Introduction to Resolve

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DaVinci Resolve integrates editing, color correction, and finishing within a single, easy to learn application. The editing and grading tools found in Resolve should be immediately familiar to experienced artists who've used other postproduction applications, but they're also very approachable to folks who are new to postproduction.

Additionally, dedicated tools available for on-set workflows integrate tasks such as media duplication, shot and metadata organization, and on-location look management into a complete tool set that lets you smoothly segue from the camera-original media being acquired in the field to the organization and use of that media in a wide variety of postproduction workflows that use DaVinci Resolve at their heart.

The tight integration in Resolve between on-set media, metadata, and "look" organization, editing, and grading means that you can freely move from one task to the next without skipping a beat. This makes it easy to color-correct clips in the middle of an edit, and then go right back to editing, without needing to export projects or launch other applications. And you can go further, using the collaborative features of DaVinci Resolve to enable multiple artists, for example an editor, a colorist, and assistants, to work together on the same timeline simultaneously, for the ultimate integrated workflow.

Of course, no postproduction professional works in a vacuum, and DaVinci Resolve makes it easy to work with other facilities by importing projects and exporting timelines among applications such as Apple's Final Cut Pro 7 and Final Cut Pro X, Adobe Premiere Pro CC, Avid's Media Composer, and many other applications via robust support of XML, AAF, and EDL import and export workflows.

This chapter introduces the DaVinci Resolve user interface (UI), explaining where to find each group of features, and how the highly focused and tightly integrated Media, Edit, Color, and Deliver pages of functionality work together to let you pursue nearly any postproduction workflow you can imagine. After this brief tour, the rest of this manual provides much more in-depth information about every aspect of functionality found in DaVinci Resolve.

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Getting Started

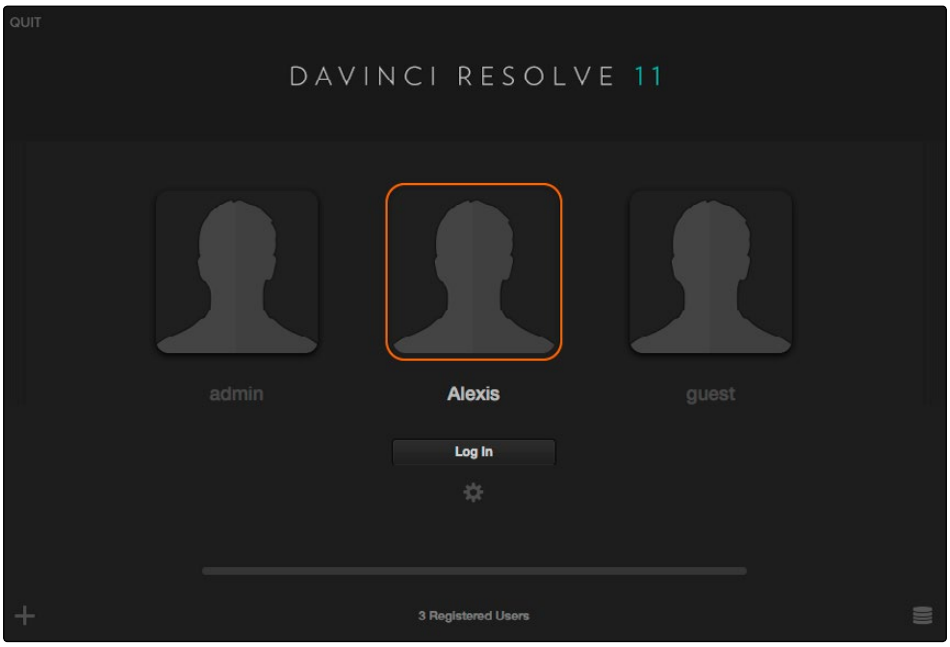
When you install DaVinci Resolve and then open it for the first time, there are a few things you're going to want to do before you begin working on your first project.

Logging In

DaVinci Resolve was originally designed as a multi-user application for professional grading suites where an elaborately appointed room at a high-end facility was being shared among a stable of colorists. Resolve is still very much used in that capacity, and the login screen provides the interface that's used to create and manage multiple users on a single workstation.

Another way of looking at the multi-user capabilities of Resolve is organizational in nature. Each login has individual settings, preferences, projects, and PowerGrades. This means that you can create users, not for specific individuals, but for specific types of projects that you want to share common project settings and PowerGrades.

To open a user, simply double-click that user's icon, or follow the on-screen instructions to create a new user and then double-click it to open.



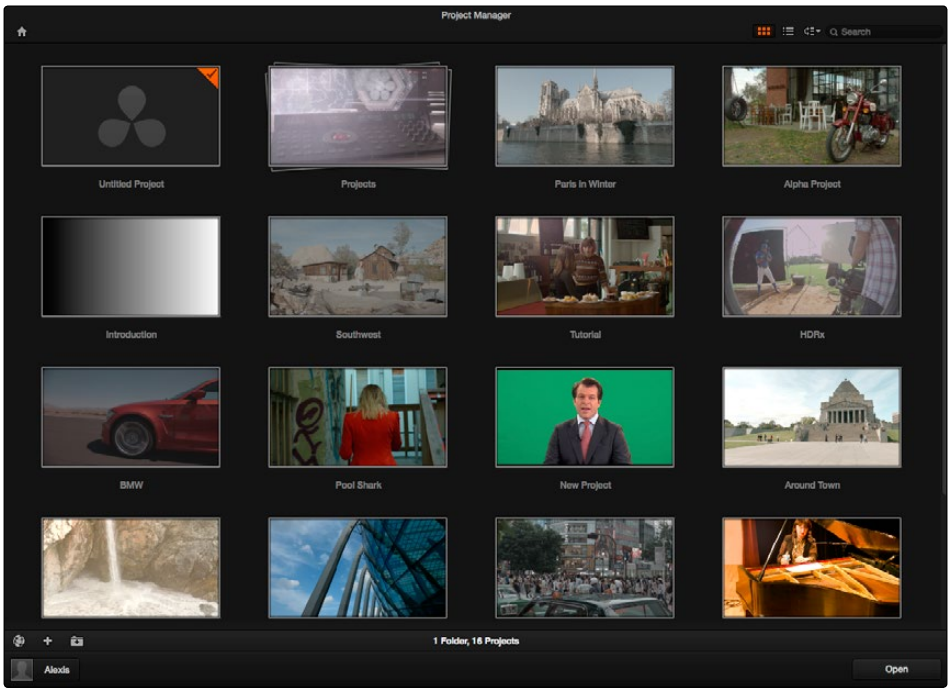
The login screen that appears when you first open Resolve

Whether you simply use the default admin login to do your work (which is fine), or you create your own individual login, there are several controls for creating and customizing user logins, all of which are covered in Chapter 2, "Logging in and the Project Manager."

The Project Manager

The Project Manager is a centralized interface for managing all projects belonging to the user who's currently logged in, whose name appears at the bottom left-hand corner in a project title bar. This is the second window you'll see when opening DaVinci Resolve. The Project Manager is also the place where you import and export projects to and from Resolve, whether you're moving projects around from user to user, or moving projects from one Resolve workstation to another.

To open any project, double-click it. To create a new project, double-click the New User icon.



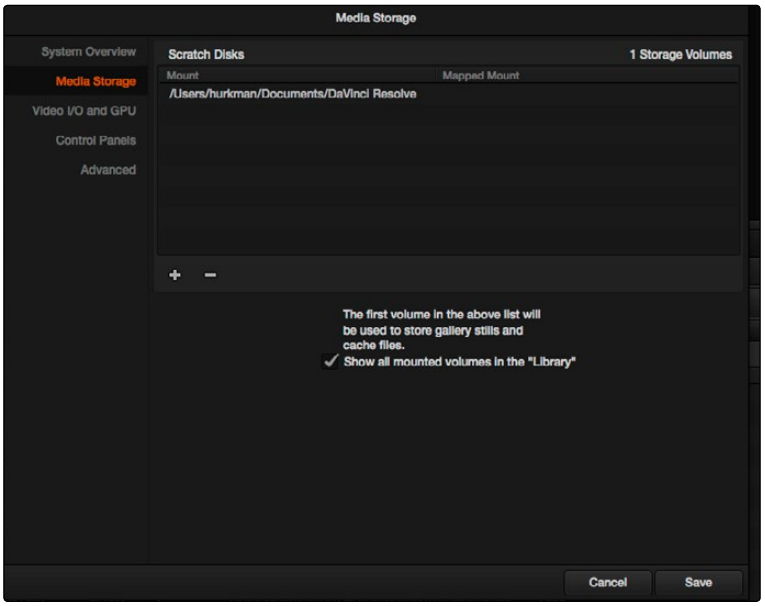
The Project Manager shows all projects belonging to the current user

More information about the Project Manager appears in Chapter 2, "Logging in and the Project Manager."

Preferences

The Preferences Window lets you set up the overall environment of your DaVinci workstation, choosing which language to display the interface with, what hard drive volume to use as the scratch disk, what I/O interfaces to use for playing audio and viewing video output, and which, if any, control surface to use while grading. If you have a system that doesn't change very often, then you may only rarely use the Preferences window. On the other hand, if you're working with a mobile system with changing video interfaces, control panels, and scratch volumes, then you may use this window more frequently.

Whenever you change any settings in the Preferences, you must quit and restart Resolve for those preferences to take effect.



The DaVinci Resolve Preferences let you set up your environment

A quick overview of the Preferences appears below, but for more information, see Chapter 3, "Project Settings, Caching, and Preferences."

System Overview

Provides an overview, for reference, of all hardware and computer characteristics that are relevant to DaVinci Resolve running smoothly, including listing of installed GPUs. A Language pop-up at top lets you specify which language the DaVinci Resolve user interface displays. Resolve currently supports English, Chinese, and Japanese.

Media Storage Volumes

This is a list within which you define the scratch disk used by your system. The first volume in this list is where Gallery stills and cache files are stored, so you want to make sure that you choose the fastest storage volume that's connected.

Video I/O and GPU

The preferences in this panel let you choose video interfaces and GPU processing hardware on your workstation. If you have multiple Blackmagic Design I/O interfaces connected to your computer, you can choose one to use for monitoring video output, and one to use for Resolve Live, a feature that lets you grade camera output during a shoot as part of an on-set workflow.

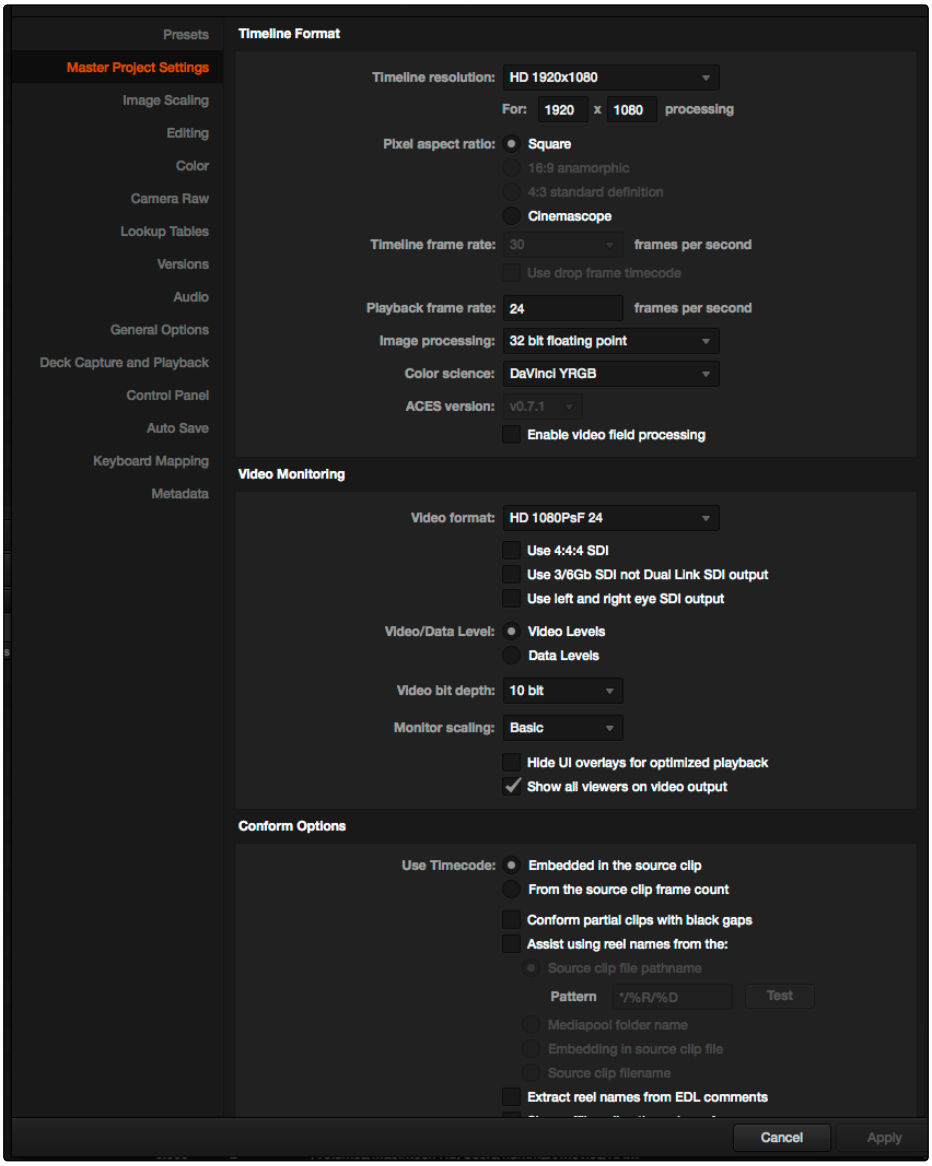
Control Panels

Lets you choose and configure (if necessary) a control surface that's connected for use during grading in Resolve.

Project Settings

Once you've created a project, all project-specific settings are found in the Project Settings window. The Project Settings window is divided into a series of panels which can be selected from a sidebar to the left. Each panel contains a collection of related settings that affects some category of Resolve functionality.

To open a panel of settings, simply click its name in the sidebar at the left.



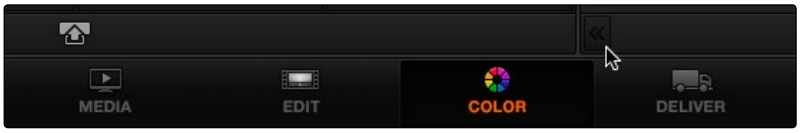
The Project Settings show all project-specific settings and attributes

The Master Project Settings define the principal attributes of a project, such as the timeline resolution, timeline frame rate, color science, and bit depth. Image Scaling settings define how clips that don't match the timeline resolution are scaled to fit. There are other panels for Editing settings, Color settings, Lookup Tables (LUTs), etcetera.

For more information about Project Settings, see Chapter 3, "Project Settings, Caching, and Preferences."

Switching Among Pages

DaVinci Resolve is divided into four main pages of functionality, which can be accessed using four buttons at the very bottom of the DaVinci Resolve interface. These buttons are organized in order of workflow, and they're always available, letting you quickly switch between importing media, editing, grading, and outputting your project in a structured manner.



Buttons for switching pages appear at the bottom of the UI

You can also switch pages using the following keyboard shortcuts.

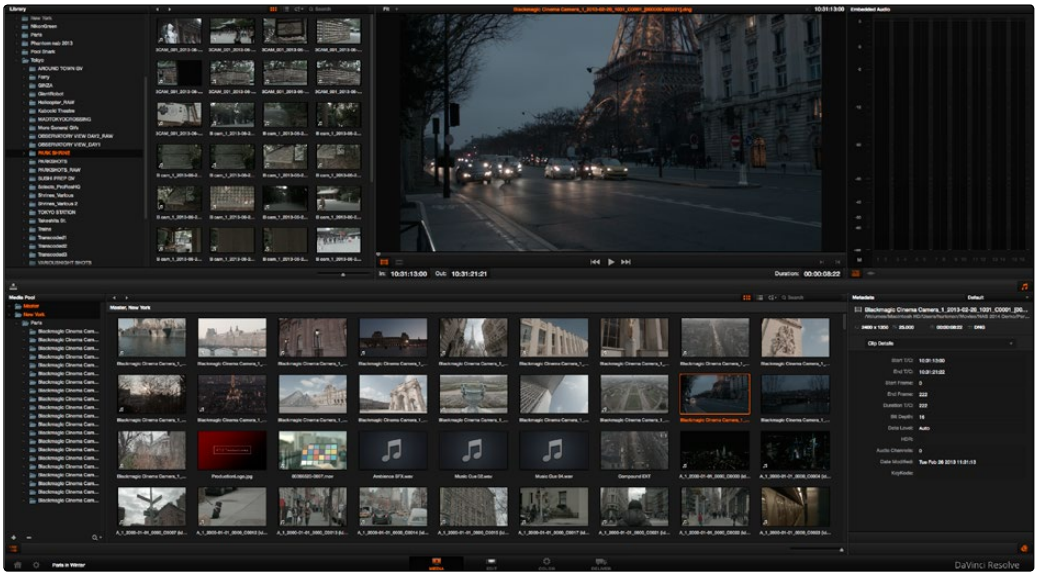
Page	Alpha
Media	F3
Edit	F4
Color	F6
Deliver	F8

The Media Page

The Media page is the primary interface for media management and clip organization in DaVinci Resolve. It's central to the way DaVinci Resolve works that the source media used by a project is organized separately from the project data that you import and manage in the Edit page. In this way, you can manage and update the clips used by timelines in the current project with ease, switching between offline and online media, reorganizing clips, and troubleshooting any problems that occur.

The Media page also contains much of the core functionality that will be used for on-set workflows, and in the ingest, organizational, and sound-synching steps of digital dailies workflows. This chapter covers most of the functionality found in the Media page, including functions in detail that are referenced throughout this manual.

The Media page is divided into six different areas, designed to make it easy to find, select, and work with media in your project. Much of the functionality and most of the commands are found within the contextual menus that appear when you right-click clips in the Library, File Browser, or Media Pool.

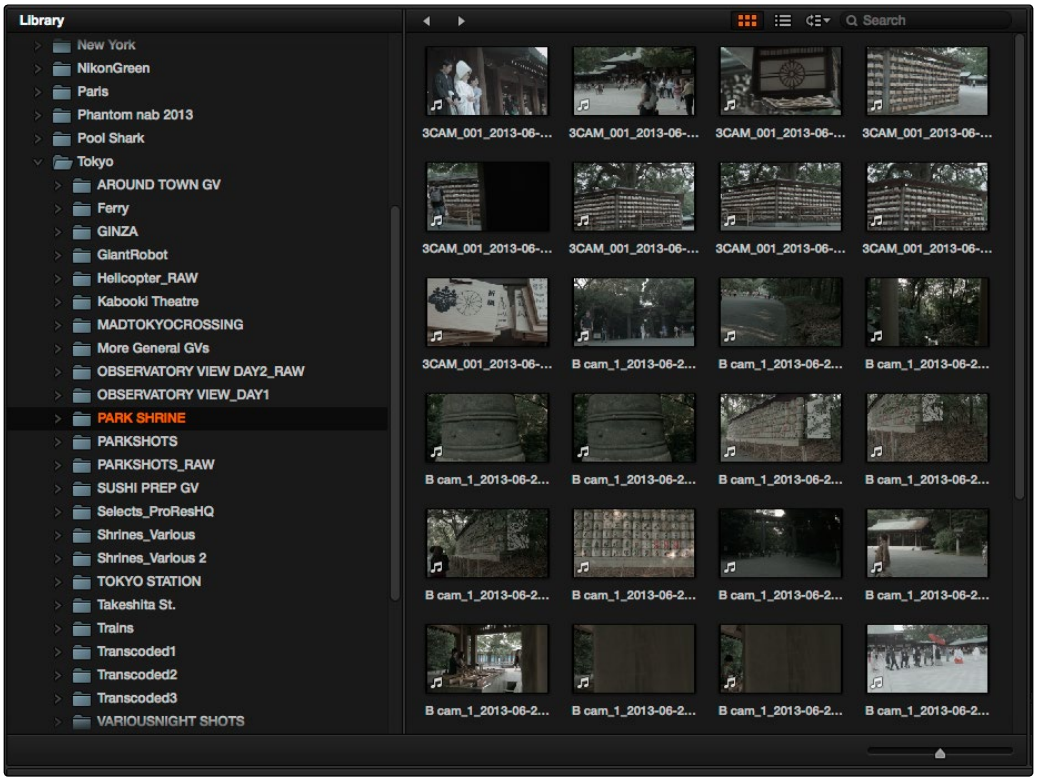


Media page

For more information on using the Media page, see Chapter 4, "Media."

The Library

The Library browser shows a list of all volumes that are currently available to your Resolve workstation. It's used to locate media that you want to import manually into your project.



Library with scrubbable clip view

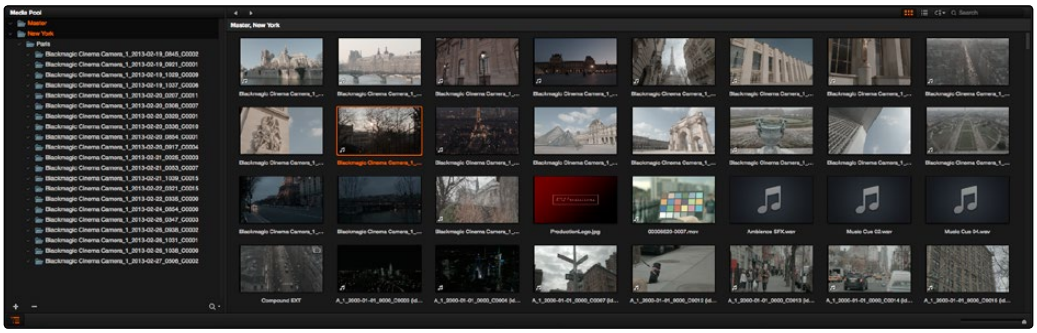
Viewer

Clips that you select in any area of the Media page show their contents in the Viewer. A jog bar appears directly underneath the image, letting you drag the playhead directly with the pointer. The full width of the jog bar represents the full duration of the clip in the Viewer. The current position of the playhead is shown in the timecode field at the upper right-hand corner of the Viewer. Simple transport controls appear underneath the jog bar, letting you Jump to First Frame, Play/Stop, and Jump to Last Frame.

Viewer

Media Pool

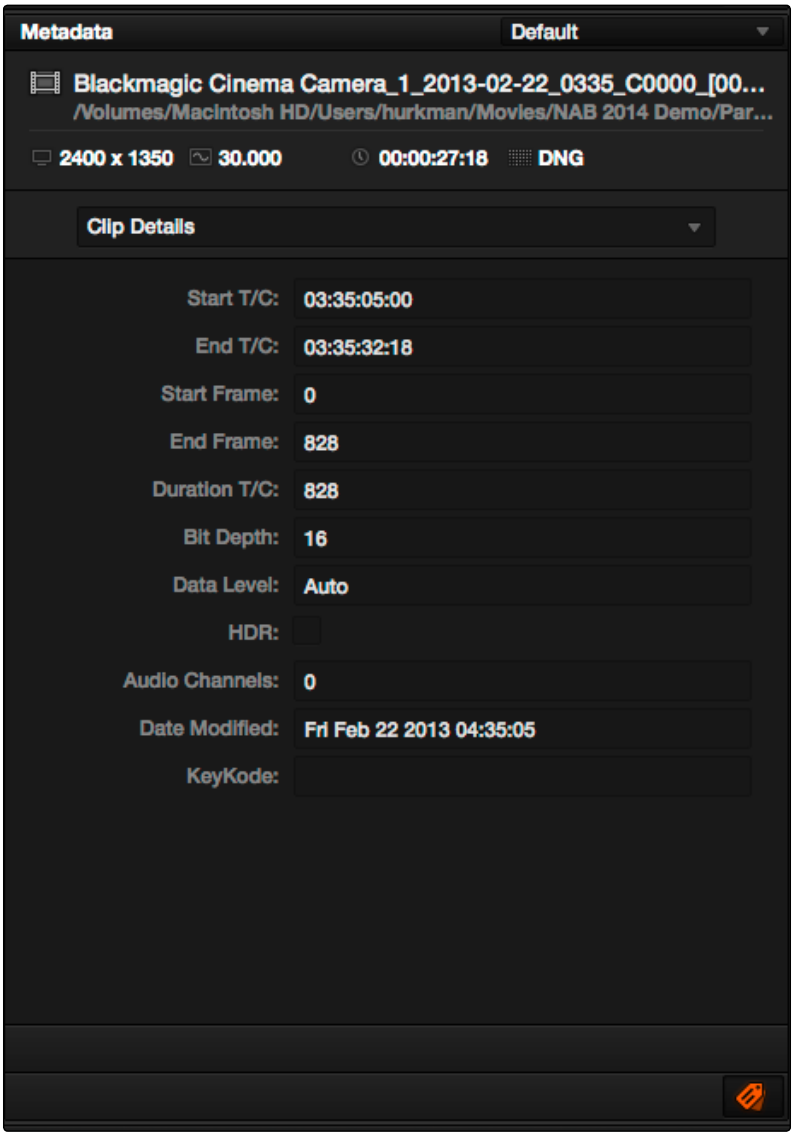
The Media Pool contains all of the media that you import into the current project. It also contains any media that's automatically imported along with Timelines that have been imported into Resolve. Ordinarily, all media imported into a project goes into the Master folder, however the Media Pool can be organized into as many user-definable folders as you like, depending on your needs. Media can be freely moved from one folder to another from within the Media Pool.



Media Pool with the Bin View closed

Metadata Editor

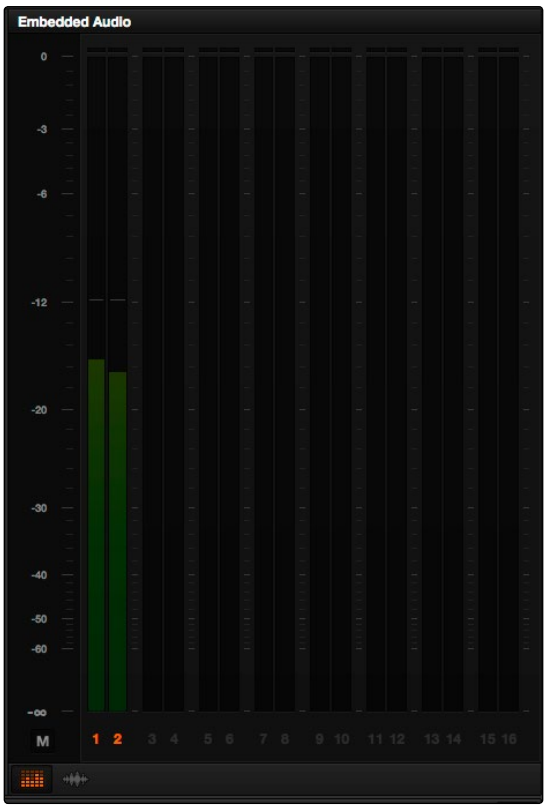
When you select a clip in any area of the Media page, its metadata is displayed within the Metadata Editor. If you select multiple clips, only the last clip's information appears. The Metadata Editor's header contains uneditable information about the selected clip, including the file name, directory, duration, frame rate, resolution, and codec. A series of editable fields within the Metadata Editor lets you review and edit the different metadata items that are available. A pop-up menu at the upper-right of the Metadata Editor lets you choose from many different sets of metadata fields and checkboxes, each grouped for a specific task or workflow.



Clip Metadata Editor

Audio Panel

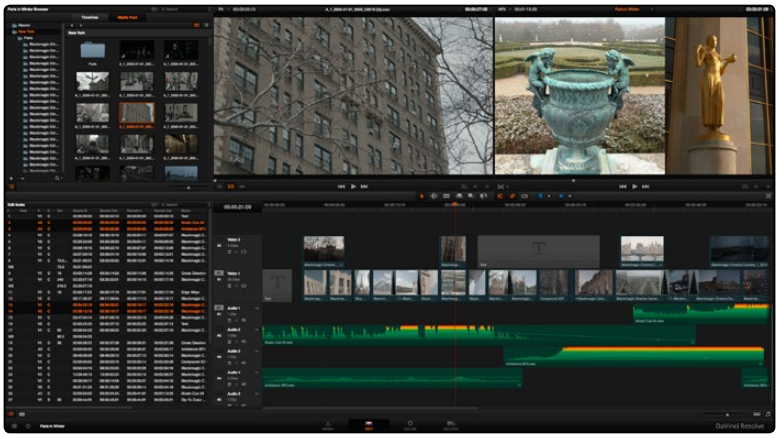
The Audio Panel can be put into one of two modes via a pop-up menu at the lower left corner. In the default Levels mode, Audio Meters are displayed that show the levels of audio in clips you're playing. In Dailies mode, you can load audio clips side by side with video clips opened in the Viewer in order to sync them together manually. The Audio Panel can also be hidden.



Audio Meters exposed

The Edit Page

The Edit page exposes a source-record style NLE that incorporates many specialized features for finishing. The Edit page is divided into three main regions: the browsers found at the left, the Viewers at the top, and the Timeline at the bottom, all of which work together to let you import, edit, and trim timelines with a flexible variety of tools and methods.



The Edit page

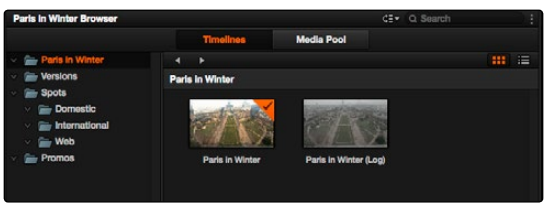
For more information on the Edit page, see Chapter 6, "Edit."

The Browser

A unified browser lets you organize and peruse all of the timelines and media in a project. The Browser can be switched among two different modes, showing Timelines or the Media Pool, by clicking the appropriate button.

Timeline Browsing

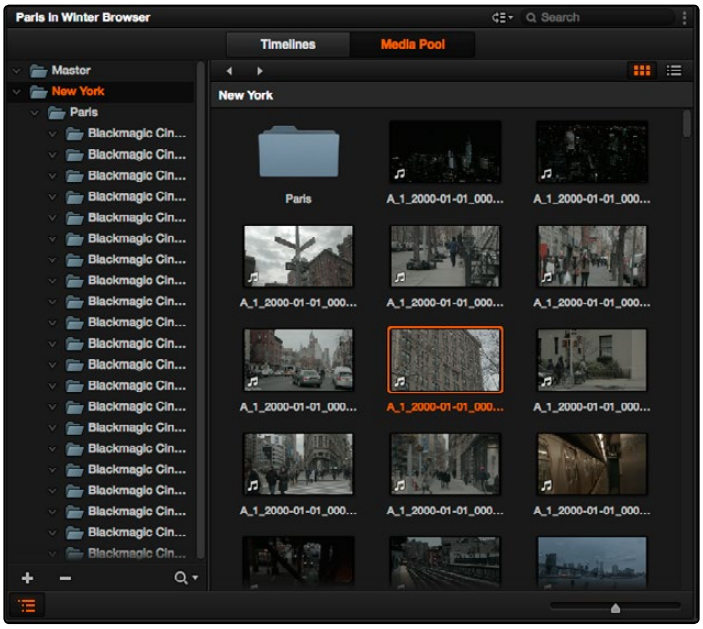
DaVinci Resolve projects contain one or more edited timelines (sometimes called a sequence in other applications) which are organized in the Timelines Browser, which contains all timelines that have been either imported or created within that project. A folder view at the left shows a hierarchical list of folders that you can use to organize your timelines. The folder view can be hidden or shown via the button at the far left of the Edit page toolbar.



The Timeline list

Media Pool Browsing

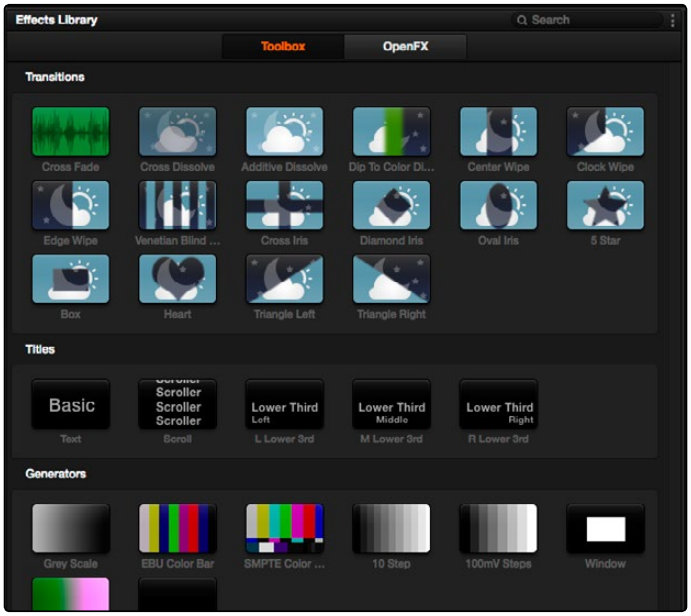
The Media Pool in the Edit page is identical to that shown on the Media page, and shows you all of the source clips that are available for editing. A folder view at the left shows a hierarchical list of folders that you can use to organize your media. By default, the Media Pool has a single folder, named "Master," but you can add more folders as necessary to organize your clips. The folder view can be hidden or shown via the button at the far left of the Edit page toolbar. A panel to the right shows the contents of the currently selected folder.



The Media Pool in Thumbnail mode

Effects Library Browsing

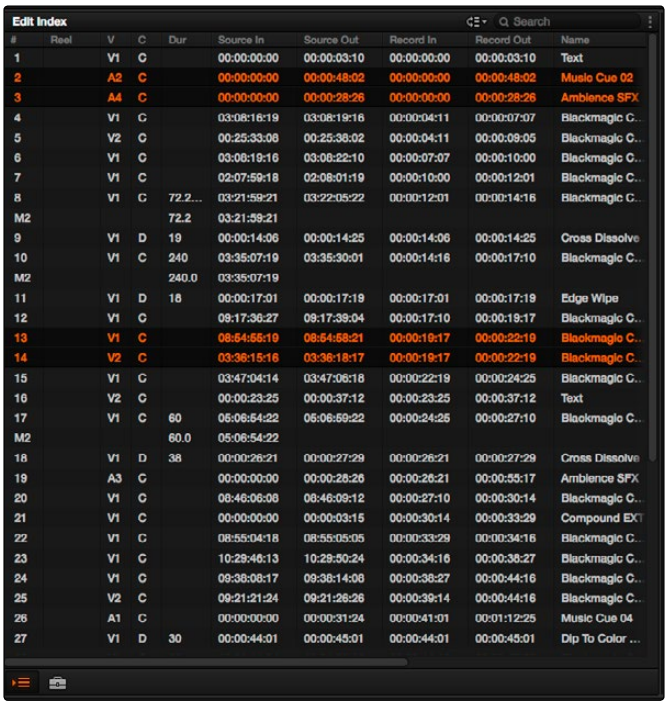
The Effects Library contains a folder with the different Video Transitions, Title Effects, Generators, and Filters that are available for editing in the Timeline. The Effects Library has two panels, a Toolbox panel that contains the default Transitions, Titles, and Generators that Resolve comes with, and an OpenFX panel that contains any OpenFX transitions and generators you might have installed on your system.



The Effects Library, made taller to show all of its contents

Edit Index

Clicking the Edit Index button opens the Edit Index. By default, this shows an EDL-style list view of all the edit events in the current Timeline. Whichever timeline is selected in the Timeline list displays its events here; each clip and transition is shown as an individual event, each of which contains multiple columns of information. If you re-edit a timeline, your changes are automatically reflected in this list.



Edit Index List shown open

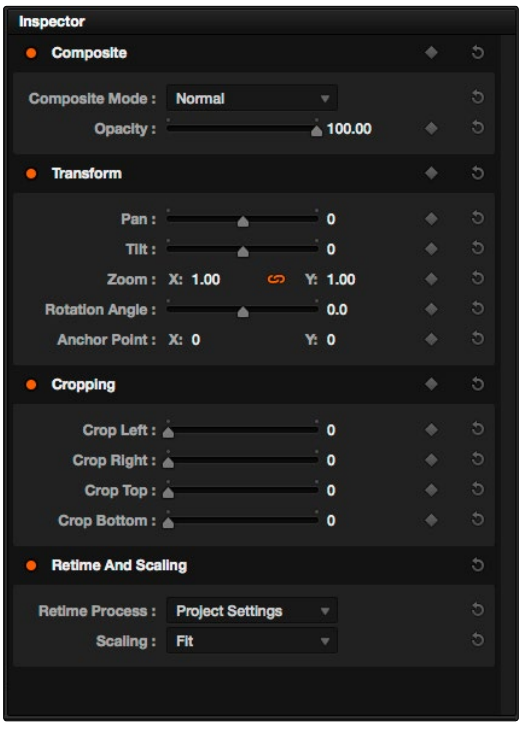
Source/Offline and Timeline Viewers

The Source Viewer lets you view individual clips from the Media Pool to prepare them for editing. Meanwhile, the Timeline Viewer shows the frame at the position of the playhead in the Timeline. You can select either viewer by clicking, and the name of the viewer that currently has focus appears in orange. The color shown in the Source Viewer always reflects that of the original source media, while the Timeline Viewer shows whatever grading you've done in the Color page.

Source and Timeline viewers

Inspector

The Inspector can be opened to let you customize compositing, transform, and cropping parameters for clips, as well as clip-specific retime and scaling options. Furthermore, the Inspector lets you edit the parameters of transitions, titles, and generators used in the Timeline, in order to customize their effect. When the Inspector is open, the Edit page switches to a single-viewer mode, showing you the Timeline item that you're inspecting alongside the Inspector with that clip's parameters.



The Inspector, opened and showing a clip's parameters

Toolbar

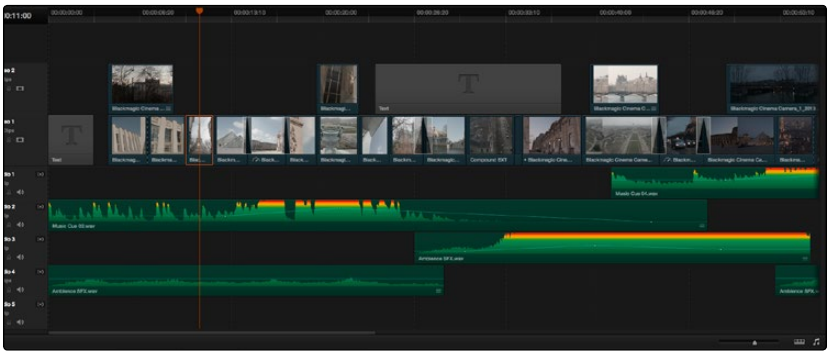
Eleven buttons starting from the left, running along the top of the Timeline, let you choose different tools for performing various editing functions.

Buttons in the Toolbar

Timeline

The Timeline shows whichever timeline you've double-clicked in the Timelines browser. It's the workspace where you either edit programs together from scratch, or import sequences from other applications to work on inside of Resolve. You can only have one Timeline open at a time.

The Timeline is divided into audio and video tracks, each of which has a series of header controls at the left that let you choose destination tracks for editing, name tracks, and turn tracks on and off, among other things. The appearance of the Timeline can be customized using the Customize Timeline pop-up at the bottom right.



An edited timeline

The Color Page

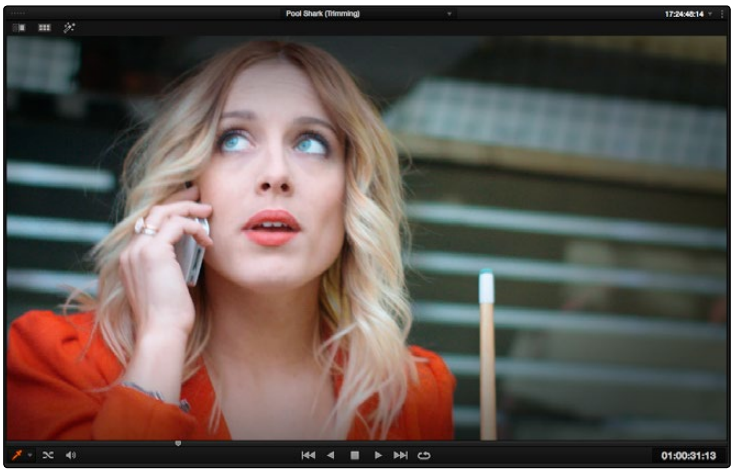
The Color page is where you color correct, or grade, your program. It has all of the controls available for manipulating color and contrast, reducing noise, creating limited secondary color corrections, building image effects of different kinds, adjusting clip geometry, and making many other corrective and stylistic adjustments. The Color page is divided into seven main areas that work together to let you build a grade. It's divided into seven regions.

The default layout of the Color Page

For more detailed information about the Color Page, see Chapter 11, "Color Page Basics."

Viewer

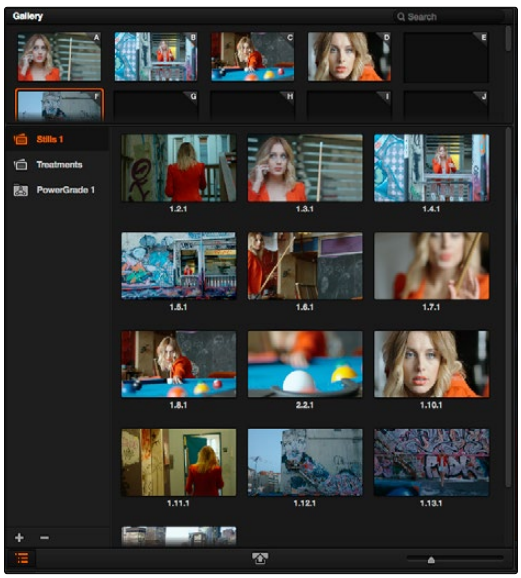
The Viewer shows the frame at the current position of the playhead in the Timeline. The contents of the Viewer are almost always output to video via whichever I/O interface you have connected. At the top of the Viewer is a header that displays the Project and Timeline names, as well as a Viewer Timecode display that shows the source timecode of each clip by default. The Timeline name is also a pop-up display that lets you switch to any other timeline in the project. A scrubber bar underneath the image lets you drag the playhead across the entire duration of the clip, while transport controls underneath that let you control playback. A toolbar at the top provides controls governing Image Wipes, Split-Screen controls, and Highlight display. Additional controls let you turn audio playback on and off, and choose which on-screen controls are currently displayed.



Viewer with transport controls

Gallery

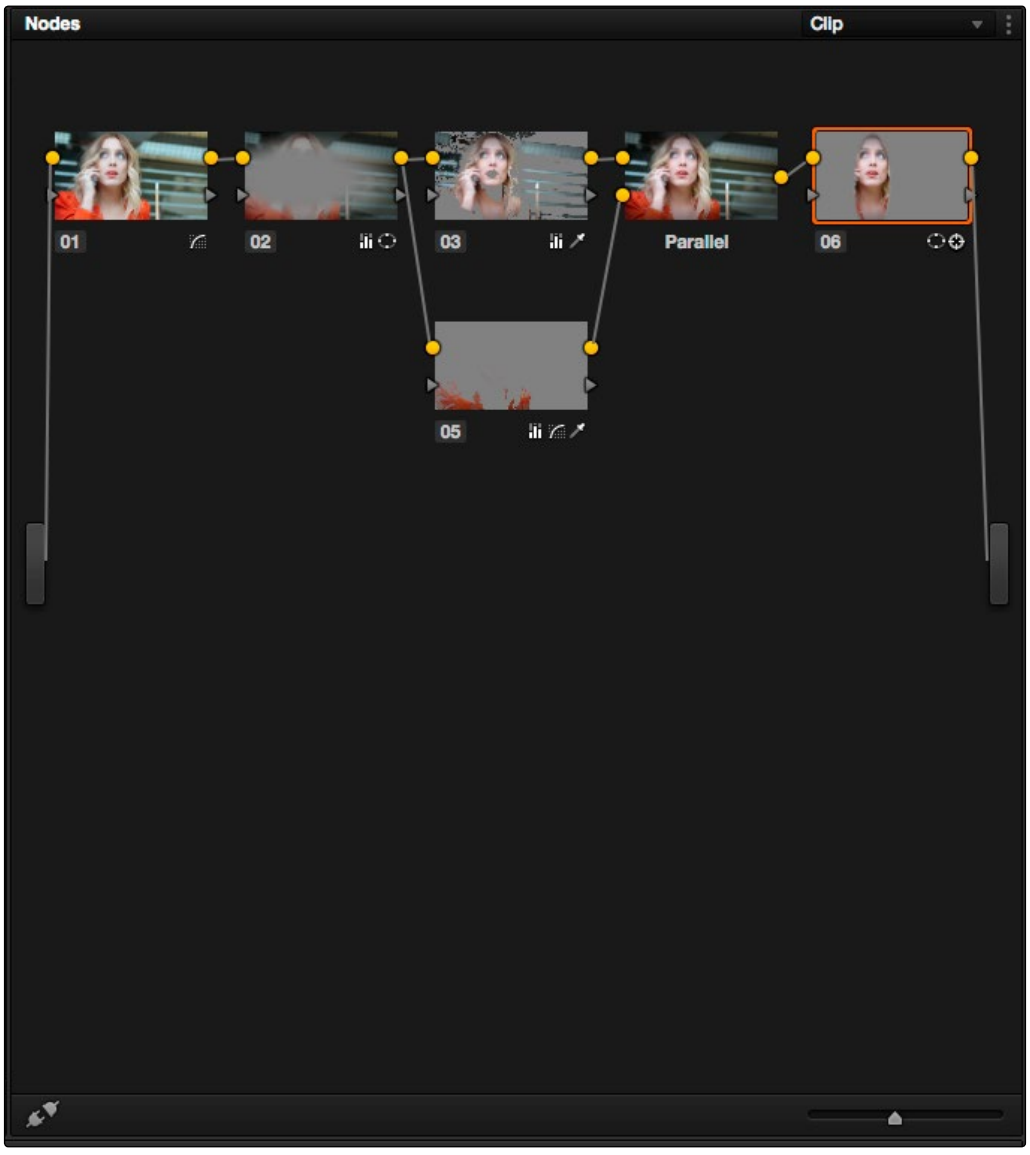
The Gallery is used for storing still frames to use as reference when comparing clips to one another. Each still frame also stores that clip's grade so you can copy it later; stills and grades are stored together. A button lets you open up the Album browser, used for organizing your stills. At the top of the Gallery, Memories let you store grade information that you can apply using a control surface or keyboard shortcuts. You can also open a larger Gallery window within the Color page that provides more room for organizing your saved stills and grades. For more information on the Gallery page, see Chapter 13, "The Gallery and Grade Management."



The Gallery has Memories, Stills saved in Albums and your PowerGrades

Node Editor

The Node Editor is where you assemble one or more individual corrections (nodes) together to create multi-correction grades (seen as node trees). This is a powerful way of assembling grades, since different combinations of nodes let you create different corrections and very specific adjustments by reordering operations, combining keys, or changing the layer order of different adjustments. For more information about the Node Editor, see the "Node Editor Basics" section of Chapter 12, "Advanced Color Features."

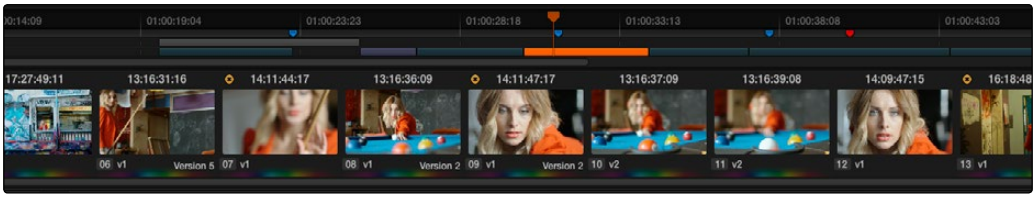


Node Editor to construct your grade processing signal flow

Timeline

The Timeline in the Color page reflects the contents of the Timeline in the Edit page, but has a different appearance that's tailored to the requirements of the colorist. However, the content is identical, and changes made to the Timeline in the Edit page are immediately seen in the Color page as you switch back and forth. The Color page Timeline provides several ways of navigating the clips in your project, as well as keeping track of what has been done to which clips.

The Timeline is divided into three parts, each of which shows different information and provides differing controls. A Timeline Ruler at the top lets you scrub the playhead across multiple clips, and can be zoomed out enough to show every clip in your entire program. Underneath, the Mini-Timeline (which can be opened or closed via a button at the right of the palette bar) shows a small representation of the Timeline in the Edit page wherein each clip is as long as its actual duration. At the bottom of the Timeline is the Thumbnail timeline, in which each clip is represented by a single frame. The currently selected clip is outlined in orange, and information appears above and below each thumbnail such as each clip's source timecode, clip number and track number, version name, whether it's been graded, whether it's been tracked, if it's been flagged, and so on.



The Timeline

Left Palettes

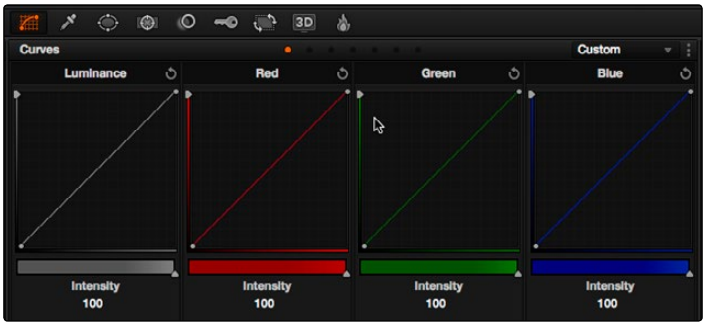
A series of palettes at the bottom left of the Color page provide access to different sets of grading tools, used principally for manipulating color, contrast, and raw media format settings. Each individual palette is opened by clicking the corresponding icon at the top of the Palette panel.

The available palettes are the Camera Raw palette (for making metadata adjustments to raw media formats), the Color Match palette (for creating automatic grades by sampling on-camera color charts), the Color Wheels (graphical color balance controls and master wheels), the Primary controls (sliders for adjusting YRGB Lift/Gamma/Gain), the RGB Mixer (for mixing color channels into one another), and the Motion Effects palette (with controls for noise reduction and artificial motion blur).

Left palette selection buttons

Center Palettes

At 1920x1080 resolution or higher, a second set of palettes is organized at the bottom center of the Color page. These palettes span a wide range of functionality, and the adjustments you make with them can be combined with those made using the Color palettes.



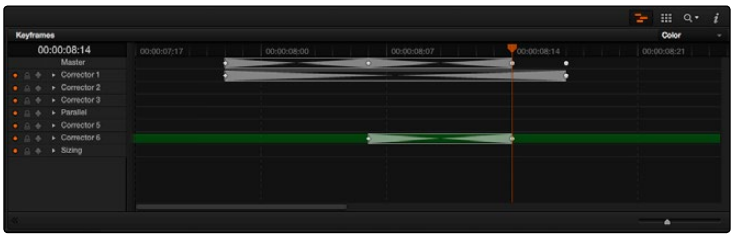
Center palette selection buttons

Note: At lower resolutions, the Left and Center palettes are merged to fit the Resolve interface into a smaller area.

The nine available Center palettes include the Curves palette, the Qualifiers palette, the Power Windows palette, and Tracker palette, the Blur palette, the Key palette, the Sizing and Stereoscopic 3D palettes, and the Data Burn-In palette.

Keyframes Editor

The Keyframes Editor provides an interface for animating Color, Sizing, and Stereo Format adjustments over time. Each node in the Nodes Editor corresponds to a track in the Keyframes Editor, which lets you animate each node's adjustments independently.



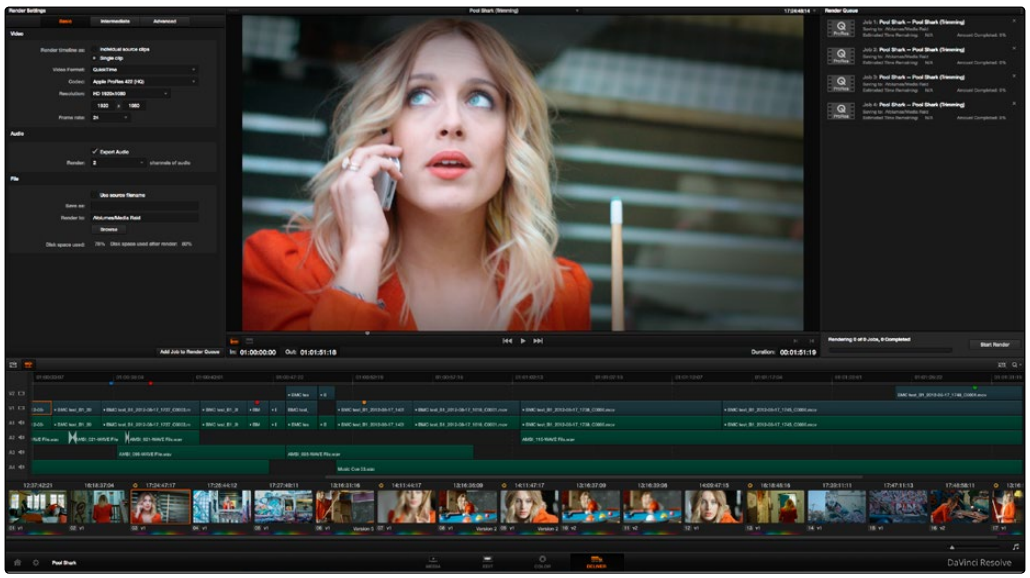
Keyframe Editor displaying dynamic grade changes

Furthermore, each node's track can be opened up to reveal Parameter Groups, so that you can animate subsets of an individual node's functions independently of other functions within the same node.

The Deliver Page

Once you've finished grading your project, you need to either render it, or output it to tape to deliver it to your client. This is where the Deliver page comes in. The Deliver page can be used both to output digital deliverables, or to output tape, depending on which mode you enable. Either way, the Deliver page is divided into five areas of functionality, each of which lets you set up a different part of a render or output to tape.

The Deliver page is set up to let you queue a series of individual jobs, each of which can have different settings, or be set up to render different parts of the Timeline. In this way, you can output multiple deliverables, or re-render multiple areas of a timeline, as your needs require.



Deliver page

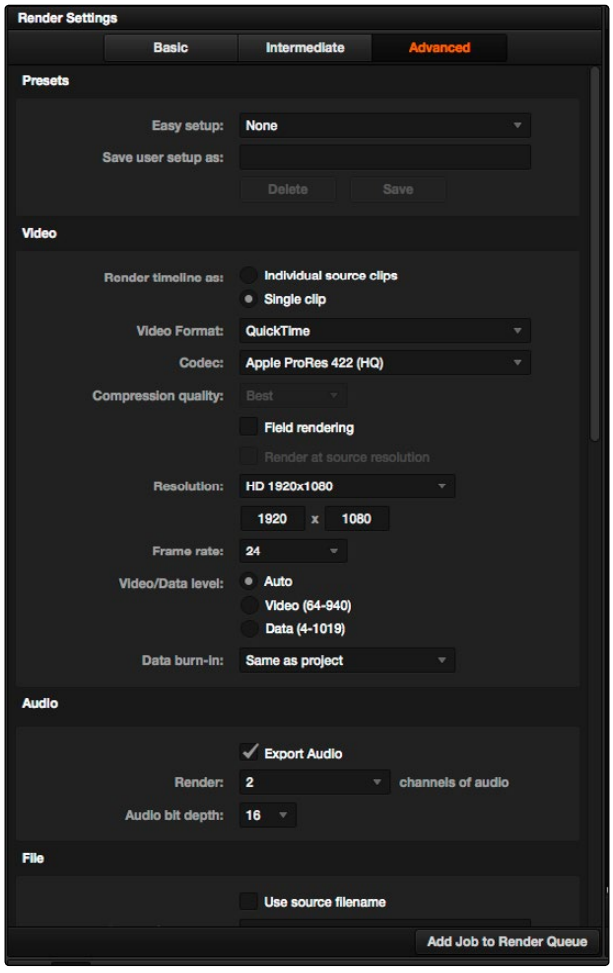
For more information about using the Deliver page, see chapter 14, "Deliver."

The Render Settings List

The Render Settings list contains the customizable settings that affect how media is rendered out of Resolve. These settings are covered in more detail later in "File-based Output." If you're using the Edit To Tape option, these settings are all disabled.

→ Basic contains only the most essential controls needed for defining whether to render a single clip or multiple clips, the render format, audio settings, and the file name and destination for the media you're delivering. This setting is appropriate for most situations where your output is fairly straightforward.

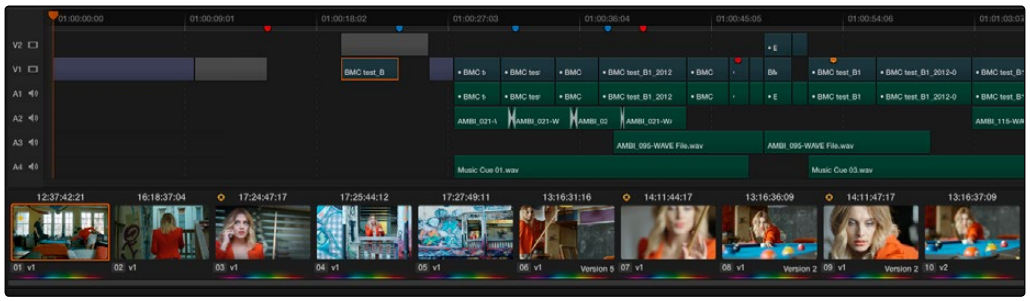
- Intermediate adds the Presets controls for using and saving Easy Setups for commonly performed delivery tasks. Additional parameters also appear for adjusting more specific aspects of your render, such as manual video/data level adjustment, data burn-in presets, and options for controlling sizing, debayer quality, and flat pass output. Intermediate also lets you create additional output passes, to output the same job with different format, codec, and data burn-in settings.
- Advanced provides all of the outputting options of DaVinci Resolve, including file name prefix and suffix editing, subfolder organization, render speed controls for limiting LAN bandwidth usage, commercial workflow options for rendering multiple versions and organizing media in different ways, and stereoscopic rendering control.



Render settings

The Deliver Page Timeline

The Timeline mirrors the Timeline seen in the Color page. You can use the Timeline in the Deliver page to turn off tracks with clips you don't want to include in the operation, define the range of clips you want to render or output to tape, and to choose which versions for each clip you want to output.

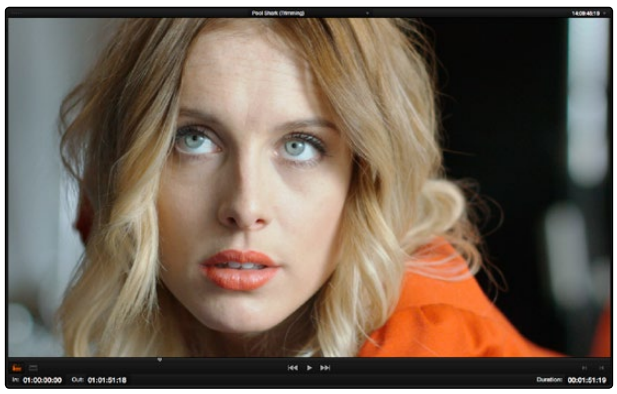


The Deliver page's Thumbnail and Mini-Timeline match the Color page

The Deliver page Timeline also has the Timeline Filter pop-up at the right-hand side of the toolbar. Using this pop-up to filter the contents of the Timeline lets you restrict the range of media you want to output in different ways. For example, if you've already rendered a timeline, but you've since made some changes, you can use the "Show Modified Clips" option to display only the clips that have changed within a particular timeframe. Another possibility is to choose the "Show Unrendered Clips" option to show all clips that have not yet been rendered.

The Viewer

When rendering file-based media, the Viewer shows you exactly how the media being output will look using the current settings, and the Transport controls move the playhead throughout the current Timeline.

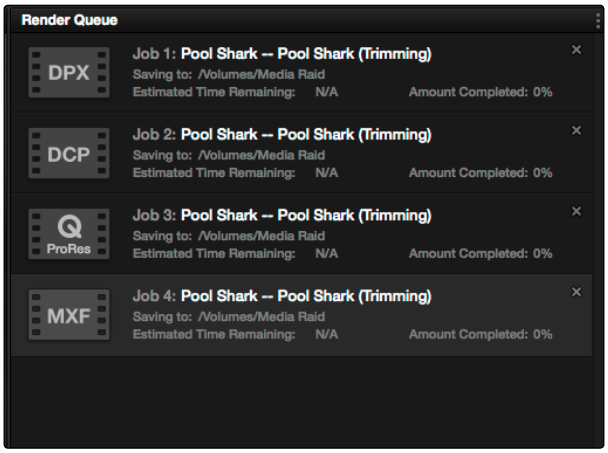


Deliver Viewer

When outputting to tape, the Viewer shows you the tape output so you can set up insert or assembly edit points, and the Transport controls move the tape in the deck if device control is enabled.

The Render Queue

The Render Queue is a list of all the jobs you've queued up for file-based rendering. Each job can have an individualized range of clips and render settings, which you can use to render multiple sections or clips of a timeline, the same timeline output to multiple formats, or multiple timelines.



The Render Queue displays all jobs

The Render Queue also has the option to show either just the jobs within the current project, or jobs queued up and saved within all projects for the current user.

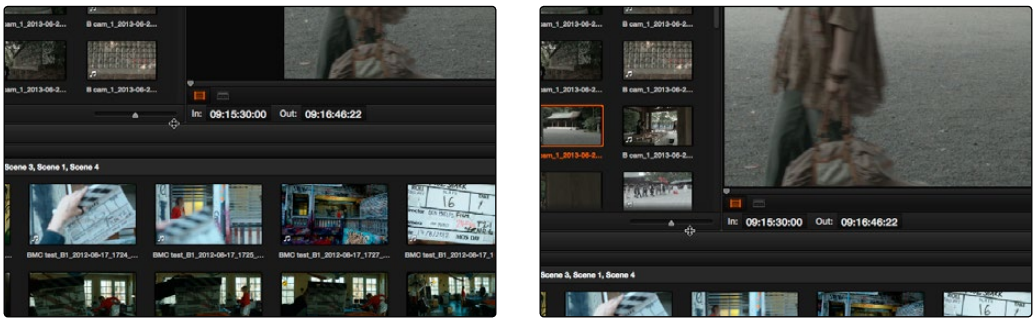
User Interface Conventions in Resolve

While each chapter covers the unique on-screen controls found in each page of DaVinci Resolve, this section summarizes how to use some of the more common controls you'll see.

Customizing Pages

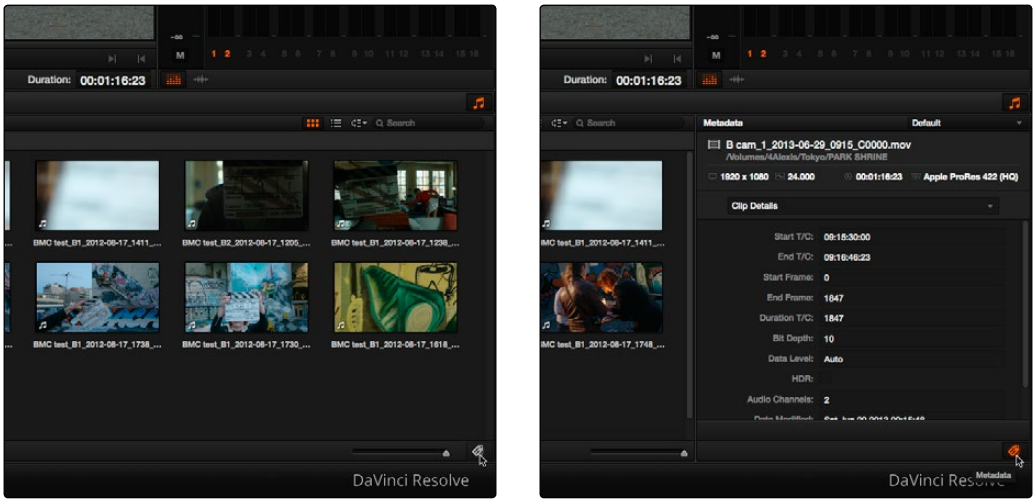
Each page of Resolve is divided into multiple panels, viewers, and palettes, each of which contains specific sets of functions. These can be customized in one of three ways.

You can resize different regions of the interface by positioning the pointer at the border between any two panels, and dragging it to enlarge one and shrink the other.



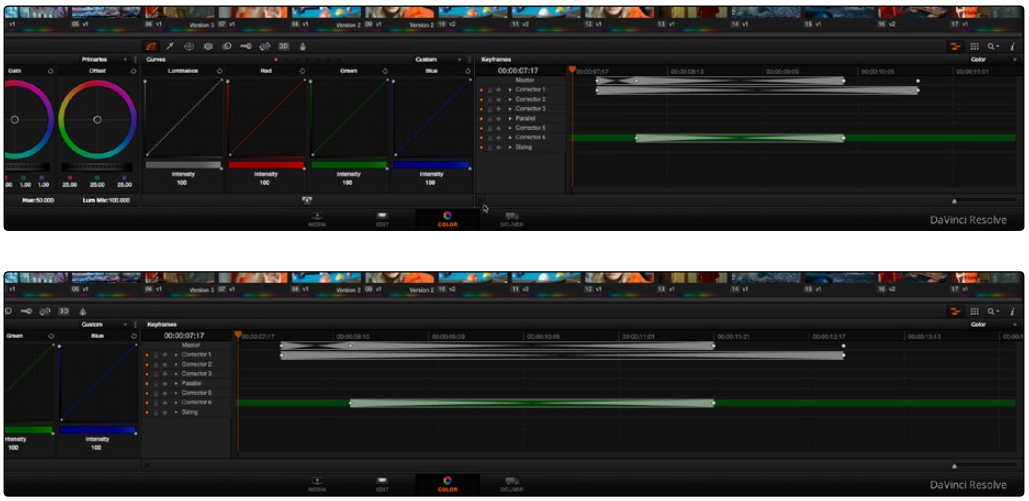
(Before/After) Resizing UI regions

You can also open and close different panels by clicking the appropriate button. For example, the Audio panel on the Media page can be opened or closed by clicking the Audio panel button on the toolbar.



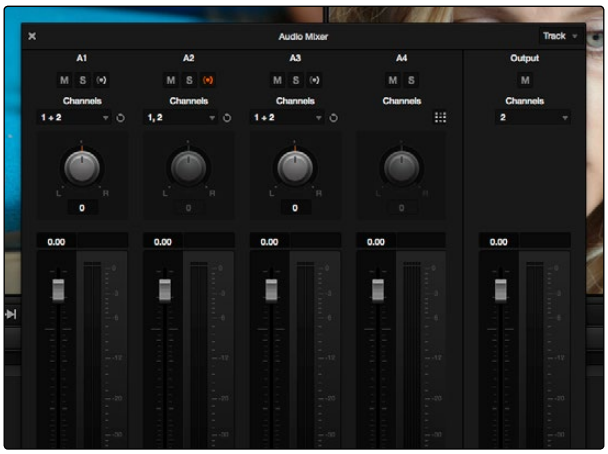
(Before/After) Showing and hiding panels

Certain UI elements can be expanded, in the process rearranging another part of the UI, by clicking a small gray Expand button. For example, an expand button at the bottom left of the Keyframe Editor in the Color page can be clicked to make the Keyframe Editor wider, while at the same time hiding controls at the center to make room.



(Before/After) Expanding the Keyframe Editor

Lastly, there are two interface elements that are exposed in separate windows. The first of these, the Audio Mixer, lets you analyze the volume and set levels of tracks and clips in your timeline. The Audio Mixer can be opened by choosing View > Audio Mixer while you're in the Edit page.



The Audio Mixer

The Video Scopes let you precisely analyze the color and contrast of clips in the Color page. They're available by right-clicking the Color page Viewer and choosing Show Scopes from the contextual menu.

The Video Scopes

Both the Audio Mixer and Video Scopes can be moved to a second computer display if one's available, and both disappear temporarily if you change pages or switch to another application.

Resetting the UI

If you're unhappy with the way you've rearranged the Resolve UI, you can choose View > Reset UI Layout to restore the UI to the default arrangement.

Dual Monitor Layouts

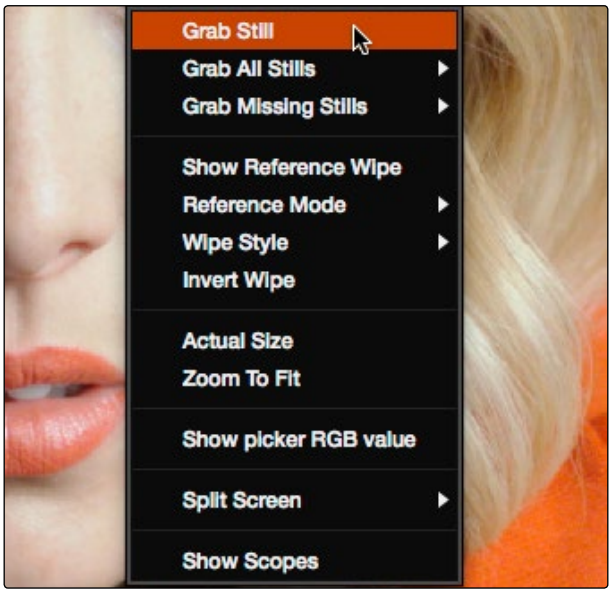
The Media, Edit, and Color pages can be switched between single screen and dual screen layouts by choosing View > User Interface Layout > Dual Screen > On. Each dual screen layout makes it possible to see many more controls at once, often in a larger workspace that lets you manage more clips, more gallery stills, etcetera.

The Edit Page dual screen layout

In single screen mode, you can choose which display shows the Resolve UI by choosing View > User Interface Layout > Primary Display > Display 1 or Display 2. In dual screen mode, this reverses the contents of both monitors.

Contextual Menus

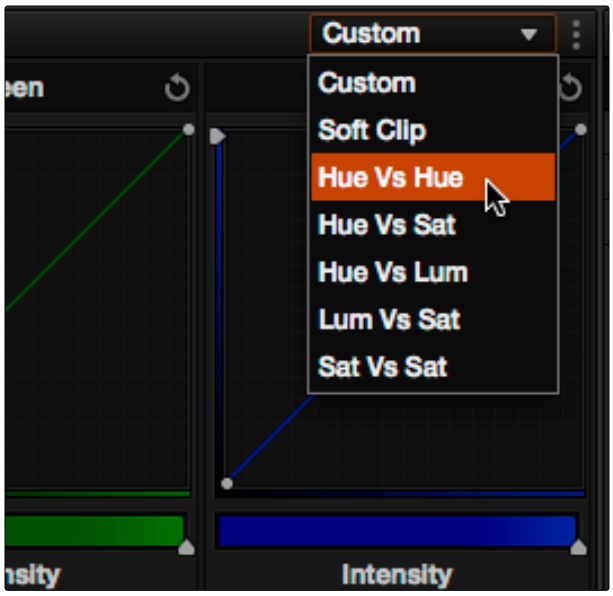
Nearly every panel on every page exposes additional functionality via contextual menus, which appear when you right-click on the appropriate item. Sometimes, different commands become available depending on whether you right-click the background of a particular panel, or on an item such as a still or node.



Contextual menus expose additional controls in the Color page Viewer

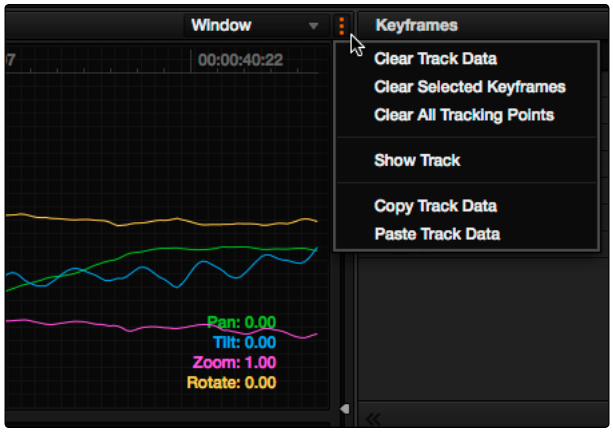
Buttons and Pop-up Menus

Most of the buttons and pop-up menus that appear in various toolbars are activated with a single click. Many panels and palettes appear with a Mode pop-up at the upper right-hand corner that lets you choose a different type of function within that palette.



Mode pop-up

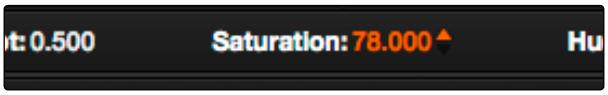
Additionally, many panels, palettes, and windows expose an Option menu, that appears as three vertical dots, which expose additional commands related to that particular function.



Option menus

Adjusting Parameters

Numeric parameters can usually be edited in a few different ways. If a slider appears, you can drag it to change the value. If a number field appears, it can also be used as a "virtual slider" by clicking and dragging to the right to raise the value, or to the left to lower the value (orange arrows indicate the direction of change).



Using virtual sliders

Double-clicking most numeric values highlights the number so that you can type a new value using the keyboard, pressing Return to confirm the change. Finally, to reset any editable parameter to its default setting, double-click its name.