



The Cut Page

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Using the Cut Page

The Cut page is a focused environment for fast editing. It's useful in situations where you need to quickly cut a news segment, build an episode of web content, edit a straightforward program, experiment with multiple arrangements of a scene, or put together a first assembly edit.

The Cut page is also a good introductory editing interface for people who are new to editing, as it presents a streamlined set of tools that are fast to learn and simple to use. Whatever your background, you'll find the Cut page to be a valuable addition to your editing experience in DaVinci Resolve.

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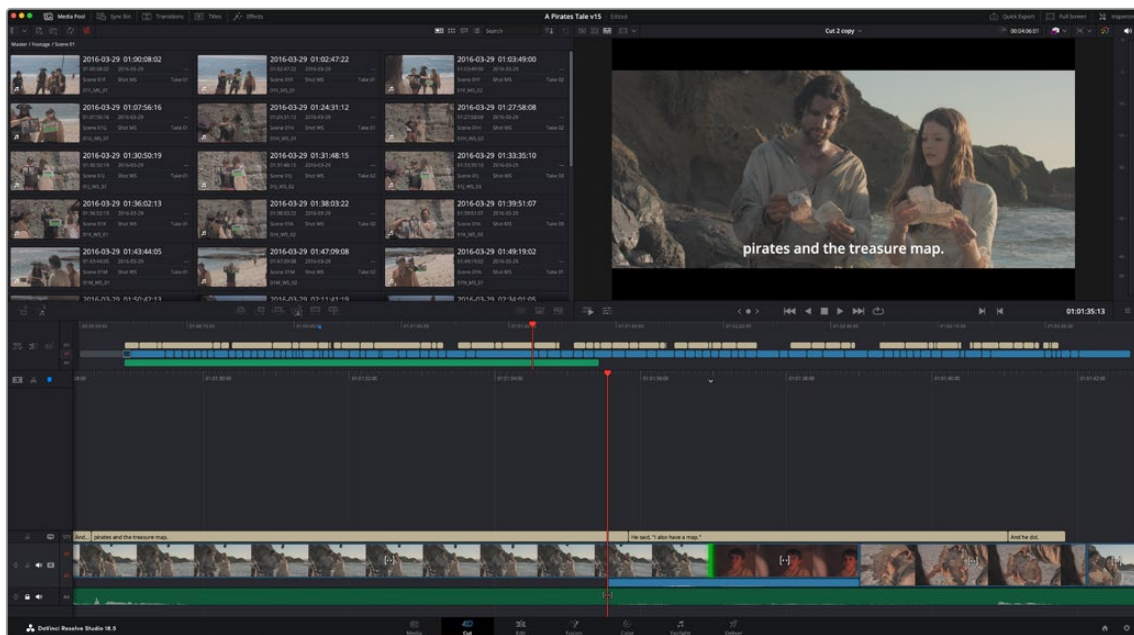
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Overview of the Cut Page

With the addition of the Cut page, DaVinci Resolve now has two editing environments, intended for two different audiences. While the Cut and Edit pages share many of the same panels such as the Media Pool, the Timeline, and the Viewer, the controls that are exposed on the Cut page have been designed for speed, so you can cut professional programs faster than you've ever been able to before.

Overview of the Cut Page User Interface

The default workspace of the Cut page consists of the Media Pool, a single Viewer, and the Timeline area. These three regions let you quickly import and organize clips, edit clips, and even export the result, all from within the Cut page.



The Cut page default workspace with the Media Pool in Metadata view

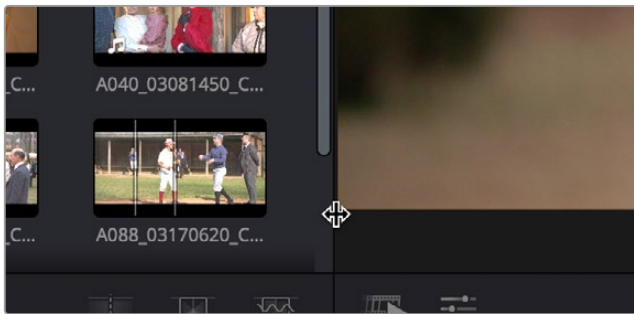
Customizing the UI

A User Interface toolbar at the top of the Cut page lets you hide and show different panels as necessary. For example, you can hide the Media Pool if you wanted more room for the Viewer. You can also replace the Media Pool with other browsers in the Media Pool's default area, showing the Sync Bin, Transitions, Titles, or Effects Browser in order to add those effects to your program in the Timeline. On the right side of the User Interface toolbar you can perform a Quick Export, expand the Viewer to Full Screen, or open the Inspector.

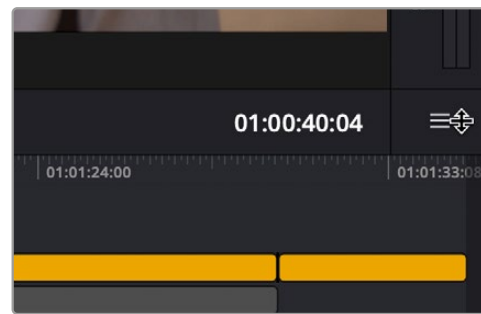


Separate buttons on the left let you open the Media Pool, Sync Bin, Transitions, Titles, and Effects browser.

You can resize the Media Pool and Viewer by dragging the vertical seam that connects them to the left or right, in the process making one panel bigger and the neighboring panel smaller.



The Viewer resize handle



The Timeline resize handle

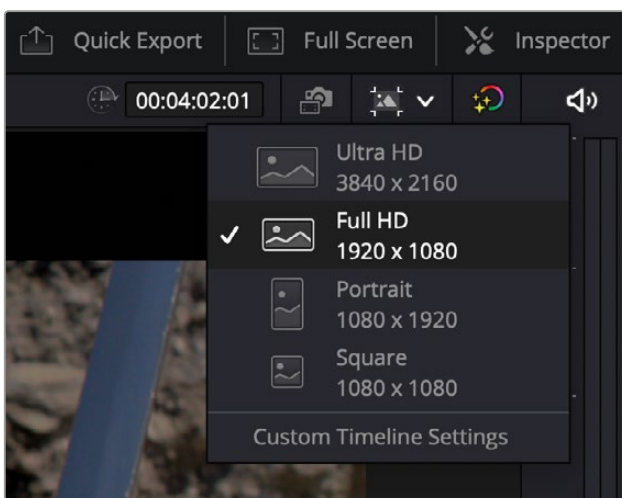
You can also resize the Timeline area by dragging the timeline handle (at the upper right corner of the Timeline) up or down, making more or less room for the Timeline while simultaneously resizing the Media Pool and Viewer areas.

Choose Settings Before You Start

When you first create a new project, you need to define its Timeline settings; you can optionally choose from common presets or a fully custom setup.

Timeline Resolution Quick Menu

This drop-down menu, to the top-right of the Viewer, lets you quickly choose which resolution you want to work at. A Custom option lets you open up the Timeline Settings panel in order to choose your own options. For more information about the Timeline Settings, see *Chapter 6, "Project Settings."*

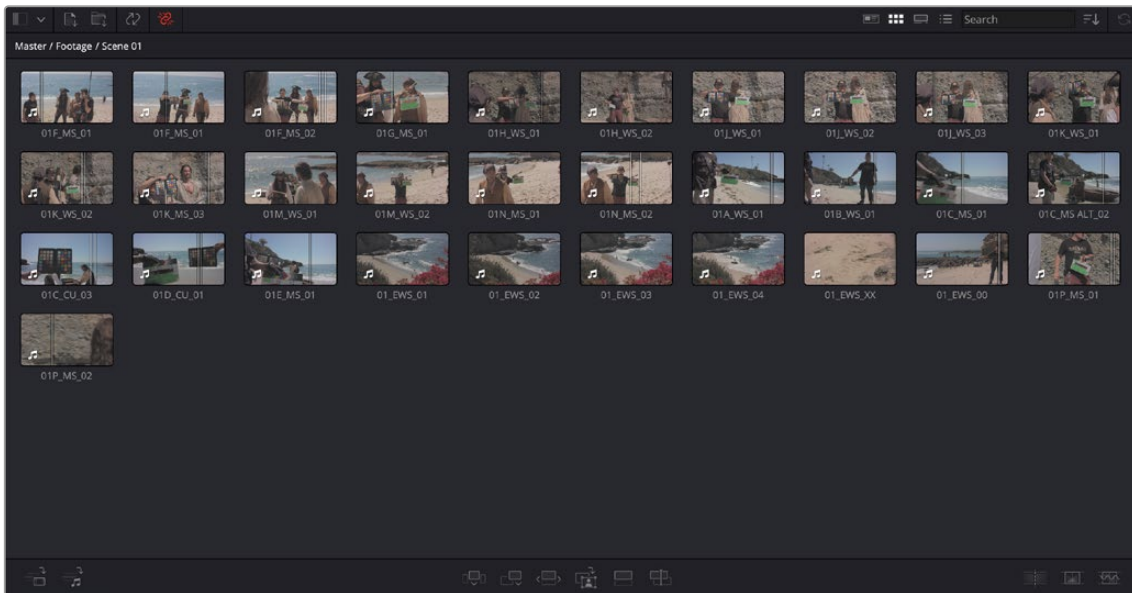


The Project Settings quick menu

The Media Pool

The Media Pool contains all video clips, audio clips, graphics, and other media that you import into your project. You can create bins with which to organize all of this media, to make it easier to find what you need quickly. These bins are opened via the bin drop-down at the upper left-hand corner.

Each piece of media you import, whether it's video, audio, or graphics, appears as an individual clip and can be selected, scrubbed for fast viewing, reorganized into bins, opened into the Viewer for playback, or edited into a timeline using the edit buttons or via drag and drop.

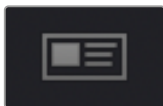


The Media Pool in Thumbnail view

Three buttons at the upper right of the Media Pool let you see your clips in different ways, depending on what you need to accomplish.



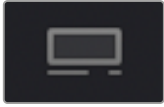
The Viewing Modes buttons



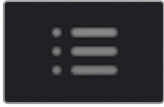
Metadata view: Each clip is represented by its own card with a scrubbable thumbnail and basic clip metadata information visible. This view is designed to have more metadata information than a thumbnail view but more targeted information than the List view.



Thumbnail view: Each clip is represented by a scrubbable thumbnail. Hover the playhead over each thumbnail and move it left and right to see the clip's image play, and use the I and O keys to mark sections of a clip that you want to use. Clicking on the lower right corner of a thumbnail reveals the clip's metadata.



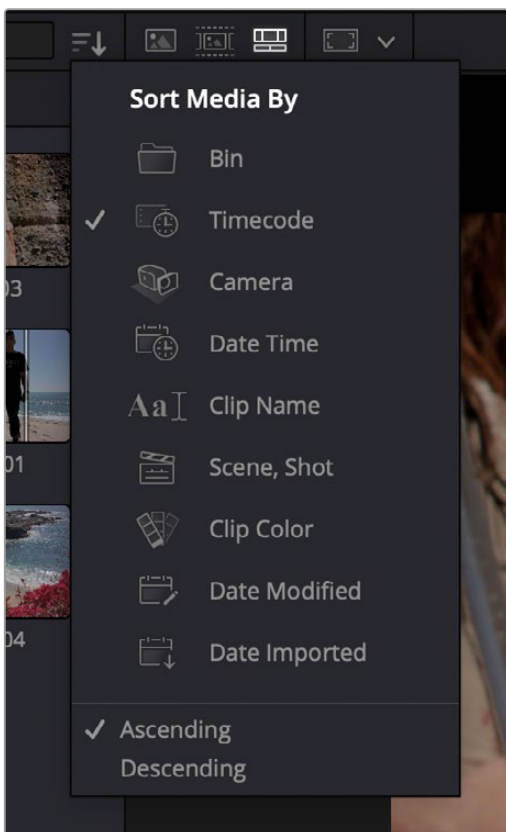
Filmstrip view: Each clip is represented by a filmstrip of consecutive frames the length of the Media Pool. Hover the playhead over the clip and move it left and right to see the clip's image play, and use the I and O keys to mark sections of a clip that you want to use.



List view: Each clip appears as an item in a multi-column list showing a variety of metadata about each clip. In List view, you can click the header of any column to sort the contents by that column's information (clicking again toggles the sort order between Ascending and Descending). Scrolling right reveals additional columns of information.

A Sort Media By drop-down menu lets you choose which criteria defines the order in which clips in the Media Pool are arranged. Options include: Timecode, Camera, Date Time, Clip Name, Bin, Scene Shot, Clip Color, Date Modified, Date Imported, and Online Status. You can choose to sort in Ascending (bottom to top) or Descending (top to bottom) order.

Lastly, a search field lets you type a term you want to use to find one or more clips that match that criteria. When you type anything, the contents of the Media Pool shrink to show only clips that match your criteria.



The Sort Media By drop-down menu

The Viewer

The Viewer lets you see clips from the Media Pool, or clips in the Timeline, and has numerous controls to control what you see and how things play.



The single Viewer in the Cut page

The Viewer has four mode options. Which option is currently in use can be seen, and switched, by four buttons in the upper lefthand corner of the Viewer.



The Viewer modes buttons

The Different options are entered automatically by various actions (from left to right):

- You can double-click any clip to open it into the Viewer as a Source Clip.
- You can view an entire bin full of clips in the Source Tape.
- You can play your edited program in the Timeline.
- You can select various framing guides and safe areas for the Viewer.

Playing Clips and Navigating the Timeline

Several controls sit at the bottom of the Viewer. These let you play through and otherwise navigate clips and the Timeline in different ways. These controls are described from left to right.



The toolbar at the bottom of the Viewer

- **Fast Review button:** Intended to help you watch through a large collection of media quickly, clicking this button begins accelerated playback through the Source Tape or through the Timeline, where the speed of playback is relative to the length of each clip you're playing through. Long clips play faster, whereas shorter clips play closer to real time. In this way, you can watch a lot of material really quickly.
- **Tools button:** The Tools button reveals a variety of controls for transform, crop, audio, speed effects, camera stabilization and lens correction, dynamic zoom, and compositing, covered in more detail later in this chapter.
- **Jog control:** Clicking and dragging within the jog control lets you scrub very precisely through the content of the Viewer.
- **Transport controls:** A set of Previous Edit (Up Arrow), Stop (Spacebar), Play (Spacebar), Next Edit (Down Arrow), and Loop Playback (Command-/) buttons constitute clickable controls for controlling playback of clips and the Timeline. Each button has a matching keyboard shortcut.
- **Mark In/Out:** Clickable controls to set In and Out points respectively.
- **Playhead timecode:** A number field shows you the timecode value at the playhead of a clip or of the Timeline to give you a numeric reference for where you are.

Tools

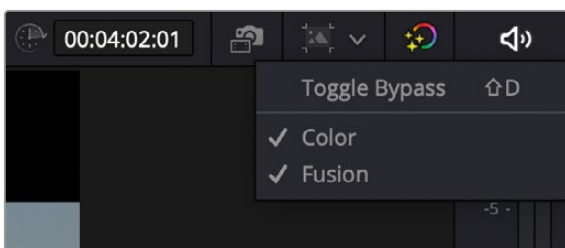
Clicking the Tools button reveals a toolbar that you can use to add and edit clip effects, right within the Viewer with no Inspector needed. The Tools button reveals a variety of controls for transform, crop, audio, speed effects, camera stabilization and lens correction, dynamic zoom, and compositing, covered in more detail later in this chapter.



The Tools bar shown opened

Bypass Color Grades and Fusion

The Bypass Color Grades and Fusion Effects button/drop-down lets you turn off all grades and effects that you may have applied in the Color page and/or Fusion page in order to improve playback performance on low power computers. Click the button (Shift-D) to disable or reenale grading and effects, or right-click this button to access a menu that lets you choose which things you want this button to control.



The Bypass Grades and Fusion button, shown being right-clicked to view its options

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

Audio Meter



An audio meter to the right of the Viewer shows you a graphical representation of the audio levels playing in the current clip or in the Timeline as you play through the Viewer, via animated vertical bars that are tinted to indicate how loud the levels are:

- Green indicates safe levels
- Yellow indicates levels that are peaking at approximately safe levels
- Red indicates levels that may be peaking at levels that are too high, risking clipping the signal and causing distortion

These animated bars serve as a visual reference you can use to help you adjust the volume of different clips to create a pleasing balance, and to make sure you don't exceed the maximum desired level and introduce clipping. A speaker button at the top of the meters lets you mute or unmute audio playback.

The Audio Meter showing an audio signal

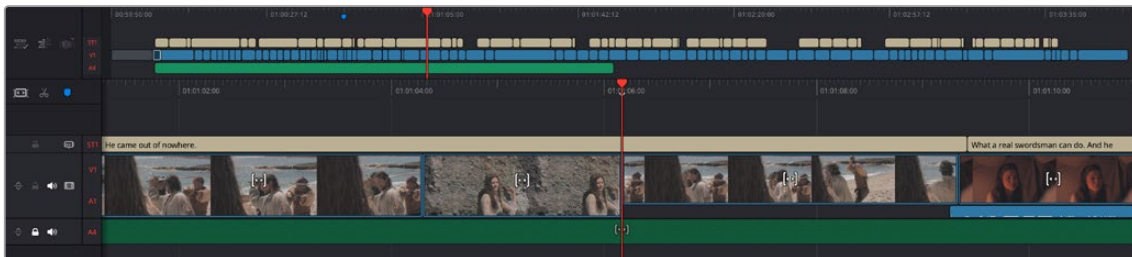
The Timeline

The word "timeline" refers both to an edited sequence of clips, which constitutes a program that is stored in the Media Pool, and to the area of the Cut page interface where you can open this sequence of clips to see its contents, and for playback and editing.

Timelines are created and stored in the Media Pool, along with all of your other clips. However, each timeline is assembled and edited in what is sometimes referred to as the Timeline Editor. Different pages of DaVinci Resolve show your timeline differently according to the special requirements of each page focusing variously on different methods of editing, grading, compositing, and audio.

However, while the interface of the Timeline Editor changes from page to page, the actual contents of the Timeline are identical, because each page's Timeline Editor is in fact showing the exact same Timeline that is currently open. This means that the advanced user can use every page of DaVinci to do different things to the same Timeline, with only the interface changing to make different functions possible in different pages.

For the Cut page user, the Timeline is divided into an Upper Timeline at the top, and a larger and more detailed Timeline Editor showing a zoomed in portion of the Timeline around the playhead at the bottom. Working together, these two views of your edited sequence make it possible to navigate your entire project and cut in great detail.



The Timeline of the Cut page, comprising the Upper Timeline and the zoomed in Timeline

Upper Timeline

The Upper Timeline always shows the entire program within the full width of your computer's display. The Upper Timeline's playhead is always free, which makes it easy to use your pointer to scroll around the entire program by dragging within the Timeline Ruler at top. This also serves as a visual reference for keeping track of where you are in your program while you're editing within the zoomed-in Lower Timeline below.

Despite the Upper Timeline's relatively small size, you can still edit in it, with most editing and trimming functions that are available in the Lower Timeline also available in the Upper Timeline. Most interestingly, it's also possible to drag clips from one part of your program in the Lower Timeline, to another area of your program in the Upper Timeline, and vice versa.

A set of small numbers to the left of the Upper Timeline lets you click a number to choose the currently selected track; this selection is mirrored on the zoomed in timeline below. The currently selected track affects where incoming clips will be placed when editing, among other things.

Lower Timeline

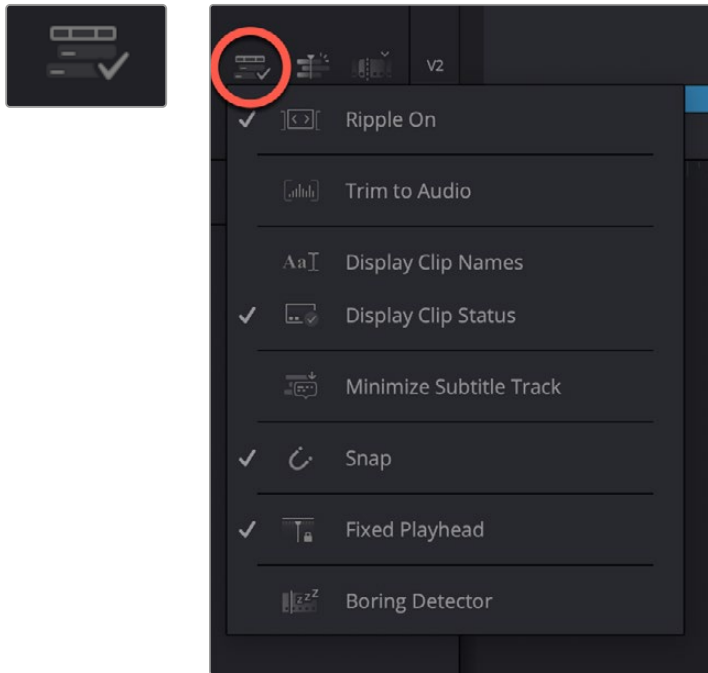
The zoomed in Lower Timeline (often referred to simply as "the Timeline") shows you a close-up view of the portion of the currently open timeline that immediately surrounds the playhead. The zoom level is fixed; you cannot change it. The zoomed-in lower timeline is intended for detailed editing, but clips can be dragged between the Timeline and Upper Timeline for fast reordering of clips across the entire duration of your program.

Toolbar

The Toolbar contains several editing functions grouped together in Action and Option menus. These functions are accessed by clicking on the appropriate icon and selecting a function from the drop-down menu.

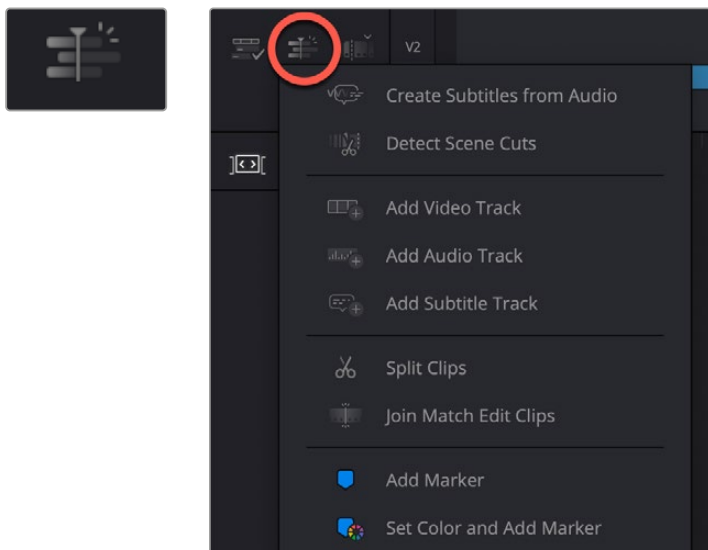
The menu icons are:

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



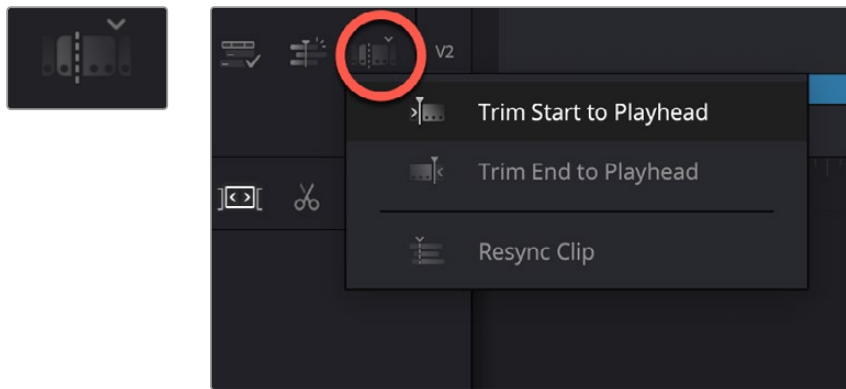
All of the Timeline Options functions

- **Timeline Actions:** The tools under this icon are generally used to add new items or make modifications to the Timeline.



All of the Timeline Actions functions

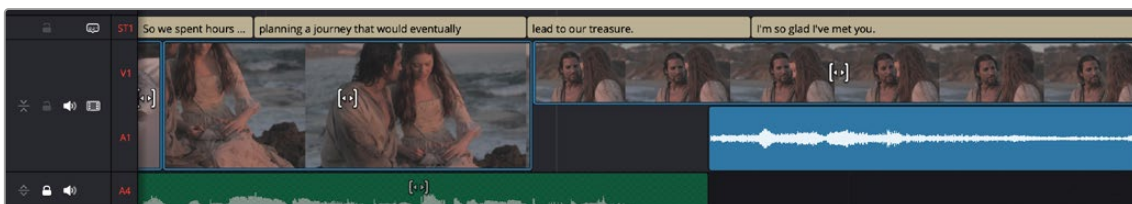
- **Edit Actions:** The tools under this icon are used to adjust clips on the Timeline.



All of the Edit Actions functions

Tracks

The Timeline is divided into multiple tracks, with each track capable of holding a sequence of clips in order to create a program. The main tracks, which are labeled numerically, combine a clip's video and audio into a single item in the Timeline, for simplicity. Editing the In or Out point of a clip edits the video and audio together.

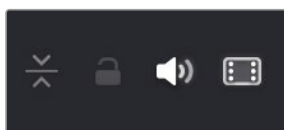


Cut Page Timeline tracks. Track ST1 shows a subtitle track. Track V1 shows both Video only and combined Video+Audio clips in an enlarged view. Track A4 shows a separate audio track.

TIP: In the Edit page, Video+Audio clips are presented as separated Video and Audio items on different tracks. When you open the Fairlight page, audio is presented on tracks with lanes, where each audio channel can be seen. In this way, each page gives you different sets of controls over the contents of the Timeline that are appropriate for each page.

Track Header Controls

The track controls, in order, allow you to enlarge a track, lock the track for edits, mute audio, and enable or disable video for the track.



Controls to enlarge, lock, mute audio, and disable video for the track

The Importance of Track 1

Each track in the Timeline of the Cut page is designed to carry specific parts of your program. Track 1 is intended for the primary video+audio of your program, often called the “A-roll,” since these are the primary shots comprising the timing and pacing of the story you’re telling. Adding, deleting, inserting, trimming, or otherwise rearranging clips on Track 1 results in the rest of the edited timeline being automatically rippled to accommodate the change you’ve made, with clips to the right of the changed area moving left to fill the gap of a deleted or shortened clips, or moving right to make room for an inserted or lengthened clip.

Tracks 2 and Above

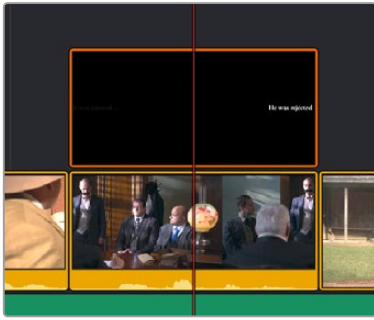
Tracks 2 and above are intended for “B-roll,” which is additional footage you stack on top of other clips in Track 1 to illustrate what someone is saying in the audio of Track 1, or for superimpositions used for compositing effects that combine two images together in creative ways. Moving or resizing clips on Track 2 and above only moves or resizes that one clip; other clips in the Timeline are not rearranged and the Timeline is not rippled when you do this.

For instances where multiple video clips overlap one another on multiple tracks, the video clip on the highest track obscures those on lower tracks, meaning that only the top clips appear during playback. This is useful when you’re experimenting with rearranging multiple clips in a complex scene. For example, you could be editing a scene where an interview clip is on the bottom track, and various b-roll clips are edited on tracks above the interview so you can freely rearrange them in different ways, while it’s always easy to reveal the speaker on the bottom track by leaving a gap in the superimposed b-roll clips.



Editing a scene with multiple superimposed clips

However, if you superimpose video-only or video+audio clips for compositing, you can use the composite modes and the opacity slider found in the Composite section of the Viewer Tools controls to mix multiple images together in different ways for artistic effects.

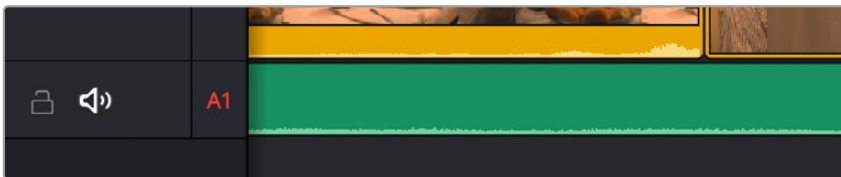


(Left) Superimposing clips you want to composite, (Right) Creating compositing effects with multiple superimposed clips

You can add additional Video+Audio tracks, when necessary, by either dragging a clip to the undefined gray area of the Timeline above the other existing tracks to make a new track automatically, by clicking the New Track button at the upper lefthand corner of the Timeline, or by right-clicking in the timeline header area and choosing “Add Video Track” from the contextual menu.

Audio-Only Tracks

You can also edit audio-only clips such as music, narration, or sound effects, onto separate audio-only tracks underneath, which are then labeled A1, A2, A3, etcetera. If you drag an audio clip to the undefined gray area of the Timeline below the other existing tracks, an audio-only track will automatically be created.



Audio-only tracks in the Cut page Timeline

Gaps

Because Track 1 is meant to hold the principal clips for your program, the Timeline automatically ripples itself to close gaps that would otherwise result when you move or rearrange clips in Track 1, and superimposed clips in Tracks 2 and above move to keep in sync with the clips they’re superimposed over. However, you can move superimposed clips on Tracks 2 and above to place them wherever you want, and gaps will be left between multiple clips on the same superimposed track so they can be edited at specific places.

Timeline Controls

The Timeline controls in the upper left-hand corner of the Timeline let you enable/disable Rippling on Track 1, Split a clip at the playhead position, and create Markers that let you keep track of important frames of the Timeline.



The Cut page Timeline controls

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 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 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.

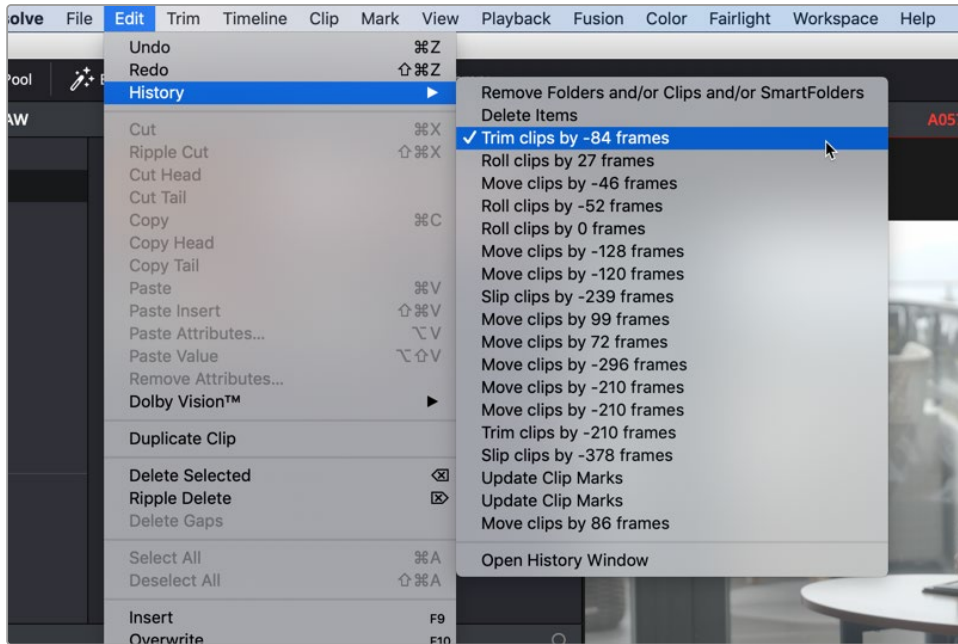
To simply undo or redo changes you've made one at a time:

- 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.

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.

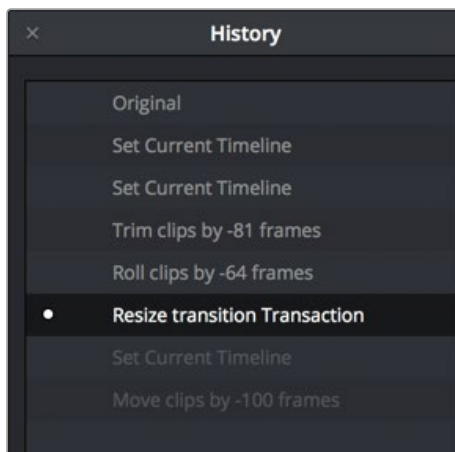


The History submenu, which lets you undo several steps at once

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 History 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.

Importing and Organizing Media in the Cut Page

Before you can start editing, you need to import the clips you want to use for your program into the Media Pool, which is the central repository of clips in your project.

This can include video, audio, and graphics files in any format that's supported by DaVinci Resolve.

Once imported, the Media Pool on the Cut page has many organizational tools you can use to make your project's media faster for you to access and sort through as you find the clips you need to create your program.

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Importing Media

Two Import buttons at the top of the Media Pool let you use import dialogs to select media you want to bring into the Media Pool for use in your project.



The Import Media and Import Folder buttons

To import individual clips:

- 1 Do one of the following:
 - a) Click the Import Media button.
 - b) Press Command-I.
 - c) Right-click the Media Pool and choose Import Media.
- 2 Use the Import dialog to select one or more clips to import, and click Open.
- 3 If you're prompted to change the frame rate of a currently empty project to match that of the incoming media, click Change.

Each piece of media you import, whether it's video, audio, or graphics, appears as an individual clip in the Media Pool. You can also import an entire folder full of media as a bin in the Media Pool.

To import a folder full of media into a bin:

- 1 Click the Import Media Folder button.
- 2 Use the Import dialog to select a folder containing media you want to import, and click Open.
- 3 If you're prompted to change the frame rate of a currently empty project to match that of the incoming media, click Change.

Each folder you import appears as a bin in the Media Pool. Double-clicking a bin opens its contents into the Media Pool, enabling you to view each individual clip.

TIP: For additional media import features, you can use the Media page, with its Media Storage browser and more feature-rich version of the Media Pool.

Removing Media

If there are clips you no longer want in your project, you can simply select them and press the Delete or Backspace keys. A Dialog asks if you want to remove the selected clip or clips; clicking Remove will remove them from the Media Pool, while leaving them intact on your media storage device.

If you want to remove every clip in the currently open bin (even the Master bin), you can also right-click anywhere within the Media Pool and choose Remove All Clips in Bin from the contextual menu.

Organizing Media into Bins

For short projects, having all your clips together in a single bin (the Master bin is the top level of the Media Pool) can be fast. However, for longer projects, organizing your media into subsets of clips within individual bins can make browsing each bin's contents using the Source Tape of the Viewer more manageable.

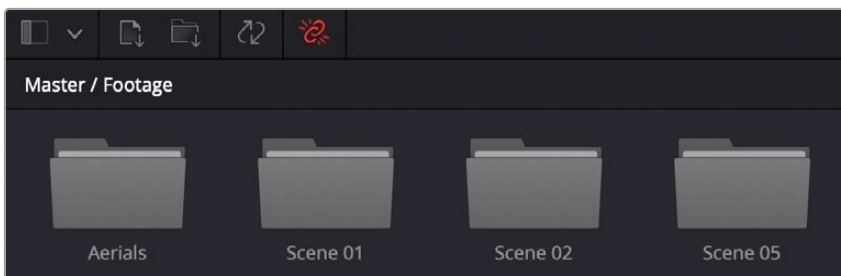
TIP: You can move clips you know you don't want, such as instances where the camera rolled on unusable scenery or moments, or completely unusable takes, into another bin so those clips don't present themselves in the Source Tape for bins containing clips you want to use.

Master Bin

At the top level of your project hierarchy is the Master bin. The Master bin contains all of the media content (clips, timelines, graphics, other bins, etc.) for your project. In the Cut page, the Master bin also shows all of your project's timelines for easy access, regardless of where they've been created in your project.

Creating and Using Bins

You can create bins with which to organize your media by choosing File > New Bin (Shift-Command-N), or by right-clicking in the Media Pool and choosing New Bin from the contextual menu. You can create bins inside of other bins, and in so doing hierarchically organize the clips you need in a variety of ways.

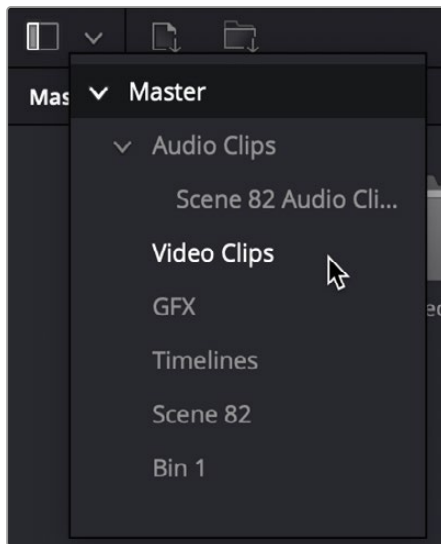


Bins seen in the Media Pool

Once you've created a bin, you can move one or more selected clips into it via drag and drop, just as you would on the desktop of your operating system's file manager.

Opening Bins

Any visible bin in the Media Pool can be opened by double-clicking it, or by clicking the Bin drop-down at the upper left-hand corner of the Media Pool and choosing a bin to open from the menu (they're shown as a hierarchical list). When opened, a bin's contents fill the Media Pool, and a path indicator at the top of the Media Pool lets you see how many levels deep you are in cases where you have bins inside of bins. You can click any level of this path to jump back up the hierarchy, or you can choose another bin from the Bin drop-down.



The hierarchical Bin drop-down menu

Create Bin With Selected Clips

You can also create a bin and put clips into it in one step. Select one or more clips in the Media Pool, right-click one of the selected clips, and choose Create Bin With Selected Clips from the contextual menu. A new bin appears called "Bin X" (where X is the next number that's available) displaying the selected clips it now contains.

Renaming Bins

To rename a bin, click its name once, then slowly click a second time (clicking too fast is a "double-click" which opens the bin), and the name becomes highlighted, ready for editing. You can also right-click a bin and choose Rename Bin from the contextual menu, which also highlights the bin's name, ready for editing. When you're done typing a new name, press Return (or Enter).

Import and Export Specific DaVinci Resolve Project Bins

You can import/export specific bins from one DaVinci Resolve project to another, allowing you to pass bins quickly between projects and workstations that have access to the same media. All Metadata, In/Out points, Timelines, etc. are transferred along with the clips in the bin, but none of the actual media files are included.

To export bins from the Media Pool:

- 1 Select one or more bins in the Media Pool.
- 2 Right-click the selection and choose “Export Bin,” or choose File > Export > Export Bin.
- 3 Choose where to save the DaVinci Resolve Bin file (.drb) in the file system dialog, and click Save.

To import bins into the Media Pool:

- 1 Right-click in the Media Pool and choose “Import Bin,” or choose File > Import > Import Bin.
- 2 Do one of the following:
 - Choose a DaVinci Resolve Bin file (.drb) from the file system dialog.
 - Double click the .drb file in your file system.

The bin or bins will appear in the Media Pool. Any bins imported this way will have the word “import” appended to their name, to avoid duplicate names. If you import a bin that contains clips that were already in the Media Pool, the potentially duplicate clips are excluded from the import and instead relinked to the media referenced by your project. This keeps your Media Pool tidy. However, if the bin or bins have been moved to another computer, you may have to relink offline media.

Import and Export Individual DaVinci Resolve Timelines

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 is 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 drop-down 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. 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 described above.

ATEM Switcher Integration

If you've recorded a multi-camera event with the ATEM Mini Pro ISO or ATEM Mini Extreme ISO, it is possible to move that entire project into DaVinci Resolve. ATEM projects include the master program clip, as well as each individual camera's "ISO" (isolated) clips, and each camera angle's audio recordings. All transitions, timecode, and camera number metadata are imported, as well as whatever graphics were stored in the ATEM's Media Pool. Once the project is loaded, you can seamlessly continue your multi-camera edit in the Cut page.

This initial live recording coupled with later post-production editing workflow is often referred to as "Live to Tape." Live to Tape gives you the all the benefits of the spontaneity, verisimilitude, and fast turnaround inherent to live production but with the added benefit of being able to later add and remove sections and adjust the editorial flow of the program. Live to Tape also allows you to fix simple mistakes, such as choosing a better camera angle, or replacing a title or graphic with an updated version. Because of this flexibility, Live to Tape is the preferred method of recording almost all broadcast network game shows, current events shows, and sitcoms. Essentially, any type of multi-camera production that does not primarily depend on being live in real time for its main purpose (like news or sports) is shot Live to Tape instead.

The Live to Tape workflow requires the following elements, all of which are provided by the ATEM Mini Pro ISO and ATEM Mini Extreme ISO.

- A program master clip that was shot live, including all the mixed camera angles, audio, transitions, etc. from the beginning of the show until the end, for reference.
- Separate ISO recordings from each camera used to shoot the program master clip. An ISO is an isolated (ISO) camera recording of the entire show from that camera's perspective only, from the beginning to end and without interruption.
- A timeline of the live recorded show that indicates where all the camera angles were switched, what transitions were used, and what graphics were involved.

Importing ATEM Mini Pro ISO Projects

Importing an ATEM project essentially rebuilds the master program clip as a timeline inside DaVinci Resolve from the camera ISOs, transitions, and graphics. This new timeline will match the master program clip in every way, just created from the original source materials rather than as a single compressed video file.

Refer to your ATEM's specific documentation for how to set up ISO recording, but one important setting is to make sure that you've checked the "ISO Record All Inputs" setting in the ATEM software control before you start shooting.

To import an ATEM Mini Pro ISO Project:

- 1 (Before you shoot) Check the "ISO Record All Inputs" setting in the ATEM software control.
- 2 At this point, record your show using the ATEM device, and note the project's folder location.
- 3 Select File > Import Project.
- 4 Select the DaVinci Resolve Project file (.drp) in the ATEM project folder, in the file browser.
- 5 Click on the Open button.



An ATEM Mini Pro project opened in the Cut page Sync bin

Relinking Blackmagic Camera Masters to ATEM ISOs

The ATEM records each camera's ISO as an H.264 HD video stream, which may not be of high enough resolution or quality for some purposes. It's possible to instantly switch your ATEM camera ISOs to the original camera recordings made in a Blackmagic Camera instead. This workflow enables the highest visual quality of Blackmagic RAW and the ability to output in higher resolutions (such as 4K or UHD) than are supported by the ATEM internally. Essentially, the ATEM can reference an additional set of higher quality ISOs recorded in the cameras, rather than those from the ATEM itself. This feature is only available using Blackmagic Cameras.

This workflow requires one more step in the process, namely making sure that you have sufficient recording space attached to each camera to record the show in its entirety. Refer to your ATEM's specific documentation for how to set up ISO recording and camera control, but one important setting is to make sure that you've checked the "ISO Record All Inputs" and the "Record in All Cameras" settings in the ATEM software control before you start shooting.

To relink to Blackmagic Camera masters from ATEM ISO recordings:

- 1 (Before you shoot) Check the “Record in All Cameras” setting in the ATEM software control.
- 2 (Before you shoot) Check the “ISO Record All Inputs” setting in the ATEM software control.
- 3 At this point, record your show using the ATEM device and note the project’s folder location.
- 4 Copy all the resulting camera masters from each camera’s memory card to the ATEM project’s “Video ISO Files” folder, and then import the project into DaVinci Resolve.
- 5 DaVinci Resolve automatically creates a separate Blackmagic RAW folder in your project and moves all the camera masters to that folder.
- 6 Click the “Switch to Camera Originals” button in the Cut page Viewer to instantly switch between referencing the ATEM H.264 ISOs and the Blackmagic Camera masters.



The Show Camera Originals button

Once your project is imported successfully into DaVinci Resolve, it can be edited using the variety of specialized Multicam editing tools found in the Cut page, including the Sync Bin, Live Overwrite, and the DaVinci Resolve Speed Editor. For more information on using these tools, see *Chapter 28, “Fast Editing in the Cut Page.”*

Media Pool Views

Once you’ve imported some clips into the Media Pool, three controls at the upper right-hand side let you control how they look, depending on what you need to accomplish.



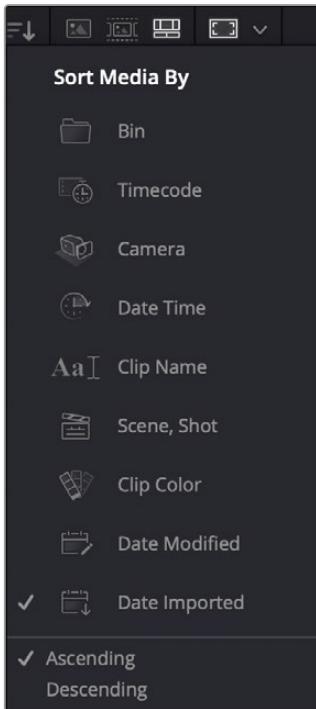
The View Mode buttons

Metadata View

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.

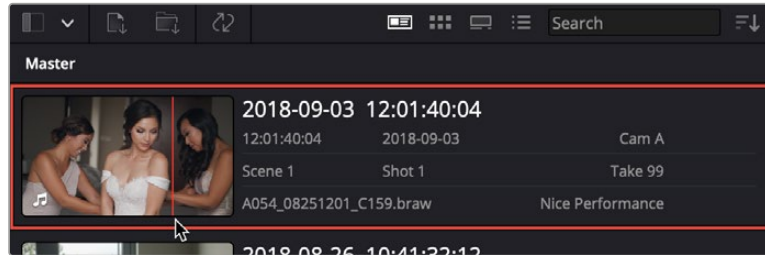
The metadata fields of the Metadata view (from the top down):

- **Thumbnail:** A scrubbable thumbnail image of your clip.
- **Row 1:** A main description field that is variable and determined by the sort order selection.
- **Row 2:** Start Timecode, Date Created, Camera #.
- **Row 3:** Scene, Shot, Take.
- **Row 4:** Clip Name, Comment.



The Media Sort options

The strength of the Metadata view is the automatic clustering of your clips in the Source Tape, based on the sort order you choose in the Media Pool Sort By menu at the very upper-right corner of the Media Pool. It is also possible to use these sort options in the Thumbnail, List, and Filmstrip views as well.

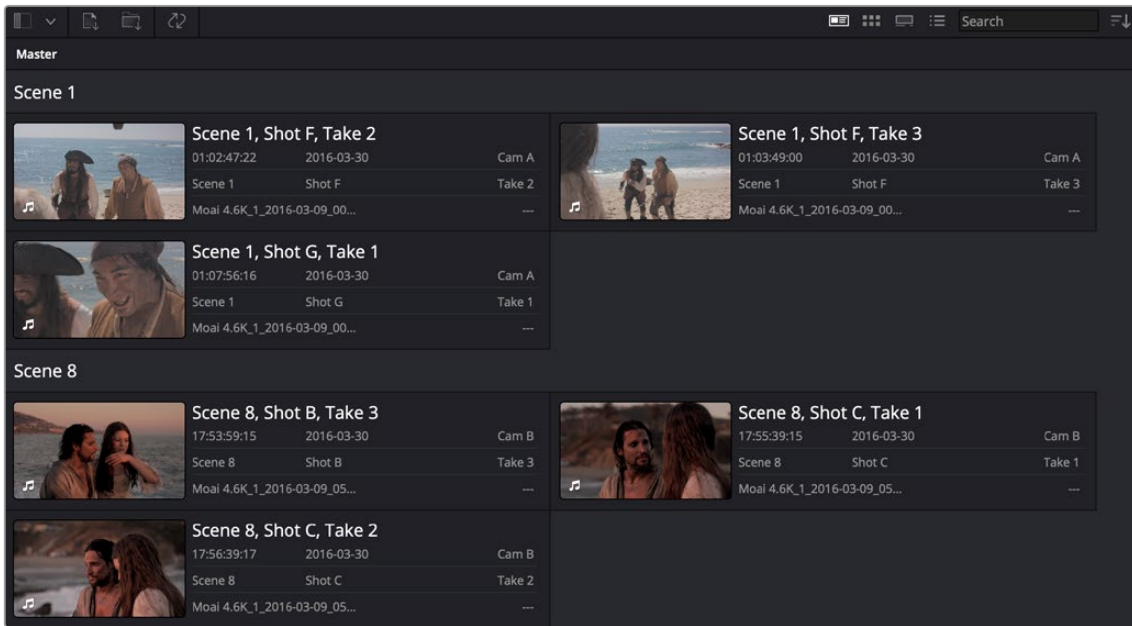


The Metadata View icon view (highlighted icon in the top bar), showing the thumbnail being scrubbed next to the clip's metadata

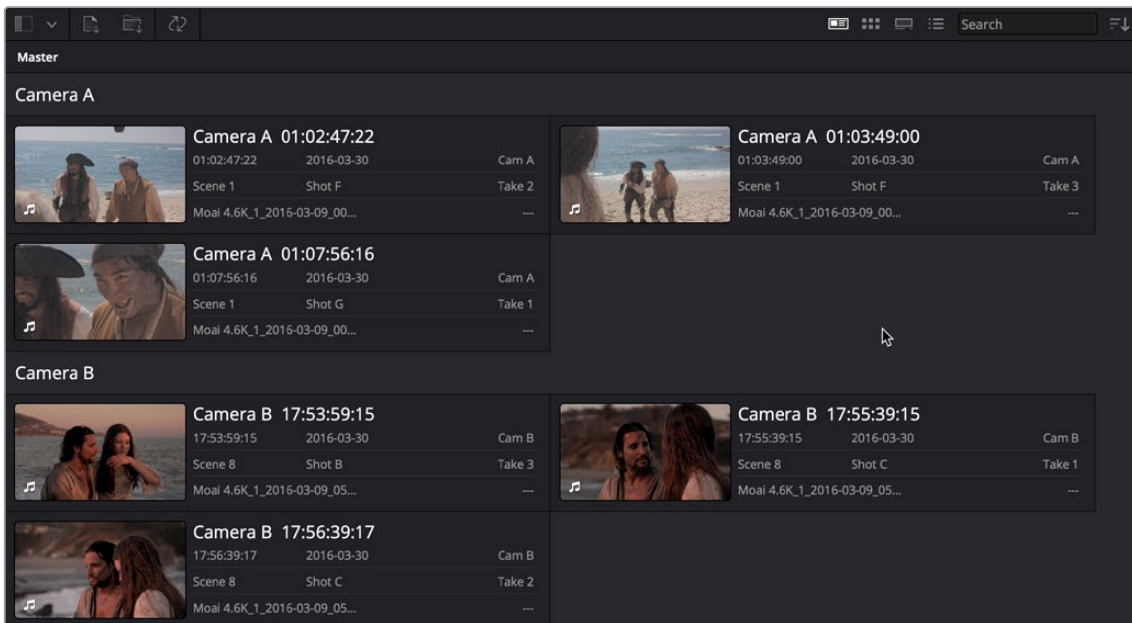
The sort modes available in the Metadata view are:

- **Bin:** This mode clusters the clips by bin, changes the main description field to clip name, and orders the list by timecode.
- **Timecode:** This mode clusters the clips by creation date, changes the main description field to creation date and start timecode, and orders the list by timecode.
- **Camera:** This mode clusters the clips by Camera #, changes the main description field to camera # and start timecode, and orders the list by timecode.
- **Date Time:** This mode clusters the clips by day, changes the main description field to creation date and file name, and orders the list by timecode.
- **Clip Name:** This mode clusters the clips by the first letter of the clip name in alphabetical order, changes the main description field to clip name, and orders the list by timecode.
- **Scene, Shot:** This mode clusters the clips by scene, changes the main description field to scene-shot-take, and orders the list by scene-shot-take.
- **Clip Color:** This mode clusters the clips by clip color name, changes the main description field to creation date and start timecode, and orders the list by timecode.
- **Date Modified:** This mode clusters the clips by day, changes the main description field to creation date and file name, and orders the list by the last time the clip was modified by the OS filesystem.
- **Date Imported:** This mode clusters the clips by day, changes the main description field to creation date and file name, and orders the list by the date the clip was added to the Media Pool.
- **Ascending:** Orders the Media Pool from lowest numerical value to highest, and alphabetically from A to Z.
- **Descending:** Orders the Media Pool from highest numerical value to lowest, and alphabetically from Z to A.

Each different sort mode changes the main description field on the card and re-arranges the Source Tape to reflect the selected organization method.



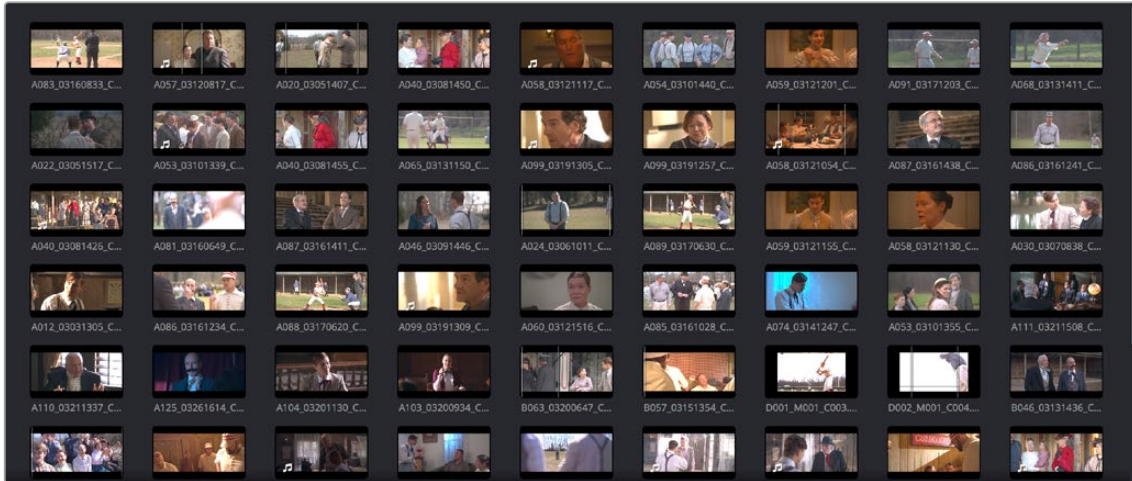
The Metadata view with clips sorted by Scene-Shot-Take



The Metadata view with the same clips sorted by Camera

Thumbnail View

Each clip is represented by a scrubbable thumbnail. Hover the playhead over each thumbnail and move it left and right to see the clip's image play, and use the I and O keys to mark sections of a clip that you want to use. Hover scrub can be enabled and disabled using the Media Pool option menu on the Edit page.



The Icon View mode

Filmstrip View

Each clip is represented by a filmstrip of consecutive frames the length of the Media Pool. Hover the playhead over the clip and move it left and right to see the clip's image play, and use the I and O keys to mark sections of a clip that you want to use.



The Filmstrip View mode

List View

Each clip appears as an item in a multi-column list showing a variety of metadata about each clip. In list view, you can click the header of any column to sort the contents by that column's information (clicking again toggles the sort order between Ascending and Descending). Scrolling right reveals additional columns of information.

File Name	Reel Name	Clip Name	Start TC	End TC	Duration	In	Out	Start	End	Frames	Type	Resolution
<input type="checkbox"/> A083_03160833_C003.mov		A083_03160833_C003.mov	11:35:29:20	11:35:31:05	00:00:01:09			0	32	33	Video	2048x858
<input type="checkbox"/> A057_03120817_C009.mov		A057_03120817_C009.mov	10:19:29:10	10:19:32:03	00:00:02:17	10:19:30:06	10:19:30:20	0	64	65	Video + Audio	2048x858
<input type="checkbox"/> A020_03051407_C006.mov		A020_03051407_C006.mov	16:09:19:02	16:09:23:04	00:00:04:02	16:09:19:12	16:09:22:17	0	97	98	Video	2048x858
<input type="checkbox"/> A040_03081450_C006.mov		A040_03081450_C006.mov	16:52:12:19	16:52:17:16	00:00:04:21			0	116	117	Video + Audio	2048x858
<input type="checkbox"/> A058_03121117_C003.mov		A058_03121117_C003.mov	13:20:15:08	13:20:17:06	00:00:01:22			0	45	46	Video + Audio	2048x858
<input type="checkbox"/> A054_03101440_C005.mov		A054_03101440_C005.mov	16:45:56:12	16:45:59:21	00:00:03:09			0	80	81	Video	2048x858
<input type="checkbox"/> A059_03121201_C003.mov		A059_03121201_C003.mov	14:02:27:16	14:02:29:08	00:00:01:16			0	39	40	Video	2048x858
<input type="checkbox"/> A091_03171203_C005.mov		A091_03171203_C005.mov	15:06:09:06	15:06:12:01	00:00:02:19			0	66	67	Video	2048x858
<input type="checkbox"/> A068_03131411_C001.mov		A068_03131411_C001.mov	16:13:35:16	16:13:37:05	00:00:01:13			0	36	37	Video	2048x858
<input type="checkbox"/> A022_03051517_C001.mov		A022_03051517_C001.mov	17:19:10:07	17:19:13:11	00:00:03:04			0	75	76	Video	2048x858
<input type="checkbox"/> A053_03101339_C005.mov		A053_03101339_C005.mov	15:41:21:16	15:41:24:10	00:00:02:18			0	65	66	Video + Audio	2048x858
<input type="checkbox"/> A040_03081455_C007.mov		A040_03081455_C007.mov	16:56:42:06	16:56:44:14	00:00:02:08			0	55	56	Video	2048x858
<input type="checkbox"/> A065_03131150_C001.mov		A065_03131150_C001.mov	13:56:13:08	13:56:15:15	00:00:02:07			0	54	55	Video	2048x858
<input type="checkbox"/> A099_03191305_C003.mov		A099_03191305_C003.mov	16:07:05:12	16:07:07:05	00:00:01:17			0	40	41	Video + Audio	2048x858
<input type="checkbox"/> A099_03191257_C002.mov		A099_03191257_C002.mov	15:58:58:12	15:59:00:17	00:00:02:05			0	52	53	Video	2048x858
<input type="checkbox"/> A058_03121054_C001.mov		A058_03121054_C001.mov	12:57:38:22	12:57:42:05	00:00:03:07	12:57:39:08	12:57:41:18	0	78	79	Video + Audio	2048x858
<input type="checkbox"/> A087_03161438_C005.mov		A087_03161438_C005.mov	17:39:56:19	17:40:01:14	00:00:04:19			0	114	115	Video	2048x858
<input type="checkbox"/> A086_03161241_C003.mov		A086_03161241_C003.mov	15:42:44:12	15:42:46:20	00:00:02:08			0	55	56	Video	2048x858
<input type="checkbox"/> A040_03081426_C001.mov		A040_03081426_C001.mov	16:27:55:09	16:27:57:14	00:00:02:05			0	52	53	Video + Audio	2048x858
<input type="checkbox"/> A081_03160649_C002.mov		A081_03160649_C002.mov	09:51:29:07	09:51:30:18	00:00:01:11			0	34	35	Video	2048x858
<input type="checkbox"/> A087_03161411_C002.mov		A087_03161411_C002.mov	17:13:44:14	17:13:48:20	00:00:04:06			0	101	102	Video	2048x858
<input type="checkbox"/> A046_03091446_C010.mov		A046_03091446_C010.mov	16:47:13:05	16:47:19:09	00:00:06:04			0	147	148	Video	2048x858

The List View mode

Sorting and Searching

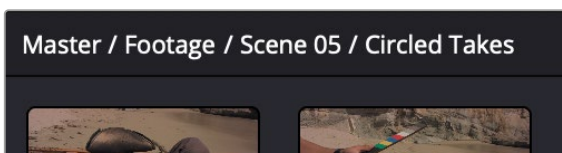
Once you've imported media into your project, searching and sorting controls help you find what you need.

Searching

A search field lets you type a term you want to use to find one or more clips that match that criteria. When you type anything, the contents of the Media Pool shrink to show only clips that match your criteria.

Navigable Clip Paths

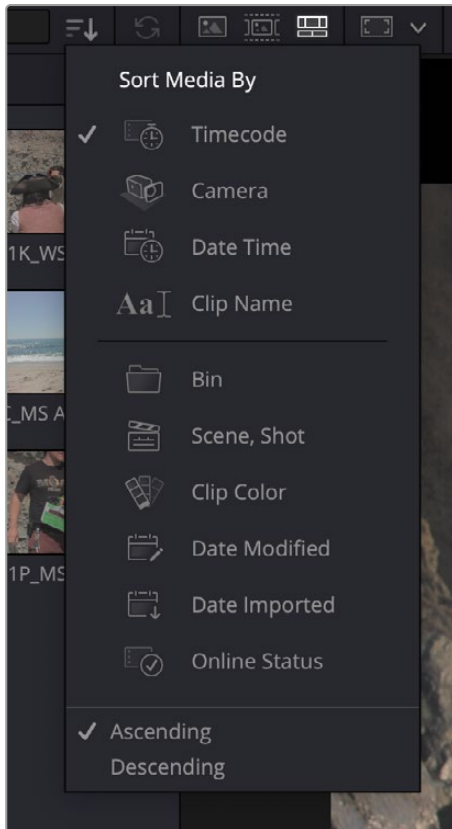
The Media Pool in the Cut page has a navigable title bar that shows a clip's Media Pool hierarchy. As you navigate in the Media Pool, the current clip is highlighted, and its hierarchy will now appear in top of the Media Pool title bar. By clicking directly on bins in this bin path, you can quickly broaden or narrow the scope of the Media Pool, say from Shoot Day to Camera to Card to Clip and vice versa.



The Media Pool title bar showing a clip's Media Pool hierarchy. Clicking directly on these bins will narrow or broaden the scope of the clips in the Source tape.

Sort Media By

A Sort Media By drop-down menu lets you choose which criteria defines the order in which clips in the Media Pool are arranged. Options include: Timecode, Camera, Date Time, Clip Name, Bin, Scene Shot, Clip Color, Date Modified, Date Imported, and Online Status, and you can choose to sort in Ascending (bottom to top) or Descending (top to bottom) order.



The Sort Media By drop-down menu

TIP: If you want to sort by a criteria that's not in the drop-down menu, you can switch the Media Pool to List view, then sort by any column you might want (such as "Date Created"), and then switch back to Icon or Filmstrip view.

Finding Timeline Clips in the Media Pool

From time to time, you'll find yourself wanting to find the source clip in the Media Pool that corresponds to a clip in the Timeline. For example, you might want to go back to a part of an interview clip you've already used to find another phrase on the same topic.

To find a timeline clip in the Media Pool:

- Right-click a clip in the Timeline, and choose Find in Media Pool from the contextual menu. The corresponding clip is selected in the Media Pool, which scrolls to show that clip, if necessary.

Clip Color

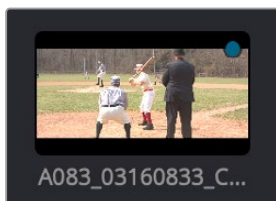
Clip colors are an organizational tool that make it easier to keep track of different kinds of clips visually. For example, you can assign colors based on good takes, based on characters or subjects in the program, based on type of media (b-roll versus a-roll for example), or using any one of a number of organizational strategies. Whatever helps you keep track of things you need to keep track of.

Changing clip colors:

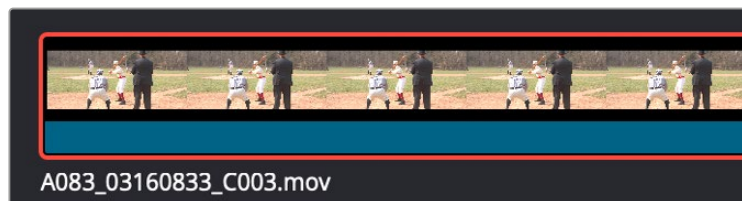
- You can assign colors to clips by right-clicking one or more selected clips in the Media Pool or Timeline, and choosing one of 16 available colors from the Clip Color submenu of the contextual menu.

Removing clip colors:

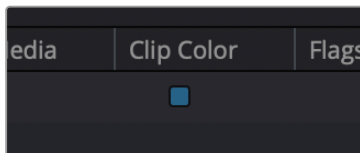
- Clip colors can be removed by right-clicking one or more selected clips in the Media Pool or Timeline, and choosing Clear Color from the Clip Color submenu of the contextual menu.
- Clip colors appear as a colored dot on a clip thumbnail when in Thumbnail view, as a clip color in Filmstrip view, and as a patch in the Clip Color column when in Column view.



Clip color in - Thumbnail

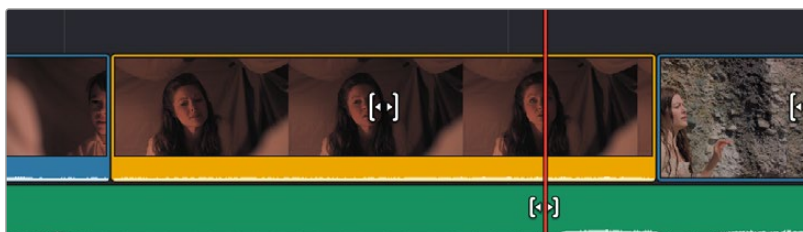


Clip color in - Filmstrip



Clip color in - Column views

- Clips with assigned colors also appear tinted in the Timeline, similarly to the Filmstrip tint in the Media Pool.



A timeline with a video clip that has been colored to identify what they are to the editor

Generate Optimized Media

If you're editing processor-intensive source formats such as camera raw, H.264, or 8K media, and your computer isn't fast enough to work with it easily in real time, you can create pre-rendered, low-overhead duplicate media to use instead, that's automatically managed alongside the original media. This is called "Optimized Media." Optimized Media lets you work more quickly by allowing you to edit with a more processor-efficient media format and resolution, while providing the ability to easily switch your project back to the original source media whenever you want. So, you can use optimized media to edit, and switch back to the original source media when it's time to finish and output. Switching is as easy as choosing Playback > Use Optimized Media if Available to toggle optimized media on and off.

DaVinci Resolve automatically manages the relationship between source clips and the optimized media you create, so all you need to do is choose which clips to make optimized media for. For example, if you're editing a project that consists of half camera raw media, and half DNxHD media, you only need to optimize the camera raw media, so you can use the search field to find all the raw clips you've imported based on Resolution, Codec, File Name, or whatever other metadata is appropriate.

To create optimized media:

- 1 Select one or more clips in the Media Pool that would benefit from being optimized.
- 2 Right-click one of the selected clips, and choose Generate Optimized Media from the contextual menu.

By default, all optimized media is written to the same directory as the cache files are written, which defaults to the first scratch disk listed in the Preference dialog's Media Storage panel. The location of cache and optimized files is also selectable via the "Cache files location" setting in the Master Settings panel of the Project Settings.

Once you've created optimized media, all you need to do to use it is to choose Playback > Use Optimized Media if Available to toggle optimized media on and off.

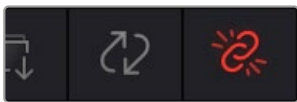
For more information on choosing which format to optimize to, creating and managing optimized media, and how optimized media interacts with raw media, see *Chapter 8, "Improving Performance, Proxies, and the Render Cache."*

Relinking Media

DaVinci Resolve attempts to automatically keep track of the relationship between clips in your project and their corresponding source media on disk. If, for whatever reason, source media that links to clips in your project becomes unavailable because it's been moved, DaVinci Resolve has several different methods of relinking those clips in the Media Pool. This section summarizes two methods of relinking, "Relink Media" and the "Relink selected clips" command. For more information on other methods of conforming projects and relinking media, see *Chapter 56, "Conforming and Relinking Clips."*

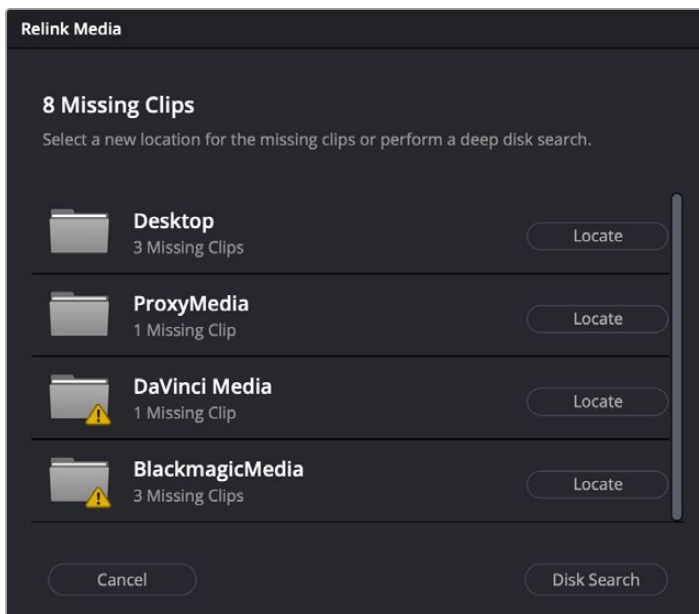
Relink Media

If DaVinci Resolve fails to find your media, a Relink Media icon in the Cut page's and Edit page's Media Pools will highlight orange.



The Relink Media icon that appears for unlinked media

Clicking this icon opens a dialog box showing the volumes that the missing files initially belonged to. You can then use this information to track down the media on your file system, find that specific hard drive, or ask a client if they provided you the media from this volume. Clicking the Locate button lets you re-connect the missing clips to a new file location of your choosing. If the quick search initiated by the Locate buttons doesn't find media that you know is there, you can initialize an exhaustive deep disk search for the media by clicking on the Disk Search button.



The Relink Media dialog showing the volume names where the missing clips originated

Relink Selected Clips

The appropriately named “Relink selected clips” command is the most flexible method of relinking clips in your project with clips in a directory of your choice, using file name and timecode as the primary criteria for reconnecting the relationship between each clip and its corresponding media file on disk.

To relink selected clips or clips in a selected bin:

- 1 Do one of the following:
 - Select one or more clips in the Media Pool browser that you want to relink, then right-click one of the selected clips or the selected bin, and choose “Relink Selected Clips” from the contextual menu.
 - Select a bin in the Media Pool bin drop-down menu that contains clips you want to relink, then right-click the selected bin and choose “Relink Clips for Selected Bin” from the contextual menu.
- 2 When the Relink File dialog opens, choose a volume and directory in which to look for the files you want to relink to, and click OK. DaVinci Resolve attempts to find every clip with a matching file name in the subdirectories of the directory you chose, using the original file paths of the clips being relinked to do this as quickly as possible. By first looking for the clips in the directories they were originally in, relinking can be quite fast.
- 3 If there are any clips that couldn't be found using the method in step 2, you're prompted with the option to do a “deep search” by a second dialog. If you click Yes, then DaVinci Resolve will look for each clip inside every subdirectory of the directory you selected in step 2. This may take significantly longer, but it should be completely successful so long as the media that's required is within the selected directory structure.
- 4 If there are still other clips that couldn't be found, you're prompted to either choose another directory altogether to continue searching, or quit.

Fast Editing in the Cut Page

The editing methods in the Cut page have been streamlined for fast editing, and the interface of this page and the methods of assembling clips together using different types of edits are designed to be easy to learn and quick to use.

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Creating and Modifying Timelines

After you've imported and organized the media you need to use in a program, the next thing you must do is create a timeline. Timelines are the organizational entities that contain the edited sequences of clips that make up your program. You can have as many timelines as you like in your project, with each timeline being an independent arrangement of clips. Timelines are stored in the Media Pool and can be organized using bins, just like clips.

Creating New Timelines

A timeline is automatically created when you edit your first clip into the Timeline. You'll see an icon for the new timeline in the Media Pool, where you can rename it.

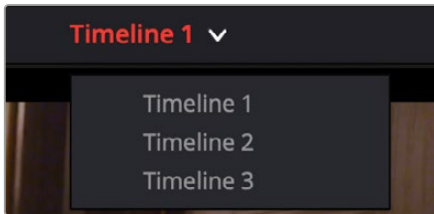
You can also create a new timeline by either choosing File > New Timeline (Command-N), or right-clicking in the background of the Media Pool and choosing Create New Timeline. A dialog appears that lets you choose a start timecode (the default is 01:00:00:00), a name, how many video and audio tracks you want it to have, what kind of audio (the default is stereo), and whether or not you want to create an empty timeline, or a timeline that automatically includes all clips in the Media Pool with or without selected In/Out points (a quick and easy way of creating a stringout of all clips you've imported).

By default, all timelines share the same frame rate, resolution, and monitoring settings as the overall project. If you like, you can also click the Use Custom Settings button to choose individual frame rate, resolution, and monitoring settings for that timeline.

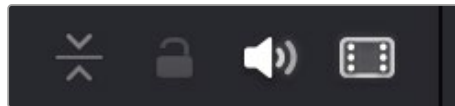
Once you've created a new timeline, double-clicking it will open it into the Timeline Editor.

Opening Timelines

If you only have one timeline in your project, that timeline is always seen in the Timeline Editor. If you have multiple timelines, you can double-click any timeline in the Media Pool to open it into the Timeline Editor, ready for editing. You can also switch from working on one timeline to another by using the drop-down list at the top of the Cut page Viewer. This unifies Viewer Timeline Selection behavior across the Cut, Edit, Color, and Deliver pages.



The Timeline Selection drop-down at the top of the Cut page Viewer



The Enlarge, Lock, Audio Enable, and Video Enable buttons in the header of a timeline track

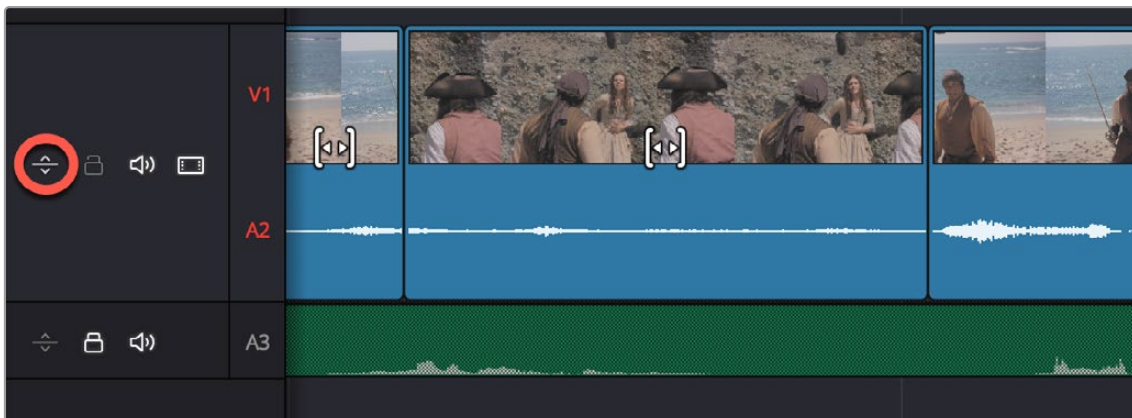
About Tracks in the Cut Page Timeline

Tracks in the Cut page timeline combine a clip's audio and video into a single track for convenience, as this makes it easy to keep audio and video organized and in sync when superimposing many clips together. This means that tracks have both video and audio enable controls in the track header controls, so that you can selectively disable video and mute audio when necessary.

Each track also has a lock control, which lets you prevent clips on that track from being altered in any way.

Enlarging Tracks

Track size can be enlarged and minimized by clicking on the Track Sizing icon on the left side of the track header. An expanded video track shows a full size video and audio track, if attached. This makes it easier to see just the track you want to focus on. Only one track can be expanded at a time.



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

Adding Tracks

If your timeline doesn't have enough tracks, you can click on the Timeline Actions menu and select Add Video/Audio/Subtitle track, or right-click anywhere in the Timeline and choose "Add Track," and a new track will be added on top of the previously existing tracks.

TIP: Dragging a new clip to the undefined gray area at the top of the Timeline also adds a new track.

Deleting Tracks

If you want to delete a specific track along with all clips on that track, you can right-click anywhere in that track's header and choose "Delete Track."

If your timeline has too many empty tracks, you can right-click anywhere in the track header and choose "Delete Empty Tracks" and all empty tracks will be removed.

Navigating Clips in the Viewer and Timeline

Before you can start editing, you need to find which parts of which clips you want to use, and define where in the currently open timeline you want to make an edit. The Single Viewer in the Cut page has three options that let you choose what media you want to play through using the transport controls found at the bottom.

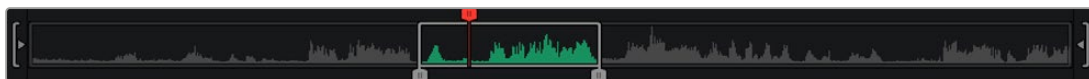
Viewer Options

Three options, selectable via buttons at the upper left of the Viewer, let you control what the Viewer shows.



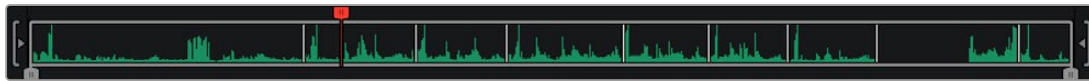
The Viewer option buttons, (left to right) Source Clip, Source Tape, Timeline, and Safe Area

- **Source Clip:** This option shows the currently selected clip in the Media Pool. This is the mode the Viewer automatically switches to whenever you double-click a clip in the Media Pool. In Source Clip, a scroll area appears at the bottom of the Viewer, the width of which represents the duration of the currently open clip. A playhead within the scroll area lets you scrub through the clip as a zoomed-in waveform and shows whatever audio is playing within the clip. Handles to the left and right of the scroll area let you reposition In and Out points within the clip to choose a section you want to edit into the Timeline. These In and Out points can also be set using the I and O keys. Once set, you can drag In and Out points to change them.



The scroll area in Source Clip option, with In and Out points positioned to either side of the playhead

- **Source Tape:** Using this option, every single clip in the currently open bin, and any subfolders in that bin, of the Media Pool is shown in the Viewer as a "stringout" in the scroll area at the bottom of the Viewer. In the scroll area, each clip appears one after the other in a long strip, with the order determined by the Sort order. This makes it easy to scrub through a whole collection of clips while you're figuring out what you want to use. As you play through, whichever clip the playhead intersects is selected in the Media Pool, so you know which clip you're looking at.



The scroll area in the Source Tape, with each clip separated by a thin line

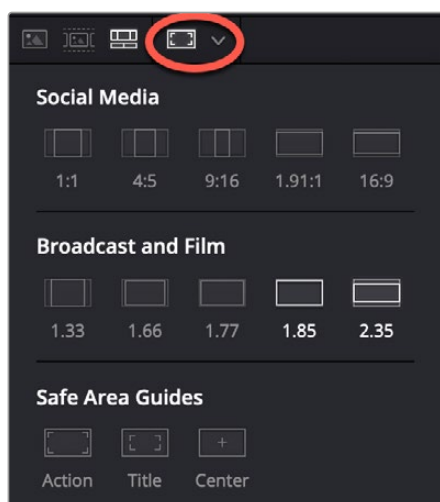
- **Timeline:** This option shows the current frame at the position of the playhead in the Timeline. Whenever you click, drag, or adjust a clip in the timeline area, the Viewer switches to the Timeline. In this option there is no scroll area; you must use the timeline area to scrub through your program. However, in the space where the scroll area would otherwise be, icons appear to indicate when the playhead is positioned at the first or last frame of a clip in the Timeline.



The scroll area in the Timeline option shows icons to indicate the beginning and end of clips

- **Safe Area:** This drop-down menu overlays many useful framing guides over the Viewer to let you see what part of the image will be included and what will part will be cropped out if you change the Timeline's aspect ratio. The framing guides can be turned on and off by toggling the Safe Area Framing Guide icon in the Viewer, and the exact guides can be selected in the drop-down menu.
 - **Social Media:** 1:1, 4:5, 9:16, 1.91:1, 16:9.
 - **Broadcast and Film:** 1.33, 1.66, 1.77, 1.85, 2.35.
 - **Safe Area Guides:** These options add additional guide lines on the Viewer to protect your composition from possibly being cut off at the extreme edges of a physical cathode ray tube. While somewhat anachronistic in this age of flat screen digital televisions, many legacy programs still adhere to these guidelines. Safe Areas still can be useful guides in ensuring your image is not inadvertently cropped by the variety of mobile devices and social media sites in use today.

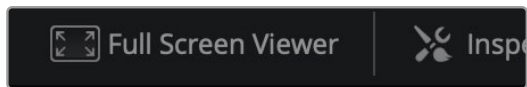
Action	Keep all movement and important action within this box.
Title	Keep all on screen text within this box.
Center	Designates the exact middle of the image.



The Safe Area Framing Guide icon (circled) and the possible framing options

Full Screen Viewer

The Cut page has a Full Screen Viewer icon in the upper-right that can be clicked to enable Full Screen view. Press Escape to return to your normal view mode.

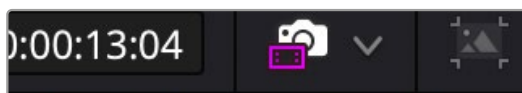


The Full Screen Viewer icon

Proxy Handling

You can switch between using your original source media and the proxy media for playback in the Cut page by using the Proxy Handling icon in the Viewer, and selecting one of the following options:

- **Disable All Proxies:** This option disables the proxies altogether and forces the original media playback only. If the original media is not available, the clip is replaced with a Media Offline graphic.
- **Prefer Proxies:** This option will use proxies files for playback, and if there is no proxy file for a clip, the original media will automatically be used instead.
- **Prefer Camera Originals:** This option will use the original media files for playback, and if there is no original media file for a clip, the proxy media will automatically be used instead.



The Proxy Handling icon in the Cut page Viewer lets you select how you want to use proxy files.

Playing Clips and Navigating the Timeline in the Viewer

Eight controls sit at the bottom of the Viewer. These let you play through and otherwise navigate clips and the Timeline in different ways. These controls are described from left to right.



The toolbar at the bottom of the Viewer

- **Fast Review button:** Intended to help you watch through a large collection of media quickly, clicking this button begins accelerated playback through the Source Tape or through the Timeline, where the speed of playback is relative to the length of each clip you're playing through. Long clips play faster, whereas shorter clips play closer to real time. In this way, you can watch a lot of material really quickly.
- **Tools button:** The Tools button reveals a variety of controls for transform, crop, audio, speed effects, camera stabilization and lens correction, dynamic zoom, and compositing, covered in more detail later in this chapter.
- **Jog control:** Clicking and dragging within the jog control lets you scrub very precisely through the content of the Viewer.

- **Transport controls:** A set of buttons provide clickable controls to control playback of source clips and the Timeline, whichever the Viewer is set to display; each button has a matching keyboard shortcut. These include Previous Edit (Up Arrow), Stop (Spacebar), Play (Spacebar), Next Edit (Down Arrow), and Loop Playback (Command /).
- **Mark In/Out:** Clickable controls to set In and Out points respectively.
- **Playhead timecode:** A number field shows you the timecode value at the playhead of a clip or of the Timeline, to give you a numeric reference for where you are. There is also a dedicated timecode entry mode for the Cut page. There are three ways of telling DaVinci Resolve that you want to perform a timecode action, regardless of what the numeric keypad keys are assigned to in the Keyboard Customization preferences.
 - Select Playback > Goto > Timecode (=) and enter your timecode value.
 - Press “+” or “-” keys, and enter your timecode value to move the current position forward or backward by that amount.
 - Click on the Timeline Timecode display on the Viewer, and enter your timecode value.

Scrolling Through the Timeline

The playhead in the Cut page is fixed. When you play, shuttle, or jog through your program, the clips in the Timeline flow past the playhead from right to left if you’re playing forward, or from left to right if you’re playing backward. This means that for playback, editing, or trimming, you bring the frame you want to see to the playhead, rather than bringing the playhead to the frame (as you do on the Edit page).

To scroll or scrub through the Timeline, do one of the following:

- Set the Viewer to show the Timeline, then use any transport or playback controls or keyboard shortcuts to move the clips in the Timeline back and forth, with the playhead indicating the current frame.
- Position the pointer within the Timeline Ruler of the Upper Timeline, and drag to the left or right to scrub through your entire program.
- Position the pointer within the Timeline Ruler of the larger Timeline Editor below, and drag to the left or right to scrub through the immediate vicinity of the current frame.
- You can use the navigation tools Playback > Previous / Next > Clip (Up Arrow/Down Arrow) or Marker (Shift - Up Arrow/Shift - Down Arrow) to navigate the Cut page Timelines.

TIP: If at any time you need to analyze the video in the Viewer, DaVinci Resolve’s full set of scopes is available in the Cut page by selecting Workspace > Video Scopes > On (Shift-Command-W).

Display Clip Names and Status in the Timeline

If you wish, you can see clip names and clip status icons directly on your clips in the Timeline, for easier identification.

To Display Clip Names for Clips in the Cut Timeline:

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

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

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

Scene Cut Detection in the Cut Timeline (Studio Version Only)

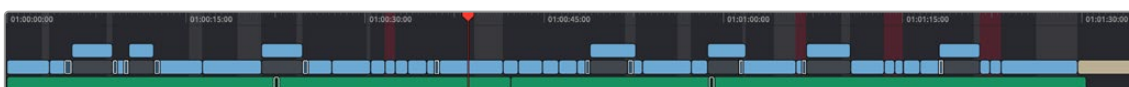
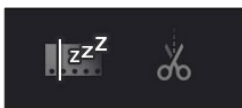
You can use the Scene Cut functionality directly in a Cut timeline. This is useful if you've imported video files of an already edited program, and you wish to automatically cut it back up into individual clips. For more information on using Scene Cut Detection, see *Chapter 23, "Using Scene Detection."*

To use Scene Cut Detection on a Cut Page Timeline:

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

The Boring Detector

The Boring Detector performs a live analysis of the lengths of each of your clips on the Timeline and then highlights areas that are too long or too short and may demand your attention. It's accessed by clicking the Timeline Options icon and selecting Boring Detector. It can be toggled off by clicking the icon again.



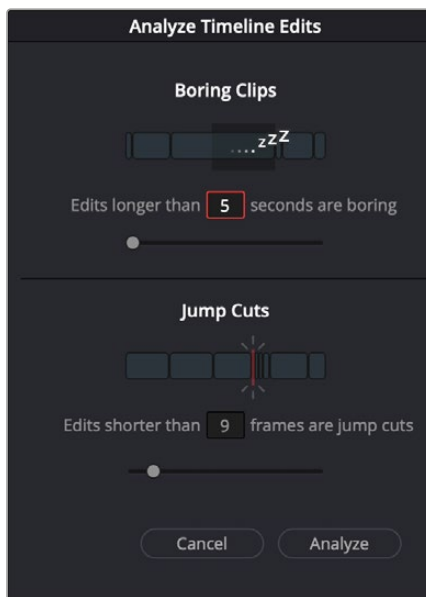
The Boring Detector icon and the Timeline showing its results

Analyze Timeline Edits

The Boring Detector's parameters are modifiable in its Analyze Timeline Edits window.

- **Boring Clips:** By adjusting this slider, you can set the minimum number of seconds that a clip's duration has to be before being flagged as too long. Clips that exceed this length are highlighted in light gray on the Upper Timeline.
- **Jump Cuts:** Adjusting this slider sets the maximum number of frames that a clip's duration has to be before being flagged as too short. Clips that are shorter than this length are highlighted in red on the Upper Timeline. Setting this to 2 frames can help you automatically find accidental "flash frames."
- **Cancel:** Closes the window without making any changes to the Boring Detector's analysis.

- **Analyze:** Starts the live analysis of your timeline using the criteria you've selected above. The Boring Detector is persistent and continues to function as you make further edits in the Cut page. It can be turned off by clicking the Boring Detector icon again.



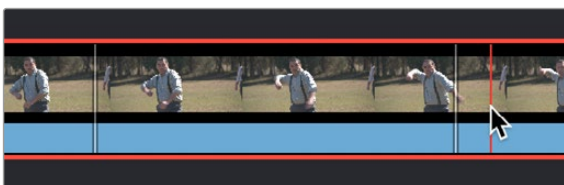
The Boring Detector's Analyze Timeline Edits window

Setting In and Out Points

Ordinarily, source media is much longer than the actual clips you'll be using in a program, so it's important to be able to define a range of media you want to edit into the Timeline. This is done by setting In and Out points, either in the Media Pool in Thumbnail or Filmstrip mode, or in the Viewer in Source Clip or the Source Tape.

Setting In and Out Points Using the Keyboard

When scrubbing through a thumbnail or filmstrip in the Media Pool, you can press the I (In) or O (Out) keys to define a range of media. The edit points appear superimposed over the thumbnail area of the clip, as well as the scroll area of the Viewer if the clip is being mirrored there.



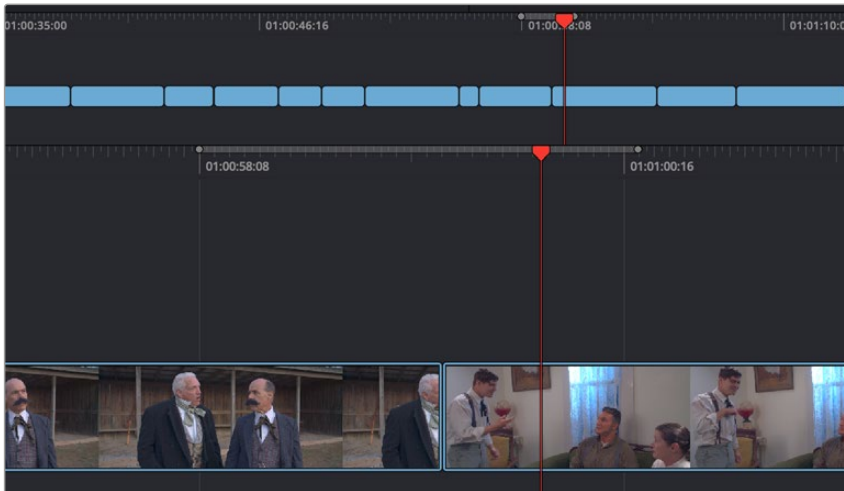
Defining a range of media in the Media Pool using In and Out points (in white)

When scrubbing or shuttling through media in the Viewer in Source Clip or the Source Tape, or through your program with the Viewer in Timeline mode, you can press the I (In) or O (Out) keys to define a range of media.



Defining a range of media in the Viewer using In and Out points

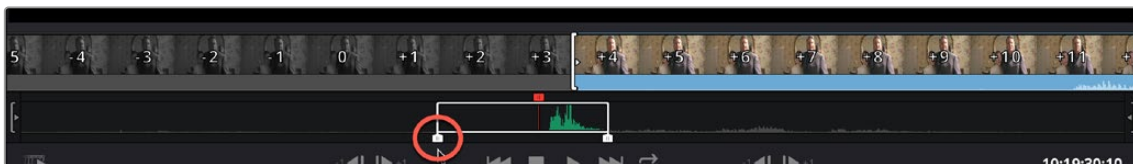
When scrubbing or shuttling through the Timeline as you drag the ruler to the left and right, you can press the I (In) or O (Out) keys to define a range for incoming edit operations. The range is marked in both the upper and lower areas of the Timeline.



Defining a range of the Timeline for editing operations using In and Out points

Setting In and Out Points Using the Pointer

If you're using a pointing device such as a mouse, trackpad or tablet, you can drag the In and Out handles found underneath the scroll area at the bottom of the Viewer to define a range of media.



The draggable In and Out controls at the bottom of the Viewer

Once you've set In and Out points, the jog In and Out controls, located at the far left and right of the scroll area in the Viewer, let you fine-tune the location of the In and Out points. Click and drag on the Jog In or Jog Out controls to move either edit point in precise increments. While you drag, a filmstrip above shows you how many frames you're trimming.



The draggable Jog In control being used to trim the In point

In and Out points set in the Timeline Ruler (either of the Upper Timeline or the Timeline Editor) can be dragged to the left or right to fine-tune them.

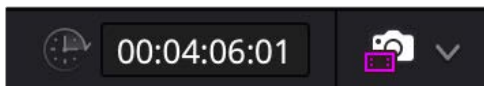


The draggable In and Out points in the Timeline Ruler

Editing the Duration Field in the Cut Page Viewer

When editing in the Cut page, you set In and Out points to insert a specified range of video. The duration of that video range appears in the Duration field, which is in the upper-right corner of the Viewer.

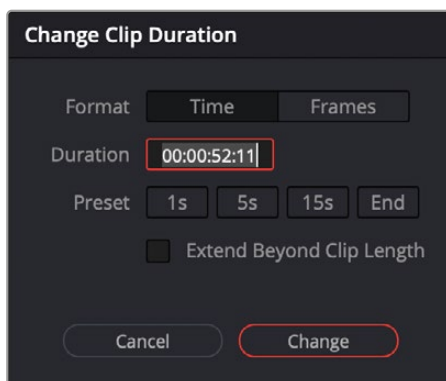
This field is now editable, and updates the Out point to match the value you enter. You can directly enter a certain number of frames, use the + or - modifiers to change the value by that exact amount, or make adjustments to the hh:mm:ss:ff field directly.



The editable duration field in the top right of the Viewer

Change Clip Duration Dialog

The Change Clip Duration dialog allows you to directly change the duration of a clip by typing in frames, a timecode value, or using time and frame-based presets. You can activate the Change Clip Duration dialog by selecting one or more clips on the Timeline and choosing Clip > Change Clip Duration (Command-D), or by right-clicking on a clip and choosing Change Clip Duration from the contextual menu. The Change Clip Duration dialog works both on the Cut and Edit pages.



The new Change Clip Duration box in Timecode mode.

Options for the Change Clip Duration Dialog box:

- **Format:** You can choose between working with Time (Timecode) or Frame values.
- **Duration:** Type in the timecode value or number of frames you wish to make the new duration of the selected clip.
- **Preset:** Select a duration by clicking on 1, 5, or 15 seconds (or their equivalent value in frames). End will extend the duration to the last frame of the selected clip, regardless of any Out points set.
- **Extend Beyond Clip Length (Cut page only):** This will append black filler to any clip whose duration is set longer than the clip itself.
- **Cancel/Change:** Click Cancel to exit without changing the duration of the clip, or Change to apply the duration change to the selected clip.

TIP: You can change the duration for more than one clip at a time by selecting multiple clips before opening Change Clip Duration. All clips selected will be changed to the same duration set in the Change Clip Duration dialog box.

Video Only and Audio Only Edits

Normally, any edit function in the Cut page uses both the Audio and Video sections of a clip to insert into the Timeline. However, there are several scenarios where you would only want either the Audio or the Video portions to be used instead.

To perform an Audio Only edit:

- Select the Audio Only icon to the left of the Upper Timeline, deselect to return to the normal audio and video edit.

To perform a Video Only edit:

- Select the Video Only icon to the left of the Upper Timeline, deselect to return to the normal audio and video edit.



(Left) The Audio Only icon, (Right) The Video Only icon

Drag and Drop Editing

Drag and drop editing can be an easy way of assembling clips into a loose edit. Once you've defined a range of media using the Source Clip or the Source Tape, you can click and drag either from the Viewer or the Media Pool to the Upper Timeline or the Timeline below to edit a clip into your program. How and where you drag determines how that clip will be edited.

Append

If you drag a clip onto an empty timeline, or to the dark gray area to the left of clips in the Timeline, that clip will become the first clip of your edit. If you drag a clip to the far left or right edge of all other clips in the upper or lower areas of the Timeline, you will append that clip to the ending or beginning of the Timeline.



(Top) Dragging a clip to the far right of the Timeline to append it, (Bottom) The appended clip

Ripple Overwrite

If you drag a clip onto a pre-existing clip in either the Timeline or Upper Timeline so that the entire clip highlights and you drop it immediately, you'll perform a Ripple Overwrite edit, substituting the previous clip in the Timeline with the new clip. If you've ripple overwritten a clip on Track 1, all clips to the right of it will be rippled to make room if the incoming clip is longer, or close the gap if the incoming clip is shorter.



(Top) Dragging clip DD onto clip BB on the Timeline to Ripple Overwrite clip BB, (Bottom) Clip DD is shorter than clip BB, so the Timeline becomes shorter once the edit is done

Overwrite

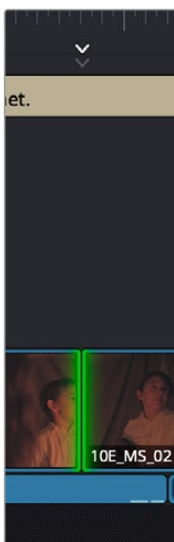
If you drag a clip onto a pre-existing clip in either the Timeline or Upper Timeline and wait a moment, the Timeline overlay changes from a highlight over the whole clip to a highlight showing just the portion of the incoming clip overlaid on the existing clip. When you drop the clip, you'll perform an Overwrite edit, which writes over the media that's already in the Timeline with the media of the incoming clip. Overwrite edits don't ripple the Timeline.



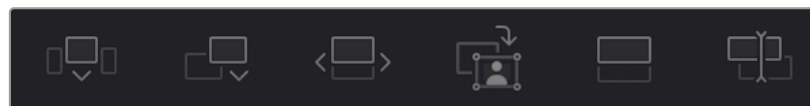
(Top) Dragging clip DD onto clip BB on the Timeline and pausing to perform an Overwrite, (Bottom) Clip DD overwrites the middle of clip BB, breaking it into two pieces while the Timeline remains the same duration

Using Cut Page Edit Commands

At the bottom of the Media Pool is a set of five buttons that let you make other kinds of edits. Some of these edits have keyboard shortcuts assigned to them and are also available via dedicated keys on the DaVinci Resolve Editor Keyboard.



Smart Indicator showing where an edit will occur



The edit buttons underneath the Media Pool, (Left to Right) Smart Insert, Append, Ripple Overwrite, Close Up, Place On Top, Source Overwrite

Smart Indicators

Some of the intelligent tools in the Cut page do not require you to select specific In and Out points in the Timeline; they rely on the playhead's relative position over a clip to guess where you likely will want to make your edit. The point where DaVinci Resolve intends to make that edit is marked using a Smart Indicator icon on the Timeline Ruler. To make the edit points easier to identify on the Timeline, after a few seconds, the Smart Indicator will move up and down on the Timeline ruler, while the actual edit point will strobe green (red if the clip has reached its start or end frame).

Setting Up and Performing Edits

No matter what kind of edit you intend to make, the process of setting them up and performing them is the same. This section describes the general process of setting up an edit, and the following sections will describe how each particular edit works.

To set up and perform an edit:

- 1 First, locate a clip you want to edit into the Timeline. There are two general ways of doing this:
 - a) Open a bin with clips you want to use, then click the Source Tape in the Viewer to show a stringout of all clips in the current bin, and its subfolders, in the currently selected sort order. Now, you can scrub around all these clips using JKL or the DaVinci Speed Editor's shuttle/jog/scroll wheel to find the media you're looking for.
 - b) Open a bin with clips you want to use, and navigate the thumbnails, filmstrips, or columns to select the clip you want, using the Search field if necessary to help find the clip you're looking for.
- 2 Scrub a thumbnail or filmstrip, or use the controls in the Viewer, or use the controls of your DaVinci Speed Editor to locate frames at which you want to set In and Out points to define an edit range, and use the I (In) and O (Out) keys to set those points.
- 3 If necessary, choose which video track you want to edit to by clicking in its track header to select it. Selected tracks are highlighted.
- 4 Perform an edit to put the selected range of the source clip into the selected video track at the desired frame, using either the buttons at the bottom of the Media Pool, or keyboard shortcuts. Different edit commands will put the source clip into different locations.
- 5 After you've committed your edit, you can press Q (or click the Timeline Viewer button) to switch the Viewer to the Timeline to play and review the edit you've just made, and then press Q again to switch back to the Source Clip or Source Tape (whichever was last used) to locate the next clip you want to edit, starting all over again at Step 1.

Smart Insert

Automatically inserts an incoming clip at the closest edit point to the playhead (as shown by the Smart Indicator) on the selected track, pushing all clips to the right of the edit point forward to make room for the incoming clip if you've inserted to Track 1. Because this is a smart operation, you are prevented from inserting a clip at any arbitrary frame; incoming clips are only inserted at the closest previously existing edit point.



(Top) Before doing a Smart Insert, (Bottom) After inserting clip DD between clips AA and BB

Append

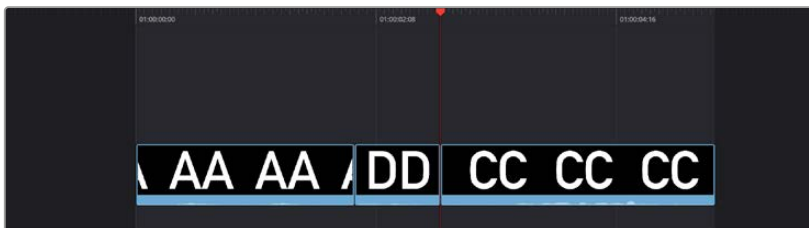
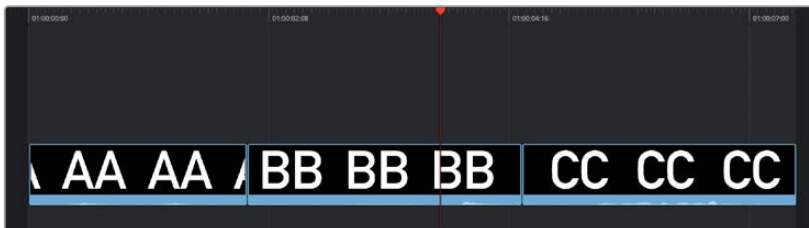
The position of the playhead is ignored; incoming clips are always placed after the last clip in the Timeline.



Performing an Append edit of clip DD to the Timeline

Ripple Overwrite

At its simplest, Ripple Overwrite substitutes a clip in the Timeline with an incoming clip. If you use Ripple Overwrite on a clip on Track 1, this will automatically move all clips that are to the right of the affected clip in the Timeline either forward to make room if the incoming clip is longer, or back to eliminate gaps if the incoming clip is shorter.



Performing a Ripple Overwrite to substitute an entire clip at the playhead (BB) with the incoming clip (DD)

However, Ripple Overwrite works differently if you've set In and Out points in the Timeline to define a range. In this case, the incoming clip substitutes whatever portion of the Timeline falls within this range, moving all other clips that are to the right of the affected range either forward to make room if the incoming clip is longer, or back to eliminate gaps if the incoming clip is shorter.



Performing a Ripple Overwrite to substitute a In/ Out range of the Timeline (part of clips BB and CC) with the incoming clip DD

Close Up

Lets you edit a clip into the Timeline as a zoomed-in close up, to make up for a lack of actual close ups that would have been shot with either longer lenses or by moving the camera closer to the subject. This function is particularly useful when you're working with 4K media in a 1080 timeline, or 8K media in a 4K timeline, which enables you zoom into existing wide shots to create medium shots, or medium shots to create close up shots, with no loss of quality.

Performing this edit adds the incoming clip as an approximate 150% scaled close up, also performs a face detection, and if a face or faces are found, automatically re-positions the face in the frame. Which frame of the Timeline the incoming clip aligns with depends on the following:

- If no In or Out points are set on the Timeline, the incoming clip aligns with the Timeline playhead as the In point.
- The incoming clip aligns with a timeline In point if one has been set.
- The incoming clip's Out point will align with a timeline Out point if one has been set without an In point. This "backtimes" the clip.



(Top) Before a Close Up edit, (Bottom) After editing clip DD into the Timeline with a Close Up edit

Place On Top

Lets you edit the incoming clip as a superimposition above whatever other clips are in the Timeline; the incoming clip is always placed on top, so if there are clips in tracks 1, 2, and 3, the incoming clip

is automatically placed on track 4, regardless of which track is selected. The frame the incoming clip aligns with depends on the following:

- When the playhead is near an edit point (within five frames), the incoming clip aligns with the closest timeline edit point in proximity to the playhead (as shown by the Smart Indicator) if no timeline In or Out points have been defined.
- When the playhead is not near an edit point, the incoming clip aligns with the playhead if no timeline In or Out points have been defined.
- The incoming clip aligns with a timeline In point if one has been set.
- The incoming clip's Out point will align with a timeline Out point if one has been set without an In point. This “backtimes” the clip.

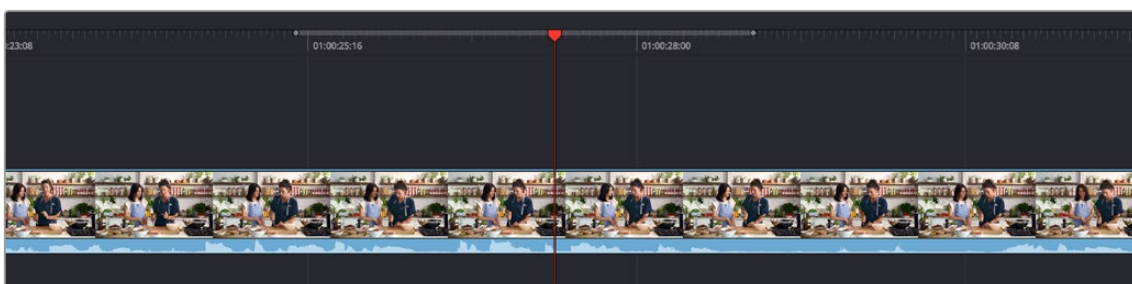


(Top) Before placing a clip on top, (Bottom) After editing clip DD into the timeline with a Place On Top edit

Source Overwrite

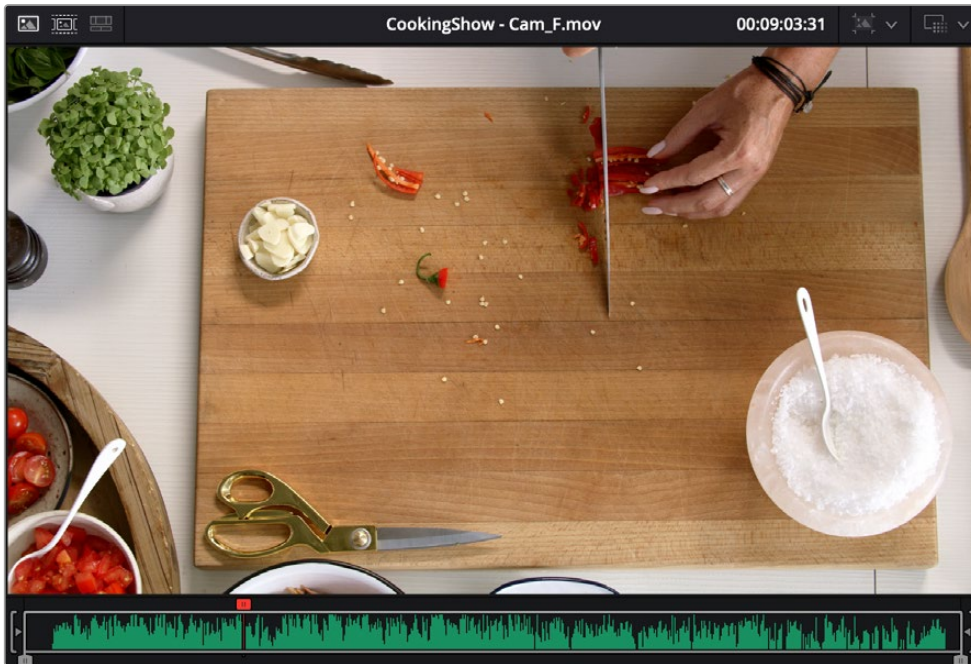
This edit requires overlapping timecode in multiple clips to work properly, such as when recording synced timecode to multiple cameras during a multi-cam shoot. If there is no overlapping timecode, this edit does nothing.

If you are working with footage from multiple cameras that have synced timecode, then the easiest way to use this edit type is to set In and Out points over a clip in the Timeline where you want to cut away to another angle. In the following example, a wide shot of a cooking show covers the moment when the chef starts slicing a chili.



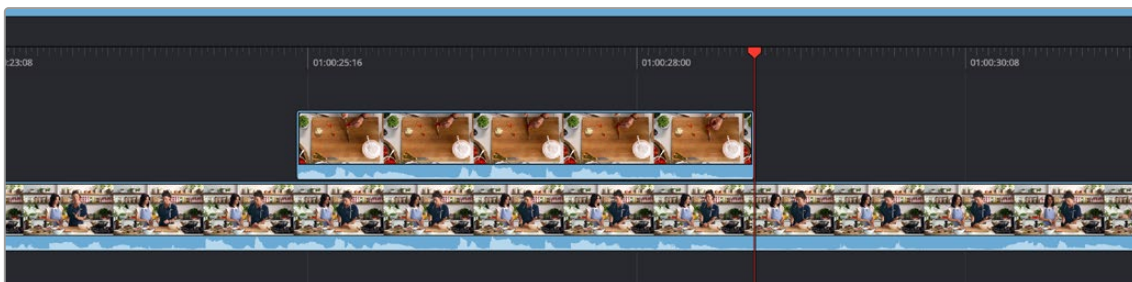
Setting Timeline In and Out points to identify a cutaway

You can then select a clip in the Media Pool that corresponds to the desired angle you want to add as a cutaway, that has synced timecode that overlaps with the clip in the Timeline. Don't set In and Out points; if necessary you can clear previously set In and Out points by pressing Option-X.



Choosing a Media Pool clip from another camera that has overlapping timecode

When you click the Source Overwrite button, a synced section of the selected Media Pool clip will be edited into the Timeline between the In and Out points you placed, superimposed on top. The result is a perfectly timed cutaway.



Using Source Overwrite to edit a superimposed and synced section of the source clip into the Timeline between the In/Out points

Alternatively, you can also use Source Overwrite to automatically place a source clip with a marked In/Out region on top of a clip in the Timeline so that its timecode syncs with the timecode of the timeline clip, when you don't know exactly how much of the incoming source clip you want to edit into the Timeline, and you just want it synced appropriately.

Overwrite

While there's no button available for performing an overwrite edit, you can use the F10 key to perform an overwrite edit, which overwrites a section of the Timeline with the incoming clip, without moving other clips in any way. The frame the incoming clip aligns with depends on the following:

- The incoming clip aligns with the playhead if no timeline In or Out points have been defined.
- The incoming clip aligns with a timeline In point if one has been set.
- The incoming clip's Out point will align with a timeline Out point if one has been set without an In point. This "backtimes" the clip.



(Top) Before, positioning the playhead at the frame you want to use as the In point for the incoming clip, (Bottom) After overwriting the end of clip CC with incoming clip DD

Subtitles

Subtitles in the Cut Timeline

The Cut page now has the same subtitle support as the Edit page, including the automatic Create Subtitles from Audio feature. For more information on how to use subtitles, see *Chapter 52, "Subtitles and Closed Captioning."*

To Add a Subtitle Track in the Cut Timeline:

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

Subtitle Tracks can be minimized in the Cut page to give more room for Audio and Video tracks by clicking on the Timeline Options icon, and selecting Minimize Subtitle Track.

Create Subtitles from Audio (Studio Version Only)

You can automatically create subtitles from your timeline's audio tracks by using the DaVinci Resolve Neural engine to analyze the speech, and automatically turn it into text subtitles. For more information on automatic subtitling, see *Chapter 52, "Subtitles and Closed Captioning."*

To Automatically Detect and Create Captions from Timeline Audio:

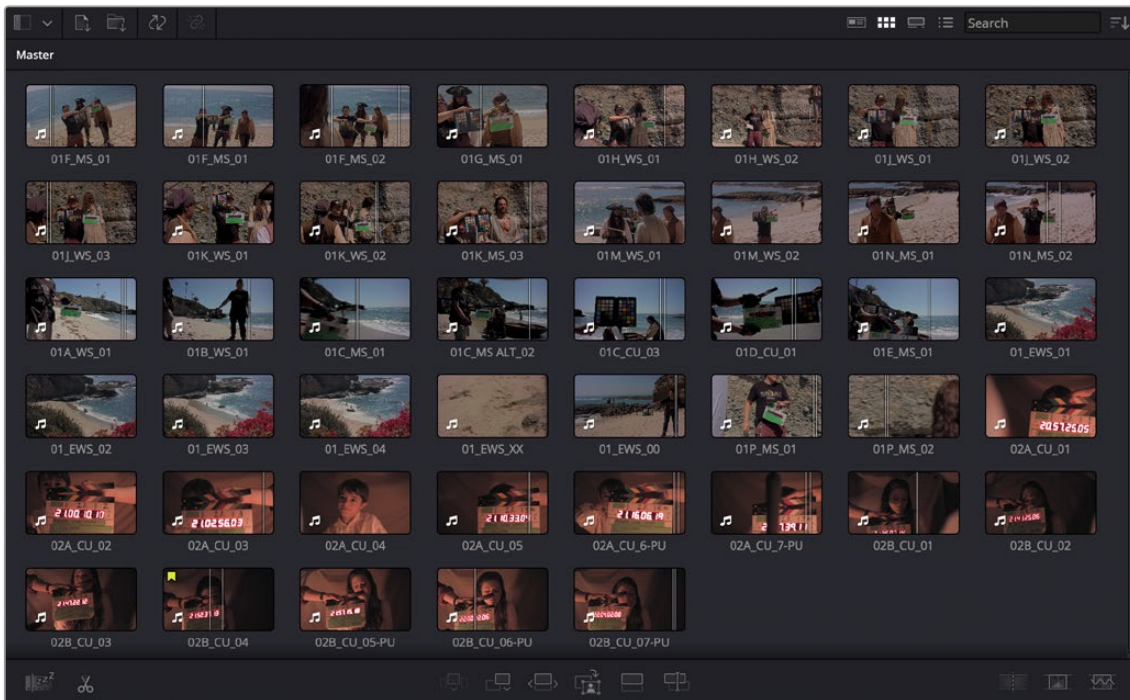
- Open the timeline with the video and audio clips you want to caption.
- Select the Timeline Actions icon and choose Create Subtitles from Audio from the drop-down menu.

Source Tape Editing

While all the features of the Cut page can be used individually, certain features are designed to be used in conjunction with each other to make your editing experience more streamlined. For example, combining the File Inspector, Source Tape, Metadata View, and the Navigable Folder Structure can create a well structured and organized project out of a single folder of unorganized clips.

Metadata Entry Using the File Inspector

The first step in organizing any project is metadata entry. In our initial project we have a large amount of clips all residing in a single Master Bin. We need to add appropriate metadata to these clips, and to do this we will be using the File Inspector.



An unorganized Media Pool in the Cut page

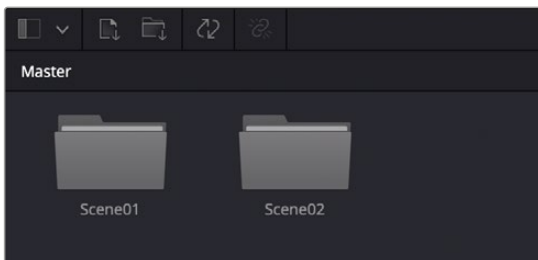
After the File Inspector is open, check the box Auto Select Next Unsorted Clip, and this will automatically select the same metadata field in the next clip in the Media Pool, after you hit the return key. Enter in the Scene, Shot, and Take metadata for each clip, based on the information on the slate in each clip.

Once each clip has its scene, shot, and take metadata, select all the clips in the Media Pool, then enter the text string “%{Scene}_%{Shot}_%{Take}” in the Name field of the File Inspector. These variables will replace the clip names for all clips with their scene shot and take numbers separated by underscores, for example: “02A_CU_03”.



Entering Scene, Shot, and Take metadata in the File Inspector, and renaming all clips via variables

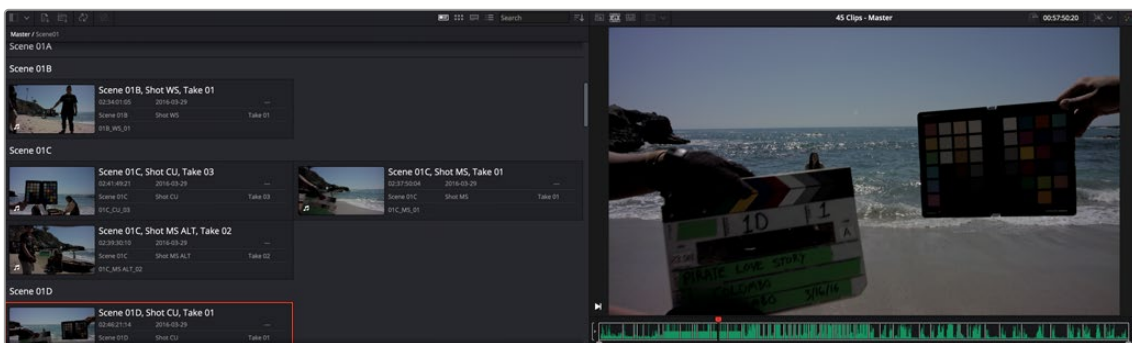
Now make two new bins in the Media Pool, Scene01 and Scene02, and drag all the clips that start with the name 01 into the Scene01 folder, and all the clips that start with the name 02 into the Scene02 folder. Our metadata entry for this project is now done.



The Media Pool with all scene 1 clips in the Scene01 folder, and scene 2 clips in the Scene02 folder

Using the Source Tape

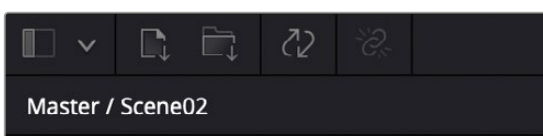
Now turn on the Source Tape, by clicking on its icon in the Viewer. Select Metadata View from the Media Pool view options, and then Sort By Scene, Shot in the Sort menu. You will now see the clips clustered by scene in the Media Pool, and all clips from both scenes are laid out in scene order in the Source Tape viewer. Selecting a specific clip in the Media Pool will snap the playhead to the first frame of that clip in the Source Tape. From here you can easily see the progression of the shots (take two follows take one, etc.), and continue your editing from here without having to hunt and click in the Media Pool.



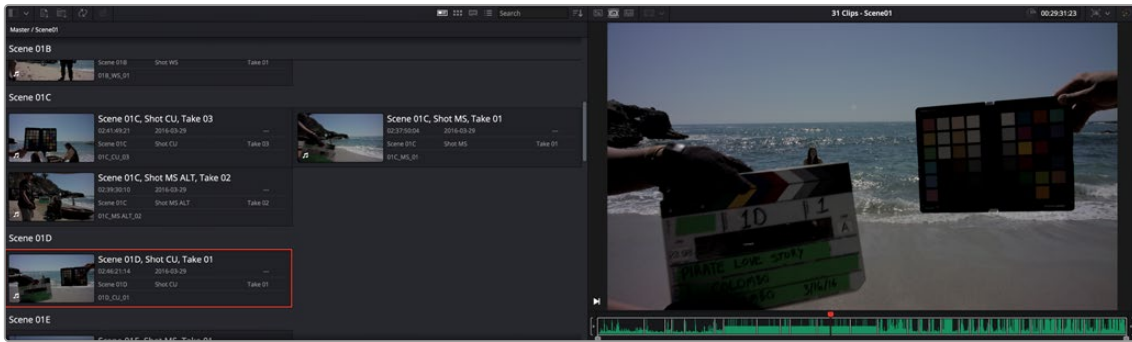
The Source Tape reflecting all clips in the Media Pool, and the Metadata View showing the clips clustered by Scene

Limiting the Source Tape Scope by Folder Structure

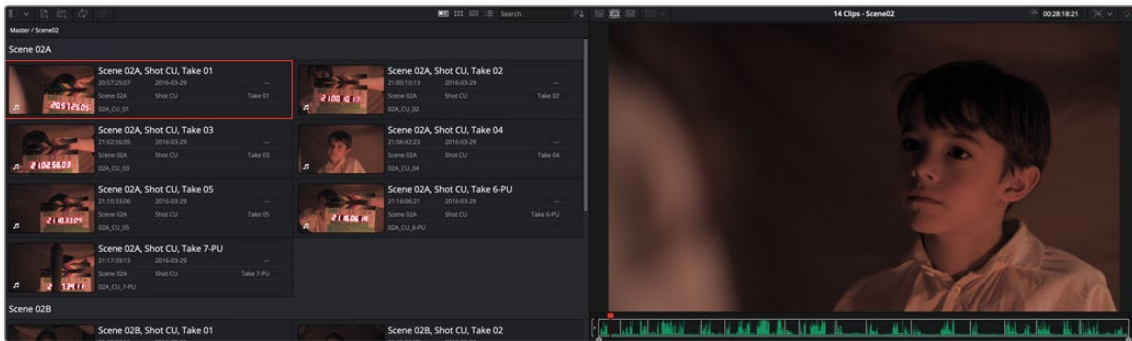
As your project grows, it can become unwieldy to constantly have an entire film's worth of media in the Source Tape. It is possible to limit the scope of the Source Tape at the bin level. As you navigate in the Source Tape, the current clip is highlighted, and its hierarchy will now appear in top of the Media Pool title bar. By clicking directly on bins in this bin path, you can quickly broaden or narrow the scope of the Source Tape. If you click on Scene02, the Source Tape will then zoom in to only show you clips in that folder. Clicking back on Master will zoom out the Source Tape to show the clips in all folders again.



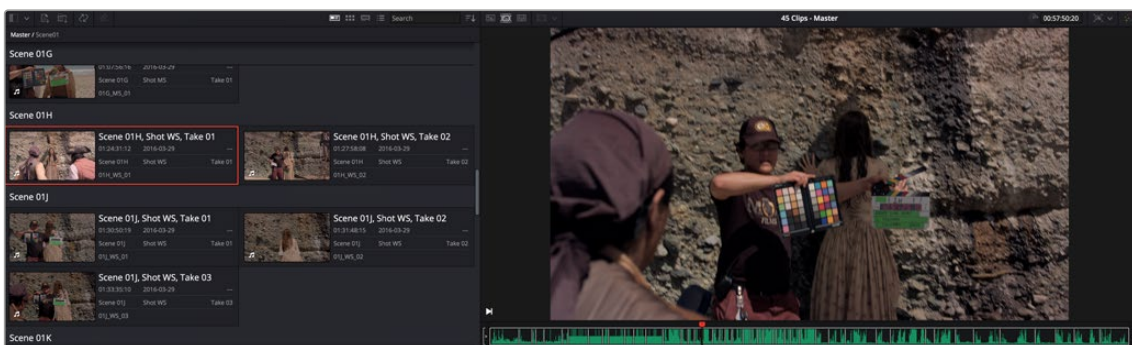
The navigable folder structure; clicking on these levels will narrow or broaden the scope of the Source Tape.



The Source Tape limited to showing only clips from Scene02



The Source Tape limited to showing only clips from Scene01



The Source Tape broadened to showing all clips in the Master folder

This is also useful when navigating bin structures that reflect the original camera file system. For example, you may have a camera that records each memory card as a separate folder, and then each individual clip is saved as a separate folder inside that folder. When you bring this file system into the Media Pool using the Create Bins option, these nested levels are mirrored in the Media Pool bin structure. Now when you click on a card bin in the Source tape, it will directly show you all the clips on that card, rather than show many individual sub-bins. This view is also viewable in Thumbnail, List, and Filmstrip views.

Sync Bin Multicam Editing

DaVinci Resolve has a number of tools to make editing multi-camera productions more intuitive and efficient. If simultaneously recorded clips from different cameras share common timecode, DaVinci Resolve can automatically sync all of these different camera angles together as you edit. The tools described in this section act as a sort of digital assistant editor that is constantly searching through all your media, and presenting all of the relevant shots to you at the exactly the right time. This functionality, combined with the DaVinci Resolve Speed Editor, makes the Cut page an extremely powerful multi-camera editor.

Preparing Footage for Sync Bin Editing

In order to properly work with the Sync Bin, every clip in that bin must have the following characteristics.

All Clips Must Have a Common Timecode

Professional video cameras and audio recorders generally have the ability to “jam-sync” their timecodes together so that each separate video and audio source records the exact same timecode at the exact same time. Jam-syncing timecode is the quickest, easiest, and most reliable method to ensure your footage syncs perfectly.

If your footage does not have a common timecode, you will need to go through some extra steps to ensure that all your material matches up at the correct time. For more information, see the Sync Clips Window section below.

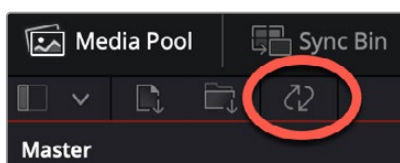
All Clips Must Have a Unique Camera Name

Most professional video cameras will have some sort of mechanism for naming the camera in its internal menu system. This camera name is then recorded as metadata in each captured clip, which can be read automatically by DaVinci Resolve. Cameras should be named either alphabetically (A, B, C, etc.), or numerically (1, 2, 3, etc.), and in a sequential order totaling the number of cameras that you are recording with.

If your camera does not automatically record this information (or it's set incorrectly), you can manually set the camera's name by modifying the Camera # field in the Metadata Editor in the Media Pool.

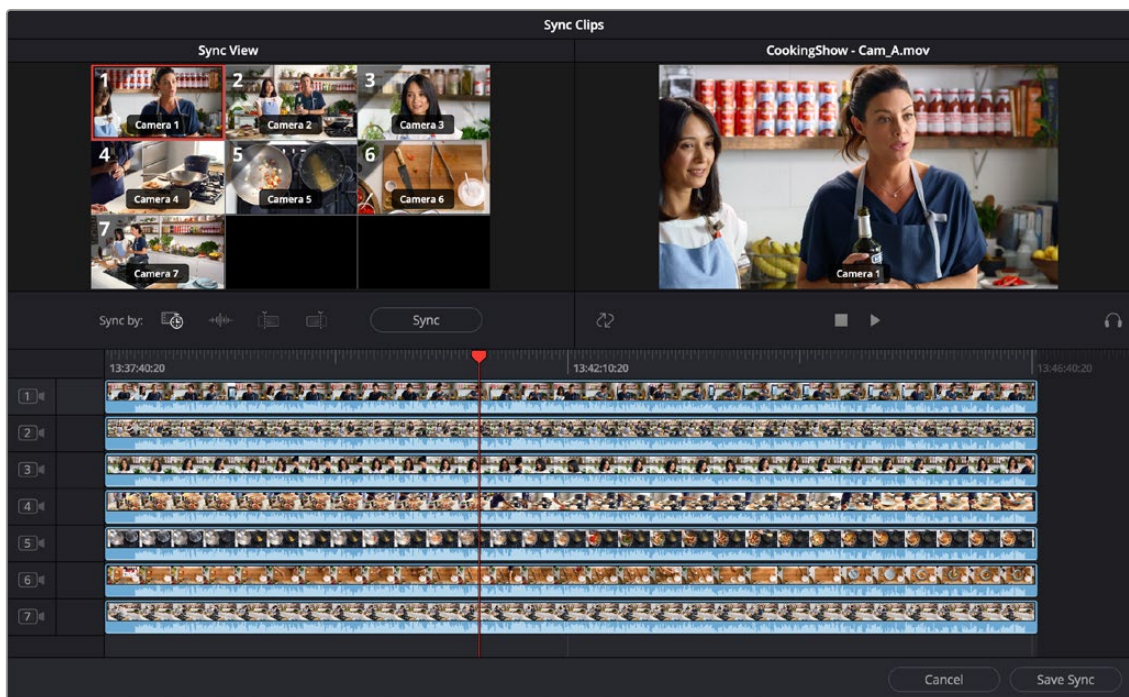
Sync Clips Window

If your footage does not share common timecode, or if the existing timecode needs to be modified for any reason, the Media Pool in the Cut page offers a Sync Clips window that allows you to modify the sync of all clips in a bin. It is accessed by clicking on the Sync Clips Window icon on top of the Media Pool.



The Media Pool Sync Clips window icon

The Sync Clips window opens and shows a live multi-camera sync Viewer on the left, and a standard clip Viewer on the right. There is also a timeline below that shows the temporal relationship of all the clips in the bin.



The Media Pool Sync Clips window

Sync By Tools

DaVinci Resolve offers several tools to automatically align your shots into perfect sync.

- **Timecode:** This button will try to align all the clips in the Sync Clips window by timecode; this is the default option.
- **Audio:** This button will try to align all the clips in the Sync Clips window by analyzing the audio tracks of each clip. In order for this to work, each clip must have at least a portion of the same audio track recorded clearly enough to analyze. An error message will notify you of which tracks could not be synced by this method.
- **In Point:** This button will try to align all the clips in the Sync Clips window by their user set In point. This is useful if you have a common mark that was shot across all cameras, for example a slate that claps closed, or a camera flash.
- **Out Point:** This button will try to align all the clips in the Sync Clips window by their user set Out point. This is useful if there was a common tail slate.
- **Sync:** This button will execute the Sync By method selected above.

Once all of the clips in the window are synced appropriately, hit the Save Sync button in the lower right-hand side of the window.



The Media Pool Sync By icons (L-R: Timecode, Audio, In point, Out point)

Manually Syncing Clips in the Sync Clips Window

If none of the Sync By tools is appropriate for the clips in your bin, you can manually sync the clips together by dragging each clip to the appropriate position on the Sync Clips Window timeline. For finer control, select the clip you want to sync and press the Comma (,) or Period (.) keys to nudge the clip backward or forward by one frame. Shift-Comma (,) or Shift-Period (.) nudges the clip by 5 frames (default), or by the amount of frames set in the “Default fast nudge length” setting in the General Settings section of the Editing panel in the User settings of the Resolve Preferences. Each clip has its own track, and you can enable sync lock in the right-hand Viewer to prevent accidental slipping.

Once all of the clips in the window are synced appropriately, click the Save Sync button in the lower right-hand corner of the window.

Using Your Newly Synced Clips

After saving the sync on your clips, a new Multicam clip will appear in the Media Pool. If you select the Thumbnail View, a Sync icon appears on all the clips you modified. If you want to modify your sync, right-click on a thumbnail and select Open Sync Group to reopen your clips in the Sync Clips window. Once you place your first clip on the Timeline as a reference, you are now ready to use the Sync Bin to edit.



Sync icons (upper left arrows) identifying synced media clips

Sync Bin Editing

The core idea behind the Sync Bin layout is that instead of traditionally scrubbing through your timeline and clips independently, you now only have to scrub through your timeline. In the Media Pool, all of the clips that exist with that same timecode value will automatically scrub in sync with the playhead. This allows you to always have the exact clips that will fit perfectly in your timeline available at your fingertips.

Selecting this mode automatically changes the layout of the Media Pool and the Viewer to better accommodate multi camera editing in the Cut page.

Edit in Your First Clip from the Media Pool

Choose a clip that will be your base layer and place it on Track 1. This clip is used as the reference for all of the other clips in the Sync Bin. Then press the Sync Bin icon.



The Sync Bin icon

Media Pool in the Sync Bin

All of the clips in the bin, and its subfolders, are presented in filmstrip mode. The clips are ganged together automatically by timecode and sorted by camera number. An additional playhead appears at the current timeline position, and moving any of the three playheads in the Cut page will scrub through all of the clips in the Sync Bin at the same time.

Viewer in the Sync Bin

The Viewer switches to a live Multi Viewer for up to nine cameras. Each camera is labeled, numbered, and the active camera in the Timeline is highlighted in red. Cameras that were not active at the current playhead time are blacked out.

The Sync Bin camera selection can be viewed full screen in the Cinema Viewer by pressing “P” on your keyboard, allowing you to see a larger, more detailed view of each specific camera. In this full-screen mode, the Sync Bin view controls operate identically to those in the normal Viewer.



The Media Pool and Viewer in Sync Bin view

Select Your Timeline In Point

Select the In point on your timeline by scrubbing the timeline playhead to the position you wish your media to start. As you do this, all of the clips in the Sync Bin will scrub along with the playhead position. Finding and selecting your edit points in the Sync Bin is greatly simplified, as all of your possible synced media choices are available instantly.

When the “Video Only” mode is activated in the Cut page, audio from the sources in the Sync Bin are now muted, and the audio playback is from the clips in the Timeline only.

Select Your Camera

In the Multicam Viewer, select the camera angle you wish to use as your source material by doing one of the following:

- Clicking on the appropriate camera in the Multicam Viewer
- Clicking on the appropriate camera number icon in the Filmstrip Viewer
- Pressing the number key of the camera on the keyboard

The Viewer will then go into Single Clip mode, showing the camera you selected. To return to the Multi Viewer, click on the circled X close icon, or simply press the Escape key.

The clip will automatically set an In point at your current timeline position, with a default duration of five seconds. You can then manually set the Out point of the clip wherever you want.



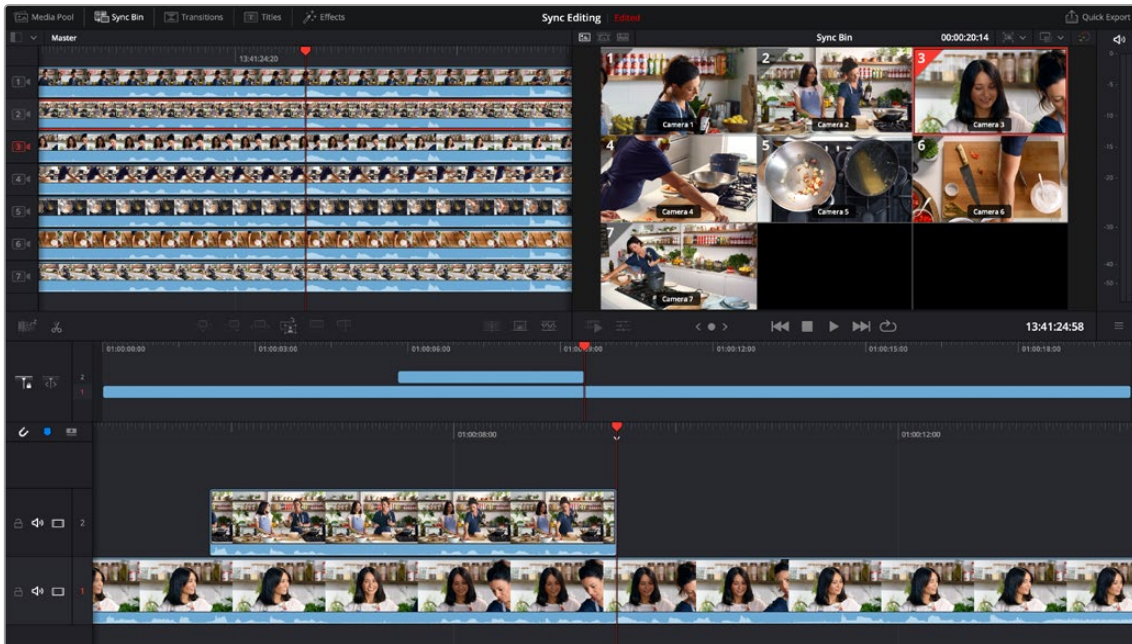
The Multicam Viewer selection

Make the Source Overwrite Edit

Once your clip's edit points are chosen, click on the Source Overwrite button and your selected camera clip will be perfectly positioned in sync on your timeline. The playhead will then automatically advance to the clip's Out point, the Multi Viewer will return, and so be instantly ready for the next edit.



Selected Camera 2 and Playhead In point on the Timeline, ready for Source Overwrite edit.

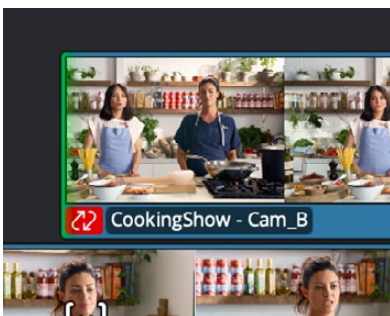


The completed Source Overwrite edit showing Camera 2 edited in, and the Timeline ready for the next edit

TIP: Because the actual media in the Sync Bin determines the overall limit of the clips, and not the Timeline, it is possible to scroll past the end of the Timeline to make an edit. When you are past the end of the Timeline, the playhead now represents the Out point instead, which allows the clip to backfill itself to fit the exact duration required to fill in the Timeline.

Resync Misaligned Synced Clips

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



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

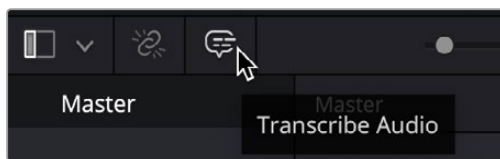
Audio Transcription and Text Based Editing (Studio Version Only)

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

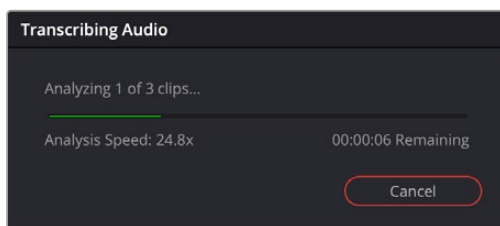
The Transcribe Audio feature is accessed via the Media Pool in the Media, Cut, Edit, and Fairlight pages and is a fully automated process.



The Transcribe Audio icon in the Media and Edit pages

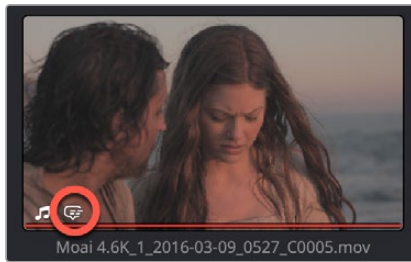
To automatically transcribe the audio of a clip:

- 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.

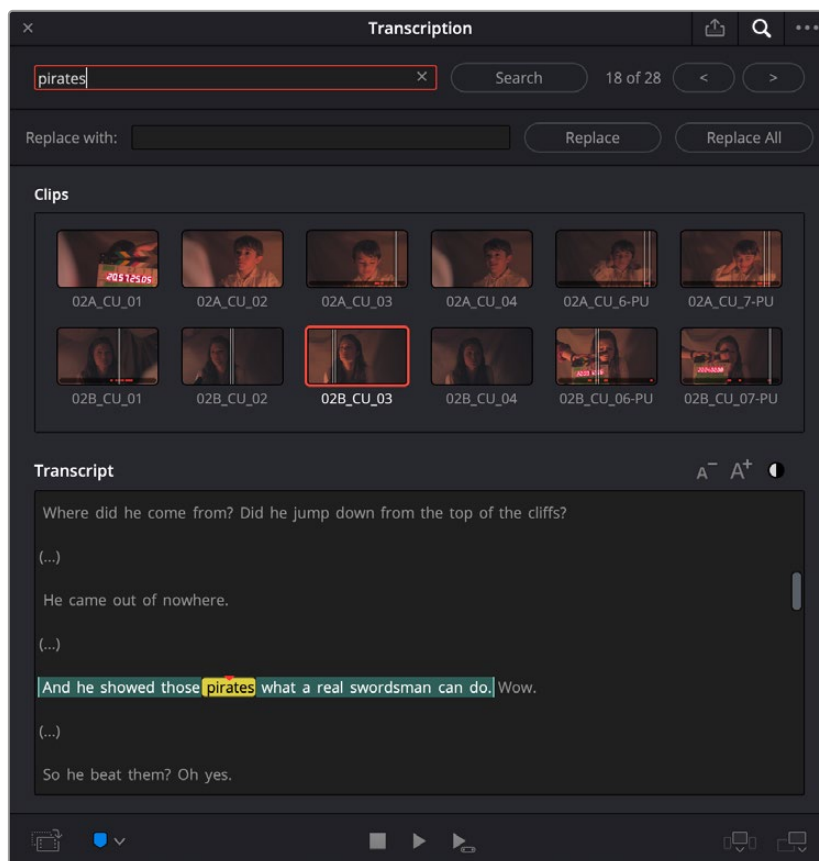
To remove a transcription from a clip:

- 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.

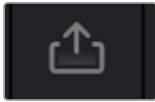
The In and Out range of the clip is highlighted in teal, and the current playhead position in the Viewer is indicated by a red triangle.

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.

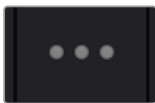
The Transcription Window is comprised of the following sections and tools:



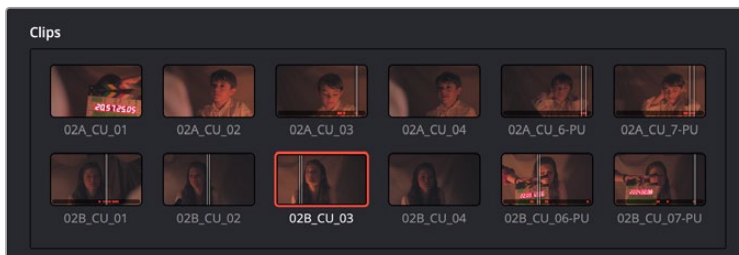
Export: Clicking this icon will launch a file browser, where you can save a .txt file of the transcription results for use in other programs.



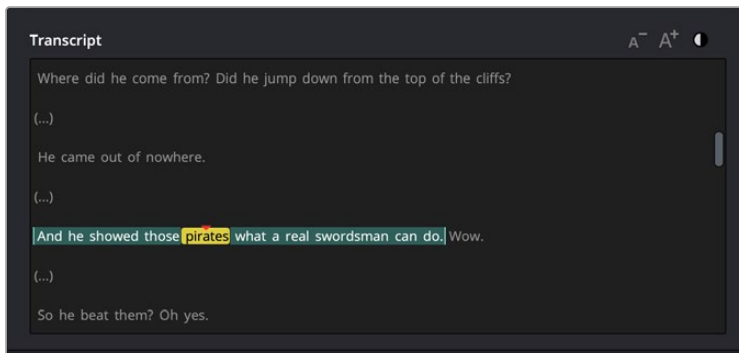
Search: Clicking this icon will expose a Search and Replace dialog, letting you find specific words or phrases across all the selected clips in the Clips panel. Found words will be highlighted in yellow.



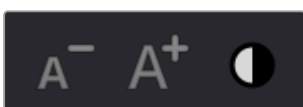
Options Menu: Reveals the Transcription Window options. Currently the only option is Remove Silent Portions.



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:

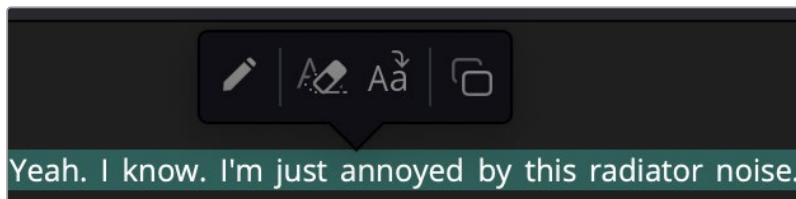
- Triple-click on any word in the paragraph to select the whole paragraph and highlight it in teal.

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.

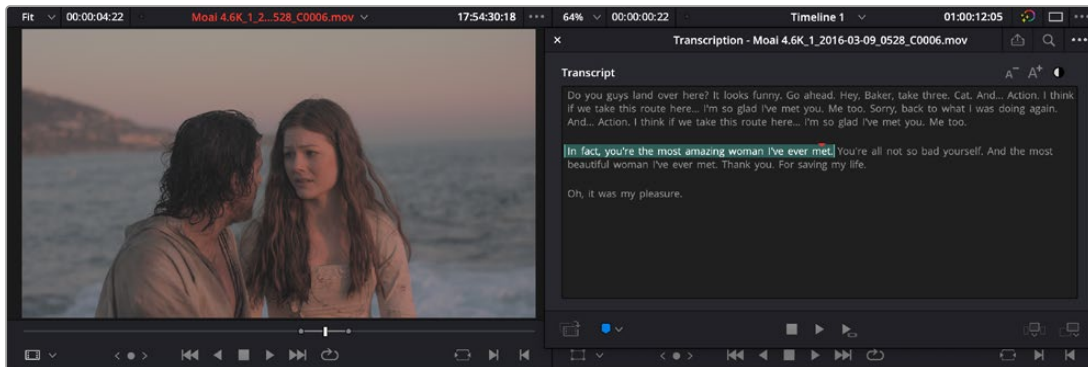
To move the playhead to a specific word in the clip:

- 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.

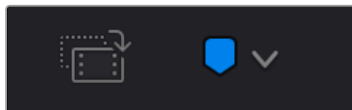
To select an In and Out range in the clip:

- 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.

Trimming in the Cut Page

Once you've assembled a sequence of clips together into a loosely edited timeline, the Cut page provides numerous methods for modifying them in the Timeline.

These tools are intended to improve the pace of your program by fine-tuning the timing of each clip, as well as the edits that separate them. The idea is to make these kinds of adjustments easy, so your program's content is clear, and the timing of your program's playback is satisfying. This process of making modifications to the edits in a timeline is referred to as "trimming."

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Tools That Help You Work in the Timeline

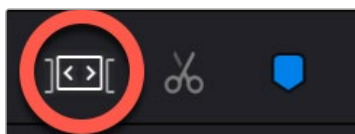
As you begin the process of trimming clips in the Timeline, a series of buttons at the top left of the Timeline help you to align clips and keep track of important frames while you work.

Ripple on Main Track Option to Disable Ripple Trims

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

To Enable or Disable Rippling on a Cut Page Timeline:

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



The Ripple On control toggles rippling on the main track.

Fixed or Free Playhead

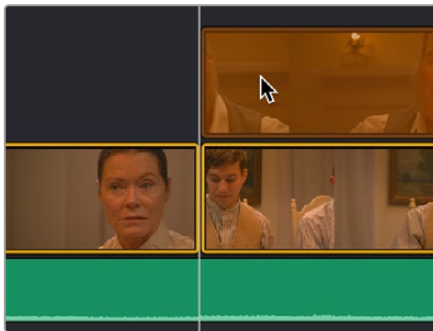
You can choose whether to keep the default fixed playhead on the Cut timeline (video flows under the playhead), or have it move freely with the video instead (playhead flows over the video). To choose the mode, click on the Timeline Options icon, and check or uncheck Fixed Playhead,

- When checked, the playhead is fixed in the center of the Timeline, and your edited clips scroll past it as you play (press the Spacebar), jog, or shuttle (use the JKL keys) in either direction. Locked mode works great when you use the DaVinci Resolve Editor Keyboard, because the Timeline flows past the playhead while you use the Jog/Shuttle/Scroll wheel. You can also scroll the Timeline using your pointer by dragging the Timeline Ruler at the top to the left or right, which also drags all of your clips to the left or right.
- When unchecked, the playhead moves across the clips as you play (press the Spacebar), jog, or shuttle (use the JKL keys) in either direction; the clips stay still. This mode can be useful when you're doing precision trimming in the Timeline using a pointing device, as the clips stay put while you drag parts of clips to make adjustments. Once the playhead gets to the right or left edge of the Timeline, the Timeline pages over to reveal the next part of your edit. You can also move the playhead by clicking in the Timeline Ruler to jump the playhead to that frame, or by positioning the pointer over the playhead's top handle, or over the playhead itself, and dragging the playhead wherever you want it to go.

Snapping

You can turn Snapping on or off by clicking the Timeline Options icon and checking or unchecking the magnet-shaped Snap icon, or press N to enable or disable snapping.

When snapping is turned on, clip in and out points, markers, and the playhead all snap to line up with one another, making it easy edit clips together at their boundaries, or to line up clips with markers or the playhead as reference for key frames you want to cut to. When a clip's boundary is snapping, a white line shows you the edges that are being aligned with one another.



NOTE: When the playhead is locked, clips don't snap to it.

The indicator that appears when clip boundaries are snapping to another edge

However, it's also important to be able to turn snapping off when this behavior impedes your ability to make small adjustments to clips in the Timeline. You can press N to temporarily turn snapping on or off while you're in the middle of dragging a clip in the Timeline, or while scrubbing the playhead using the pointer.

- When you change snapping while dragging a clip, an edge, or the Timeline, it's considered to be a temporary operation, and snapping reverts to its previous state when you release the mouse button.
- When you change snapping in between dragging operations, the snapping state remains set until the next time you change it.

Locking, Muting and Disabling Tracks

As you work in the Timeline, you may find it useful to lock tracks with clips you don't want to accidentally change as you work. For example, you might lock an audio track that has an edited piece of music you're now cutting other video and audio clips to, so you don't accidentally alter or trim the music that serves as the base of your program. Clips on locked tracks appear stippled to let you know they can't be altered.



A locked audio track, the Lock icon is closed and clips on that track are stippled

You may also find it useful to mute the audio or disable the video of tracks you don't want to see while playing the Timeline. For example, you might want to disable a track filled with title graphics if you

want to get a closer look at the underlying video in the background. Each track has Mute and Enable controls, while audio-only tracks only have Mute controls. White controls are enabled, while gray controls are disabled.



Track 1 is disabled; the Enable button is orange and clips on the track are dimmed

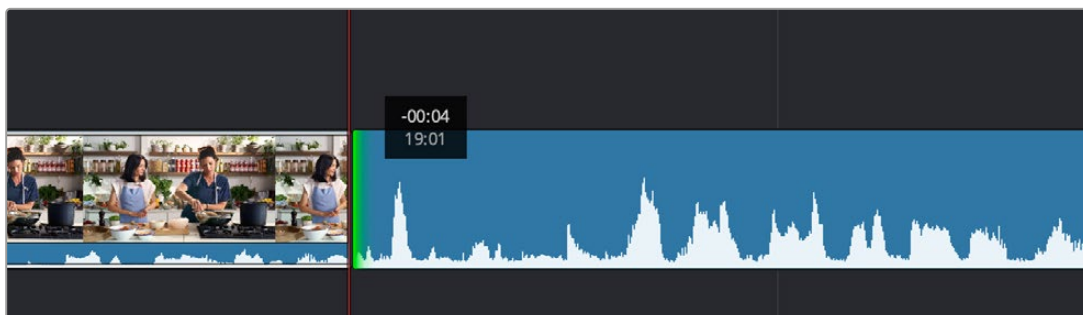
Audio Trim View

When performing a trim operation in the Cut page, you can set the option to expand the audio waveform of a Timeline clip while trimming. This mode gives a much more accurate view of the audio, making it easier to pick a specific edit point between words, beats, etc.

To toggle Audio Trim view:

- Click the Timeline Options icon, and check Trim to Audio.

With this option enabled, you'll see an expanded waveform for audio/video clips that are being trimmed in the Timeline, while you're trimming. This shrinks back down after you finish the trim operation.



The Audio Trim view showing an expanded audio waveform while trimming in the Timeline

Timeline Markers

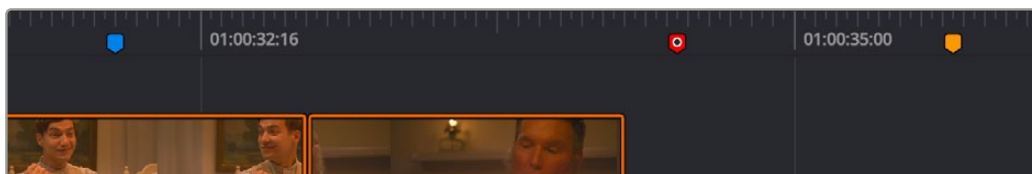
You can place markers in the Timeline Ruler (of both the Upper Timeline and the Timeline Editor) to keep track of important frames of clips you want to remember, alternate edit points you're thinking of, key moments in the edit, or to make notes of things you need to do. You can edit marker text, which appears as an overlay in the Viewer, and you can change the color of markers to distinguish them from one another.



The Marker button in the Timeline track header

Methods of working with markers:

- **To add a marker:** Move the playhead to a frame you want to mark, then click the Marker button in the Timeline header, or press the M key. You can also add a marker from the Timeline Actions icon.
- **To add a marker with a specific color:** Move the playhead to a frame you want to mark, then click the Timeline Actions icon, and select Set Color and Add Marker. This will both add a marker and open the Markers Edit window, letting you pick a specific color and add a comment.
- **To jump the playhead among markers:** Hold the shift key and press the Up or Down Arrow keys to jump the playhead from marker to marker.
- **To edit a marker's name, text, color, or keywords:** Double-click a marker, or jump the playhead to a marker and press M again. When the marker dialog opens, edit the Name, Notes field, Keyword field, or color of the marker, then press Return or click Done to close the dialog. Markers with custom notes appear with a dot.
- **To move a marker:** Drag a marker to another frame in the Timeline Ruler.
- **To delete a marker:** Select a marker, and press Delete. Or, align the playhead with a marker, and press Option-M. Or, jump the playhead to a marker, press M to open the marker dialog, and then click Remove Marker.



Blue, red, and orange markers in the Timeline; the red marker contains text, the others do not

Making Selections

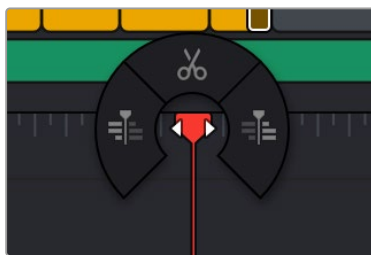
As you continue to work in the Cut page, it becomes increasingly helpful to know how to make different kinds of selections, both in the Media Pool and in the Timeline. Most of these methods of selection should be familiar to you if you have experience with other media applications or file managers.

Methods of selecting clips in the Media Pool:

- **To select a single clip:** Click a clip in the Media Pool. Once you've selected a clip, you can use the Up and Down arrow keys to move the selection to other clips.
- **To select a contiguous range of clips:** 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.
- **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.
- **To select all clips:** Select one clip, then choose Edit > Select All (Command-A).

Methods of selecting clips in the Timeline:

- **To select one clip:** Click a clip with the mouse. Command-clicking that clip de-selects it.
- **To de-select all clips in the Timeline:** Click in any empty area of the Timeline to de-select everything, or press Command-Shift-A.
- **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.
- **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.
- **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 all clips in the Timeline from the playhead forward:** Right-click the top handle of the playhead, and click the right button on the radial menu that appears.
- **To select all clips in the Timeline from the playhead backward:** Right-click the top handle of the playhead, and click the left button on the radial menu that appears.



The radial menu that appears when you right-click the top handle of the playhead

Methods of selecting edits in the Timeline using the pointer:

- **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.
- **To select just the incoming or outgoing half of an edit point to resize:** 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.
- **To select multiple roll points:** Command-click the center of multiple edit points. Command-click a selected edit point to deselect it.
- **To select multiple resize points:** Command-click the left or right sides of multiple edit points.
- **To de-select all clips in the Timeline:** Click in any empty area of the timeline to de-select everything.

Keyboard shortcuts for selecting edits in the Timeline:

- **To select an edit point from the keyboard:** Press V to select the nearest edit point to the playhead.
- **To change an edit selection from the keyboard:** Once you've selected an edit point, press U to toggle among selecting the outgoing half, incoming half, or the entire edit.
- **To de-select all edits in the timeline:** Press Command-Shift-A.

Moving Clips in the Timeline

Once you've edited some clips into the Timeline, you'll probably want to start fine-tuning the edit by moving clips around. Different operations can be performed depending on how you move these clips. All of these techniques work in both the Upper Timeline and the Timeline Editor.

Ripple Overwriting An Entire Clip in Track 1

Drag a clip in the Timeline or Upper Timeline over another clip in the Timeline so that the pointer overlaps that clip, and quickly drop it onto another clip in Track 1. The clip you dragged replaces the clip you dropped it onto, and all clips to the right are moved to either make room (if the dragged clip is longer) or to close the gap (if the dragged clip is shorter).



Clicking clip BB to begin dragging it



Dragging clip BB onto clip DD to ripple overwrite it



Clip BB is moved and takes the place of clip DD, while the rest of the Timeline moves left to close the gaps in Track 1

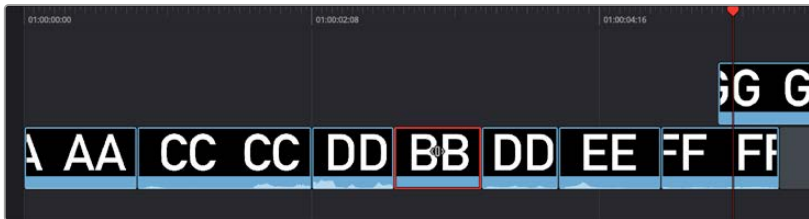
NOTE: If you wait too long, this Ripple Overwrite operation will turn into an overwrite operation. If you drag a clip in Track 1 onto a clip in any other track, you can only do an overwrite, not a ripple overwrite.

Overwriting the Middle of Other Clips

Drag a clip in the Timeline or Upper Timeline over another clip in the Timeline so that the pointer overlaps that clip, and pause until the clip you've selected is overlaid on top of the second clip, and release the mouse button. The target clip is overwritten by the duration of the clip you dragged and split in two.



(Top) Dragging clip BB and pausing to overwrite part of clip DD



(Bottom) Clip BB is moved, overwriting the middle of clip DD which is now in two pieces; the rest of the Timeline moves left to fill the gap by moving clip BB in Track 1

Overwriting The Edges of Other Clips

Drag a clip in the Timeline or Upper Timeline over the edge of a neighboring clip without letting your pointer overlap it, then drop the clip. The overlapping part of the neighboring clip will be overwritten.



(Top) Dragging clip CC to partially overlap clip DD in order to overwrite it



(Bottom) After dropping clip CC to partially overwrite the beginning of clip DD, clip DD is shortened and the other clips in the Timeline move left to fill the gap in Track 1

Swapping Clips

Drag one or more clips from one part of the Timeline or Upper Timeline to another so that the pointer overlaps an edit between two clips (the edit point turns purple), and drop the clip. The clip(s) you dragged are now moved so that they're inserted at the edit point you targeted.



Dragging clip CC to swap it between clip II and JJ



Dropping clip CC rearranges the Timeline, which automatically closes all gaps and move clips to the right where necessary; superimposed clips are kept in sync with clips in Track 1 that have moved

Copy, Cut, and Paste

Clips can be cut, copied, and pasted in the timeline or Upper Timeline to duplicate them or move them around, just like words in a word processor.

To cut/copy and paste in the Timeline:

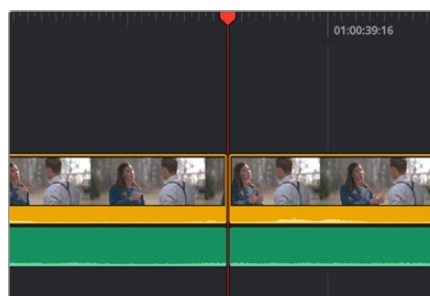
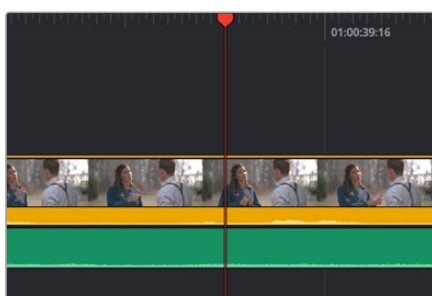
- 1 Select one or more clips in the Timeline.
- 2 Do one of the following:
 - a) Press Command-C to copy them (the selected clips remain where they are).
 - b) Press Command-X to cut them (the selected clips are removed and the Timeline automatically ripples itself to close the gap).
 - c) Move to another part of the Timeline, then press Command-V to paste the clips. The clips are pasted to the frame at the playhead, to the same track they were copied from, and overwrite whatever other clips are at that part of the Timeline.

Splitting Clips

You can split any clip into two pieces, effectively adding an edit point in the middle, in preparation for moving part of a clip, deleting part of a clip, inserting another clip at that edit point, or adding an effect of some kind to one part of a clip but not another.

To split a clip:

- 1 Move the playhead to the frame of a clip where you want to split it.
- 2 Do one of the following:
 - Click on the Edit Actions icon, and select split from the drop-down menu.
 - Right-click the top handle of the playhead and click the Split button that appears on the radial menu.
 - Press Command-Backslash.
 - Press the Split Clips (scissor) icon on the far left of the Cut page Edit commands.



(Left) Before splitting a clip, (Right) After, a new edit point bisects the clip into two pieces

Disabling and Deleting Clips

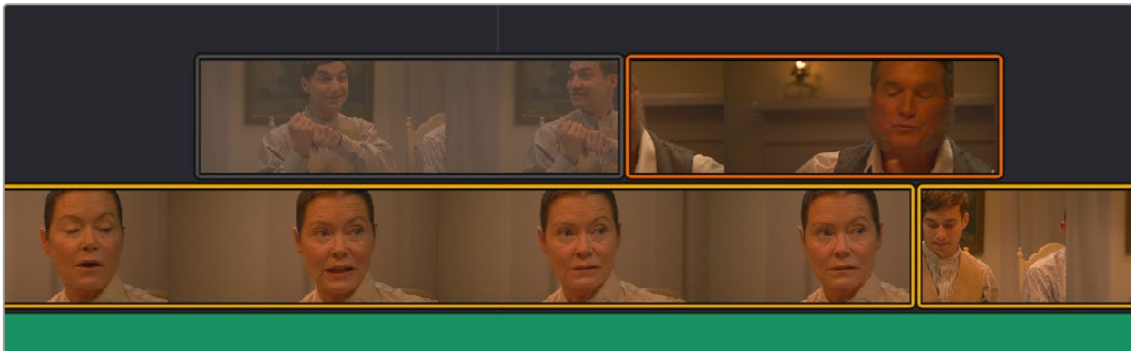
Clips that you no longer want can be disabled or deleted.

Disabling and Muting Clips

You can turn off the audio and/or video for a clip in the Timeline, without removing the clip itself. This is useful in instances where you want to use a clip's audio or video selectively, or for instances where you want to disable the audio and video for a clip that you don't want to use, without eliminating it completely from the Timeline in case you change your mind.

Disabling Clips

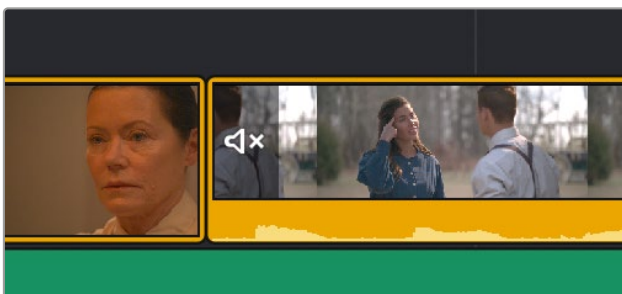
You can turn off a clip's video while leaving it in the Timeline by selecting it and pressing D, or by right-clicking it and deselecting Enable from the contextual menu. The clip turns dull to show it's disabled. Audio will continue to play for that clip unless you mute it as well.



A disabled clip in the Timeline

Muting Clips

You can turn off a clip's audio while leaving it in the Timeline by right-clicking it and choosing Mute from the contextual menu. A mute icon is superimposed over the beginning of the clip to show audio is disabled. Video will continue to play for that clip unless you disable it as well.



A muted clip in the Timeline

Deleting Clips

If you want to completely eliminate one or more clips from the Timeline, select them and press the Delete key. The clip(s) will be removed. If you've deleted a clip on Track 1, the Timeline will ripple to close the gap automatically.



Selecting clip DD to delete it



Deleting clip DD results in clips EE through NN moving left to fill the gap in Track 1; superimposed clips move to keep in sync with the clips underneath them

Deleting Parts of Clips

If you want to delete only part one or more clips, set In and Out points around the section of the Timeline you want to delete, and press the Delete key. The section of the Timeline between the In and Out points will be removed. If you've deleted part of a clip on Track 1, the Timeline will ripple to close the gap automatically.



Marking In and Out points to delete that section of the Timeline



After deleting whatever's between the In and Out points, all clips to the right of the marked section move left to close the gap in Track 1

Trimming Clips

You can also quickly modify your edited timeline by resizing the In and Out points of any clip, moving the edit points between clips, and slipping the contents of a clip.

Resize Clips While Rippling the Timeline

If you move the pointer over the far left or right edge of a clip in the Timeline or Upper Timeline, it turns into a Resize icon to indicate that you can drag the In or Out point of that clip to make it shorter or longer, in the process rippling all clips to the right in the Timeline to accommodate the new length of the clip. While you drag, a tooltip shows you how many frames you've moved the clip and the clip's new duration. As you do so, the audio will scrub along with the Resize cursor.

If you resize a clip in Track 1, the rest of the edited timeline automatically ripples to accommodate the changes you've made, with clips to the right of the changed area moving left to fill the gap of a deleted or shortened clip, or moving right to make room for an inserted or lengthened clip.



(Top) Clicking the Out point of clip DD in Track 1

(Bottom) Dragging to shorten clip DD ripples the Timeline; a tooltip appears to show you how many frames you've resized

Moving or resizing clips on Track 2 and above only moves or resizes that one clip; other clips in the Timeline are not rearranged and the Timeline is not rippled when you do this.



(Top) Clicking the out point of clip HH in Track 2

(Bottom) Dragging to lengthen the clip doesn't ripple the Timeline

TIP: When you resize the Out point of a clip on Track 1 that's underneath a superimposed clip, and the superimposed clip has an In point that's to the right of the In point of the clip you're resizing, then dragging the Out point of the clip you're trimming past the left of the In point of the superimposed clip will delete that superimposed clip from the Timeline.

Rolling an Edit

You can click and drag any edit point between two clips in the Timeline or Upper Timeline to “roll” it, basically resizing the Out point of the outgoing clip and the In point of the incoming clip simultaneously. This lets you move an edit point without changing the duration of the overall timeline. While you drag, a white overlay in the Timeline lets you see how much media you have available for rolling (depending on the available handles in the source media). As you do so, the audio will scrub along with the right clip's In point.



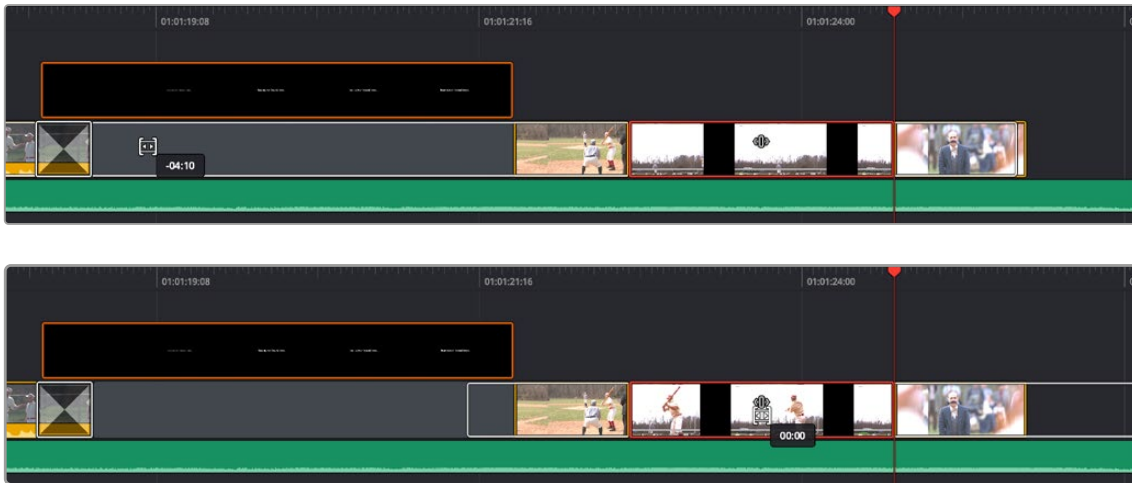
(Top) Clicking an edit between clips CC and DD

(Bottom) Dragging to the right rolls it forward, simultaneously resizing clips CC and DD

Slipping Clip Content

For each clip in the Timeline, a Slip handle appears at the center of the clip. Dragging this handle lets you slip the contents of that clip to present a different range of media, without changing the position or duration of the clip, and without changing any other part of the Timeline.

You can even select multiple clips, such as two superimposed clips, or a number of clips in a row, and slip them all at the same time. While you drag, a white overlay in the Timeline lets you see how much media you have available for slipping (depending on the source clip's duration).



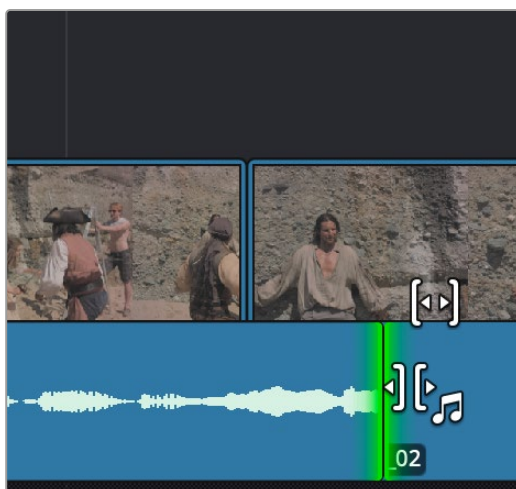
(Top) Clicking a clip's slip handle, (Bottom) Dragging a clip's slip handle to change the range of media within that clip

Roll and Trim Audio Edit Points to Add Split Edits

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

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

- Expand the track on the Cut page by clicking on the Enlarge Track icon on the left side of the track header. This is not strictly necessary but makes it easier to find the correct trigger point for the tool and see the audio waveform as you're trimming it.
- Hover the pointer over the edit point in the lower audio portion of the track. When the trim icon shows a musical note to the right, you can then slide that edit point back and forth and only the audio portion of the clip will be expanded forwards or backwards.
- The Trim View will also appear in the Viewer as you edit, along with expanded audio waveforms that are zoomed into the frame level for precision.



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

Trim or Extend Clip to Playhead

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

To Trim or Extend Clip to Playhead:

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



(Top) The original Timeline with playhead intersecting between the second and third set of "BB's," (Middle) The resulting clip when Trim Start to Playhead is selected, (Bottom) The resulting clip when Trim End to Playhead is selected

Trimming Edits in the Viewer

You can double-click any edit point between two clips in the Timeline or Upper Timeline to open up the Trim Editor, which provides a detailed method of adjusting both halves of an edit point. A graphical A/B roll interface shows two filmstrips with the outgoing clip on top and the incoming clip on the bottom. These controls are draggable:

- Drag the left side of the top filmstrip's handle to trim the Out point of the outgoing clip
- Drag the right side of the bottom filmstrip's handle to trim the In point of the incoming clip
- Drag the white handle between the top and bottom filmstrips to roll the edit point, simultaneously adjusting the outgoing and incoming edit points

Numbers over each frame let you see exactly how many frames you're trimming, while a pair of buttons to the left and right of the transport controls in the Viewer toolbar let you adjust the outgoing clip's Out point and incoming clip's In point in one frame increments.



The Viewer Trim Editor seen when you double-click an edit in the Timeline

Trimming Transitions in the Viewer

If you double-click a transition, that transition appears sandwiched between the outgoing and incoming clips, with handles you can use to trim the transition's length, as well as the outgoing and incoming halves of the edit point to which the transition is applied.



The Viewer Trim Editor seen when you double-click a transition in the Timeline

Using the Inspector in the Cut Page

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

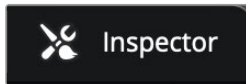
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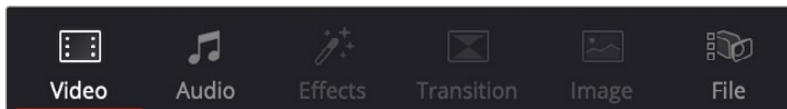
Using the Inspector

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:

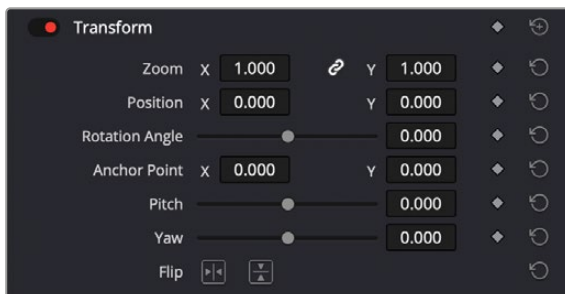
- **To activate or deactivate a control:** Click the toggle to the left of the control's name. The orange dot on the right means the control is activated. A gray dot on the left means the control is deactivated.
- **To reveal a control's parameters:** Double-click the control's name.
- **To reset controls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

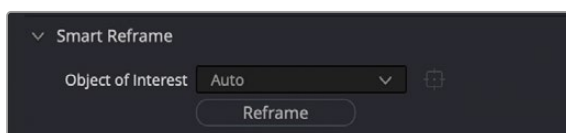


The Transform section of the Video Inspector panel

- **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.

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.



The Smart Reframe section of the Video Inspector panel

- **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.

Cropping

The Video Inspector controls the image's cropping parameters.

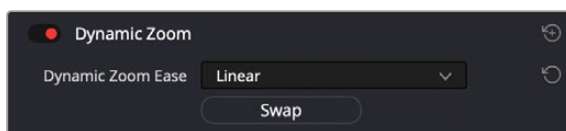


The Cropping section of the Video Inspector panel

- **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."*

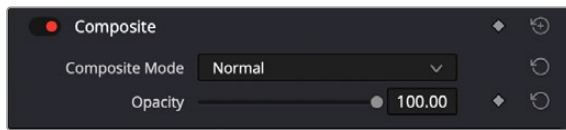


The Dynamic Zoom section of the Video Inspector panel

- **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.

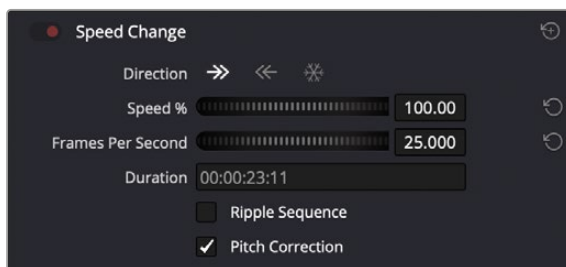


The Composite section of the Video Inspector panel

- **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.



The Speed Change controls in the Video Inspector

- **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.

Stabilization

These controls let you smooth out or even steady unwanted camera motion within a clip.



The Stabilization section of the Video Inspector panel

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.

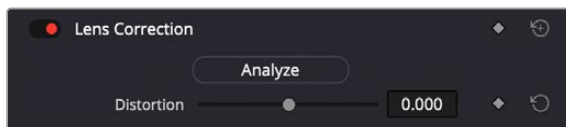
The other controls let you customize how aggressively the selected clip is stabilized.

- **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.

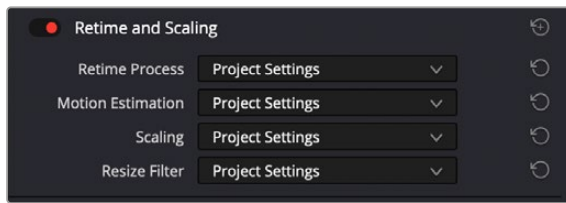


The Lens Correction section of the Video Inspector panel

- **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.

Retime and Scaling

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



The Retime and Scaling section of the Video Inspector panel

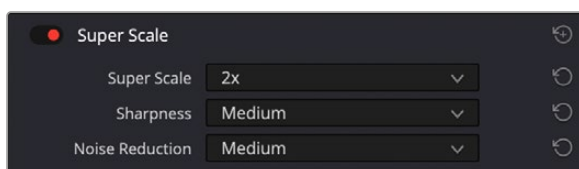
- **Retime Process:** Lets you choose a default method of processing clips in mixed frame rate timelines and those with speed effects (fast forward or slow motion) applied to them, on a clip-by-clip basis. The default setting is “Project Settings,” so all speed-effected clips are treated the same way. 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.”
- **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.



The Audio Inspector parameters

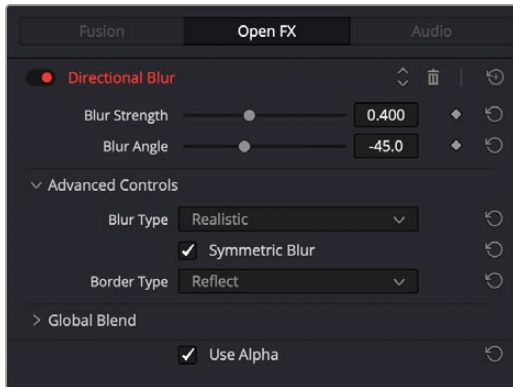
- **Clip Volume:** Each clip has a single volume control that corresponds to the volume overlay over each audio clip.
- **Clip Pan:** (Only exposed for clips) A simple Pan slider that controls stereo panning.
- **Voice Isolation (Studio Version Only):** Voice Isolation is a plugin that can remove loud, 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.
- **Amount:** Lets you adjust the amount of voice isolation processing.

- **Dialogue Leveler:** The Dialogue Leveler analyzes source material to detect dialog, and then “ride down” louder areas, “lift up” softer areas, and lower background sounds that are not dialog. It works without typical dynamics processor “pumping” (compression/limiting) or other obvious side effects and produces results similar to detailed manual clip gain adjustments or by carefully “riding” the track with fader automation.
- **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

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.



The Effects Inspector controls

These controls include:

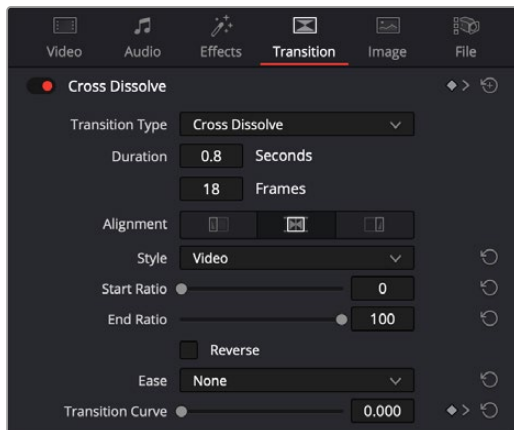
- **Enable button:** A toggle control to the left of the parameter group's name lets you disable and re-enable every parameter within that group at once. Orange means that track's enabled. Gray is disabled.
- **Parameter group title bar:** Double-clicking the title bar of any group of parameters collapses 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 plug-ins that accompany DaVinci Resolve, see Part 12, "Resolve FX Overview."

Transition

Double-clicking a transition in the Timeline opens that Transition Panel in the Inspector.

Each transition has the following properties you can edit.



The Transition Inspector controls

- **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.

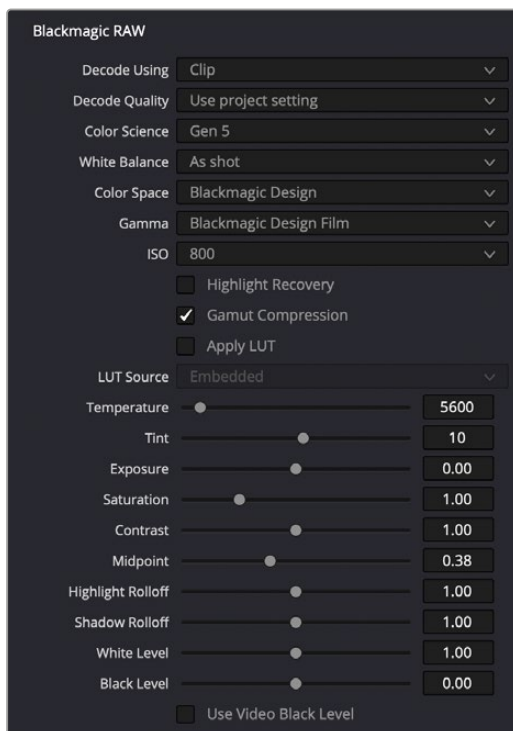
- **Style:** The different Dissolve transitions (Cross Dissolve, Additive Dissolve, and so on) expose this drop-down that lets you choose different ways for the outgoing clip to blend into the incoming clip during the dissolve. There are six different options to choose from:
 - **Video:** A simple linear 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 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.

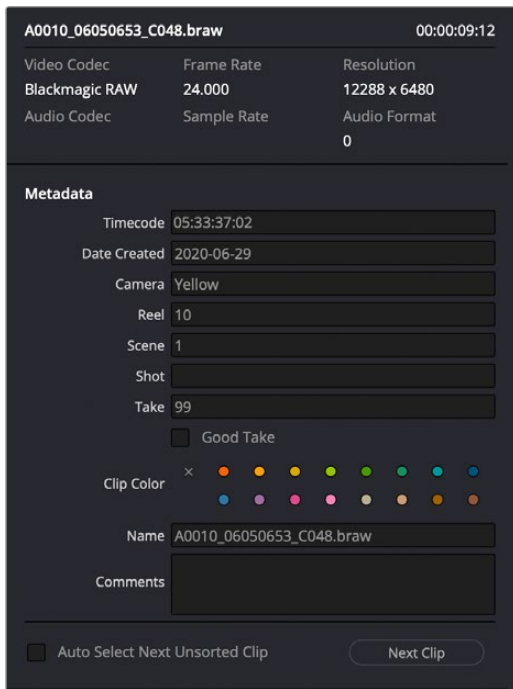


The Image Inspector controls for BRAW footage

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

File

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:



The File Inspector controls

- **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.

Video and Audio Effects in the Cut Page

As you build your edit, you'll often find it necessary to add effects to clips to create titles, blend clips together with compositing, add plugins to give clips a particular look, speed clips up or slow them down, or transform clips to zoom into them or move them around the frame. The Cut page has controls to accomplish all of this and more.

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Adding Transitions

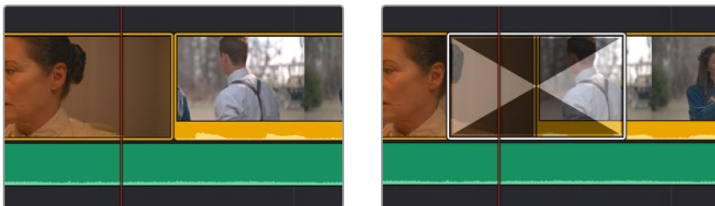
You can add transitions such as dissolves or wipes to an edit to indicate a change of topic, a change of location, or the passage of time. You can also add a Smooth Cut transition to patch unwanted cuts in interview clips or other situations where there's not a significant change in the position of the subject or background in the frame. Three buttons, at the bottom right of the Media Pool, make it easy to add and remove dissolves and Smooth Cut transitions.



The Cut, Dissolve, and Smooth Cut buttons

Adding Dissolves

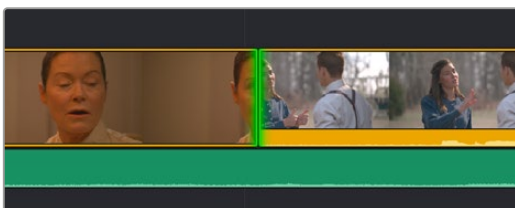
Dissolves are the most standard and ubiquitous type of transition, and so they're the easiest to create. Place the playhead on or near an edit you want to turn into a dissolve, and click the Dissolve button at the bottom left of the Media Pool. A one second Cross Dissolve will be added to the edit point that's nearest to the edit point.



(Left) Moving a playhead near an edit point,
(Right) Adding a dissolve

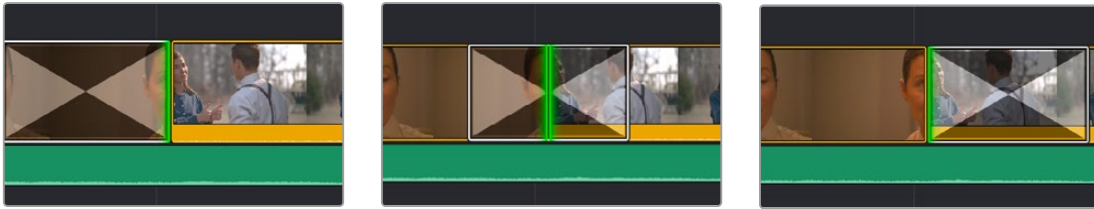
Adding Dissolve Using Keyboard Shortcuts

You can also add a dissolve by selecting one or more edit points (or moving the playhead near an edit you want to select and pressing V to select the nearest edit point), then pressing Command-T to add a dissolve, which is the standard transition.



A selected edit point

You can also add a transition that's aligned with the beginning, middle, or end of the edit point using the keyboard. To do so, select an edit point, press the U key repeatedly to cycle among selecting the start, center, or end of the edit, then press Command-T to add the standard transition. The standard transition will be added with its alignment based on the edit selection you made; selecting the start of the edit places a transition that ends on the edit; selecting the end of the edit places a transition that starts on the edit, and choosing the center of the edit places a transition that is similarly centered.



A transition that's aligned with the beginning, center, and end of an edit point

Changing a Transition to a Cut

To remove a dissolve, thereby changing a transition to a cut, move the playhead at or near the edit with the dissolve, and click the Cut button, which is fast to do when you're using the DaVinci Resolve Editor Keyboard which has a dedicated Cut button.

TIP: Alternately, you can select one or more transitions in the Timeline and press the Delete key to remove them.

Adding Smooth Cuts

Smooth Cuts are special-purpose transitions designed to make short jump cuts in the middle of a clip unnoticeable. This is done by using optical flow processing to match the same features on either side of a cut in order to automatically morph a subject from one position to another over the duration of the transition.

To add a Smooth Cut:

- 1 Place the playhead on or near an edit.
- 2 Click the Smooth Cut button at the bottom left of the Media Pool. A one second Smooth Cut will be added to the edit point that's nearest to the edit point.

The Smooth Cut effect works best on clips such as sit-down interviews and close-up head shots with a minimum of background and subject motion, and where the subject's position on either side of the cut is not significantly different. A good example of when Smooth Cut is effective is when you're cutting pauses, partial repeats, filler sounds such as "um" or "you know," or other speech disfluencies out of an interview clip to tighten the dialog, and you want to eliminate the little "jump" that occurs at the cut without having to cut away to B-roll. Applying a short two or four frame Smooth Cut transition to the edit can make this kind of edit invisible, as long as the speaker doesn't change position significantly during the cut. The more motion there is in the background of the shot, and the more the speaker changes position, the harder it will be to get a useful result using Smooth Cut. Although the default duration for any transition is one second, you'll find that Smooth Cut transitions may work much better when they're short; 2- to 6-frame Smooth Cut transitions often work best to disguise jump cuts.

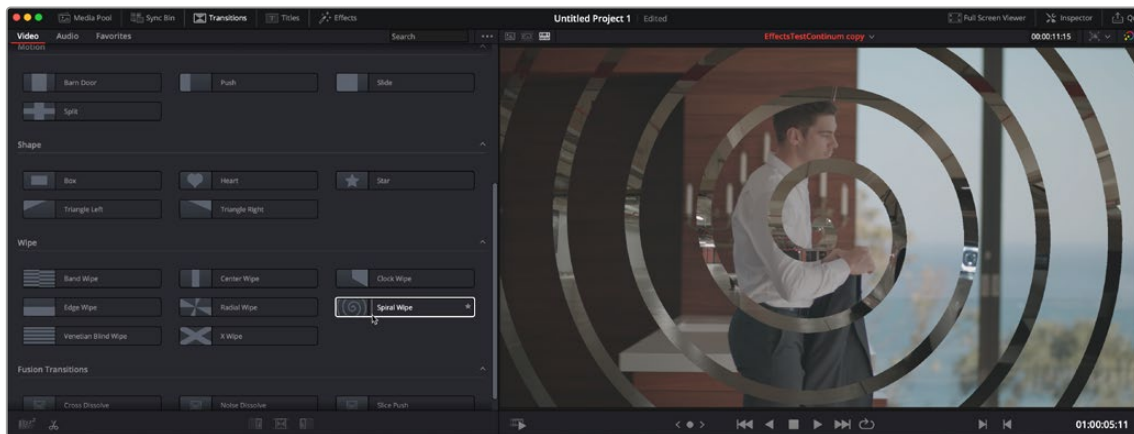
Adding Other Kinds of Transitions

In order to make the selection of transitions, titles, and effects more intuitive, DaVinci Resolve shows each effect as a thumbnail representation in addition to the text name. This allows the user to

quickly scan through all the numerous options to select the appropriate effect visually, rather than remembering them based on name alone. You can preview transitions and titles before you place them on the Timeline to quickly audition multiple options before making your final decision.

Transitions Thumbnails

To preview a transition before you place it into the Timeline, ensure that “Hover Scrub Preview” is checked in the Transitions option menu, then simply hover your pointer over any transition in the Transitions tab and move it across the thumbnail. The transition will preview in the Viewer using the two clips nearest the Smart Indicator in the Cut page, or the two clips nearest the playhead in the Edit page.



Scrubbing over a Transition Thumbnail previews the transition in the Viewer.

Once you've chosen your transition, it can be applied by to any edit point by using the methods below:

Methods of adding different transitions:

- **To add a transition by dragging it from the Transitions Browser:** Drag a video transition from the Effects Library to an edit point in the Timeline so that it's centered at, ends at, or starts at the edit point. If there is no overlap between the heads and tails of the two clips, you may not be able to add a transition where you want.
- **To add a transition using the Transitions Browser's contextual menu:** Select one or more edit points (one per track), then right-click a video transition in the Effects Library and choose Add to Selected Edit Points. That transition will be added to every selected edit point at once.
- **To add a transition by double-clicking in the Transition Browser:** You can double-click a transition in the Cut page's Transitions Browser to apply it directly to the edit point referenced by the Smart Indicator.
- **To add a transition by using the transition alignment icons in the Transition Browser:** You can double-click on one of three transition alignment icons at the bottom of the in the Cut page's Transition Browser.

Accessing Favorited Transitions

Any transitions you've marked as favorites can be accessed directly in the toolbar by right-clicking the Smooth Cut icon, and selecting your transition from the drop-down menu. You can mark a transition as favorite from the effects library by hovering over the entry and clicking the star.

Editing and Removing Transitions

Once you've added a transition, you can edit it in a number of different ways to work best for your program, both in the Timeline and in the Transition Inspector.

Methods of editing transitions in the Timeline:

- **To change a transition's duration:** Drag the beginning or end of a transition in the Timeline to be longer or shorter symmetrically about the current edit.
- **To move a transition from one edit to another:** You can drag a transition from its current position to another edit point.
- **To copy a transition from one edit to another:** Select a transition, then option-drag it to another edit point to add a duplicate transition.
- **To change a transition's type:** Drag a different transition from the Transition Browser onto the current one in the Timeline.
- **To remove a transition:** Select a transition in the Timeline and press the Delete key.

Editing transitions in the Transition Inspector:

For more detailed control over your transition, including modifying all transition-specific parameters, use the Transition Inspector. For more information on each specific transition included in DaVinci Resolve, see Chapter 47, "Using Transitions."

Titles

There's a collection of title clips in the Titles Browser that you can use to add superimposed titles, slates, interstitial titles, lower thirds, or otherwise fulfill any textual needs your program has.

Titles Thumbnails

To audition titles before you place them into the Timeline, ensure that "Hover Scrub Preview" is checked in the Titles option menu, then simply hover your pointer over any thumbnail in the Titles tab. If the title is animated (i.e., Fusion titles), moving the pointer across the thumbnail will preview the animation. Once you've chosen your title, you can drag it from the Titles tab to your Timeline in the Edit page or in the Cut page to either the upper or lower Timelines, or use the editing selection modes at the bottom of the tab.



Scrubbing over a Title Thumbnail previews the title in the Viewer.

Two categories present two different kinds of titles. The “Titles” category presents simple, bare-bones titles that you can customize in a variety of different ways. Of the available options, the Text title is the most flexible. The “Fusion Titles” category presents more complicated titles that are more visually sophisticated and have more preset animation.

Adding Titles

You can add a title to the Timeline by opening the Titles Browser and dragging and dropping titles into the Timeline wherever you want them to be, just like any other clip. The default duration of a title clip is 5 seconds. This standard “generator” duration can be customized in the Editing panel of the User Preferences.

Once edited into the Timeline, titles can be moved, resized, and superimposed much like any other clip. Furthermore, when selected, both titles and generators expose the same Transform, Cropping, Speed, and Composite controls as any other clip; these controls can be used to composite titles in various ways to create different text effects.

Editing Titles

Once you add a title to the Timeline, the original title generators that shipped with DaVinci Resolve have onscreen controls that let you edit text and transform and position blocks of text directly within the Timeline Viewer.

Positioning and Transforming Text

So long as the Timeline playhead is positioned over a text generator that’s on top of one or more background clips, clicking on the text in the Timeline Viewer reveals onscreen transform controls that correspond to the Position, Zoom, and Rotation parameters in the Inspector.



Transforming a title’s text box in the Viewer

While dragging text to reposition it, snapping occurs at the X and Y center of the frame, as well as around the outer third of the frame. Holding the Shift key down while dragging a text object constrains movement to just the X or Y axes. Holding the Option key down turns snapping off.

Editing Text

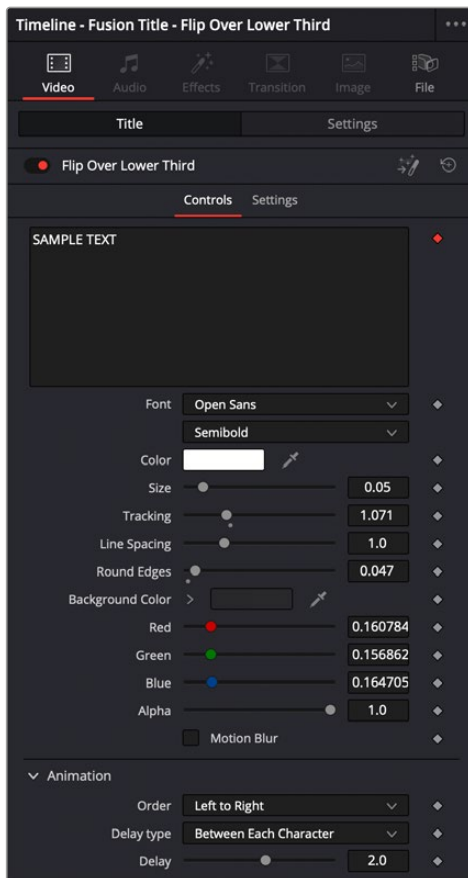
Double-clicking on text in the Timeline Viewer puts that text into an editable state, wherein you can insert a text cursor or select characters to edit the text as you would in any text editor.



Editing the text of a title in the Viewer

Editing Titles Using the Video Inspector

For more precise control of your titles, double-clicking on any title will bring up its parameters in the Video Inspector. Here you can change fonts, colors, drop shadows, backgrounds, etc. You can also adjust basic transform parameters and cropping as well. For more information on Editing Titles, see *Chapter 48, "Titles, Generators, and Stills."*



The Title settings of Video Inspector

Adding Resolve FX and Other Plugins

The Effects Browser reveals video and audio plugins that you can drag and drop onto to your clips. As far as video plugins go, there are several categories of Resolve FX plugins that accompany DaVinci Resolve, but if you've installed Resolve-compatible OFX plugins, those appear here as well, organized into their own categories. For audio plugins, a set of Fairlight FX plugins comes with DaVinci Resolve, but if you've installed VST plugins on macOS or Windows, or you have Audio Units installed on macOS, those will appear in the Audio category also. When you have a lot of video or audio plugins, a search field makes it easy to find the one you're looking for.

Video Effects

Each available category of video plugins creates different sorts of image effects, such as blurs, lighting effects, or stylization of different kinds. To preview a video effect before placing it on a clip, ensure that "Hover Scrub Preview" is checked in the Effects option menu, then simply hover your pointer over any thumbnail in the Effects tab and move it across the thumbnail. The effect will preview in the Viewer using its default parameters, and scrub through the clip that is selected in the Timeline. If no clip is selected then it will use the clip currently under the playhead.

To activate a specific video effect on a clip, simply drag the thumbnail of the selected effect to a clip on the Timeline. In the Cut page, you can also double-click the thumbnail to apply the effect to the selected clip. To adjust the effect's parameters, open the Effects tab in the Inspector.



Scrubbing over an Effect Thumbnail previews that effect in the Viewer.

Audio Effects

Audio plugins let you process your audio in different ways, adjusting the tone using equalization, changing dynamics with compression, or adding effects such as echo, reverb, flange, or modulation. To activate a specific audio effect on a clip, simply drag the thumbnail of the selected effect to a clip on the upper or lower Timelines in the Cut page, or onto a clip in an audio track on the Edit page. Once the effect has been dropped on a clip, its audio plugin controls will open for you to adjust the plugin's parameters.

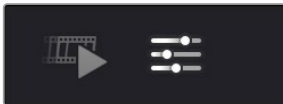
Generators

The various video generators included in DaVinci Resolve can be previewed by hovering your pointer over any thumbnail in the Generators tab. To edit a generator into your Timeline, simply grab the thumbnail of the generator you wish to use, and place it in your Timeline in the Edit page, or in either the upper or lower Timelines in the Cut page.

For more information on using all the included video and audio effects in DaVinci Resolve, see *Chapter 46, "Editing, Adding, and Copying Effects and Filters."*

Clip Tools

Clicking the Tools button in the Viewer toolbar opens up additional categories of controls that let you apply various effects to the current clip, or adjust whatever effect is already applied to the current clip. Many of the parameters of these effects have corresponding onscreen controls that let you make visual adjustments directly in the Viewer.



The Tools button

Shared Controls

Every category of effect at the bottom of the Viewer has two shared controls. A toggle control at the far left lets you enable or disable an effect without losing whatever custom adjustments you've made. A reset control at the far right lets you reset every parameter within a particular category of controls to the default settings.



The Toggle button (at left) and Reset button (at right)

Transform

When you select Transform, onscreen transform controls appear that let you directly manipulate the image in the Viewer. You can drag anywhere within the clip's bounding box to adjust pan and tilt, drag any diagonal corner to proportionally resize, drag any top/bottom/left/right side to squeeze or stretch width or height, or drag the center handle to rotate.



Onscreen Transform controls in the Viewer

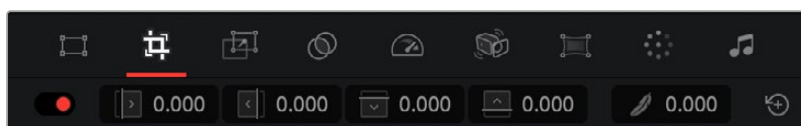
TIP: While dragging a clip using the onscreen controls to reposition it, holding the Shift key down constrains movement to just the X or Y axes.

The onscreen controls also correspond to the following editable parameters, which are also editable in the Video Inspector and in the Edit Sizing mode of the Sizing palette in the Color page:

- **Zoom Width and Height:** 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.
- **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 bring 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.

Crop

The Cut page has a set of onscreen controls you can use to directly crop the image in the Viewer. Each side of the image has an individual handle for cropping just that side. These parameters are also editable in the Video Inspector and the Color page Sizing palette.



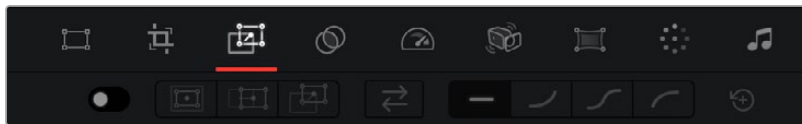
Onscreen Crop controls in the Viewer

The Crop effects also correspond to an additional set of cropping parameters, with an additional control for softness:

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

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. A set of two onscreen controls let you create a Dynamic Zoom effect. A green box shows the starting size and position of the animated transform, while a red box shows the ending size and position of the animated transform. Drag anywhere within either bounding box to reposition either the start or the end of the animated effect, and drag any of the corners to adjust the size at the start or end. A motion path appears to show you motion that's being created. Adjusting the Dynamic Zoom controls automatically enables dynamic zoom. These controls are also available in the Video Inspector.



Dynamic Zoom controls in the Viewer

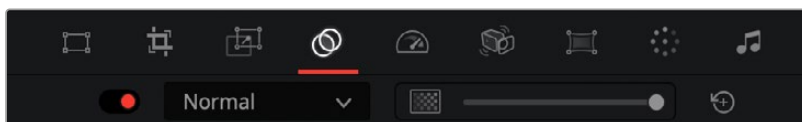
These controls correspond to two parameters in the toolbar (Dynamic Zoom is also editable in the Video Inspector).

- **Zoom/Pan/Angle Presets:** Let you enable or disable preset positions for the zoom level, pan location, and angle of this effect.
- **Swap:** This button reverses the start and end transforms that create the dynamic zoom effect.
- **Ease Buttons:** 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.

TIP: While dragging dynamic zoom outlines to reposition them, holding the Shift key down constrains movement to just the X- or Y-axis.

Composite

Two controls let you create transparency and use composite modes to create different compositing effects (also called Blend modes or Transfer modes). These controls also editable in the Video Inspector.



Composite controls in the Viewer

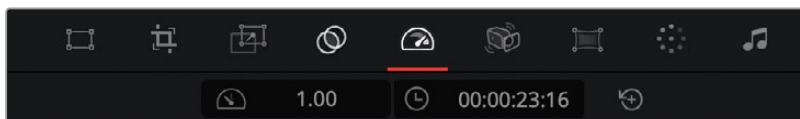
- **Composite Modes:** Composite modes blend two superimposed clips together on the Timeline using different kinds of math to achieve differing results, to create transparency effects, increase image exposure, and combine multiple clips into a single image in many creative and useful ways. All Composite modes interact with the Opacity slider. For more information on what each Composite mode does, see *Chapter 50, "Compositing and Transforms in the Timeline."*

- **Opacity:** This slider lets you make a clip more transparent, over a range from 0 (totally transparent) to 100 (totally opaque). When set to a value less than 100, the selected clip is mixed with whatever video clip is underneath it on the Timeline, using the Composite mode that's currently selected. If no clip appears underneath the Timeline, then the clip is mixed with black and will work similarly to a fade.

TIP: If a superimposed video or still image clip in the Timeline has an alpha channel, that alpha channel automatically creates transparency within that clip, compositing it against whatever is in the track underneath. There's no need for you to do anything for this to work.

Speed

Speed effects let you speed up, slow down, or otherwise change the playback speed of clips in the Timeline. When you change the speed of a clip, that clip's duration also changes to reflect a shorter clip that plays faster, or a longer clip that plays more slowly. Speed effects change both video and audio playback, but the audio of sped up or slowed down clips is always pitch corrected. Speed effects applied in the Cut page also appear and are editable via several different methods in the Edit page timeline and the Video inspector.



Speed Effects controls in the Viewer

- **Speed:** Changing this value lets you speed up or slow down playback by a simple numeric multiplier. You also have the option of choosing a negative value to create reverse speeds.
- **Duration:** When you retime a clip, the Duration field lets you see how the change you're making affects the new duration based on the original duration of the clip with no speed effect applied.

Stabilization

The Image Stabilization controls use warping and/or translation to let you smooth out or even lock 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.



Stabilization controls in the Viewer

To stabilize an image, all you need to do is to choose a Stabilization Method from the drop-down (see below for more information), and then click the Stabilize button. DaVinci Resolve analyzes the current clip, and applies a stabilization effect.

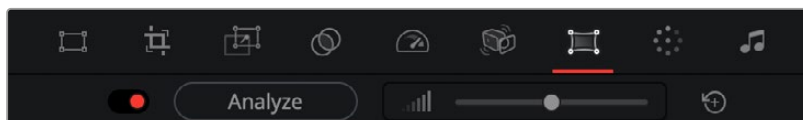
The rest of the stabilization controls let you refine the result. Whenever you adjust any of these parameters, you must click the Stabilize button again for the effect to be updated.

- **Stabilization Method:** A drop-down 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, because the option you choose changes how the image analysis is performed. If you choose another option, you 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.
- **Stabilize:** Clicking this button on a previously unstabilized clip analyzes the motion in that clip and applies an initial smoothing effect. Clicking this button on a clip that's already been analyzed lets you recalculate a modified stabilization effect.

TIP: These controls are identical to those found in the Video Inspector and the Color page Tracker palette, and populate the same image processing data. This means that you can use the Stabilization found on the Cut page, and then use the stabilization graph and controls found in the Color page to refine the results, if necessary.

Lens Correction

Lens Correction presents two controls that let you either correct lens distortion in the image, or add lens distortion of your own for effect. These controls are also editable in the Video Inspector and Color page Edit Sizing palette.



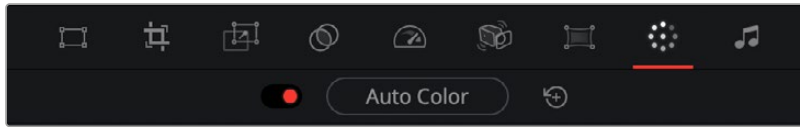
Lens Correction controls in the Viewer

- **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.

Color

The Color section of the Tools consists of only one option: Auto Color. The Auto Color command provides a quick way to automatically balance the blacks and whites of a clip based on the current frame at the position of the playhead. Using advanced algorithms, based on the DaVinci Neural Engine, it provides superior results when automatically adjusting color balance and contrast.

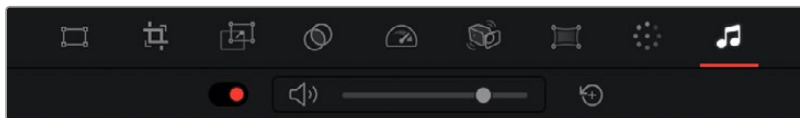
For more details on using Auto Color, see *Chapter 127, "Automated Grading Commands and Imported Grades."*



Color controls in the Viewer

Audio

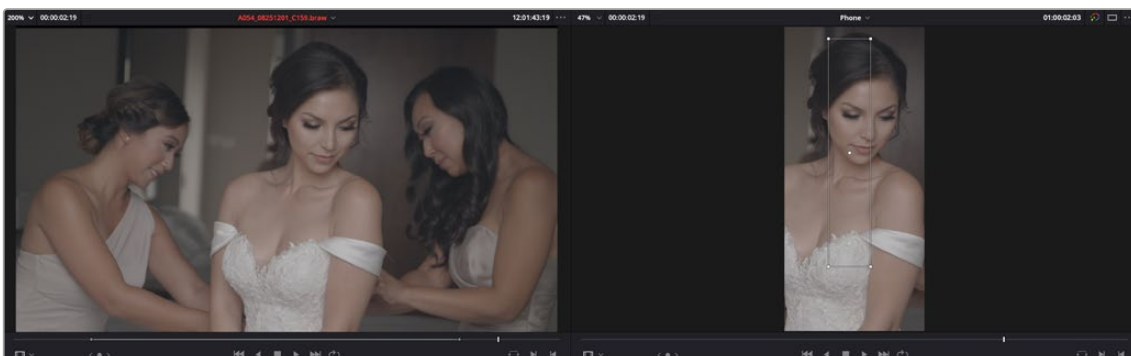
A slider lets you adjust audio levels of the current clip in the Viewer, making the volume of that audio clips softer or louder. This is identical to each clip's volume setting in the Edit and Fairlight pages.



Audio controls in the Viewer

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.

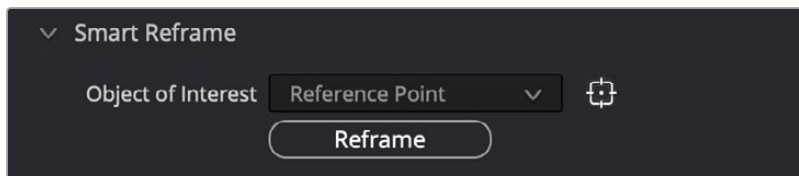


Smart Reframe in action with the Reference Point bounding box active (right)

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 Video 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.

Chapter 32

Quick Export

Once you've finished your program and you want to share it with others, you can use the Quick Export button to output the contents of the Timeline as a self-contained file in one of a variety of different formats in order to share it with people.

Contents

Quick Export

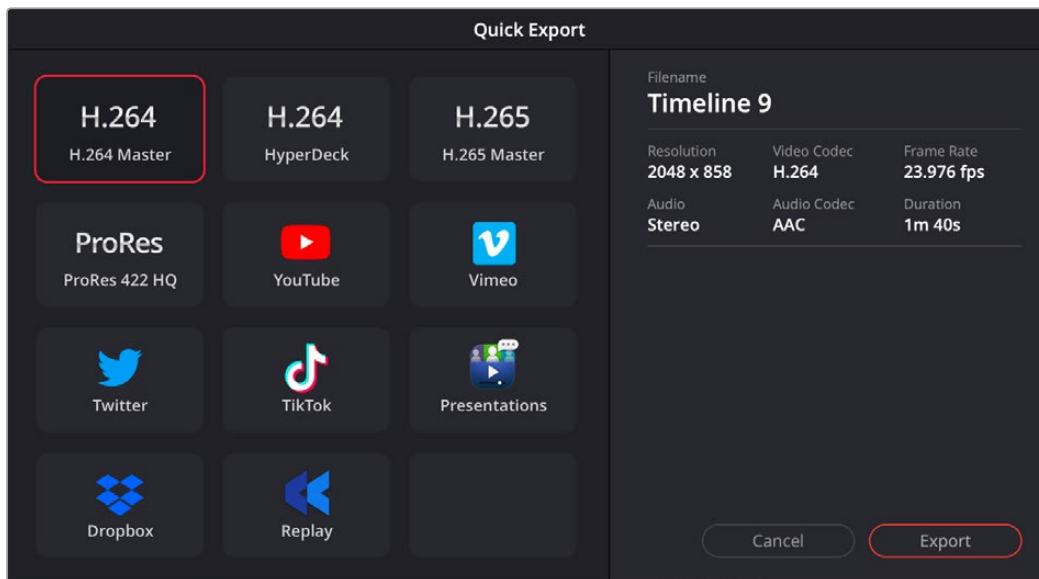
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Quick Export

You can choose File > Quick Export to use one of a variety of export presets to export your program from any page of DaVinci Resolve. You can even use Quick Export to export and upload your program to one of the supported video sharing services, including YouTube, Vimeo, Twitter, and Dropbox.

To use Quick Export:

- 1 In the Cut, Edit, Fusion, or Color page, optionally set In and Out points in the Timeline to choose a range of the current program to export. If no timeline In or Out points have been set, the entire timeline will be exported.
- 2 Choose File > Quick Export or click the Quick Export icon at the upper right-hand corner of the Cut page.
- 3 Select a preset to use from the top row of icons in the Quick Export dialog, and click Export.
- 4 Choose a directory location and enter a file name using the Export dialog, then click Save. A progress bar dialog appears to let you know how long the export will take.



The Quick Export dialog

TIP: To use custom export options, you can use the Deliver page. For more information on creating custom presets for rendering, see *Chapter 187, "Rendering Media."*