Importing Projects and Relinking Media

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Importing Projects and Relinking Media

Generally speaking, "conforming" a project describes the process of importing a project exchange file from another post-production application, and automatically relinking each clip in the imported timeline to the high-quality media files each clip corresponds to.

If you need to continue editing, color correct, or finish a project that was put together in another application, you can import via the EDL, AAF, or XML project exchange formats. When you go through the process of conforming a project, you use the imported project data to arrange the clips in the Media Pool into a timeline that constitutes the program that's about to be graded.

This chapter provides detailed information about the nuts and bolts of project import, with in-depth information about preparing projects for import into DaVinci Resolve, how effects are imported and handled, and how to conform XML, AAF, and EDL project exchange formats in the Edit page. Nearly all of these workflows are accomplished in the Edit page. For more information about working in the Edit page, see Chapters 13-21.

Preparing to Move Your Project to Resolve

When you're preparing to move a project from another NLE to DaVinci Resolve, there are a few steps you can take to make your work more organized.

Move Clips to the Lowest Video Track

Editors often use the multiple tracks NLEs offer for simple clip organization in the edit of a scene. While this is convenient for offline editorial, it is less convenient when you're trying to conform, grade, finish, and render the media used by a project as quickly and efficiently as possible.

For this reason, it's a good idea to move all clips that are not stacked or superimposed as part of a compositing operation down to track V1 of the Timeline in your NLE. This produces a simplified edit that has many advantages. The project becomes smaller to move because there's less media in the Timeline, and consequently becomes faster to render. Furthermore, the colorist is spared confusion because this eliminates "hidden" media that is nonetheless connected to other clips that can be seen.

It's also helpful, once you've reorganized the Timeline, to eliminate any empty tracks that are left. This can be done from within DaVinci Resolve, but doing it in your NLE further simplifies the project import process.

Organize Unsupported Media Files

Depending on your workflow and on the NLE you're working with, there may be clips using formats that are unsupported in DaVinci Resolve. Unsupported generators, media formats, and other effects constructs may simply not be seen in Resolve, and will consequently appear as unlinked clips.

If you know this in advance, you can move all such clips into dedicated tracks where they can be isolated, and the track can be turned off to hide the unsupported clips, simplifying timeline navigation. This also saves the colorist from the need to worry about why there are offline clips in the Timeline at 3 o'clock in the morning, immediately before starting a render.

Creating an Offline Reference Movie

Even though the colorist in any given workflow is likely to be building new grades from scratch, it can be valuable to have a reference movie showing any color corrections, filters, or effects that the offline editor applied during the editing process. This offline reference can be imported into a Resolve project, and used as a split-screen reference whenever there's some question about a look or effect from the offline edit.

Offline reference movies also serve as a useful tool when conforming a project in the Edit page. After project conform, you can compare the project as seen in the Record Viewer with the synchronized offline movie as seen in the Source Viewer set to Offline mode. This makes it easy to scrub through a project to make sure that each clip has imported correctly and is in sync.

More information about using Offline Reference Movies appears later in this chapter.

Mixed Frame Sizes and Mixed Codecs

Most NLEs can freely mix media using different frame sizes, different codecs, and different frame rates. DaVinci Resolve deals with these combinations in different ways, depending on what settings you've selected in the Project Settings.

- **Mixing Frame Sizes:** Mixed frame sizes are easily handled. The Set Timeline Resolution To parameter in the Master Project Settings panel of the Project Settings dictates the current resolution of the project. Any clips with a frame size that doesn't match the project is resized according to the option selected in the Image Scaling panel of the Project Settings. You can, of course, always manually readjust the sizing of any clip if you want to make a specific adjustment. All resizing is done using the optical-quality resizing algorithms in DaVinci Resolve. For more information, see Chapter 29, "Color Page Effects."

- **Mixing Codecs:** Mixed codecs are also not a problem, as long as the different codecs used by the media in the project you're importing are compatible with the list of codecs and formats that DaVinci Resolve supports. For more information about the currently supported list of codecs and formats, check the Blackmagic Design support page for DaVinci Resolve. This list is updated often with newly supported formats.

Mixed Frame Rates

DaVinci Resolve also supports mixed frame rates, although there is a setting you must choose to ensure the best results for the NLE you're importing from. By default, mixed clip frame rate support is enabled via the "Mixed frame rate format" pop-up menu that appears either in the Master Project Settings, or in the Import AAF or XML dialog.

The different options available in the "Mixed frame rate format" pop-up are available to let you conform projects using the method of mixed frame rate calculation used by the NLE a project was originally edited in; different NLEs have different ways of mixing frame rates, and that used by Final Cut Pro 7 is different from that used by Final Cut Pro X or Avid Media Composer. If you need to change this setting, you must do so before you import any media into the Media Pool; once the Media Pool is populated, this setting can no longer be changed.
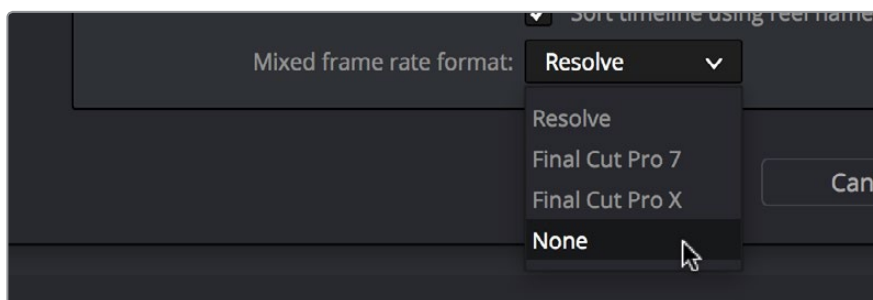
Mixed frame rate format selection

This Mixed frame rate format pop-up menu is also found in the Load AAF and Load XML dialogs. Resolve automatically chooses a setting from the "Mixed frame rate format" pop-up menu that corresponds to the project file you're importing, but in some cases you can override this setting if necessary. For projects sent from Final Cut Pro, you can choose either "Final Cut Pro 7" or "Final Cut Pro X" to match the type of project you're importing. On the other hand, you should choose "Resolve" for projects imported from Premiere Pro, Smoke, Media Composer, or other NLEs.

When "Mixed frame rate format" is set to anything but None, DaVinci Resolve conforms and processes all clips in the Timeline to play at the frame rate that's selected in the "Calculate Timecode At" pop-up menu. For example, 23.98, 29.97, 30, 50, 59.94 and 60 fps clips will all play at 24 fps if that's what "Timeline frame rate" is set to in the Master Project Settings. Clips with different source frame rates will be retimed to match the Timeline conform frame rate.

The Retime process that's used to render clips with differing frame rates can be changed for individual clips via the Retime Process parameter in the Edit Page Inspector, or it can be changed project-wide using the Retime Process parameter found in the Editing panel of the Project Settings. For more information on how each of the three available options work, see the "Frame Interpolation" section of Chapter 3, "Project Settings and Preferences."

If you choose "None," then clips with frame rates that aren't equal to the Timeline frame rate will ignore their original frame rate and will play at the Timeline rate, resulting in either faster or slower motion, depending on the difference between the original and Timeline frame rates.

> **NOTE:** Because DPX files often either lack or have incorrect frame rate information in the header data, you may need to select None when conforming a project using image sequences to make sure your media is not incorrectly interpreted.

How clips in mixed frame rate timelines are rendered depends on whether the Render Settings are set to render individual source clips or one single clip. When you render the Timeline as "Individual Source Clips," then all clips are rendered individually at their original frame rate. If you select "Single Clip," then all clips are converted to the "Timeline frame rate" frame rate setting, and rendered as a single media file.

Importing Effects When Conforming Edits

DaVinci Resolve is capable of translating a subset of the effects exported within XML, AAF, and EDL project files into their Resolve equivalents. The following chart illustrates which effects are supported, and for which project import formats.

Unsupported effects are neither imported nor displayed in Resolve. However, the majority of unsupported effects are preserved internally, and are reinserted into exported XML or AAF files so that those effects will reappear in your NLE once the project is reimported.

	EDL	FCP 7 XML	FCP X XML	AAF
Color Corrections	No	No	Yes	No
Composite Modes	No	Yes	Yes	Overlay only
Multiple Tracks	No	Yes	Yes	Yes
Video Transitions	Yes	Yes	Yes	Yes
Audio Transitions	No	No	No	Yes
Opacity Settings	No	Yes	Yes	Yes, via 3D Warp or Superimpose

	EDL	FCP 7 XML	FCP X XML	AAF
Position, Scale, Rotation	No	Yes	Yes	Yes, via 3D Warp
Linear Speed Effects	Yes	Yes	Yes	Yes
Variable Speed Effects	No	Yes	Yes	Yes
Still Image Clips	No	.tif, .jpg, .bmp, .dpx, .dng, .psd	.tif, .jpg, .bmp, .dpx, .dng, .psd	.tif, .jpg, .bmp, .dpx, .dng, .psd
Freeze Frames	No	No	No	Yes
Nested Sequences	No	Yes	Yes	No
Linked Clip Audio	Yes	Yes	Yes	Yes
Mixed Frame Rates	No	Yes	Yes	Yes
Text Generators	No	Yes	Yes	No

Effects supported with imported AAF, XML and EDL

About Supported Color Corrections

At the time of this writing, only Final Cut Pro X XML projects are capable of exporting color correction data that can be imported as primary grades in DaVinci Resolve. For obvious reasons, color correction import is a one-way street, and imported color corrections cannot be output back to Final Cut Pro. Imported Final Cut Pro X color adjustments appear in the Color page as primary corrections.

Other workflows for importing color correction information from other applications are available using ColorTrace to import grade data from CDLs (Color Decision Lists). For more information, see the "Copying Grades Using ColorTrace" section in Chapter 32, "Copying Grades Between Timelines Using ColorTrace."

About Supported Transitions

EDLs are the most restrictive when it comes to transition support in Resolve, as only Cross Dissolves will be read. Any other transitions appearing in an EDL will be automatically converted to a Cross Dissolve of the same duration when it's imported into DaVinci Resolve.

On the other hand, Resolve supports the import of ten different transitions when importing XML project files from Final Cut Pro X and legacy Final Cut Pro 7, or nine different transitions when importing AAF files from Avid Media Composer or Symphony.

	EDL	FCP X XML	AAF
Clock Wipe	No	Yes	Yes
Center Wipe	No	Yes	Yes
Cross Dissolve	Yes	Yes	Yes
Additive Dissolve	No	Yes	No

	EDL	FCP X XML	AAF
Dip to Color Dissolve	No	Yes	Yes
Edge Wipe	No	Yes	Yes
Venetian Blind Wipe	No	Yes	Yes
Cross Iris	No	Yes	Yes
Diamond Iris	No	Yes	Yes
Oval Iris	No	Yes	Yes

Supported transitions for imported EDL, XML and AAF

Transition Names

To help you prepare projects for export, note that the names of transitions vary between XML and AAF project files. Here are the supported transitions as they appear in Avid Media Composer and Symphony.

- Dip to Color Dissolve = Dip to Color effect in the Blend category
- Edge Wipe = Horizontal/Vertical/Lower Left/Lower Right/Upper Left/Upper Right Diagonal effects in the Edge Wipe category
- Center Wipe = Horizontal Open and Vertical Open effects in the Edge Wipe category
- Clock Wipe = Clock effect in the Shape Wipe category
- Venetian Blind Wipe = Vertical Blinds and Horizontal Blinds effects in the Shape Wipe category
- Cross Iris = 4 Corners effect in the Shape Wipe category
- Diamond Iris = Diamond effect in the Shape Wipe category
- Oval Iris = Circle effect in the Shape Wipe category

About Supported Opacity, Position, Scale, and Rotation Settings

When importing XML project files from Final Cut Pro X, Premiere Pro, or legacy Final Cut Pro 7, DaVinci Resolve supports the import of Opacity, Position, Scale, and Rotation settings. Imported Composite and Transform settings for any given clip appear in the Inspector of the Edit page, or in the Edit Sizing mode of the Sizing palette in the Color page. If these settings have been keyframed, the animation will appear in DaVinci Resolve.

When importing AAF files from Media Composer or Symphony, DaVinci Resolve supports the import of Opacity, Resize and 3D Warp effects, which are converted into Pan, Tilt, Zoom, and Rotate settings in Resolve. As of Resolve version 11.1, there is improved support for Bezier and cubic interpolated keyframes in AAF files.

About "Ken Burns Effect" and Dynamic Zoom

If you import a project from Final Cut Pro X with clips that use the Ken Burns effect for creating pan and scan animation, then the Dynamic Zoom parameters (found in the Edit page Inspector when a clip is selected) for each affected clip will be populated with an equivalent animated effect.

About Speed Effects

DaVinci Resolve supports the import of Speed Effects from different applications, but different project formats have different Speed Effect support.

- **EDL:** Resolve only supports the import of linear Speed Effects when importing EDLs.
- **XML:** Resolve supports the import of both linear and variable Speed Effects when importing XML project files from both Final Cut Pro 7 and Final Cut Pro X. As of Resolve version 11.1, XML from Final Cut Pro X can also provide information about whether frame blending or optical flow is used, as well as information about the Bezier curve transitions of speed effects.
- **AAF:** Resolve supports the import of both linear and variable Speed Effects when importing AAF files from Media Composer or Symphony that use Timewarp effects.

About Nested Sequences and Compound Clips

DaVinci Resolve supports the import of compound clips from Final Cut Pro X and of nested sequences from legacy Final Cut Pro 7. Both appear within Resolve as compound clips, in both the Timeline and the Media Pool. As of Resolve version 11.1, compound clips with mixed frame rates are supported, as well as multi-cam and a/v synchronized clips from Final Cut Pro X, which are represented in Resolve as compound clips. For more information about creating and using compound clips in Resolve, see the "Compound Clips" section of Chapter 16, " Multicam Editing."

About Supported Composite Modes

When importing XML project files from Final Cut Pro 7, Premiere Pro, and Final Cut Pro X, DaVinci Resolve supports the import of eight different Composite modes. When importing AAF files from Media Composer, the Overlay composite mode is supported when the source AAF file has a Superimpose effect applied to it.

	FCP 7/X XML	AAF
Add	Yes	No
Subtract	Yes	No
Difference	Yes	No
Multiply	Yes	No
Screen	Yes	No
Overlay	Yes	Yes
Lighten	Yes	No
Hardlight	Yes	No
Softlight	Yes	No
Darken	Yes	No

Supported composite modes with imported XML and AAF

About Supported Still Image Formats

DaVinci Resolve supports the import of greater-than-one-frame-in-duration TIF, JPG, PNG, DPX, and DNG still image files that appear in Final Cut Pro X, Final Cut Pro 7, and Premiere Pro XML files, and AAF files exported from Media Composer. These clips appear as ordinary clips in the DaVinci Resolve Timeline. Export of still images is limited to Final Cut Pro 7 and Final Cut Pro X XML formats.

About Supported Alpha Channels

Media with embedded alpha channels is supported for any project as long as it's in a media format that DaVinci Resolve supports; this includes TIFF, OpenEXR image sequence formats, and four-channel QuickTime formats such as ProRes 4444, DNxHR 444, and QuickTime Animation. Alpha channels are automatically enabled, and can be used for compositing directly within the DaVinci Resolve Timeline.

Starting in Resolve 12.5, alpha channels can be exported in round-trip workflows when rendering individual source clips. However, when rendering a program as a single clip, all composited effects are rendered together to produce a single output media file. For more information on rendering clips with alpha channels, see Chapter 34, "Delivery Effects Processing."

About Imported Text Effects

DaVinci Resolve supports the import of text generators when importing XML project files from both Final Cut Pro X and Final Cut Pro 7. All imported text effects appear in the DaVinci Resolve Timeline as Basic text generators. Some, but not all, formatting parameters are imported, depending on the project file format being imported.

About Imported Audio in AAF Projects

Starting with Resolve 12.5, any combination of audio track types, channel map order, MXF and QuickTime files, and rendered or unrendered clips should import without problems.

> **NOTE:** When exporting an AAF project, Resolve is capable of writing mono media in stereo tracks.

Preparing Unsupported Clips and Effects You Want to Grade

If there is an unsupported effect within your NLE of choice that you want to move into DaVinci Resolve for grading (for example, clips with effects filters that are native to a particular NLE), here's a simple workflow to follow.

To "bake" an effect into a clip you're sending to DaVinci Resolve:

1   Export that clip as a self-contained media file using whatever Resolve-compatible mastering codec you prefer.

2   Reimport the resulting media file into your project.

3   Edit it into your project's timeline to replace the original effects clip.

4   Export a version of the resulting sequence for use in Resolve.

This is a good way of prepping the titles and effects of projects that you want to finish in DaVinci Resolve. If you create self-contained media files for all title clips and effects, then these elements will import cleanly and easily, and you can export a complete, texted version of your program out of Resolve.

Additionally, if a composited clip is using unsupported effects (for example, a filtered still image with animated position that's superimposed using the Overlay composite mode and set to 70% opacity), an ideal way to prep this clip for XML export to Resolve is to set the composite mode to Normal, set Opacity to 100%, and then export the resulting clip as a self-contained QuickTime movie. Reimport the result, edit it back into the Timeline to replace the original superimposed clip, and then set its composite mode to Overlay and its Opacity to 70% to match the original settings. Now the unsupported effects are "baked" into the clip, but the effects that Resolve does support are still live, and can be readjusted in context while grading.

How DaVinci Resolve Conforms Clips

While it may seem pedantic, it cannot be overemphasized that an edited timeline is simply a set of information about an arrangement of clips, along with any adjustments and effects that have been applied to those clips. With this in mind, it becomes easier to explain how Resolve manages timelines and the media they use separately. In short, it's possible to import multiple versions of a timeline, that arrange the same clips in different ways, using subsequently imported EDL, AAF, or XML files. Each revised timeline automatically attempts to "reconform" itself to use the same clips in the Media Pool as previous versions of that timeline did.

> **TIP:** The resulting timelines, each with a differently edited arrangement of the same clips, can also share grades if you're using remote versions. For more information on versions, see Chapter 28, "The Gallery and Grade Management."

The Difference Between Conforming and Relinking

While the two terms are often used synonymously, conforming typically refers to the process of matching a timeline to the clips it uses, while relinking typically refers to the process of matching a clip in a project to its corresponding media file on disk.

In particular, this section of the manual makes this distinction explicitly. Conforming refers to matching a clip in a timeline to a clip in the Media Pool. Relinking refers to matching a clip in a timeline or the Media Pool to a media file on disk. This is a recent change necessitated by an expansion of relinking and reconforming options, so the author offers his apologies if this usage is not always consistent.

A Short Summary of Methods for Conforming

As a result of timelines and clips being managed separately, there are several ways you can reconform clips in a timeline to clips in the Media Pool, and clips in general to a project's corresponding source media on disk. Which methods will be most valuable depend entirely on the workflow you're using, but the following three methods are most common when importing projects from other sources.

- Importing media during AAF or XML import: When you import a project via AAF or XML, you have the option of using the embedded file paths in the AAF or XML file to import and relink all referenced media into the Media Pool for automatic reconforming to the clips in the imported timeline. If the media has been moved so that the file paths are invalid, then you'll be asked to find the location of the media as part of the import process.

- **Importing media prior to importing an EDL, AAF, or XML:** In EDL workflows, it's essential to import the media an EDL will be reconformed to into the Media Pool before you import the EDL. However, you can do this for AAF and XML import workflows as well. When you do this, Resolve tries to automatically reconform the clips in the imported timeline to those in the Media Pool.

- **Importing media into the Media Pool when Timeline clips are offline:** DaVinci Resolve maintains a dynamic relationship between clips in the Media Pool and those in a project's various timelines. If you have a timeline with one or more offline clips, that means that the relationship between that clip in the Timeline and the Media Pool has been lost, either because there is no corresponding clip in the Media Pool, or because the corresponding clip in the Media Pool is offline. If there is no corresponding clip in the Media Pool, and you then import the corresponding media for those clips into the Media Pool, Resolve will automatically reconform the offline Timeline clips without you needing to do anything else.

In all cases, Resolve follows a specific set of rules to determine which media files on disk or which clips in the Media Pool corresponds to which clips in one or more timelines. The following sections go into detail on what these rules are, and how to use them to your advantage.

For more comprehensive information about conforming and relinking clips and media in other workflows, see "Manually Conforming and Relinking Media" at the end of this chapter.

## Essential Clip Metadata for Conforming and Relinking

When conforming projects in Resolve, the accuracy and integrity of clip metadata is critical for a successful result. Keep the following three criteria in mind when you're preparing media to use in DaVinci Resolve.

- **Accurate timecode:** Essential for every clip. First off, each clip should have a valid timecode track, and it should go without saying that the timecode should match the same timecode used by all other instances of that media file in a particular project. If there are problems with a clip's timecode, Resolve has tools you can use to edit or offset timecode to account for known inconsistencies. By default, the "Use Timecode" project setting is set to "Embedded in the Source Clip," so that timecode is read from the embedded timecode track within a QuickTime or MXF file, or from the header data of a DPX frame file. However, you can also choose the "From the source clip frame count" option which enables timecode to be read from the Source clip's frame count for image sequences.

- **File names:** When "Assist using Reel Names" in the Master Project Settings is off (the default setting), this forces Resolve to conform clips using file names when importing XML and AAF projects. File names can only be only used when conforming XML or AAF files, or when importing a DaVinci project; file names are never used when conforming EDLs.

- **Reel Name:** Only used for conforming if "Assist using Reel Names" is on in the Master Project Settings panel of the Project Settings. Assigning reel names to your media is not essential, but recommended, and can make media management easier for certain operations, especially in EDL workflows. However, if you experience problems conforming clips with "Assist using Reel Names" turned on, you should try turning it off as one possible troubleshooting step.

How DaVinci Resolve matches media files to clips in an imported project depends on how you're importing the project.

Conforming Clips During XML and AAF Import

For workflows where you're importing AAF or XML projects, and relinking the resulting clips in Resolve to media files that are either on disk, or conforming them to clips that are in the Media Pool already, the rules for how clip metadata is defined for reconforming depend on two settings in the Load AAF or XML dialog: "Automatically Import source clips into media pool," and "Ignore file extensions when matching."
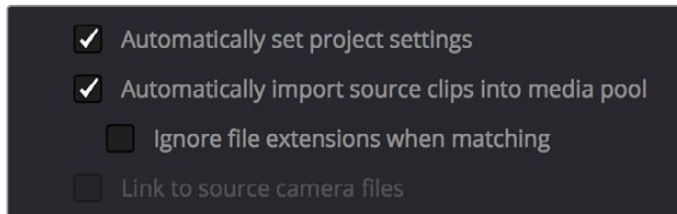
The most important settings for conforming media in the Load dialog

The ways in which these two checkboxes interact to let you choose how media is conformed to an imported AAF or XML file are complex, but here are the rules.

When Importing Clips with File Extensions Matching Those in the AAF or XML File

Turn "Automatically Import" on and "Ignore file extensions" off.

This is the default setting, and is most useful when the AAF or XML file you're importing contains references to the high-quality media you want to grade, and you want to automatically add it to the Media Pool.

- First, if there are already clips in the Media Pool, Resolve tries to conform as many of these clips as possible by matching the file paths in the AAF or XML file to the stored file paths of each clip in the Media Pool.
- Second, for all remaining clips not found, Resolve imports as many clips as possible into the Media Pool from any storage volumes that are visible to Resolve, using the file paths from the XML or AAF.
- Third, for all remaining clips not found, Resolve tries a clip name match of clips that are already in the Media Pool.
- Fourth, for all remaining clips not found, Resolve tries a timecode match (along with a reel name match if this is enabled) of clips that are already in the Media Pool.
- Finally, for all remaining clips not found, the user is prompted to manually choose another folder to search.

When Importing Clips With Different File Extensions

Turn "Automatically Import" on and "Ignore file extensions" on.

Turning both of these options on is useful in situations where the sequence you're importing was originally edited using offline quality media, and you want to conform to high-quality online media in a completely different format, possibly in the Media Pool, possibly on another disk. One example of this is as when the edit was done using QuickTime or Avid DNxHD media, but you're reconforming to CinemaDNG files on another disk in order to grade the camera original raw media. Leaving "Automatically Import source clips into media pool" on, in this case.

- First, if there are already clips in the Media Pool, Resolve tries to conform as many of these clips as possible by matching clip names.

- Second, for all remaining clips not found, the user is prompted to choose another folder to search, and Resolve imports as many clips as possible by matching clip names, ignoring file extensions.
- Third, for all remaining clips not found, Resolve tries a timecode match (and reel name match if this is enabled in the Master Project Settings) of clips that are already within the Media Pool.
- Fourth, for all remaining clips not found, the user is prompted to manually choose another folder to search.

Turn "Automatically Import" on and "Link to source camera files" on.

The "Link to source camera files" checkbox only appears when you import AAF files. Turning this option on when automatically importing media relinks the imported project to the original camera source files that are kept track of by Media Composer/Symphony via the "Source Name" metadata within the AAF file.

When You're Only Relinking to Clips Already In the Media Pool

Turn "Automatically Import" off.

Turning "Automatically Import source clips into media pool" off is useful in situations where you only want to conform the imported AAF or XML to clips in the Media Pool. This is most useful in situations where you've imported all of the camera original media into the Media Pool first, for example when creating the dailies that were then edited, and you want to conform the imported AAF or XML to the media that's already there.

- First, if there are already clips in the Media Pool, Resolve tries to conform as many of these clips as possible by matching the file paths in the XML or AAF to the file paths stored for each clip in the Media Pool.
- Second, for all remaining clips not found, Resolve tries a clip name match of clips that are already in the Media Pool.
- Third, for all remaining clips not found, Resolve tries a timecode match (and reel name match if this is enabled) of clips that are already within the Media Pool. In this case, the file name is not used.

Beware When Choosing a Volume or Folder to Search

When prompted to choose a folder to search, you can optionally choose an entire volume; Resolve always searches through all subdirectories, and eventually all media on that volume will be found. However, depending on the size and number of files on the selected volume, this operation could take an unexpectedly long time, especially on a SAN volume.

Defining Clip Metadata when adding Media to the Media Pool

For workflows where you're manually adding media files to the Media Pool when you're editing from scratch in Resolve, preparing to process dailies, or as a separate step before importing EDL, XML, or AAF project files and reconforming them to a higher-quality set of media than what was originally used to edit with, the rules for how clip metadata is defined in preparation for conforming are a bit different.

- Timecode: Calculated using the "Calculate Timecode At" setting in the Master Project Settings panel of the Project Settings.

- **Reel Names:** Determined depending on whether the "Assist using Reel Names from the" checkbox is on or off, and on which option you've selected. Reel names can be extracted dynamically, so any time you change this setting the reel names in the Media Pool update to reflect the change, or they can be defined manually, in which case you can set different clips to use different methods of reel name extraction.
- **Clip Names:** Read and stored, used for AAF and XML imports, but not used for imported EDLs.

How Reel Names are Identified

The "Assist using Reel Names" checkbox in the Master Project Settings panel of the Project Settings is an extremely important setting for controlling how the conform process works. By default, it's turned off, and Reel Names are left blank. This is fine for conform workflows where all you need is the file path or file name and source timecode to successfully identify which media files correspond to what clips. However, if you need more information than that to reconform the clips in your project, you can turn on the "Assist using Reel Names" checkbox to enable Resolve to use one of four different methods to automatically define reel names for every clip in the Media Pool.

Automatically Defining Reel Names

When you use the "Assist using Reel Names" options in the Project Settings, reel names are extracted dynamically. This means that any time you change the method of reel name extraction in the Project Settings, the reel names of all clips in the Media Pool automatically update to reflect the change. This can be seen in the Reel Name column that's visible if you put the Media Pool into List view. For example, were you to change the "Assist using reel names" options from "Source clip file pathname" to " "Mediapool folder name," the contents of the Reel Name column would visibly change. This is useful when you're importing a project for which all clips use the same method of determining their reel name. The use of reel names is critical in EDL and AAF workflows, but isn't necessarily as important in XML-centric workflows.

Manually Choosing Reel Name Definitions For Individual Clips

You also have the option of manually choosing the criteria for how one or more selected clips in the Media Pool have their Reel Names defined, using the Clip Attributes dialog. This is useful when there are certain clips in a project that need to use a different method of reel name extraction, or manually entered reel names.

To manually define Reel Names for one or more clips:

1 Select one or more clips in the Media Pool.

2 Right click one of the selected clips, and choose Clip Attributes from the contextual menu.

3 Open the Reel Name panel of the Clip Attributes dialog, choose a new option, and click OK.

Once you've used Clip Attributes to change the Reel Names of clips, those clips no longer automatically update when you change the "Assist using Reel Names" options in the Project Settings. For more information on using Clip Attributes, see Chapter 9, "Working With Media."

Methods of Defining Reel Names

There are five options that are available for automatically determining how reel names are extracted from the source media when "Assist using Reel Names" is turned on, and one option in the Clip Attributes Reel Name panel for manually defining reel names. The use of reel names is critical in EDL and AAF workflows, but isn't necessarily as important in XML-centric workflows.

- **Source clip file pathname:** Obtains the reel name by extracting it from each media file's path. This makes it possible to extract a reel name from all or part of the file name, or from all or part of the name of any folder in the path that encloses that file. This extraction is defined using the Pattern field.
- **Pattern:** A code that defines how a reel name should be extracted from the source clip pathname. More information about creating patters appears later in this chapter.
- **Media Pool folder name:** The reel name is obtained from the name of the bin in the Media Pool that encloses that clip. For example, in a stereoscopic workflow you might want to export offline stereo media with the "Left" and "Right" bin names in which they're organized as reel names. Another example would be organizing VFX being incrementally processed in individually named bins, such as "VFX_Tuesday_10-12."
- **Embedding in Source clip file:** Useful for file formats where the reel name is embedded within the media file itself. CinemaDNG and other digital cinema cameras, QuickTime files created by Final Cut Pro, and DPX frame files are formats that can contain reel name header data.
- **Source clip filename:** If there is no defined reel number, often it's easy to just use the Source clip filename.
- **User Defined:** This option is only available when you manually alter the Reel Name for one or more selected clips in the Media Pool using the Clip Attributes dialog. Choosing User Defined lets you type any string of text you like to use as the reel name.

An additional checkbox is available, "Extract reel names from EDL comments," which is primarily useful for legacy workflows in which you conform an EDL exported from Final Cut Pro 7 to camera original R3D media.

- **Extract reel names from EDL comments:** Some media file formats, such as R3D, have reel names, obtained from the file names, that are longer than the eight characters that are allowable in a standard EDL. This option allows DaVinci Resolve to extract reel names from appropriately formatted EDL comments, such as those output from Final Cut Pro 7.

Using the Pattern Field

If you're using the Pattern option to extract the reel name from a clip's source file pathname, you have the option to create your own search pattern, enabling you to have DaVinci Resolve extract the reel name in highly specific ways to accommodate more exotic workflows.

Extraction patterns are interpreted from right to left, deciphering each clip's file path element by element starting with the file name, and then considering each enclosing directory's name to the left. Each extraction pattern consists of a series of text characters and "wild card" operators in unique combinations corresponding to the length and names used in the file path.

Here are a series of search characters that may be used.

	Extraction Pattern Operators
?	Looks for matches of any single character. Add as many question marks as there are characters you want to match. ?? matches two characters such as 02, ???? matches four characters such as 0002.
*	A wildcard that creates matches for any sequence of zero or more characters.
%R	Specifies the reel name's actual location. Reel names may contain any character, but should not contain a directory separator (forward slash).
%_R	Extracts the reel name and strips out the R3D file name underscores found in EDLs from Final Cut Pro 7 or earlier.
%D	Matches any directory name or file name. When this is the last operator in a pattern, do not add a forward slash.
/	Used to separate any two operators

If you're trying to create a new extraction pattern for a unique workflow, there's a test dialog you can use to try different patterns out before applying them to your project.

To test the extraction path:

1 Click the Test button next to the current Pattern in the Master Project Settings panel of the Project Settings. The "Specify Reel Extraction Pattern" dialog opens.

2 Type the extraction patten you want to test into the Pattern field.

3 Using whatever method you prefer, find the file path of the media file that you want to test the extraction pattern on, and copy or type it into the Sample Path field.

4 Click TEST.

5 If the reel name that appears below is correct, then click Apply to copy the extraction pattern into the Pattern field of the Master Project Settings. If the reel name that appears is not correct, modify the extraction pattern and try again.

Examples of Reel Name Extraction Patterns

To better understand how this process works, below are several examples showing the various methods of reel name extractions. The / is used as the separator between control parameters.

Example 1:

This example shows the reel name stored within the parent folder name of the clip.

  - Pattern: `*/%R/%D`
  - File path: `vol0/MyMovie/Scans/004B/Frame[1000-2000].dpx`
  - Reel Name: `004B`

Parsing takes place from right to left so to analyze this pattern start at the right end. In this case the %D matches to the file name "FrameNNNN.dpx" where NNNN is the frame number in each file of the clip. Moving left of the file name, the /%R/ section of the string is next. This specifies that the reel name will be the entire name of the parent directory immediately above the file. Then the * at the beginning of the string says match any pathname in front of the directory name that has the reel name. This string would find the parent directory regardless of how many levels deep it is nested on the directory path.

Example 2:

Here we see the reel name stored in the parent folder name of the clip and prefixed with the reel name.

- Pattern: `*/????%R/%D` or alternatively `*/Reel%R/%D`
- File path: `/vol0/MyMovie/Scans/Reel1234/Frame[1000–2000].dpx`
- Reel Name: `1234`

In this example both of these extraction patterns produce the same result. They are also similar to the first example. The reel name is still in the parent directory name but in this case it will have the fixed characters "Reel" prefixed in front of the reel name. The first pattern with ???? would actually match with any 4 character in front of the reel name. The second pattern is more specific and would only match the word "Reel" in the directory name.

Example 3:

This example shows the reel name stored within the parent folder name two directory levels up.

- Pattern: `*/%R/%D/%D`
- File path: `/vol0/MyMovie/Scans/004B/134500–135000/Frame[1000–2000].dpx`
- Reel Name: `004B`

This example is again similar to Example 1. The difference is that in Example 3, the reel name is the directory name two levels above the clip. In Example 1, the reel name was in the directory name only one level up.

Example 4:

Finally, we see the reel name that is embedded within the clip name of the material.

- Pattern: `*/Reel%R_*`
- File path: `/vol0/MyMovie/Scans/Reel004B_[1000–2000].dpx`
- Reel Name: `004B`

This example shows a method for extracting the reel name from the file name of the clip. Again, starting at the right the two pattern characters "_*" match any series of characters up to the first underscore character. In this case it will pick up the file extension (.dpx) and the frame number portion of the file name. Next, the "/Reel%R" characters indicate the reel name is the characters between the '/Reel" and _ character. The * at the beginning of the pattern will match a file path any number of directories deep in front of the file name.

# Creating Digital Dailies
For Round Trip Workflows

A common workflow using DaVinci Resolve is the processing of digital dailies for media formats and projects where the camera original media would benefit from an initial grade, or from conversion into another more workflow-friendly format. Examples include programs shot using Log-C or S-Log media that require some form of grading to produce acceptable-looking media for editing, or converting processor-intensive raw formats into other high-quality media containers for offline editing and/or finishing.

In the process, Resolve offers numerous tools that let you add organizational metadata, synchronize dailies in dual-recording workflows, apply processing LUTs for color management, and output a wide variety of NLE-friendly media with exactly specified file naming conventions, file structures, and timing metadata.

This section provides an overview of the different features that DaVinci Resolve offers for undertaking any workflow that begins with media processing in Resolve.

### Step 1—Ingest Media and Add/Edit Metadata

It's not necessary to have a project file exported from an NLE to start working in Resolve. Using the Media Storage browser on the Media page, you can access any volume that's currently available to the system, and import any compatible media format into the Media Pool.
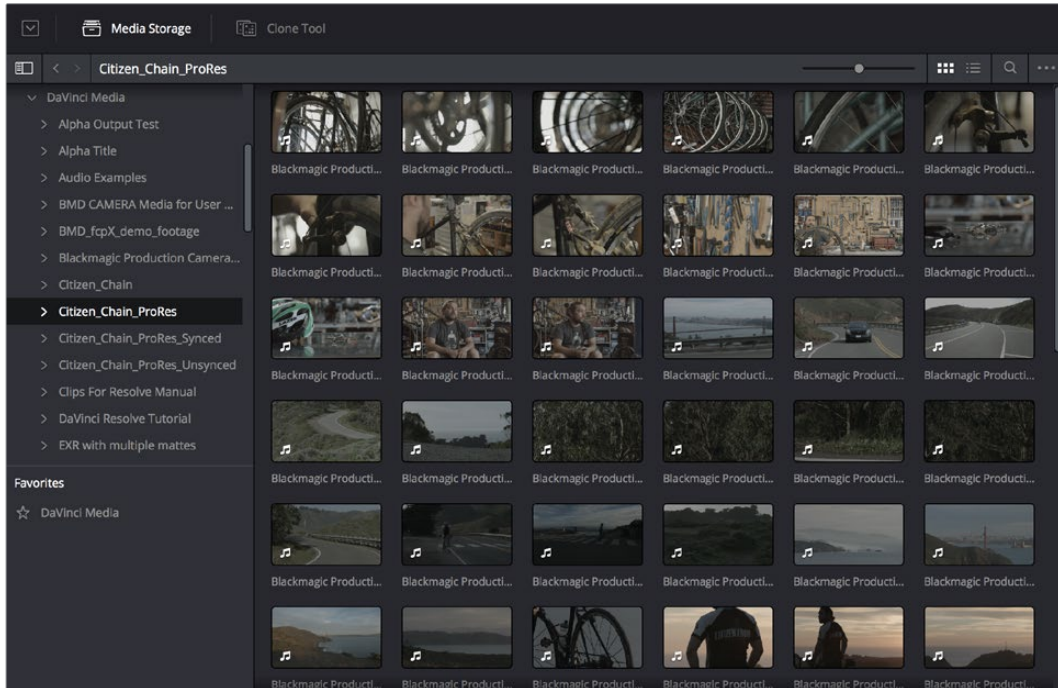
Media Storage browser with scrubbable clip thumbnails

The Media Pool is Resolve's internal database of available media for the currently open project. If you like, clips in the Media Pool can be organized into multiple bins. Once media has been added to the Media Pool, you can access a variety of descriptive metadata using the Metadata Editor, adding descriptions, notes, scene and take information, flags, day and date information, program and episode information, etcetera. This data can populate metadata tags when exporting ALE lists to move the metadata to a compatible NLE.

For more information on ingesting media in the Media page, see Chapter 8, "Adding and Organizing Media."
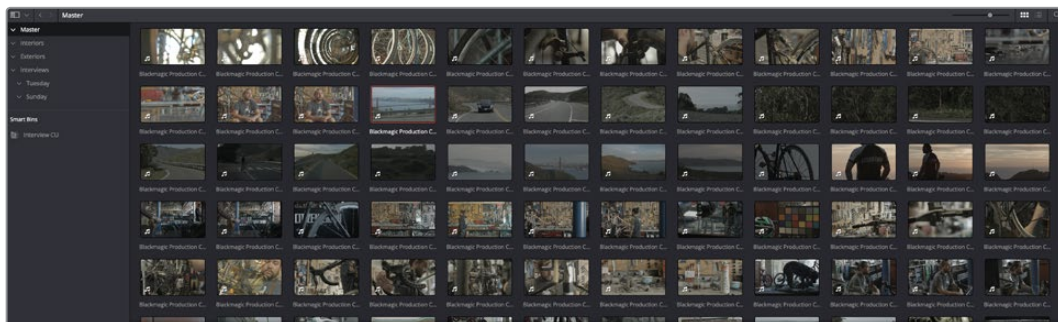
The Media Pool

Step 2—Sync Audio to the Dailies

If your video format has embedded audio, Resolve can simply pass that audio through when outputting media from the Deliver page. However, if the program you're working on employs dual-system audio recording, there are a variety of methods available for syncing it in the Media page. You can also import timecoded Broadcast WAVE files into the same bin as the accompanying video clips (you can place them into a sub-bin if you like), in preparation for syncing the dailies in Resolve. Once you've imported the video and audio media you want to sync into the Media Pool of the Media page, you can right-click the enclosing folder and choose "Auto-Sync Audio Based on Timecode" which automatically syncs every timecode-matched pair of audio and video media clips within the same folder, all at once. Alternately, you can choose "Auto-Sync Audio Based on Timecode and Append Tracks" to add the synced audio tracks to any audio tracks already present in the video clips.

> **TIP:** For the best results, consider using different folders for each day's audio and video clips.

If you don't have synced timecode, but your video clips have separately recorded audio (usually via an on-camera microphone) that matches the dual-system audio recordings, you can use waveform syncing to quickly sync each video clip with its matching audio clip. Import your separately recorded audio files into the same bin as the accompanying video clips (you can place them into a sub-bin if you like), in preparation for syncing. Once imported, you can right-click the enclosing folder and choose "Auto-Sync Audio Based on Waveform" which automatically syncs every timecode-matched pair of audio and video media clips within the same folder, all at once. Alternately, you can choose "Auto-Sync Audio Based on Waveform and Append Tracks" to add the synced audio tracks to any audio tracks already present in the video clips.

> **TIP:** With waveform syncing, for the best and fastest results, consider using different folders for each day's audio and video clips, or even different folders for each scene, to reduce the number of waveforms that need to be compared at one time.

Finally, if all you have in the way of sync reference is a humble clap-board, you can manually sync video and audio clips by selecting a video clip to open into the Media page viewer, and then clicking the Waveform button in the Audio panel and clicking the corresponding audio clip to show its waveform in the audio panel. In this way, you can drag the Viewer and Audio Panel's playheads to the video and audio sync points, and click the Audio panel's link button to lock the A/V sync of that clip.

For more information on syncing audio and video in the Edit page, see Chapter 9, "Working With Media."

Step 3—Do Whatever Grading is Necessary

Many productions that decide not to record camera raw media instead elect to record a log-encoded or "flat" image to ProRes or DNxHD media files in order to preserve the most image data for grading without clipping highlights or shadows. This can be accomplished using in-camera settings that record log-encoded QuickTime or MXF media, or via external video recorders such as the Blackmagic Video Assist. Depending on the camera you're shooting with, the recorded media will use one of a variety of log-encoded gamma curves such as Log-C, S-Log, S-Log2, S-Log3, BMD Film, CanonLog, Panasonic VLog, or REDlog Film, among others.

In other workflows, raw video formats are recorded and later debayered as log-encoded clips in order to preserve the maximum amount of debayered data for grading, or in preparation for transcoding.

If you're outputting high-quality media files meant to be used themselves for later finishing, then you may want to simply pass the source image data through unaltered. However, if you're creating offline media for editors, directors, and producers to watch for the next three months, you can grade this data in a variety of ways to provide more pleasing output that's been "normalized" in order to look closer to what was monitored on-set during the shoot.

There are many ways of normalizing log-encoded media in DaVinci Resolve. If you're working with one or more raw formats, you can choose to debayer all clips straight to Rec.709 in the Project Settings. However, if you're working with log-encoded ProRes or DNxHD media, you need to normalize these clips using other methods.

An easy and powerful way to do so is to use DaVinci Resolve Color Management. To do so, set the "Color science" setting within the Project Settings to "DaVinci YRGB Color Managed." Then, right-click each clip or group of clips in the Media Pool, and choose the appropriate setting for each type of media from the Input Color Space submenu (you can define the Input Color Space of multiple selected clips at once). For more information on using DaVinci color management, see Chapter 6, "Data Levels, Color Management, ACES, and HDR."
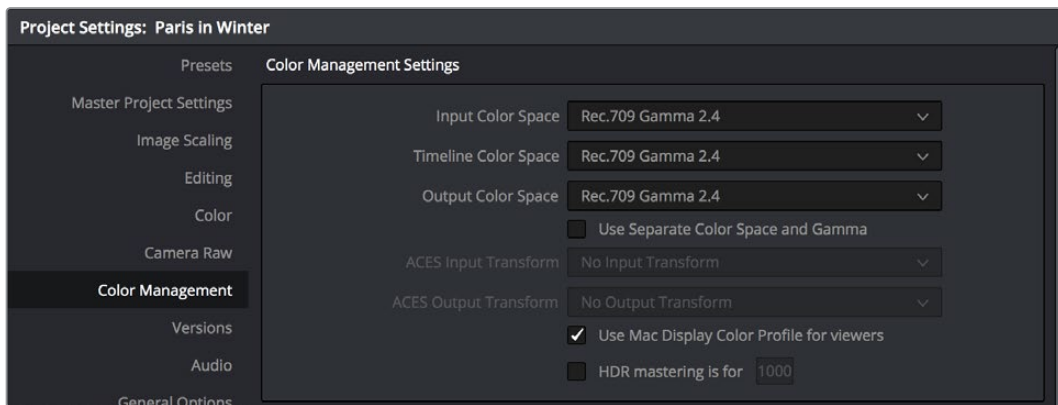
Enabling DaVinci Resolve Color Management

If you don't want to use DaVinci color management, you can also use one or more LUTs (Look Up Tables) to normalize Log-encoded media. You can apply a LUT to the entire project to normalize the particular log characteristics of the media you're processing. Project-wide LUTs can be applied in the Color Management panel of the Project Settings. For more information, see Chapter 3, "Project Settings and Preferences."
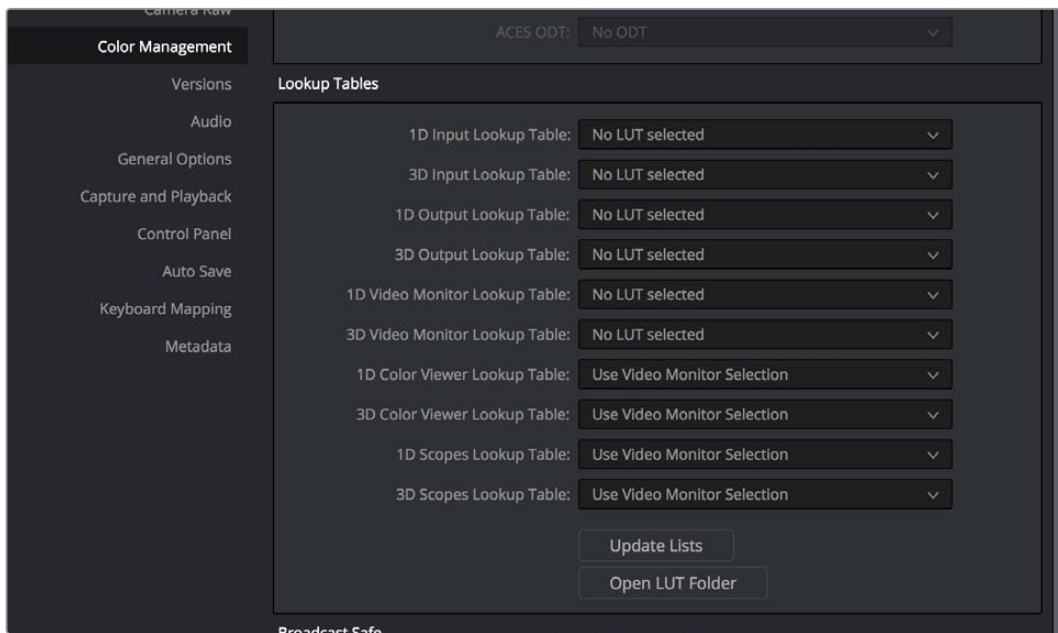
Project-wide LUT table settings on the Look UpTables panel of the Project Settings

In the case of LUT-managed shooting workflows where a variety of LUTs have been custom-designed to monitor different scenes, you can manually apply individual LUTs to one or more selected clips from each scene using the Media Pool's contextual menu.

You can also edit each scene's clips into timelines, and apply separate LUTs to each clip in the Clip mode of the Node Editor of the Color page, or apply a single LUT to an entire timeline using the Timeline mode of the Node Editor. For more information on using LUTs as part of grades, see Chapter 30, "Working in the Node Editor."

Alternately, if on-set color correction from the shoot been provided via a CDL-compliant EDL exported from one of several on-set grading solutions that are available, you can use the ColorTrace™ from CDL command to batch import grading information from another application. For more information on CDL Import workflows, see Chapter 32, "Copying Grades Between Timelines Using ColorTrace."
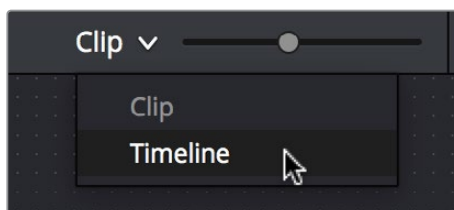

Selecting Timeline in the Node Editor

If your project's workflow requires that you start out with even higher-quality dailies, you can go ahead and manually grade individual clips as you would with any project. However, if you want to create a fast "one-light" adjustment for every clip in the Master Timeline at once, you can use the Timeline grade mode of the Node Editor in the Color page to apply a single correction simultaneously to every clip in the current Timeline. This is particularly useful as you can readjust the Timeline grade as much as you like, and the changes are automatically applied to every clip in the Timeline. For more information, see Chapter 30, "Working in the Node Editor."

Step 4—Export Media Suitable for Editing

Once you've organized your clips, synced the dailies, and applied whatever grading is necessary for the purpose at hand, you'll use the Deliver page to set up the format, file naming convention, and organization of the media you're outputting for editing or finishing.
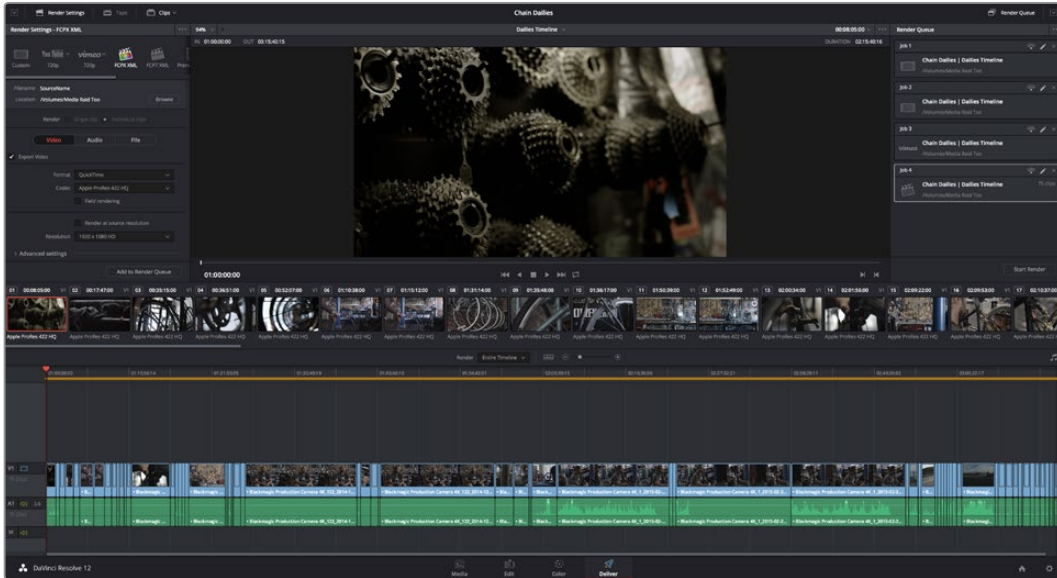
Deliver page with several jobs set up for rendering

Furthermore, if you need to apply a window burn, watermark, or logo to the media you're processing, that can be accomplished in the Data Burn-In palette of the Color page. Window burns can be formatted with a lot of flexibility, and are written out to media that's either rendered or output to tape. For more information, see Chapter 19, "Edit Page Effects."
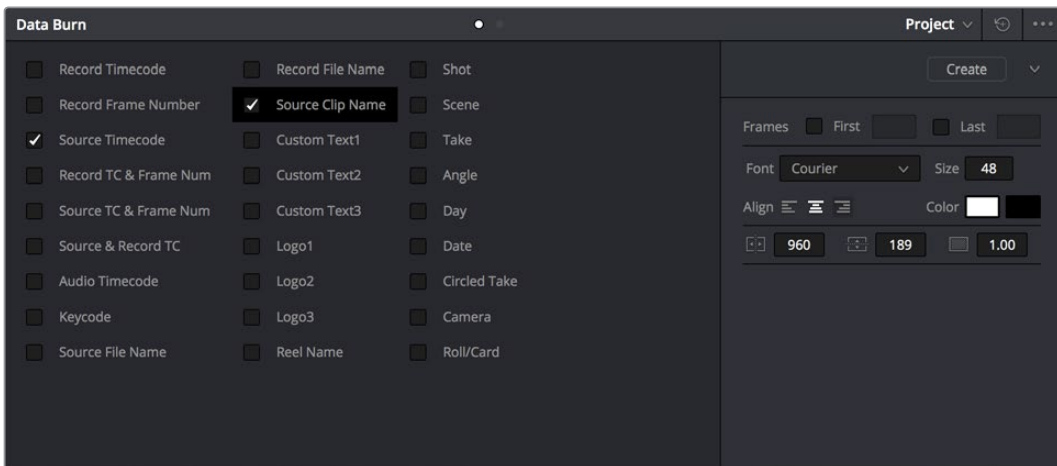
Choosing metadata to display onscreen in the Data Burn-in palette

Once you've selected the appropriate Render settings and Window Burn options, you can output one or several versions of the media, to accommodate jobs where you need to provide several media deliverables. For more information on setting up and using the Deliver page, see Chapter 35, "Delivering Media."

Step 5—Reconform Media to an EDL, AAF, or XML Project File

Once the offline media you've delivered has been edited in whichever NLE is used for the project, it's simple to reimport the edited project via an AAF, XML, or EDL file, depending on which is most suitable to your application. This edit data can be used to reconform the original media that you imported into the Media Pool, so that you immediately have access to whatever graded adjustments you made to create the offline media, as applied to the source media.

Importing AAF, XML, or EDL files in the Edit page creates new timelines, and you can import multiple subsequent Timelines to accommodate changes that have been made to the edit, if you find yourself grading a project that is in progress editorially. In fact, depending on how you set up your grades, you can use Remote Versions which will automatically ripple to follow each clip when you import a re-edited version of the program as a new timeline, saving you from having to recreate your work. For more information on using Remote Versions, see Chapter 28, "The Gallery and Grade Management."

Step 6—Output Final Media for Finishing

Once you're finished with your final grade, you'll again use the controls of the Deliver page to render the program's final media, either as individual clips for a round-trip workflow, or as a single media file or image sequence for delivery as a digital master.

Conforming XML and AAF Files

XML and AAF import is one of the most straightforward methods of bringing edits with as many video tracks as you need from different NLEs into DaVinci Resolve. XML import has the added benefit of allowing a variety of supported effects to be imported along with the edit data, as well as multiple tracks of video data. This section covers the relatively simple procedure used to import XML projects into DaVinci Resolve. The same procedure is used for AAF import, although this is covered in more detail in the following section.

DaVinci Resolve can import projects that were exported to the Final Cut Pro 7 or Final Cut Pro X XML formats. Premiere Pro also uses the Final Cut Po XML project exchange format to accommodate round-trip workflows. However, for the best results you need to make sure that you're exporting XML from Premiere Pro version 5.5.1 or newer; ideally you want to export from the latest version of Premiere Pro that's available.

In general, exporting XML for use by DaVinci Resolve is straightforward, and there really aren't any settings you need to manage when exporting an XML file other than the version of XML you want to export. For this reason, it's best to do whatever timeline and/or media management you need to before XML export.

Manage Your Media Before Exporting an XML or AAF

In workflows using imported XML or AAF projects (or even EDLs), it's easiest to relink and conform to the accompanying media files if they're all located in a single directory path. Having media sorted into multiple directories is fine as long as they're all within a single main directory that you can select at the appropriate stage of project import.

Importing XML and AAF Project Files

This section covers the Import AAF/EDL/XML dialog in much more detail. One procedure lets you accomplish any of the following workflows:

- Importing an XML or AAF file and automatically conforming to and importing the media it's linked to.
- Importing an XML or AAF file and manually choosing another set of media, presumably in a different format or resolution, with identical metadata, to conform to instead.
- Importing an XML or AAF file that's linked to offline media derived from a camera original format, and automatically conforming it to and importing the camera original media.

Each of these workflows is possible by choosing the correct combination of options, each of which is described in the following procedure.

To load an XML or AAF file and automatically link to its referenced media:

1   Do one of the following:

From any page, choose File > Import AAF, EDL, XML (Shift-Command-I).

Open the Edit page, right-click anywhere in the Media Pool, and choose Timelines > Import > AAF/EDL/XML.

2   Using the file dialog that appears, find the project file you want to import, and Clip Open.

The Load AAF or Load XML window appears, depending on your selection.

3   Choose the options that are applicable to your particular project. By default, these options are based on metadata within the file you selected.

- Source File: The file you selected in the previous step.
- Import Timeline: If there are multiple sequences within the selected XML or AAF source file, this pop-up menu lets you choose which sequence to import as a DaVinci Resolve timeline.
- Timeline name: The name of the Timeline you're about to create. This defaults to the name of the sequence that was exported, but you can change it if you like.
- Master timeline start timecode: The timecode at which the imported timeline will start. This automatically matches the start timecode of the selected Import Timeline.
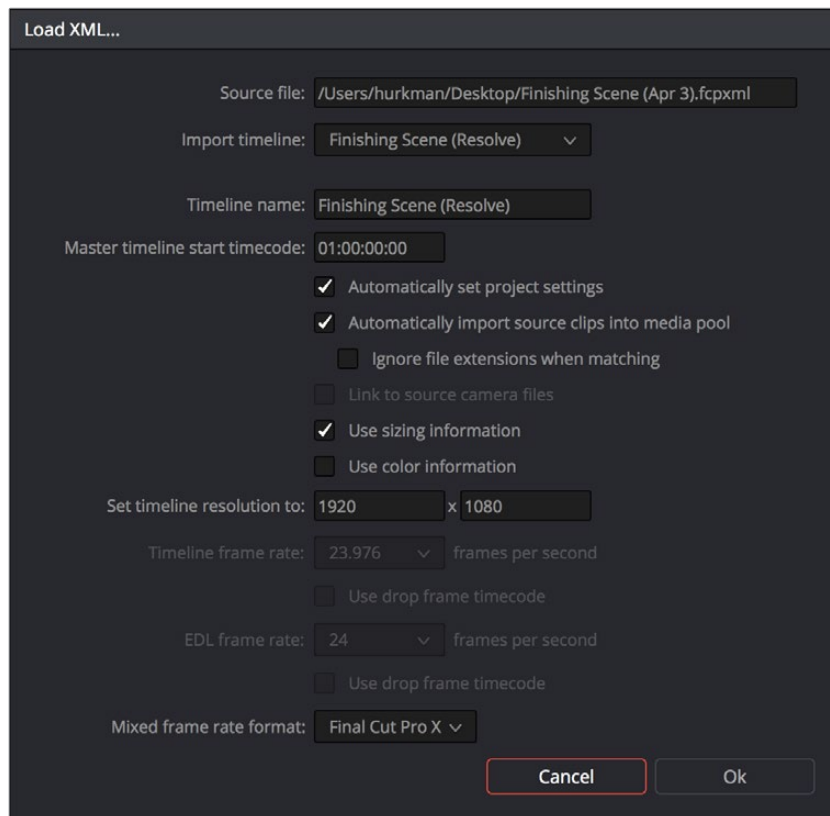
Options when importing an XML

- **Automatically set project settings:** Leave this option on to automatically change the frame size and frame rate settings in the Project tab of the Config page with those in this window. If you're importing an XML or AAF file into a project that already has media in the Media Pool, the Timeline frame rate is locked and cannot be changed.

- **Automatically import source clips into media pool:** Leave this checkbox on to automatically import the media referenced by the XML or AAF project file you selected into the Media Pool based on the embedded file paths. If the media files are not automatically found at these locations, you will be prompted to manually select a directory where the clips are located.

- **Ignore file extensions when matching:** Turn this checkbox on if you want to manually choose a different directory of media to link to, for example if the XML you're importing links to ProRes Proxy media, and you want to relink to another directory of corresponding ProRes 4444 or camera raw media.

- **Link to source camera files:** For AAF files only. Turn this checkbox on if you want to reconform the imported project file to the camera original files that correspond to the offline media that's currently referenced.

- **Use sizing information:** Lets you import position, scale, and rotation transforms from the originating NLE via the imported XML and AAF project files. These transforms are stored in each clip's settings in the Edit page Inspector.

- **Use color information:** For Final Cut Pro X XML files only. This option lets you import a subset of color correction data from the Final Cut Pro X color board controls.

- **Set timeline resolution to:** Two fields let you specify the width and height of the frame size you want to work at in Resolve. The default is whatever resolution is specified in the XML or AAF file being imported.

- **Timeline framerate:** By default, this is derived from the frame rate of the XML or AAF file being imported. If you're importing an XML or AAF file into a project that already has media in the Media Pool, the Timeline frame rate is locked and cannot be changed.
- **Use drop frame timecode:** By default, this is derived from the XML or AAF file being imported.
- **EDL framerate:** By default, this is derived from the frame rate of the selected file.
- **Use drop frame timecode:** By default, this is derived from the frame rate of the selected file.
- **Mixed frame rate format:** This pop-up menu lets you choose the method used to conform mixed frame rates for rendering and playback. You can choose the "Final Cut Pro 7" or "Final Cut Pro X" methods of conform, while for projects imported from Media Composer, Premiere Pro, Smoke, or other NLEs, you should leave this set to "Resolve." This pop-up menu also appears in the Load AAF or XML dialogs when you import a project.

4   After choosing all necessary settings, click OK.

5   Assuming you left "Automatically import source clips into media pool," turned on, if the media linked to by the XML or AAF file is not in the expected disk location, or if you turned on the "Ignore file extensions when matching" checkbox, then another window appears prompting you to choose the folder within which the media for this project is stored.
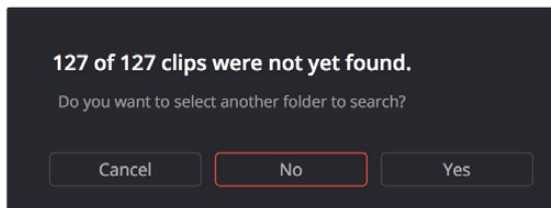
A prompt appears if all the media was not found

If necessary, navigate to the folder containing your media (all subfolders will be automatically traversed as well), select it, and click OK.

IMPORTANT: It's always possible to choose the top level of any volume to automatically find all media in any directories located within, but if the volume is large and full of many files, scanning every folder and document of the volume may be an extremely time-intensive process.
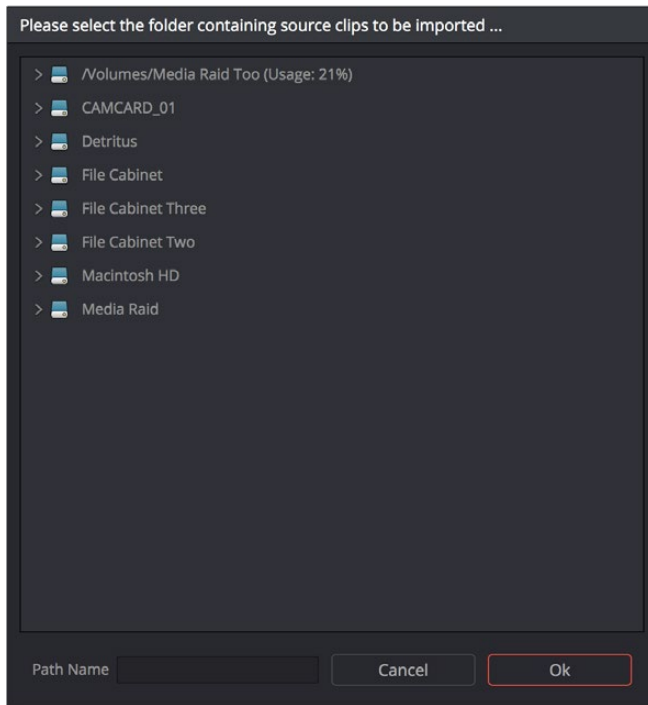
Selecting the source folder for your XML imported clips

The XML or AAF file is imported. A new timeline and the referenced media files appear in the Media Pool, and the Timeline appears in the Edit page. Clips that could not be linked to a corresponding file in the Media Pool appear red to indicate that they're offline and unlinked.

> **TIP**: You can open the Edit Index and choose Filter Offline Clips from the option menu to see a list of all offline clips in the current Timeline.

Conforming AAF Files

AAF (Advanced Authoring Format) is a project exchange format, originally developed by the Advanced Media Workflow Association (AMWA). Commonly used applications that export project data in the AAF format include Avid Media Composer, Avid Symphony, and Adobe Premiere Pro.

This chapter describes some recommended workflows for moving projects from Media Composer (or Symphony) to DaVinci Resolve for grading, and then returning to Avid Media Composer for finishing.

Supported Media Types in AAF Round Trips

Media Composer provides several methods of ingesting and managing compatible media formats. Ultimately, which formats are suitable for a Media Composer to Resolve round trip depends on whether they're compatible with Resolve.

There's one other thing to keep in mind as you're managing media in Media Composer; not all formats are compatible with all media management operations. This combination of format compatibility and operational compatibility requires you to carefully tailor your workflow around which media files you'll be using.

Transcoding to DNxHD Always Works

Since DNxHD was developed as Media Composer's core codec, workflows where you transcode other media formats to MXF-wrapped DNxHD before editing will always work, and are the simplest when round tripping between Media Composer and DaVinci Resolve. Resolve supports both MXF-wrapped and QuickTime-wrapped DNxHD media.

Linking to Media Using AMA and Consolidating

Avid Media Access (AMA) is a means of directly linking clips to media files in Media Composer without needing to either transcode them to DNxHD MXF files, or copy them to an Avid MediaFiles directory. While convenient, workflows involving media that's linked using AMA require a bit more forethought.

Not all AMA-compatible media formats can be consolidated in Media Composer, which limits your ability to create a smaller, more portable collection of media to move into DaVinci Resolve. Whether or not an AMA-linked clip can be consolidated depends on its media format; Media Composer can only consolidate formats that it can write. For example, since Media Composer cannot write R3D media, then R3D media cannot be consolidated.

Furthermore, not all AMA-compatible media formats are compatible with DaVinci Resolve. Simply being able to edit a media format in a Media Composer timeline doesn't guarantee you can use it in Resolve. The following table lists which media formats can be AMA-linked in Media Composer, which formats can be consolidated, and which are compatible for use in DaVinci Resolve.

If you're prepping a sequence that uses a mix of media formats, some of which can be consolidated, and some of which can't, you should transcode all clips that aren't compatible with consolidation to an Avid native codec before beginning the process of consolidating media and exporting an AAF to DaVinci Resolve.

Fast Imported Media

Another wrinkle is that Media Composer supports a media ingest method called "Fast Import," where imported media is quickly copied to the Avid MediaFiles directory by inserting the original image data using the original codec into an MXF wrapper. This is an extremely fast and efficient way to bring media into Media Composer projects, but the resulting files are not typically compatible with DaVinci Resolve.

On the other hand, keep in mind that any media format that can be Fast Imported can also be consolidated. If you're planning to round trip a sequence that uses Fast Imported media, it's recommended that you either transcode the Fast Imported clips to DNxHD prior to AAF export, or conform your exported AAF project to the camera original media in Resolve instead.

> **TIP**: Whenever you use a combination of media in your project that includes formats that aren't compatible with DaVinci Resolve, you can use the "Transcode Video To" checkbox in the options of the Export As dialog when exporting an AAF project. This option lets you to transcode all media that isn't a compatible format into a format that is compatible.

	Can be Natively AMA-Linked	Can Be Consolidated	DaVinci Resolve Compatible
ARRI ALEXA Raw	Yes	Yes	Yes
AVCHD	Non-native support	No	No
Canon XF (C300)	Yes	Yes	Yes
CinemaDNG	No	No	Yes
GFCAM MXF (Ikegami)	Yes	Yes	No
P2	Yes	Yes	No
QuickTime (ProRes)	Yes	Yes	Yes
R3D (RED)	Non-native support	No	Yes
Sony F65 Raw	Yes	No	Yes
Sony HDCAM SR (SStP)	Non-native support	No	Yes
Sony XDCAM	Yes	Yes	Yes

Compatible AMA linked formats

Logged Errors When Importing AAF

If you turn on the "Import log messages as markers" checkbox in the Load AAF… dialog, certain error messages that alert you to issues with the AAF import you're trying to do will be added as markers with notes to the Timeline. You have an option, via a pop-up embedded within the text of this checkbox, of choosing the color of the markers used to store this information.

The following messages will create markers:

- Nested edits are not supported in this release. A black clip placeholder will be inserted.
- Transition type 'XXXX' is not supported in this release. A Cross Dissolve will be inserted.
- Effect type 'XXXX' is not supported in this release. Plain clips will be imported.
- Nested layer editing is not supported in this release. The first source clip will be used.
- SMPTE Wipe Transition type 'XXXX' is not supported in this release. A Cross Dissolve will be inserted.
- Interpolation type 'XXXX' is not supported in this release. Linear interpolation will be used.
- The clip 'XXXX' failed to link because the timecode extents do not match any clip in the Media Pool.
- Mismatch between specified target timecodes 'XXXX' and located file timecodes 'YYYY.'
- No overlap between specified target timecodes 'XXXX' and located file timecodes 'YYYY.'
- Clip 'XXXX' in track 'XXX' at timecode 'UNKNOWN', with reel name 'XXXX' and filename 'XXXX.'
- Clip 'XXXX' in track 'XXX' at timecode 'UNKNOWN', with reel name 'XXXX' and filename 'XXXX.'
- File not found in search directories.

As of the time of this writing, this feature is only available when importing AAF files.

Performing an AAF Avid Round Trip

This section outlines a comprehensive workflow for creating projects in Media Composer that will be compatible with DaVinci Resolve, moving projects from Media Composer to DaVinci Resolve, then grading, rendering, and sending the final graded project back to Media Composer. The following steps include procedures covering the following tasks:

- Ingesting all media as high quality MXF-wrapped DNxHD, then round tripping from Media Composer to DaVinci Resolve.
- Importing and editing Resolve-compatible AMA-linked media formats, then round tripping from Media Composer to Resolve.
- Transcoding AMA-linked media files into offline-quality DNxHD clips for editing, then exporting an AAF file and reconforming it in Resolve to high quality camera-original media as part of the round trip.

Because there are so many variations in the way that Media Composer can ingest media and output AAF projects, you should familiarize yourself with the following procedures before continuing with your own project.

Step 1—Create a Project in Media Composer

1   When creating a project in Media Composer, take note of the image format details, as these should be matched in DaVinci Resolve. In particular, set the image format (e.g., 1080p/24) and raster dimensions (e.g., 1920x1080) to match your desired mastering format. Also, color space should be set to RGB 709 if you're planning to send ingested/transcoded media from Media Composer to Resolve for grading.

> **NOTE:** This information can also be found in the Avid Project Format tab.

2   Open your project, and ingest all necessary media into a new Bin using one or both of the following methods:

- Transcode media for editing: The simplest workflow for AAF import and round-trip workflows is to ingest transcoded, native MXF-wrapped DNxHD media using the Import command.
- Import AMA-linked clips: You can also import AMA-linked clips, so long as all AMA-linked files are in a format that's compatible with Resolve. Keep in mind that not all AMA-compatible formats can be consolidated in Media Composer. In this case, import AMA-linked media into a new Bin using the Link to AMA File(s) command, and edit as usual.

Once you've ingested all necessary media, you can edit your project as you would any other, keeping in mind which effects are compatible with DaVinci Resolve. For more information on effects in Media Composer to Resolve round trips, see Chapter 22, "Importing Projects and Relinking Media."

Step 2—Exporting an AAF for DaVinci Resolve

When you're finished editing, you need to export an AAF that will conform the .mxf media you used in Media Composer into a DaVinci Resolve timeline. Two export configuration options are available, depending on whether DaVinci Resolve and Media Composer are on the same system.

1   Select the sequence you want to export, and choose File > Export AAF, XML (Shift-Command-O).

2   In the Export As dialog, type a name for the AAF file you'll be exporting.

3 Choose a location to save the AAF. You can save it anywhere you like, but if you're moving the project to another workstation, you may want to save it to a specific folder on a removable hard drive where you store your AAF and XML files. The location you choose can also be used as the location of the media that's exported to accompany the AAF.

4 Click the Options button to open a more detailed window of export settings.

5 Turn on the AAF Edit Protocol checkbox. This option forces Media Composer to export a simplified AAF file that's more compatible with the project exchange workflows of different applications.

6 Choose the appropriate option from the Export Method pop-up menu to configure how the AAF and its accompanying media will be exported. The option you choose depends on the following:

- If Media Composer and Resolve Are on the Same System: Choose "Link to (Don't Export) Media" to export an AAF file that links to the existing media in its current location. Click the Audio Details tab and choose "Link to (Don't Export) Media" from the Export Method pop-up menu.

- If Media Composer and Resolve Are on Different Systems: Choose one of the two following export methods:

- Copy All Media: For each source clip used, the entire corresponding media file is copied. This can be useful when you want to preserve the original relationship of each clip to the source media file it came from. However, be aware that you'll potentially be exporting a lot of media when you use this option.

- Consolidate Media: This is a more efficient media management workflow for finished projects, since unused media will not be copied. You can specify additional handles to add to the beginning and end of each exported media file, in frames, in the Handle Length field. Should any media file and its handles overlap another media file and its handles, both will be combined into a single exported media file.

7 (Optional) If you're using a combination of media in your project that includes formats that aren't compatible with DaVinci Resolve, you can optionally turn on the "Transcode Video To" checkbox and choose a media format from the pop-up menu to the right. This option automatically transcodes all media in your sequence that doesn't match the format specified in the pop-up to match that format.

8 If you're copying or consolidating media to another drive, choose "Folder" from the Media Destinations Video/Data pop-up menu. Turn on the "Use Same Folder As AAF File" checkbox to save the exported media to the same folder you selected in step 3. If you leave this checkbox turned off, you can click Select Folder to choose another location.

9 Click Save, and when you return to the Export As dialog, click Save again.

Once export is complete, you'll see a duplicate sequence and duplicate media populating your Media Composer bin, with the suffix ".Exported" appended to the sequence, and ".new" appended to each media clip.

In the file system, the resulting folder contains an AAF file, and an Avid MediaFiles folder that contains the exported media.

Step 3—Conforming Your AAF in Resolve

1 Open DaVinci Resolve and create a new project.

2 Before you do anything else, you need to set Resolve to properly read the timecode and reel number information from the AAF files that Media Composer creates. Click the gear button at the lower right-hand side of the Resolve window to open the Project Settings window, click Master Project Settings, scroll down to the Conform Options, and do the following:

- Make sure that "Use Timecode" is set to "Embedded in the source clip."
- Turn the "Assist using reel name from the" checkbox on, and choose "Embedding in source clip file."
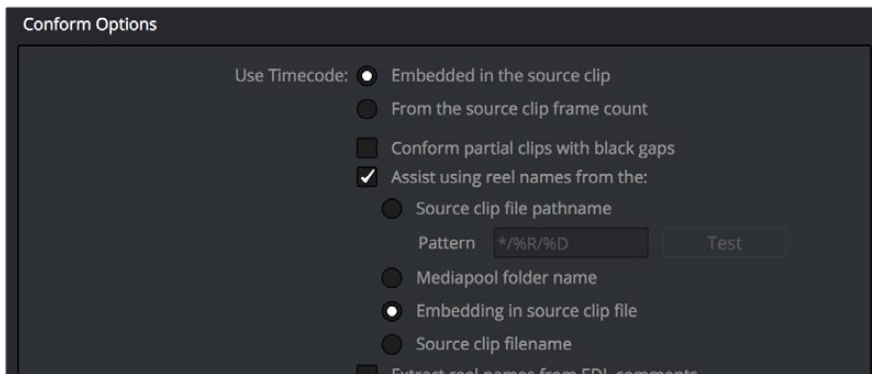
Conform assistance with reel names embedded in the source clip

3 Click Save.

4 Do one of the following:

From any page, choose File > Import AAF, EDL, XML (Shift-Command-I).

Open the Edit page, right-click anywhere in the Media Pool, and choose Timelines > Import > AAF/EDL/XML.

5 When the File Selection window opens, select the AAF file you exported from Media Composer, and click Open.

6 When the Load AAF dialog appears, the settings you choose determine which media files the AAF will be conformed to:
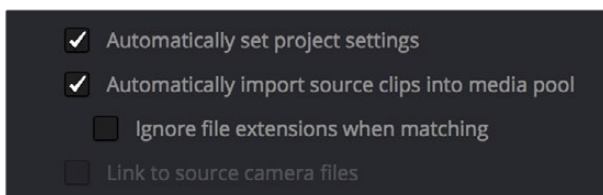
Import AAF window conform options

- To conform to the transcoded or AMA-linked media files you edited: Leave the "Automatically import source clips into media pool" checkbox turned on.
- To conform to a different set of camera-original files: Turn on both the "Automatically import source clips into media pool" and "Link to source camera files" checkboxes, which references the Source Name metadata that Media Composer/Symphony embeds in exported AAF files to track the correspondence in file naming between transcoded and camera original media.

- **To conform to a directory of media of your choosing:** Turn on both the "Automatically import source clips into media pool" and "Ignore file extensions when matching" checkboxes.

- **To conform to media that's already in the Media Pool:** Turn off the "Automatically import source clips into media pool" checkbox. There must be clips in the Media Pool for this to work.

7   Additionally, make sure that the "Automatically set project settings" checkbox is on.

8   Optionally, you can turn on the "Use Sizing Information" checkbox if you want to import position, scale, and rotate transform data from the originating Media Composer project into Resolve.

9   Click OK.

As long as the media remains where it was when you exported it from Media Composer, the timeline and all its media should now import. However, if the location of the media files you're conforming to has changed, then you may need to identify the location of the media via an additional dialog. For example, if you've copied the media from the portable hard drive it was originally conformed to, to a faster storage volume, then a file dialog appears, requesting that you choose the folder containing the media used by your project. If prompted, do so and click OK.

Once import is complete, the Media Pool fills with the source media used by the imported project, and the edit appears as the current Timeline in the Edit page.

Step 4—Continue Editing, Grading, and Finishing the Project

Edit the Timeline in the Edit page and grade each clip in the Color page as you would any other. However, you should be aware that if you use the tools found in the Edit page to make any editorial changes to the timeline you've imported, your export options will change later on:

- **If you don't make editing changes:** Then you have the option to have DaVinci Resolve use the Avid AAF file that you originally imported to generate an updated one. This preserves audio and all other unsupported effects from the original AAF file, so that they reappear when you export a new AAF back to Media Composer. If you use this option, you need to make sure the original AAF file you import remains in the same location.

- **If you do make editing changes:** Then you need to use the "Generate New AAF" command to export an AAF of the re-edited Timeline from Resolve back to Media Composer. This newly generated AAF file will not include audio, nor will it include any effects that are not supported by Resolve.

Step 5—Render Graded Media and Export a New AAF

1   When you're ready to send a graded project back to Media Composer, select the Timeline you graded and open the Deliver page.

2   Choose "Avid AAF" from the Presets at the top of the Render Settings to load its settings.
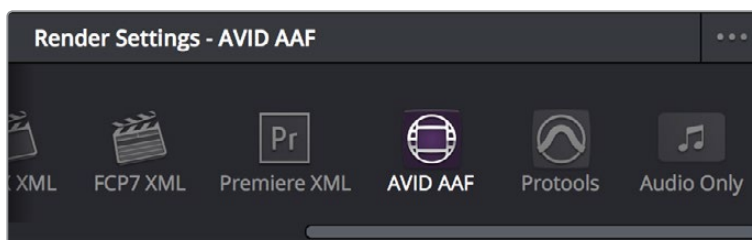
Selecting the Avid AAF setup for round-trip

3   In the Format section, choose the MXF codec you want to render to.

4   In the File section, choose the appropriate file destination path for the rendered media. The location you choose depends on whether Media Composer and Resolve are on the same computer or not.

- If Media Composer and Resolve are on the same computer: Create a new folder within your Avid MediaFiles folder (Avid MediaFiles/MXF/) named with a number. Make sure you choose a previously unused number.

- If Resolve is on a different computer using different storage: Select any directory on the portable hard drive you'll be using to bring the media back to the Media Composer workstation from which it came.

5   If you require handles for your rendered output, you can click the "More options" at the bottom of the File section, and scroll down to the "Add X Frame handles" field. When making any changes to the File render settings, make sure to leave the "Render Clip with Unique Filename" checkbox turned on to ensure that each clip rendered has a different file name as multiple clips in the edited sequence may originate from the same source clip.

6   In the Timeline, click Select All Clips to select the entire Timeline for delivery, and then click Add to Render Queue at the bottom of the Render Settings to add the job you've set up to the Render Queue.

7   Click Start Render at the bottom of the Render Queue to initiate rendering.

The project renders, and an AAF is automatically exported to the same directory as the media you've rendered.

Step 6—Copy the Graded Media to Avid MediaFiles

1   For workflows where Resolve and Media Composer are on separate workstations, locate the media directory containing the media files that were rendered out of Resolve on the portable hard drive being used to transport the project back to your Avid workstation, and copy it into the Avid MediaFiles/MXF/ directory.

2   Rename the directory to be a number. Make sure you choose an unused number.

Step 7—Import the Graded AAF

1   Reopen the original project in Media Composer. If the media in the new directory of the Avid MediaFiles folder is in a compatible format, it will automatically be added to the internal database of media.

2   Create a new bin to contain the graded sequence you're about to import.

3   Open the new bin, then choose File > Import AAF, XML (Shift-Command-O), select the graded AAF file that you exported from Resolve, and click Open.

As long as the media is available in the Avid MediaFiles directory, the new bin you've created should automatically fill up with the clips that were rendered out of Resolve, and a new sequence should appear.

4   Double click the sequence you've imported to open it into the Record monitor and Timeline, fully conformed with the color corrected clips from DaVinci Resolve.

This sequence is now ready for finishing in either Media Composer or Symphony.

Relinking Transcoded Media to AMA Media

This next workflow is useful when you've been editing transcoded, offline versions of processor- or bandwidth-intensive media, but you want to send the original high-quality source media (such as ALEXA or RED raw files) to Resolve for grading. In certain situations, it may be better to reconform your sequence to the original AMA-linked media files in Media Composer before you round trip from Media Composer to DaVinci Resolve.

Step 1—Relink Your Transcoded Media to AMA-Linked Source

1   Edit a sequence using media that you've transcoded within Media Composer.

2   When you're finished, open the bin that contains your project's camera original media, and select the AMA-linked clips that correspond to the transcoded clips you've been editing.

3   Right-click the edited sequence in its bin, and choose Relink from the contextual menu.

4   When the Relink dialog appears, turn on "Select items in ALL open bins," and leave the "Create new sequence" checkbox turned on.

    A new sequence is created that is now linked to the AMA-linked camera originals.

Step 2—Export an AAF File

1   Select the new sequence that was created, and choose File > Export AAF, XML (Shift-Command-O).

2   Type a new name, choose a location for the file, and click Options.

3   Choose AAF from the Export As pop-up menu, and choose "Link to (Don't Export) Media" from the Export Method pop-up menu.

4   Click Audio Details, and choose "Link to (Don't Export) Media" from the Export Method pop-up menu.

5   Click Save to exit the Export Settings dialog, and then click Save again to export the file.

Step 3—Import the AAF, Grade, Render, and Export

1   Open Resolve, and import the AAF file you exported into the Edit page. You'll need to manually select the media in a second dialog.

2   Grade the project as you would any other.

3   When you're done grading, use the AAF Round Trip option in the Deliver page to render the graded media into a new (numbered) directory in the Avid MediaFiles directory.

4   Open the Edit page, select the original AAF timeline you imported, right-click it, and choose Export AAF/XML. Pick a location for the file and click Save.

Step 4—Reimport the AAF into Media Composer/Symphony

- Open Media Composer, and import the AAF you exported from Resolve.

    Your graded sequence is now ready for finishing.

Conforming EDL Files

DaVinci Resolve supports the CMX 3600 format for EDL import and export. The edit decision list (EDL) is the lowest common denominator project exchange format there is, and most professional postproduction applications are capable of exporting and importing projects in this format, including Media Composer, Smoke, and the legacy Final Cut Pro 7.

The universality of EDLs is due, in part, to their longevity; different EDL formats have been in use for decades. It's also due to their simplicity. At least as used by DaVinci Resolve, EDLs describe a very narrow range of editorial information, including clip arrangement, clip name (via embedded comments), video transitions (cuts or dissolves), and linear speed settings (percentage of fast forward or slow motion).

Another limitation is that EDLs only support a sequence of shots on a single video track. If you need to move projects with multiple tracks of audio and video, then you can export each track as a separate EDL from the originating application, and then right-click the timeline you want to import them into in the Media Pool and use the Timelines > Import > EDL to New Track contextual menu command to import each separate EDL to a new track of a single timeline in Resolve. This is described later in this chapter.

> **NOTE:** While the EDL format supports a variety of SMPTE-defined video transition codes, all EDL transitions are turned into cross dissolves of identical duration in Resolve.

If you're not familiar with the EDL format, each edit appears as a numbered event that contains the reel number, edit type, source timecode (In and Out points), and record timecode (In and Out points). Here's a sample of a simple four event EDL:

```
TITLE:  Pool Shark Edit
FCM:    NON-DROP FRAME
001     REEL_ONE   AA/V   C      10:59:23:01 10:59:28:16 01:00:00:00 01:00:05:15
002     REEL_ONE   AA/V   C      11:39:48:15 11:39:51:13 01:00:05:15 01:00:08:13
003     REEL_ONE   AA/V   C      13:16:30:21 13:16:34:19 01:00:08:13 01:00:12:11
004     REEL_ONE   AA/V   C      14:09:43:16 14:09:44:20 01:00:12:11 01:00:13:15
```

Since DaVinci Resolve was originally designed to work by importing and exporting EDLs, there are several methods you can use to import projects using EDLs. In all cases, you must first add the media referenced by that EDL to the Media Pool before you can import its EDL.

The three primary workflows are:

- Conforming EDLs to individual media files: Importing an EDL that references a collection of discrete media files that have already been imported into DaVinci Resolve.
- Preconforming, or "notching," a "Flattened" master media file using an EDL: Importing an EDL that references a "flattened" master media file. Flattened master media files are created when an entire sequence is exported from an NLE as a single self-contained media file.

- **Importing an EDL Directly to a New Track of an Existing Edit:** If you're importing a multi-track video project, and the only means of doing so is using EDLs, you can export each track of the source project as an individual EDL, and then import each EDL into Resolve directly into additional tracks of the same Timeline. This is also useful for workflows where effects clips are being managed on a separate track assembled elsewhere, that you can then import directly into a graded timeline to place many new effects clips all at once.

This description covers the different ways that EDLs can be used in DaVinci Resolve.

EDL Export of a Project and Its Media

When using EDL workflows, it's important to make sure that every clip in your edited sequence, and every source media file it's linked to, has an appropriate reel number/reel name, and true timecode written into that file. When conforming EDLs, Resolve requires reel names and accurate timecode to successfully conform the imported EDL timeline to media in the Media Pool.

To export an EDL that can be easily conformed by Resolve, each NLE has particular settings that you should use. The primary supported format is CMX 3600, although Resolve also supports the DEDL format exported by both Smoke and Flame. Also, most editing applications let you choose which video and audio tracks you want to export, and how to handle the start timecode for the selected sequence of clips you're exporting. In general, it's a good idea to make sure that the exported start timecode matches that of your sequence timeline.

There are other details, however, that vary by application. For example, when exporting an EDL from Media Composer using Output > List Tool, you need to make sure that the Active Setting is set to Default EDL, and that the Output Format is set to CMX_3600. When exporting an EDL from Premiere Pro, you have the option of enabling Use Source File Name and Include Transitions. When exporting an EDL from the legacy Final Cut Pro 7, you need to make sure you set Reel Conflicts to Generic Edits, and turn on the File Names checkbox. Most applications provide other settings that are are optional, including EDL notes of various kinds, but for a cleaner, easier to read EDL, you can turn these off if you like.

Conforming EDLs to Individual Media Files

The advantage of working with discrete media files is that they are the "purest" version of the media, without any effects (such as dissolves or superimpositions) "baked" into the visuals that might create complications when you're grading.

1. Before you import any media, make sure that the "Timeline frame rate" pop-up menu in the Master Project Settings panel of the Project Settings is set to a frame rate that matches your project and media. Otherwise, the EDL's timecode will be misinterpreted.

2. Open the Media page, use the Media Storage browser to locate the media you want to add to the project, and add it to the Media Pool by right-clicking the enclosing directory and choosing one of the following commands:

   - **Add Folder into Media Pool:** Adds all compatible media files within that folder to the Media Pool. Subfolders are not traversed.
   - **Add Folder and SubFolders into Media Pool:** Adds all compatible media files from that folder, and all subfolders within that folder, to the Media Pool.
   - **Add Folder Based on EDLs into Media Pool:** Prompts you to choose an EDL. Only media referenced by that EDL is imported, and only the selected folder is searched for that media.
   - **Add Folder and SubFolders Based on EDLs into Media Pool:** Prompts you to choose an EDL. Only media referenced by that EDL is imported, and the selected folder and all subfolders are searched for that media.

> **TIP:** The "Add Folder… Based on EDLs" commands are useful for efficiently adding just the media you need to the Media Pool in instances where there might be many terabytes of unmanaged source media, most of which is unused.

3 Do one of the following:

- From any page, choose File > Import AAF, EDL, XML (Command-Shift-I).
- Right-click anywhere in the background of the Media Pool, and choose Timelines > Import > AAF/EDL/XML.
- A window appears prompting you to "Select a file to import."

4 Navigate to the EDL file you want to use, select it, and click Open.

- The Load EDL window appears.

5 Choose the options that are applicable to your particular project. All greyed out options are not editable, either because they're not applicable, or are not defined by the Project Settings that are currently applied. The options you can set include:

- Source File: The file you selected in the previous step.
- Timeline name: The name of the Timeline you're about to create. This defaults to the name of the EDL file you selected, but you can change this if you like, for example, to add the import date if this is a new version of the edit.
- Automatically set project settings checkbox: Turn this option on if you want to overwrite the frame size setting in the Master Project Settings panel of the Project Settings. You cannot overwrite the Timeline frame rate when importing an EDL.
- Set timeline resolution to: Two fields let you specify the width and height of the frame size you want to work at in Resolve. This defaults to your Project settings, but can be overridden by turning on the "Automatically set project settings" checkbox.
- EDL framerate: Choose the frame rate of the sequence that you exported as an EDL. You can use this option to convert the EDL frame rate from 30 to 24 frames per second if you set the Timeline frame rate to 24 fps and if the EDL frame rate is set to 30 fps; this is useful when an offline edit is done at 30 fps with media using 3:2 pulldown. Note that 25 fps to 24 fps conversion is not supported.
- Use drop frame timecode checkbox: Only enabled if the EDL frame rate pop-up menu is set to 30 fps. Turn this on if your EDL uses drop-frame timecode.

6 When you're finished choosing options, click OK.

- The EDL is imported, a new timeline appears highlighted in the Media Pool, and its corresponding sequence of clips appears in the Timeline Editor if you're in the Edit page. Clips that could not be linked to a corresponding file in the Media Pool appear with a red thumbnail to indicate that they're unconformed.

Preconforming "Flat" Media Files to EDLs

Preparing an edited sequence for grading, along with each individual clip of media, can be time consuming for effects-intensive projects, or it may be an unnecessary step for a project with no effects whatsoever.

In these cases, it can be simpler and quicker to export a flattened master media file that can be split back apart into its individual clips in DaVinci Resolve. This workflow is similar to a more traditional tape-to-tape workflow, except that you're working from a digital master, rather then a tape-based master.

The easiest way to do this is to use the Preconform button in the Edit page to split a single master file that you've imported into the Media Pool back into individual clips in a new timeline.

To preconform a flattened master media file to an EDL:

1   Open the Media page, use the Media Storage browser to navigate to the flattened master media file that you exported containing the entire program, and double-click to add it to the Media Pool.

2   Right-click anywhere in the background of the Media Pool, and choose Timelines > Import > Preconformed EDL.

3   In the "Select an EDL file" dialog that appears, navigate to the EDL that matches the flattened master media file you had exported, select it, and click Open.

4   In the "Parse preconform options" dialog that appears, give the new Timeline a name, and click OK

    A new Timeline appears in the Media Pool list, and opening it in the Edit page shows the flattened media file with edits added to its video track that correspond to those from the selected EDL, ready for further editing and grading. The audio is left uncut, on the premise that you're probably focused on grading the visuals in this workflow, and not on re-editing the audio.

Conforming "Flat" Media Files Using Split and Add

The second method of conforming an EDL to a flattened file is to use the "Split and Add" command in the Media page to split one or more master media files into individual clips that match those of an EDL, then importing the EDL itself in the Edit page in a second step.

This method is useful if there are clips in different folders or volumes that you want to conform to a single EDL. For example, the majority of the first reel of a program may have been exported as a single flattened file, but the corresponding EDL may require that an additional folder of effects clips be added to the Media Pool to be fully conformed.

To split a flat media file in the Media page, and import its EDL in the Edit page:

1   Before you import any media, make sure that the "Timeline frame rate" pop-up menu in the Master Project Settings panel of the Project Settings is set to a frame rate that matches your project.

2   Open the Media page, use the Media Storage browser to navigate to the flattened master media file that contains the entire program.

3   Select the flattened media file, right-click it, and choose "Split and Add into Media Pool."

4   In the "Select EDL files for splitting clips" dialog that appears, navigate to the EDL that matches the flattened master media file, select it, and click Open.

5   Select the frame rate of the project from the File Conform Frame Rate dialog that appears. This frame rate should be identical to the "Timeline frame rate" pop-up you set in step 1.

6   Choose the appropriate options in the "Enter handle size for splitting" dialog that appears:

    Handle size in number of frames: Enter a number of frames to be added as handles to the first and last frame of the clip. This is useful when you're using the "Split and Add into Media Pool" command to import only the referenced sections of a directory of individual media files.

Split Unreferred Clips: Useful when the referenced media files include segments that aren't "referred to" by any events within the EDL used to split them. Turning this checkbox on adds all such unreferred clip segments to the Media Pool as separate clips, for possible later use.

7   Click Split and Add.

The Media Pool fills up with individual segments of the flattened master media file, each of which matches an event in the EDL you used to split it.

8   To import the corresponding EDL to create a timeline with this media, do one of the following:

From any page, choose File > Import AAF, EDL, XML (Command-Shift-I).

Right-click anywhere in the background of the Media Pool, and choose Timelines > Import > AAF/EDL/XML.

9   In the "Choose a file to import" dialog that appears, navigate to the EDL that matches the flattened master media file, select it, and click Open.

10   Choose whatever options are necessary from the Load EDL dialog that appears (the default settings should work fine), and click OK.

The Master Timeline and the timeline you just imported appear in the Media Pool, the Conform EDL list updates with the events from the imported EDL, and the Timeline editor shows the edited clips, ready for grading. Clips that could not be linked to a corresponding file in the Media Pool appear with a red x to indicate that they're unconformed.

Importing an EDL to a New Track

This last procedure describes how to add an EDL, not as an individual new Timeline, but as an additional video track to an existing Timeline. There are many reasons you might want to do this. For example, if you need to move a multi-track project to DaVinci Resolve from an application that can't export either AAF or XML project exchange files that Resolve understands, you can use multiple EDLs. Simply export each track of the source project as an individual EDL, and then import each EDL into Resolve as additional tracks of the same Timeline.

This is also useful for workflows where effects clips are being managed on a separate track assembled elsewhere, that you can then import directly into a graded Timeline to place many new effects clips all at once.

To import an EDL to a new track of an existing timeline:

1   In this procedure, you have the option of adding whatever media is required by the EDL you're about to import to the Media Pool first, or you can add the media after the EDL has been imported. It's your choice.

2   Open the Edit page, select a timeline in the Media Pool, then right-click it and choose Timelines > Import > EDL to New Track.

A window appears prompting you to "Choose a file to import."

3   Navigate to the EDL file you want to use, select it, and click Open.

A new video track is created above any previously existing tracks, and events from the selected EDL are immediately loaded into it according to their record timecode positions. If you loaded the media needed by the new clips at the beginning of this procedure, that media should be conformed. Otherwise, you'll need to track down the media files needed by the new unconformed clips and add it to the Media Pool now.

Verifying Imported Projects with Offline Reference Clips

When you set the Left Viewer in the Edit page to Offline mode, you're able to compare an Offline Reference Clip to a timeline with both playheads ganged together. As you play the Timeline, the Offline Reference Clip file plays as well.

An Offline Reference Clip must be added to the Media Pool specifically as an "offline" clip, and is associated with a particular timeline by right-clicking that timeline in the Media Pool and choosing it from the Link Offline Video submenu.

The idea is that if your client exports a flattened version of their edited sequence at the same time as they export the EDL, AAF, or XML project file they want graded, then you can compare the project data that's imported into Resolve to the actual video of the offline edit.

> **NOTE:** Typically, the flattened version of the program you're given uses a low-quality codec, and contains effects and color correction that's not final, which is why it's called an Offline Reference Clip.

There are two reasons for comparing an Offline Reference Clip to a timeline:

- **Verifying the clip order:** If you're unsure whether or not you've properly resolved reel conflicts or other problems that occurred while you were conforming a timeline, you can compare each edit to the offline version of the program to spot problems and identify the proper media that should correspond to any clip.
- **Recreating effects:** If there are offline effects, such as temporary grades made in the NLE, or pan and scan transforms that you want to check, the Offline reference mode lets you split-screen your current grade against the Offline Reference Clip in the Color page.
- **Filling holes in timelines with missing or unlinked clips:** Two options found in the Master Project Settings panel of the Project Settings, "Show offline clips through conform gaps," and "Show offline clips through missing clips," let you set Resolve to display Offline Reference Clip media to fill gaps in the Timeline or replace the contents of unlinked clips. This is typically done to resolve emergency situations when you need to proceed with a screening or review session despite the fact that you're missing media for whatever reason. For more information, see Chapter 3, "Project Settings and Preferences."

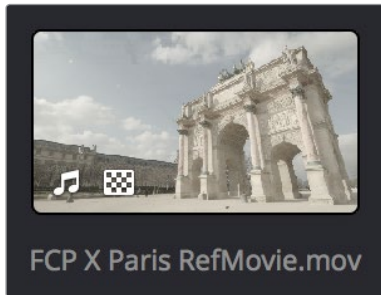## Setting Up an Offline Reference/Timeline Comparison

Here's how to compare Offline Reference Clips to a timeline.

> **IMPORTANT:** You need to make sure that the media you've imported as an Offline Reference Clip has a valid timecode track, otherwise this procedure won't work.

To compare a timeline with an Offline Reference Clip:

1. Open the Media page, and use the Media Storage browser to find the flattened Offline Reference Clip that you want to use for comparison.

2 Right-click the Offline Reference Clip file and choose Add as Offline Reference Clip.

3 That clip appears with a small checkerboard badge in its icon in the Media Pool.


Checkerboard indicating an Offline video

4 Open the Edit page, right-click the timeline you want to review against the Offline Reference Clip, and choose the offline clip you imported from the Timelines > Link Offline Reference Clip submenu.
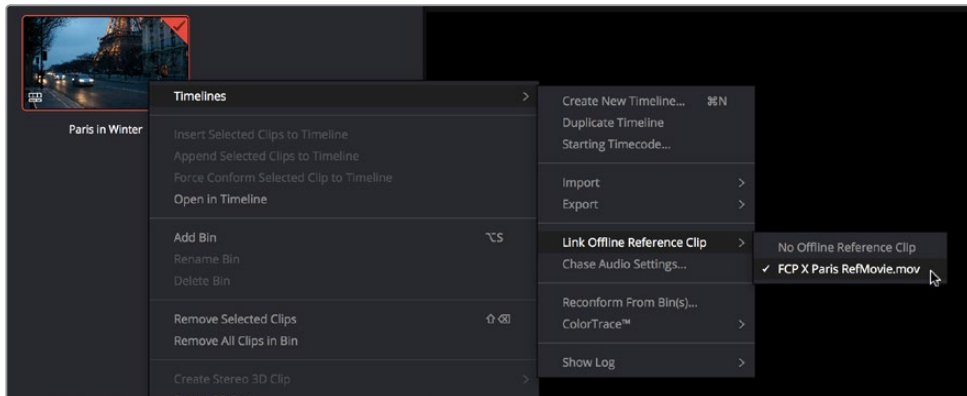

Selecting the Offline video to link to the current Timeline

**5** Open the Source pop-up menu and choose the checkerboard icon indicating Offline Reference.
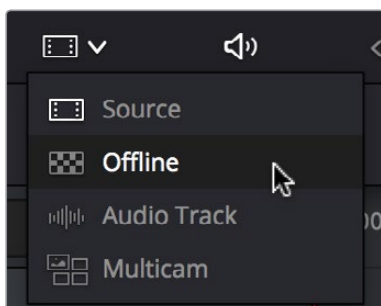
Selecting the Offline video in the Source Viewer

The Offline Reference Clip now appears within the Offline Viewer, and plays back in sync with the Timeline. If your clips are graded, you can see a side by side comparison between the state of each clip in the Offline Reference Clip, and the graded timeline clip.
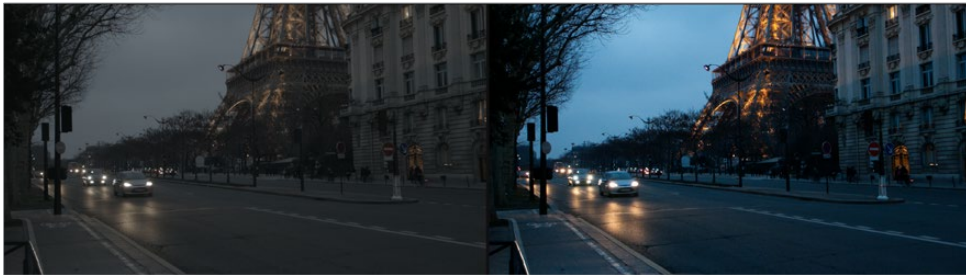
The Edit page in Offline/Timeline mode

6 If you like, you can optionally choose other ways of comparing clips, by right-clicking anywhere within the Timeline Viewer and choosing Vertical Wipe, Horizontal Wipe, Mix Wipe, Difference, or Box (wipe). These modes offer you different ways of quickly and directly comparing the content, sizing, color, and alignment of the Offline Reference Movie to the clips in your timeline.
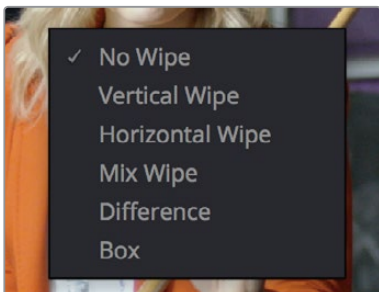
Different viewing options for comparing the Offline
Reference Movie to the Timeline are available in the
Timeline Viewer contextual menu

If you choose a wipe or difference comparison, that comparison will also be visible on the display connected to your video output interface, and dragging anywhere within the Timeline Viewer will adjust the ratio of the wipe in the case of the Vertical, Horizontal, Mix, and Box wipes.

7 To turn a Vertical or Horizontal Wipe, Mix Wipe, Difference, or Box comparison off, simply right-click the Timeline Viewer again and choose No Wipe.

Manually Conforming and Relinking Media

DaVinci Resolve provides a wealth of tools to help you deal with managing the relationship between clips in the Media Pool and clips in timelines, and with the links between each clip and its corresponding media file on disk. You can use these tools to manage different project workflows, or to deal with problems that can occur when importing project files in any format from a variety of sources.

This section describes every method available in Resolve for conforming clips and relinking media. For more information on the clip metadata that's used to determine the correspondences between clips and media, see "How DaVinci Resolve Conforms Clips," earlier in this chapter.

Conforming and Relinking During Project Import

As described earlier in this chapter, when you import an AAF or XML file, you have the ability to relink the clips that are imported into the Media Pool to the corresponding source media files on disk as part of the process. As an automatic result, the imported timeline is conformed to the clips in the Media Pool, and you end up with a Media Pool full of clips, and an arrangement of those clips in the imported timeline. Because it all usually happens at the same time, it's easy to confuse the distinction between a timeline's relationship to the clips in the Media Pool, and each clip's relationship to their corresponding source media file on disk.

The workflow for importing an EDL makes this process more explicit, since you must first import all of the clips you need into the Media Pool, making sure that they have the correct reel names and timecode. This creates the link between the Media Pool clips and the source media on disk. You then import the EDL in a second step, which creates a timeline that attempts to reconform itself to the clips in the Media Pool using reel name and timecode information.

Conforming and Relinking Outside of Project Import

There are many reasons why you might want to reconform or relink media long after you've started editing or grading a project, so Resolve provides additional tools to facilitate these workflows as well. For example, you may have started a project using placeholder VFX or stock footage clips, but you later need to replace these with final versions of the same shots. Or, you may have decided to grade a project using transcoded versions of the camera raw media files you were given, only to decide later that you want to switch one or all of the clips in the timeline to use the original camera media instead. Resolve has a variety of tools to support these workflows and more.

The Difference Between Conforming and Relinking

While these two terms are often used synonymously, conforming typically refers to the process of matching a timeline to the clips it uses, while relinking typically refers to the process of matching a clip in a project to its corresponding media file on disk.

In particular, this section of the manual makes this distinction explicit. Conforming refers to matching a clip in a timeline to a clip in the Media Pool. Relinking refers to matching a clip in a timeline or the Media Pool to a media file on disk. This is a recent change necessitated by an expansion of relinking and reconforming options, so the author offers his apologies if this usage is not always consistent.

All Methods of Conforming and Relinking

As a result of timelines and clips being managed separately, there are several ways you can reconform clips in a timeline to clips in the Media Pool, and clips in general to a project's corresponding source media on disk. Which methods will be most valuable depend entirely on the workflow you're using.

- Importing media during AAF or XML import: When you import a project via AAF or XML, you have the option of using the embedded file paths in the AAF or XML file to import and relink all referenced media into the Media Pool for automatic reconforming to the clips in the imported timeline. If the media has been moved so that the file paths are invalid, then you'll be asked to find the location of the media as part of the import process.

- **Importing media prior to importing an EDL, AAF, or XML:** In EDL workflows, it's essential to import the media an EDL will be reconformed to into the Media Pool before you import the EDL. However, you can do this for AAF and XML import workflows as well. When you do this, Resolve tries to automatically reconform the clips in the imported timeline to those in the Media Pool.

- **Importing media into the Media Pool when timeline clips are offline:** DaVinci Resolve maintains a dynamic relationship between clips in the Media Pool and those in a project's various timelines. If you have a timeline with one or more offline clips, that means that the relationship between that clip in the timeline and the Media Pool has been lost, either because there is no corresponding clip in the Media Pool, or because the corresponding clip in the Media Pool is offline. If there is no corresponding clip in the Media Pool, and you then import the corresponding media for those clips into the Media Pool, Resolve will automatically reconform the offline timeline clips without you needing to do anything else. This process can be automated by right-clicking the Timeline in the Media Pool and using the Timelines > Import > Additional Clips With Loose (or Tight) Filename Match contextual menu commands, which automatically searches your file system for media that matches all of the offline clips in a particular timeline.

- **Importing media into the Media Pool when timeline clips are already online:** The same dynamic relationship between clips in the Media Pool and those in a timeline are also maintained while clips are online. This means if you have two different versions of the same clip in the Media Pool that share the same file name or reel name and the same overlapping timecode (for example, a camera raw clip and a ProRes or MXF transcoded version), Resolve is capable of automatically conforming to either clip. By default, all clips that are part of an imported timeline, or that you've edited into a brand new timeline, have Force Conform enabled by default. Force conform simply means that a particular clip in a timeline only considers the current clip in the Media Pool to which it is conformed as the valid clip; all other clips are ignored, even if their name and timecode make them a valid match. If you right-click that clip in the timeline and turn force conform off, that clip will display a "clip conflict" error, with a badge to the left of its name in the timeline. Right-clicking that badge reveals a dialog showing you every clip in the Media Pool with a matching file name or reel name and overlapping timecode, so that you can choose which clip you want to conform to.

- **Using the Reconform From Bin(s) command:** This method also takes advantage of the dynamic relationship between clips in the Media Pool and those in a timeline. If you've imported multiple versions of the same clips, with identical file names or reel names and overlapping timecode, into separate bins of the Media Pool, you can turn off Force Conform for every clip in a timeline, and then use the Reconform From Bin(s) command to reconform those timeline's clips from the clips in one bin to the clips in another.

- **Using the Relink command:** If you have a Resolve project in which there are offline clips in the Media Pool, that means that the relationship between that clip and the source media file on disk has been lost. In this case, you can use the Relink Selected Clips command to relink those clips to the corresponding source media on whatever storage volume it happens to be on. In the process, you'll automatically relink any of those clips in all timelines in which they appear. This is useful if you're relinking to media that's been moved to another location, and that may have a different directory structure as a result. One warning about searching large SAN volumes – you probably don't want to use this command to choose a starting directory that's too high up the file path, as the resulting search times may be unexpectedly long.

- **Using the Change Source Folder command:** You also have the option to relink offline clips in the Media Pool using the Change Source Folder command, which essentially changes each selected clip's file path to a new file path that you select. This is useful if you're relinking to media in a series of subdirectories that have the same structure, but that have moved from one location to another. It's also a very safe command to use when relinking to media on a SAN volume.
- **Overwriting clips on disk that are linked to in a Resolve project:** Last, but certainly not least, Resolve is smart enough to automatically relink clips in the Media Pool that have been overwritten on disk by another version of the same file, so long as the timecode (and reel name, if used) in the new version of the file still overlaps.

The following sections illustrate each one of these methods of conforming and relinking media in more detail.

Relinking Clips to Media Files on Disk

The easiest method of relinking clips in your project that have gone offline is to use the appropriately named "Relink selected clips" command. This is the most flexible method of relinking clips in your project with clips in a file system directory of your choice, using file name and timecode as the primary criteria for re-creating the correspondence between each clip and its corresponding media file on disk. This is a good command to use to relink media that's been moved to another location or reorganized using another file structure on disk.

To relink selected clips:

1   Select one or more offline clips to relink, or select a bin in the Media Pool bin list that contains clips 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.

2   When the Relink File dialog opens, choose a directory in which to look for the files you want to relink to, and click OK. 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 Resolve will look for each clip inside every subdirectory of the directory you selected in step 2. This may take significantly longer, but 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.

Relinking Clips Using the "Change Source Folder" Command

If you've used your file system to move media that's associated with a Resolve project, but you haven't changed the directory structure with which it's organized, you can use the "Change Source Folder" command to quickly relink selected clips in the Media Pool to the new file path of the media on disk, using the original file paths as a guide. This is a good relinking method to use, if possible, for projects on a SAN where you don't want to risk the excessively long search times that could result from using the Relink command to examine a nested hierarchy of folders in a more flexible way.

To relink your Media Pool clips to a new location:

1   Select one or more clips in the Media Pool, then right-click one of the selected clips, and choose "Change Source Folder" from the contextual menu. The Relink Media window appears displaying the original path for the material, with controls for choosing a new directory.

2   Click the "…" button to the right of the "Change To" field, and then use the file navigation dialog to find the new location of the media file, select it, and click Open.

3   If you succeeded in finding the appropriate media file, click Change. Otherwise, click Cancel.

Reconforming Clips by Importing Clips Into the Media Pool

DaVinci Resolve maintains a dynamic relationship between clips in the Media Pool and those in a project's various timelines. If you have a timeline with one or more offline clips, that means that the relationship between that clip in the timeline and the Media Pool has been lost, either because there is no corresponding clip in the Media Pool, or because the corresponding clip in the Media Pool is offline. If there is no corresponding clip in the Media Pool, the simplest thing you can do is to import new media with matching file names (or reel names) and overlapping timecode for those clips. Once new clips appear in the Media Pool, Resolve will automatically reconform them to the matching offline clips in the timeline without you needing to do anything else.

There are two general methods you can import clips into the Media Pool:

- **Using the Media page:** Open the Media page, locate the clips you require in the Media Storage browser, and add one or more selected clips into the Media Pool via drag and drop, double-clicking, or by right-clicking and choosing one of myriad options from the contextual menu.

- **Drag and drop from the file system:** You also have the option of switching to the file system of your workstation, and dragging and dropping media files from your file browser to the Media Pool on the Media or Edit page of Resolve directly.

For more information about manually adding clips to the Media Pool, see Chapter 8, "Adding and Organizing Media."

Automatically Importing All Offline Timeline Clips Into the Media Pool

If you find that there are a lot of offline clips in a timeline that have no corresponding Media Pool clips, there's an easy way to fix this, that effectively Reconforms clips the same way as in the previous section, but automates the process of gathering a list of what's missing.

To import unconformed clips and reconform them to the Timeline:

1   In the Edit page, right-click the problem timeline in the Media Pool, and choose one of the following commands:

- **Timelines > Import > Additional Clips With Loose Filename Match:** Searches the Timeline for all unconformed clips, and prompts you to specify a directory of media with which to attempt to conform them, adding only the media that's necessary to the Media Pool. The "Loose Filename Match" command ignores file extensions, which lets you replace offline media with online media in a different format.

- **Timelines > Import > Additional Clips With Tight Filename Match:** Searches the Timeline for all unconformed clips, and prompts you to specify a directory of media with which to attempt to conform them, adding only the media that's necessary to the Media Pool. The "Tight Filename Match" command searches only for media with identical file extensions.

2   Choose the directory with the remaining media to be conformed in the dialog that appears, and click OK.

If the conditions necessary for matching the media files in the directory you selected to the unconformed clips in the current Timeline are met, then the needed files are automatically added to the Media Pool, and the unconformed clips become conformed.

Automatically Importing All Offline Timeline Clips

If you find that there are a lot of offline clips in a timeline that have no corresponding Media Pool clips, there's an easy way to fix this, that effectively Reconforms clips the same way as in the previous section, but automates the process of gathering a list of what's missing.
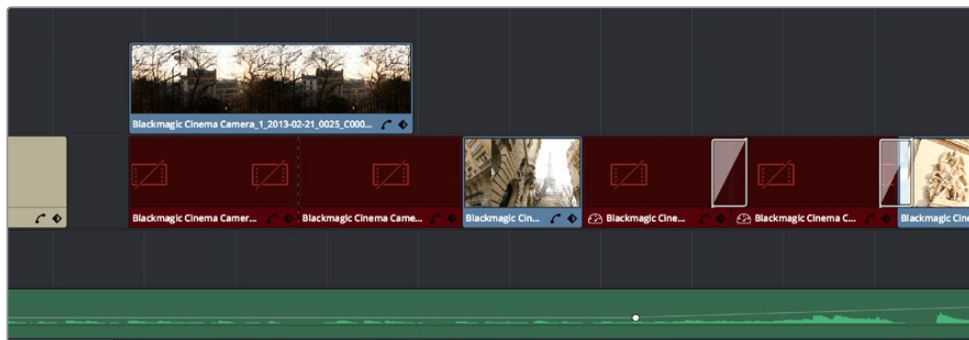
To import offline clips and reconform them to the Timeline:

1   =In the Edit page, right-click a timeline in the Media Pool that has unconformed clips, and choose one of the following commands from the Timelines > Import submenu:

- Additional Clips With Loose Filename Match: Searches the Timeline for all unconformed clips, and prompts you to specify a directory of media with which to attempt to conform them, adding only the media that's necessary to the Media Pool. The "Loose Filename Match" command ignores file extensions, which lets you replace offline media with online media in a different format.

- Additional Clips With Tight Filename Match: Searches the Timeline for all unconformed clips, and prompts you to specify a directory of media with which to attempt to conform them, adding only the media that's necessary to the Media Pool. The "Tight Filename Match" command searches only for media with identical file extensions.

2   Choose the directory with the remaining media to be conformed in the dialog that appears, and click OK.

If the conditions necessary for matching the media files in the directory you selected to the unconformed clips in the current Timeline are met, then the needed files are automatically added to the Media Pool, and the unconformed clips become conformed.

Conformed Timeline showing missing clips

Understanding, Fixing, and Using Reel Conflicts

The same dynamic relationship between clips in the Media Pool and those in a timeline are maintained whether clips are offline or online, it makes no difference. However, this does mean that if you have two different versions of the same clip in the Media Pool, that share the same file name (or reel name) and the same overlapping timecode, then Resolve is capable of automatically conforming to either clip. A good example of this is if you have both the camera

raw version of a clip, and a ProRes or MXF transcoded version imported into the Media Pool at the same time. Both clips have the same content, the same file name, and the same range of frames. This poses the potential for what Resolve refers to as a "clip conflict."

You won't necessarily notice this at first because, by default, all clips that are imported with a timeline, or that you've edited into a brand new timeline, have a Force Conform setting enabled by default. All clips in a timeline with Force Conform enabled only consider the current clip in the Media Pool to which they're conformed as the valid clip; all other clips with file names and overlapping timecode that would otherwise make them an otherwise valid match are ignored.

However, if you right-click such a clip in the Timeline and turn Force Conform off, that clip will display a "clip conflict" error, with an "attention" badge to the left of its name in the Timeline.

Conflict icon indicating at least two clips
have matching conform parameters

Clip conflicts are typically considered to be an error, but not always. They can be a problem if the media you've imported along with an imported project from another application has media that was added with timecode but no reel identifier (for example, when shots from multiple unidentified reels that all start at 0 hour). The thing is, you may not immediately notice such clip conflicts, until you turn Force Conform off.

> **TIP**: Overlapping timecode often occurs in the normal course of work, but should be managed by altering each clip's embedded reel name, or by organizing media in different bins.

Using Clip Conflicts as a Conform Tool

On the other hand, clip conflicts can often be desirable solutions to workflows where you need to switch among different versions of a particular clip. To take the example of an edited timeline consisting of transcoded QuickTime versions of camera raw original media, if you only had the transcoded clips in the Media Pool, then all is well.

However, suppose in the course of working that you decide you need the resolution or additional color latitude of the camera raw version of a particular clip. If you import the camera raw version of that one clip, you should notice nothing different. However, if you then right-click that clip in the Timeline and choose Force Conform to uncheck the setting and turn it off, you should then see the attention badge to the left of the clip name in the Timeline. This lets you know that this clip in the Timeline is correctly seeing the relationship between it and the now two simultaneously named clips with timecode overlap in the Media Pool.

The current relationship between this timeline clip and the one to which it is conformed doesn't change; this badge is only letting you know that now there is a second clip in the Media Pool to which you could potentially conform this clip in the Timeline. Now, you need only choose which one by right-clicking the clip conflict badge, and following the procedure below.

Resolving Clip Conflicts

Once you have a clip conflict, whether intentional or not, it's really easy to resolve it. In fact, this feature is the very basis for the name of the software.

To resolve a reel conflict by relinking a clip's media:

1 Right-click the "attention" icon of any clip in the Timeline.

The Conflict Resolution window appears, showing a list of all files in the Media Pool, of any format, that have identical file names (or reel names) and timecode that overlaps with the clip you right-clicked. Each item in this list shows a thumbnail of the clip, the file path of the media on disk, the file name, starting timecode, reel name (if any), and creation date, to help you determine which of the clips in that list is the one you want to use.
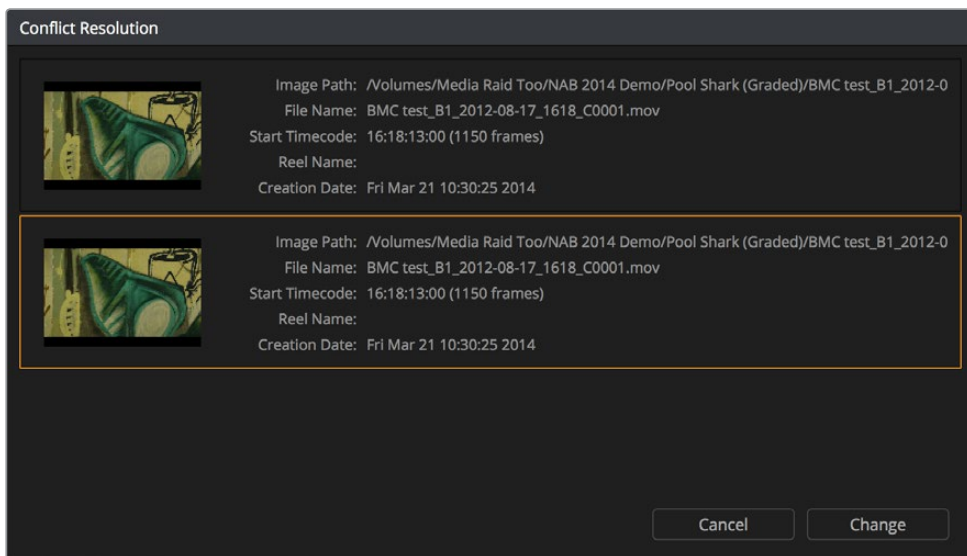
Conflict Resolution window showing what other clips have overlapping timecode and reel information

2 Click the entry in the list that you want to conform to, and click Apply. The clip in the Timeline changes to reflect the media you selected, and the "attention" icon is replaced with a "resolved" badge indicating that the conflict has been resolved. Keep in mind that you can always right-click the "resolved" badge to change which Media Pool clip you want to conform to. It remains a dynamic relationship.

A clip badge showing that the conflict was resolved

Using the "Reconform From Bins" Command

The "Reconform From Bins" command gives you a way of reconforming multiple clips in a timeline at once to a bin full of clips with file names and timecode that overlap with them. It operates similarly to the method previously described of turning off Force Conform and manually choosing another Media Pool clip for a particular timeline clip to be conformed to, except that it lets you do this as a batch operation to reconform many clips all at once.

To use Reconform From Bins, it's important to organize the duplicate clips you're adding to the Media Pool sensibly, in a self contained bin or bins. Most simply, you can have the media you edited with or imported originally in Bin 1, and then the updated versions of some of these clips in Bin 2. Using Reconform From Bins, you can decide whether the clips in your timeline conform to Bin 1, or Bin 2 where possible (only clips for which there is a valid match are reconformed, the others are ignored).

For example, you could use this method to:

- Replace transcoded versions of clips in a timeline with the original camera raw clips.
- Replace the previous versions of VFX clips in a timeline with new versions.
- Replace the offline-quality media you've been working with so far with online-quality media.
- Replace the temp clips you were originally given with rescanned or recaptured stock footage.

In all of these cases, if you create a new bin for the new replacement clips you're importing, and keep them all in one place, you can use Reconform From Bins to swap the new clips with the old in a single step.

Keep in mind that for this to work, the replacement clips that you're adding to these bins must have identical file names (or reel names) and overlapping timecode with the clips they're meant to replace. If the timecode doesn't match, you'll need to manually replace the clip in the Timeline.

Here's a step by step workflow.

To reconform a timeline to clips within a specific Media Pool bin:

1   Double-click the Timeline you want to reconform to open it.

2   Press Command-A to select every clip in the Timeline, right-click one of the selected clips, and choose "Force Conform Enabled" to disable force conform for each clip. This frees Resolve to consider all possible matches for those clips in cases where there may be multiple clips with overlapping timecode in the Media Pool.

3   Right-click the current Timeline in the Media Pool, and choose Timelines > Reconform From Bins. A folders list dialog appears, with the Master folder displayed.

4   Click the disclosure triangle to the left of the Master bin to reveal the bins contained within.

5   Turn on the checkboxes for the bins with media you want to conform the Timeline to, and turn off the checkboxes for bins with media that you want to ignore.
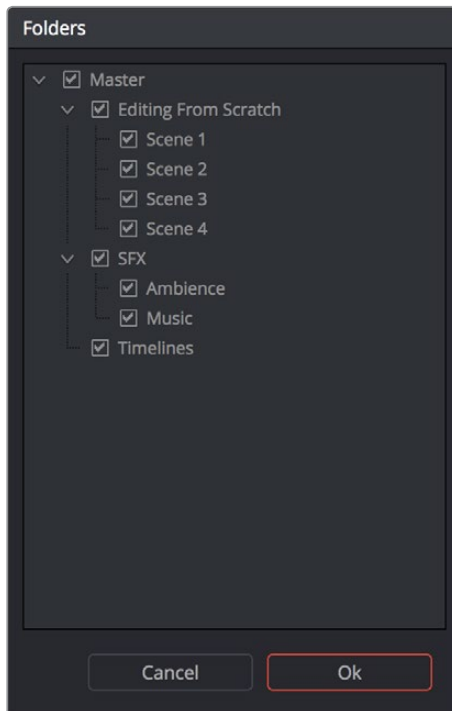
Selecting folders for reconform

6 Click OK.

The Timeline is automatically updated to conform to the media contained within the bins you checked.

Once you've used "Reconform From Bins" and two clips with identical timecode and reel names are in selected folders, you'll have a clip conflict badge in the Timeline. To eliminate this badge, you can select all clips in the Timeline, right-click them, and choose Force Conform Enabled to turn on Force Conform for every clip in the Timeline, and eliminate these warnings.

Using the Force Conform Command

If you have a problem in a Timeline such that an unlinked clip simply won't automatically conform to any clip in the Media Pool, even if you know the clip is there, you can use the Force Conform command to force a clip in the Timeline to conform to a clip of your choosing. This command automatically suspends the Force Conform setting in that clip, and ignores file names and reel names in favor of your manual selection.

To force conform an unconformed clip to another clip in the Media Pool:

1 Select a clip in the Media Pool.

2 Right-click an unconformed clip in the Timeline, and choose "Force Conform Selected Clip to Timeline" from the contextual menu. The selected clip in the Timeline is conformed to the clip you selected in the Media Pool in one of two ways:

- If the selected Media Pool clip has timecode matching the selected Timeline clip: The new clip is perfectly conformed to match the original clip.

- If the selected Media Pool clip doesn't have timecode matching the selected Timeline clip: The new clip is conformed such that the first frame of the Media Pool clip is aligned with the first frame of the reconformed clip in the Timeline, and occupies the same duration.

3 If you right-click that clip again, you'll see that Force Conform is enabled, showing you that the clip has been force conformed to media for which it wasn't originally a match.

> **IMPORTANT:** The clip you select in the Media Pool must be equal in length or longer than the clip you select in the Timeline for Force Reconform to work.

Re-editing Media Directly in the Timeline

If, for whatever reason, none of the above methods of relinking or reconforming have worked, sometimes the only thing left to do is to replace the problem clip in your timeline with a different clip. For example, you may need to replace an old version of an effects shot with a newer one, or or you need to replace an offline version of a stock footage shot with a higher quality one, and the problem is that you've got a mismatched filename and/or timecode, no reel name, and the files are completely different formats, frame sizes, and durations.

In this case, it's a good thing that DaVinci Resolve has such good editing tools. For more information on editing, see Chapters 13 through 20. When fixing conform problems via manual editing, the Replace edit is your special friend. For example, you could use a replace edit to match a new incoming clip's timing to the old one. Or you could use a three-point edit, a place-on-top edit, or even a simple drag and drop edit to put the new clip into the Timeline to take the place of the old one. For specific information on the different edit types in Resolve, see Chapter 14, "Editing Fundamentals."

Dealing With Grades That Are Linked to Multiple Timelines

If you've set your project up to use Remote versions, then any clips that refer to the same file in the Media Pool are linked and share the same Remote versions of grades that are applied to them. For example, two clips that are close-ups from the same take refer to the same media file, so they're both automatically linked to one another and share the same remote grades.

Clips using Remote versions also exhibit this behavior when they appear in multiple timelines. Clips using Remote versions that are located in different timelines, but that refer to the same file in the Media Pool, are linked and share the same remote versions of grades. This is why you can grade one timeline, and then import a re-edited version via EDL, AAF, or XML, and have the new timeline automatically inherit all grades from the previous timeline.

However, you can override this behavior to have one timeline that's independently graded from the others. Simply select that timeline, open the Color page, right-click any clip in the Thumbnail timeline, and choose Copy Remote Grades to Local from the contextual menu. All grades are copied to Local versions, and from that point on all changes you make to grades in that timeline have no effect on the other timelines in your project.

For more information about Local and Remote versions, see Chapter 28, "The Gallery and Grade Management."