools using the Deliver page. The resulting media can be handed off to a Pro Tools-based audio facility to be worked on by a dedicated team of audio specialists, who will most likely output a stereo or 5.1 mix file that you can then reinsert in the Timeline you're using to master the final output of your program.

For more information on exporting AAF for Pro Tools in the Deliver page, see *Chapter 186, "Using the Deliver Page."*

Chapter 45

Media Management

Media Management in DaVinci Resolve refers to operations that let you copy or transcode the media that's linked to clips in your timeline, with the option to eliminate unused media in the process.

Media Management is used to consolidate media from an edited timeline or from a project nearing completion.

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What Is Media Management in DaVinci Resolve?

If you've edited a program within DaVinci Resolve, you can use the Media Management command to take care of a variety of tasks, including but not limited to:

- Creating a duplicate of your project's clips that eliminates unused media in preparation for handing the media off to another facility.
- Transcoding all clips in a timeline to another format while eliminating unused heads and tails.

For example, if you're preparing to export a project to hand off to another DaVinci Resolve user somewhere else, or even an XML or AAF to give to someone using a completely different NLE or finishing application, you can use Media Management in DaVinci Resolve to consolidate and relink the media used by the timeline you're handing off, so the exported project or timeline references a smaller set of media.

Even if you're not handing a project off, if you've ingested an enormous amount of source media into a project, and after the majority of the editing decide that you want to create a consolidated set of the media you're using in order to lighten the project's load in the Media Pool, you can create a duplicate of the media to conform to, omitting unused clips and trimming the unused heads and tails of the clips you are using in the process.

But Media Management isn't just useful for projects you've edited in DaVinci Resolve. For example, if you're importing a project from another application and you've been given an enormous amount of source media to conform to, you may be hesitant to copy all of it to your accelerated storage volume, since (a) most of it is probably unused by the project file you've been given, (b) it'll take forever to copy from the cheap USB 2 hard drive they've given you, and (c) it will clog up your local storage, taking valuable space away from other projects. In this case, you can use the Media Management to copy a reduced set of media files consisting of only the clips used in the current timeline of the Edit page.

Media Management of Timelines Creates .drt Files

When performing Media Management operations to copy or transcode media from a timeline, a DaVinci Resolve Timeline (.drt) file is automatically created in the same bin as the resulting media files, linked to the newly created media. This timeline can then be imported into the same or a new DaVinci Resolve project.

File Formats That Are Compatible With Media Management

No matter what you use it for, Media Management is designed to work with all video formats that are have decode support within DaVinci Resolve, and is capable of outputting a few more formats than the Deliver page can. Compatible formats include but are not limited to:

- QuickTime
- MXF
- R3D
- Image-based raw media formats including Blackmagic RAW and Alexa raw
- DPX, EXR, JPEG 2000, TIFF, Cineon, and other compatible image sequence formats
- AVI
- H.264
- XAVC
- AVC-Intra

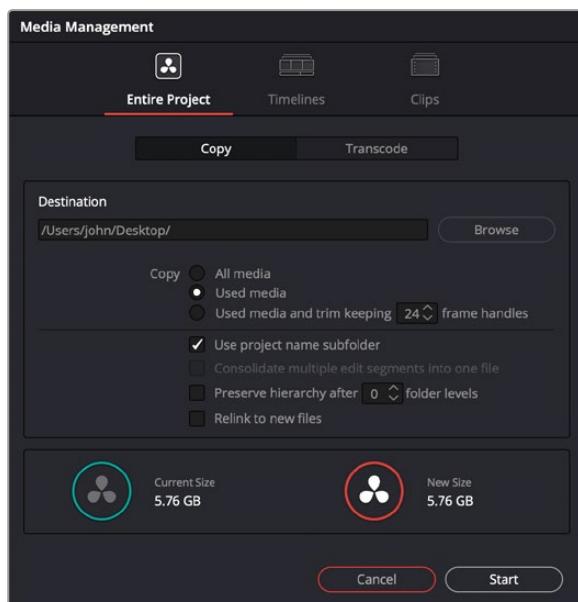
In addition, the “trim unused media” options of the Copy or Move operations are now compatible with clips that use codecs employing temporal compression, such as H.264, XAVC, and AVC-Intra, enabling you to eliminate unused media for these formats during media management without recompressing or transcoding.

Using Media Management

Using Media Management is simple.

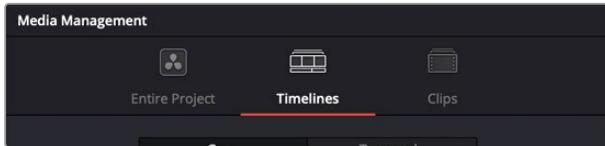
To media manage clips and timelines in a project you've created:

- 1 Select the items you want to media manage, either clips or one or more Timelines.
- 2 Choose File > Media Management, and the Media Management window appears.



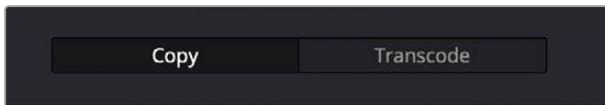
Media Management window

- 3** Choose the scope of the Media Management operation, shown at the top of the window. You can choose to affect the Entire Project, only one or more Timelines, or only Clips. What you had selected prior to opening the Media Management window affects the scope that is selected when you open this window, but it doesn't limit the operation to only the selected items. So, if nothing was selected in the Media Pool, then "Entire Project" is automatically highlighted. If any clips were selected, then "Clips" is highlighted automatically. If any Timelines were selected, then "Timelines" is highlighted. However, if for whatever reason the wrong option is highlighted, you need only click the option you want to select it instead.



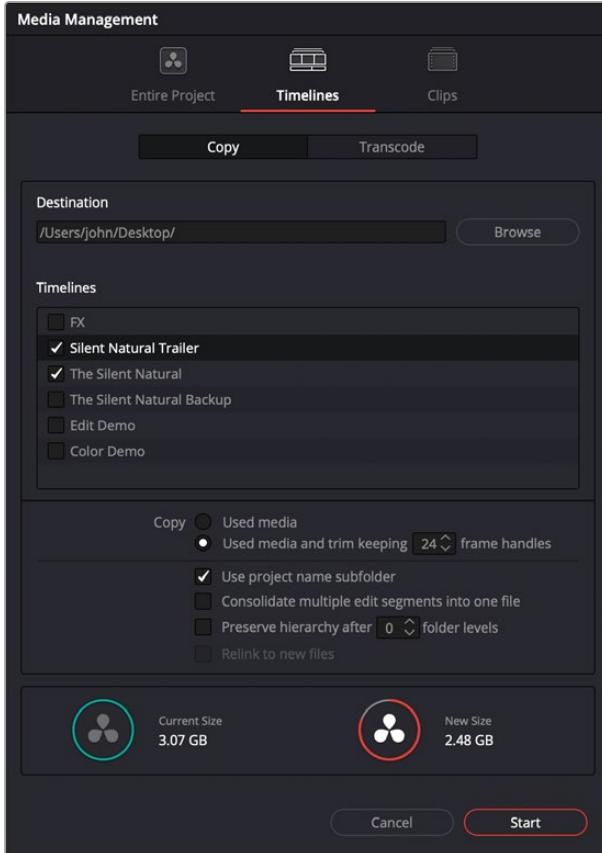
Media Management scope options

- 4** Next, choose which operation you want to perform:
- **Copy:** Creates duplicates of all media associated with clips or timelines at the destination.
 - **Transcode:** Creates duplicates of all media associated with clips or timelines in a new format that you specify; all transcoded clips are written to the same destination.



Media Management operations

- 5** Click the Browse button and use the File Destination dialog to choose a location for the managed media to be written. The file path of this location appears in the Media Destination field.
- 6** Choose the options associated with the operation you selected. If you choose to media manage Timelines, then a Timeline Selection option lets you choose which Timelines you want to include in this operation. The current size of the selected media is listed below, alongside an estimate of the size of the media after the operation you've selected. Depending on which options you select, the estimate may be larger or smaller, but this will show you if you need to change the selected options to achieve a more desirable final size.



Media Management options shown for copying trimmed media from a specific timeline

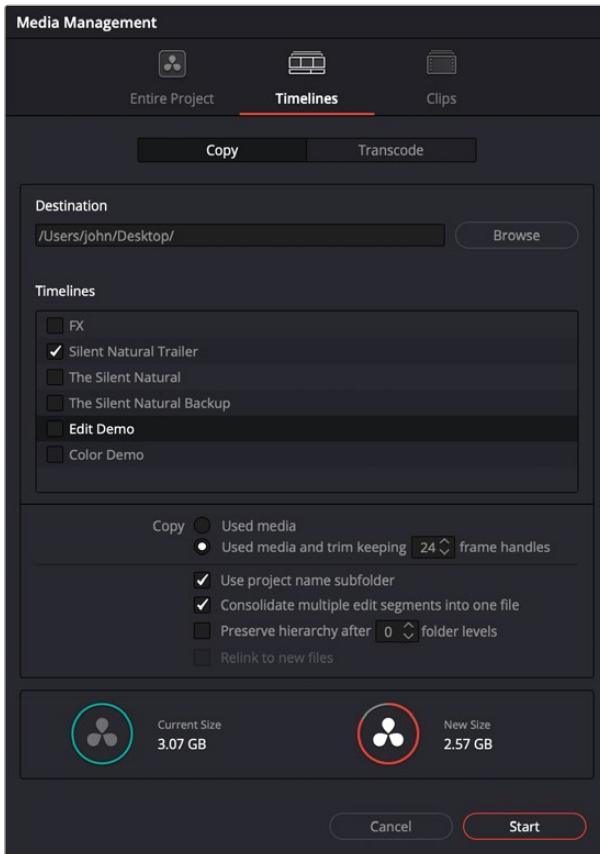
- 7 When you've finished choosing options, click Start. A progress bar appears showing you how long the operation will take.

The following workflow illustrates how you can use Media Management to cut down the amount of media you need to deal with when you're conforming a project imported from elsewhere, and you've been given far more media than you actually need, because you only need what's actually in the timeline you're importing.

To use Media Management to create a consolidated duplicate of media for a project you're conforming:

- 1 Connect the portable drive containing the media to be conformed to your workstation.
- 2 Import the AAF or XML project file you were given into the Edit page, and conform it to the media on the portable drive you connected in step 1. You're only doing this to identify what clips you need to media manage, not because you'll be working off that volume.
- 3 Choose File > Media Management. The Media Management window appears.
- 4 Choose Timelines at the top of the window, and then open the Timeline selection section and turn on the checkbox of the timeline you want to consolidate the media for.
- 5 Click the Browse button and choose the volume you want to write the consolidated media to.

- 6** Choose the following options for consolidating the media. For this operation, you'll want to enable:
- Click the Browse button, and choose the accelerated storage volume you're using for all media you're using with DaVinci Resolve.
 - Choose the “Timelines” Media Management scope, if it's not selected already, to manage all media from the selected timeline.
 - Choose “Copy” to make a duplicate of the media from the portable storage volume to your accelerated storage.
 - Choose “Copy and trim used media keeping 12 frame handles” if you're comfortable with 12 frame handles.
 - Turn on “Consolidate multiple edit segments into one media file” if you don't mind having larger media files that preserve the relationship of what clips come from which single media files. This can make grading simpler later on.
 - Turn on “Relink to new files” to automatically relink the timeline you've selected to the new media that's being generated.



The Consolidate dialog lets you choose how and where to copy the trimmed media.

- 7** When you're done choosing these settings, click Start. A progress bar appears showing you how long the operation will take.

A subset of media used by that timeline is copied to the specified directory, and a DaVinci Resolve Timeline (.drt) is automatically generated that is relinked to the timeline and clips in the Media Pool. You are now ready to continue working on the project.

Continuing Media Management Jobs on Error

DaVinci Resolve has a more user-friendly behavior when dealing with errors during media management operations. In previous versions, DaVinci Resolve would stop and wait for user input immediately upon encountering an error, meaning that if an error happened while you were out at lunch, nothing would happen until you came back. Now, DaVinci Resolve will skip error-flagged files and continue to perform any remaining media management to all the other clips.

Options in the Media Management Window

The different Media Management operations offer different options.

- **Entire Project Copy/Transcode all media:** (Not available for Timelines) Choosing this option copies the full amount of source media for every single clip in the project. If you add more media later, and then use the Copy function again, DaVinci Resolve will only copy the additional files needed to reflect the current Media Pool.
- **Destination:** Click the Browse button to choose a destination to which to copy the managed media. To create a new directory, right-click a Volume icon in the File Browser list, choose New Folder, type a name into the resulting dialog, and click OK.
- **Timeline selections:** If you've selected the Timelines mode of media management, you can open the Timeline Selection controls and turn on the checkbox by each timeline with media you want to include.
- **Copy/Transcode All media:** Copies all media available to that operation.
- **Copy/Transcode Used media:** Only copies media files for clips that are used in a timeline, and copies them in their entirety.
- **Copy/Transcode Used media and trim keeping x frame handles:** Only copies media files that are used in a timeline, but eliminates unused heads and tails except for user-specified handles.
- **Use project name subfolder:** Automatically creates a subfolder named for the project under the destination directory that contains all the copied or transcoded media.
- **Consolidate multiple edit segments into one media file:** This option only becomes available if you've selected "Copy and trim used media" If multiple clips in a timeline come from the same media file, then a single consolidated media file will be generated that contains all frames from all of these clips, along with whatever additional frames lie between them. Even though this option results in more media being copied or moved, it's extremely useful if you're consolidating media that you want to grade using the automatic grade linking of remote versions, as this preserves the original relationship between each Timeline clip and the source media file it's from.

- **Preserve folder hierarchy after x folder levels:** Retains a user-specified depth of the original directory structure used by a clip's corresponding source media file, recreating it when rendering new files for output. The number you select determines how many levels of subdirectories DaVinci Resolve will automatically create within the currently specified "Render job to" directory to match the path used by the source files. Defaults to 0, which creates no matching subdirectories. The number of path levels is defined relative to the head of each media file path.
- **Relink to new files:** (Appears for the Copy operation only) Relinks the selected clips and/or timelines to the new media you've created by copying, wherever you've copied it to.

Options for Transcode Only

The following options appear only when Transcode is the selected Media Management operation.

- **Settings:** Exposes the default controls for the Media Management operation.
- **Video:** Exposes the video codec controls for rendering to all available video formats.
- **Audio:** Exposes the audio codec controls for rendering to all available audio formats.

File Naming When You Consolidate Media

When you're media managing clip-based formats like QuickTime or MXF, if the "Trim Used Media" option is on, and the "Consolidate Multiple Edit Segments Into One Media File" checkbox is off, then timelines that use multiple clips derived from the same media file will generate multiple trimmed media files. To prevent these files from overwriting one another, additional characters are appended to each trimmed media file coming from the same source; which characters are used depends on the video format.

- **For DPX files:** _0, _1
- **For R3D files:** _S000.RDC, _S001.RDC
- **For QuickTime files:** _S000.mov, _S001.mov