What's New for Avid® Media Composer® v5.0

The following lists what's new for the current editor release.

Feature	Description	For More Info
Mixing Frame Sizes and Aspect Ratios	You can now mix frame sizes and aspect ratios in the same sequence.  *The reformatting capabilities that let you mix frame sizes and aspect ratios in a sequence are also not generally appropriate for use with stereoscopic material. The image scaling and resizing that occurs affects the separation between objects in the left and right images.*	See "Mixing Frame Sizes and Aspect Ratios" on page 4.
Transcoding Mixed Rate Material	You can transcode clips of any edit rate.	See "Transcoding Mixed Frame Rate Material" on page 9.
Timeline Direct Manipulation	You can now edit sequences without having to enter specific edit modes.	See "Working with the Timeline Palette" on page 13.
Film Based Metadata enhancements	Changes were made to improve your workflow in many areas of the application, including support of file based media, entering your own custom key numbers, changes to FilmScribe, AutoSync, Relink, and EDL.	See "File Based Metadata Enhancements" on page 37.
Alternate Source Capture	You can enter a different timecode and tape name when you batch capture.	See "Alternate Source Capture" on page 39.
Selecting Items in a Bin	The way in which you select and sort items in a bin has changed. It now follows a standard operating system selection process.	See "Selecting Clips and Sequences" on page 42 and "Sorting Clips and Sequences" on page 42.

Feature	Description	For More Info
Promoting Effects	You might need to update some effects if you are working with sequences that contain effects created in an earlier version of the editing application.	See "Updating and Reverting Existing Effects in Sequences" on page 43
Displaying Clip Information	Displaying clip information in the Info window has been simplified.	See "Using the Info Window" on page 46
AVCHD™ Import	This release includes support for importing AVCHD (Advanced Video Codec High Definition) material.	See "AVCHD Import" on page 47.
Baseband Capture of XDCAM HD	You can now capture to the DVCPro HD and XDCAM HD 50 video resolutions over HD-SDI or HD component connections.	See "Baseband Capture to DVCPro HD and XDCAM HD" on page 48.
Audio Mixdown Changes	Due to support of Multichannel audio, the procedure for mixing down audio tracks has been updated.	See "Mixing Down Audio Tracks" on page 48
Ancillary Data Track	With an Avid Nitris DX or an Avid Mojo DX you can preserve ancillary data with a Data track	See "Preserving HD Closed Captioning and Ancillary Data" on page 50
Render email notification	You can configure your Avid editing application to send an email notification when a render operation completes. This lets you leave your application unattended when a long render operation is taking place, yet still know when the render completes.	See "Email Settings" on page 61.
AMA Plug-ins update	The following AMA plug-ins have been developed and are available to download from the www.avid.com/ama website: QuickTime, RED, MXF, Canon MXF, and AMA Proxy. For up-to-date information about each of the AMA plug-ins, go to www.avid.com/ama.	For information about these plug-ins and the AMA process, see "File Based Media - AMA" on page 63.
Multichannel Audio	Your Avid editing application allows you to edit up to 24 tracks of video and 24 tracks of audio, including multichannel audio tracks.	See "Multichannel Audio" on page 115

Feature	Description	For More Info
SubCap Effect updates	The SubCap effect has new parameters that let you: Turn the display of the subtitle on or off. Control the thickness of text characters and their outlines more precisely. Control the horizontal location of the anchor with respect to the background box.	For more information, see the "SubCap Effect Parameters" topic in the Help.
Reverse Match Frame change	When you perform a Reverse Match Frame, the system searches all selected tracks in the Record monitor for the frame on all selected tracks in the Source monitor. Previously, it only searched the topmost selected track.	For more information, see "Performing a Reverse Match Frame" topic in the Help.
Support for Matrox® MX02™ Mini	The Avid Media Composer and Avid NewsCutter editing applications have been qualified for use with the Matrox MX02 Mini device for monitoring video and audio output.	See "Setting Up the Matrox MX02 Mini" on page 152.
User Interface update	The user interface has been updated to allow you to customize button color and the brightness of the user interface.	See "Customizing the Avid User Interface" on page 153
Audio changes	A new Track Control Panel has been included with this release, along with support for up to five Real-Time Audio Suite plug-in (RTAS) inserts on each audio track.	See "New Audio Features" on page 156
RGB Dual Link Support	The Avid® Media Composer® and Avid Symphony editing applications with Nitris DX support RGB HD dual link.	See "Dual Link HD RGB Support" on page 170.
Quick Transistion dialog enhancements	You can now choose your tracks within the Quick Transition Dialog box.	See "The Quick Transition Dialog Box" in the Help.
Timeline Settings changes	A number of improvements have been added to the Timeline Settings options.	See "Timeline Settings Changes" on page 171.
Enhanced Effects	A number of effects are now realtime effects.	See "Enhanced Effects" on page 172.

Feature	Description	For More Info
Effects Automatically Promoted to Advanced Key Frame Editor	In previous versions of Avid editing applications, you could apply some effects as standard keyframe effects and subsequently choose to promote them to advanced keyframes. This workflow is no longer necessary or available. Effects either use advanced keyframes only or use standard keyframes only. For information on promoting existing effects in sequences, or existing effect templates, see Updating and Reverting Existing Effects in Sequences and Promoting Existing Effect Templates.	See “Updating and Reverting Existing Effects in Sequences and Promoting Existing Effect Templates” in the Help.
Stabilizing an Image	The Stabilize effect uses AutoStabilize to track and stabilize an image automatically when you apply it to a single segment in the Timeline. AutoStabilize uses the tracking and effect parameter options that are most likely to result in a stable image. In many cases, you do not need either to interrupt the automatic process or to adjust effect parameters after it finishes. If you need to, you can adjust parameters after the automatic process, or even retrack.	See “Stabilizing an Image” in the Help.
Windows 7 qualification	The editing application has been qualified with the Windows 7 Operating System.	See the editing application ReadMe.

Mixing Frame Sizes and Aspect Ratios

You can work with media of different frame sizes, aspect ratios, and pixel aspect ratios in the same sequence. For example, you can mix SD 4:3, HD 16:9, and film formats.

How Your Avid Editing Application Reformats Clips in Sequences

Your Avid editing application reformats a clip in a sequence when the aspect ratio, pixel aspect ratio, or frame size of the clip do not match those of the project. Your Avid editing application automatically resizes and repositions these clips to match the project’s format settings.

You need to ensure that your project’s format settings are set correctly so that clips are reformatted properly. For more information, see “Creating a New Project” in the Help and “Changing the Aspect Ratio for an SD Project” on page 5.

When you change a format setting, for example, the aspect ratio for an SD project, all clips currently edited in a sequence immediately adapt to the new format. You do not need to re-edit any clips in your sequences. When you next view the sequence, you see any changes to the size and position of clips.

By default, your Avid editing application reformats clips to fill the frame by stretching. You can set other reformatting options by changing the Reformat attribute for that clip in the bin. For more information, see "Modifying the Reformat Attribute for a Clip" on page 6.

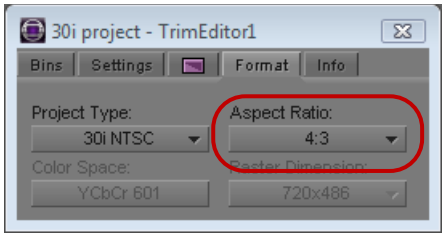
Changing the Aspect Ratio for an SD Project

You typically set the aspect ratio for an SD project when you create the project (see "Creating a New Project" in the Help). However, you can change the aspect ratio at any time.

For HD projects, only the 16:9 aspect ratio is available as this is the only aspect ratio allowed in the HD standard.

To change the aspect ratio for an SD project, do one of the following:

- Click the Format tab in the Project window, then click the Aspect Ratio menu, and select either 4:3 or 16:9, depending on the aspect ratio you want to use.



Aspect Ratio menu in the Format tab of the Project window

- Right-click in the monitor window in Source/Record or in Trim mode, select Project Aspect Ratio, and then select either 4:3 or 16:9, depending on the aspect ratio you want to use.Right-click in the monitor window in editing or in Trim mode, select Project Aspect Ratio, and then select either 4:3 or 16:9, depending on the aspect ratio you want to use.

  Your Avid editing application changes the aspect ratio of the monitors, and resizes and repositions any material in the project's sequences that does not match the new aspect ratio so that it conforms to that aspect ratio. You see these changes when you next open and view an affected sequence. You do not need to re-edit the media into the sequence, and the source media remains unchanged.

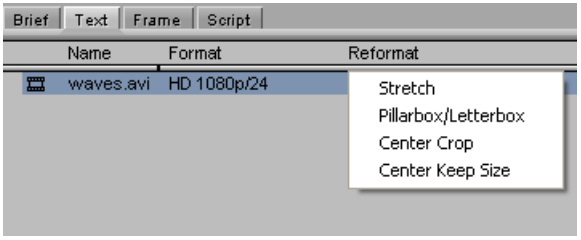
Modifying the Reformat Attribute for a Clip

Your Avid editing application uses the Reformat attribute of a clip to resize and reposition the clip so that it conforms to the current frame size and aspect ratio specified in the Project Settings. When you create a clip or subclip, the Reformat attribute is automatically set to Stretch. If you are using AMA to link to clips, then the default is set to Center Keep Size.

You can modify this Reformat attribute at any time. Reformat options apply only when a clip does not match the project aspect ratio. For a list of these options, see "Reformatting Options Reference" on page 7.

If you are working in an Interplay environment, do not change the Reformat attribute from the Stretch setting. If you use a different setting, and you then use Interplay Transcode or Send to Playback, the results might not be what you expect.

The illustration shows the Reformat bin column and the menu that lets you choose a Reformatting Option.



Changes you make to the Reformat attribute apply only to the selected clip in the bin. You can have several subclips derived from the same master clip, and set different Reformatting Options on each of them.

When you change the Reformat attribute of a clip, it updates if it is loaded in a Source or pop-up monitor, and new edits into a sequence using this clip use the new Reformatting Option. However, previous edits using this clip continue to use the old value. If you want to update a sequence so that all versions of this clip in a sequence use the current Reformat attribute, refresh the Reformatting Options for the sequence.

To set the Reformat value for an individual clip or subclip:

1. Open the bin containing the clip or subclip you want to modify.

   For more information, see "Opening and Closing Bins" in the Help.
2. Click the Text tab.
3. (Option) If it is not already visible, display the Reformat bin heading.

   For more information, see "Using Text View" in the Help.

4. Click the Reformat field for the clip or sub-clip, and select an option.

   Options apply only to clips that do not match the frame size and aspect ratio of the project.

   For more information, see "Reformatting Options Reference" on page 7.

Reformatting Options Reference

The table describes the choices available under the Reformat bin heading and their effect when you edit a clip into a sequence of a different size or aspect ratio. These options have no effect on clips that do match the project size and aspect ratio. For information on how to set the reformatting options for a clip, see "Mixing Frame Sizes and Aspect Ratios" on page 4.

In all reformatting options, the center of the source material is set by default to the center of the sequence frame. You can reformat the clip manually by using the "Center Keep Size" reformatting option and then using the Resize effect to modify the position of a clip after you edit it into a sequence.

Option	Description
Stretch	Scales the clip to match the width and height dimensions of the sequence. If the clip's aspect ratio does not match the sequence's aspect ratio the image is distorted (stretched or squeezed).

The illustration shows an example where a 4:3 clip is placed in a 16:9 sequence. The clip is stretched horizontally to accommodate the width of the sequence.

Option	Description
Pillarbox/Letterbox preserve aspect ratio	Scales the clip to create the largest possible image without cropping, while maintaining the original aspect ratio.

The illustration shows two examples. When you edit a 16:9 clip into a 4:3 sequence (left), the resulting segment has horizontal bars at the top and the bottom. When you edit a 4:3 clip into a 16:9 sequence (right), the resulting segment has vertical bars at the sides.

Center crop, preserve aspect ratio	Scales and crops the clip to be the smallest size possible while filling the entire frame. The resulting image is centered in the frame.

The illustration shows two examples. When you edit a 16:9 clip into a 4:3 sequence (left), the resulting segment is cropped at the sides. When you edit a 4:3 clip into a 16:9 sequence (right), the top and the bottom of the segment are cropped.

Center, keep original size	Centers the clip in the sequence but does not resize it. If the source clip is not the same size as the sequence, the clip is either cropped or does not cover the whole of the sequence frame.

Transcoding Mixed Frame Rate Material

You can transcode clips of any edit rate, including clips that you have edited into a sequence, to any resolution available within your current project.

You might need to transcode mixed-rate material as part of common workflows like offline/online conversion or creation of a QuickTime reference movie. You also might want to transcode mixed-rate material in order to homogenize your sequence and transfer it to an editing application that cannot conform mixed-rate sequences, such as an Avid DS version older than 10.3, or an older Media Composer application. You can also use transcoding for general clip conversion tasks such as removing 2:3 pulldown from 29.97i sources (to generate 23.976 sources), or generating NTSC material from a PAL source.

Once the transcode process completes, you can edit with the clips directly, or you can batch capture or import if you have access to original sources at the new rate. The transcoded material uses the project's edit rate, so the new clips no longer require motion adapters when you edit them into sequences in the same project type. When existing material in a sequence is transcoded across edit rates, your Avid editing application automatically removes motion adapters and adjusts Timewarp effects.

Your application creates new clips whose duration and start and end timecode matches the original clips as closely as possible and which are as compatible as possible with the project's edit rate. However, due to roundoff error, you might see minor variations in clip duration or in frame offset information that could result in such issues as minor audio/video differences (for example, slips of 1 or 2 frames).

In some cases, the last frame of a transcoded clip might be offline. Avid recommends using non-zero handles when you transcode sequences with mixed-rate clips to minimize the chance of seeing offline frames.

You should check transcoded sequences carefully and adjust any variations from the original sequences that are not acceptable to you, for example, by trimming.

You cannot transcode clips across edit rates using the Transcode Server in Interplay.

Working with Color Spaces in HD Projects

In full HD projects, some Avid editing applications and Avid input/output hardware devices let you work in either the YCbCr or the RGB color space. Your Avid editing application uses a project's color space setting to control how it displays video, processes most effects, and outputs sequences.

RGB and YCbCr both separate colors into three channels, but they store color information differently. When you choose which color space to work in, you need to take several factors into consideration, including the color space of your media, your output needs, and your performance expectations for your Avid editing application while editing.

The RGB color space is not available for 720p or NTSC/PAL SD projects.

Understanding the YCbCr Color Space

YCbCr performs better, but is of lesser quality.

YCbCr stores brightness (Y) separately from colors (Cb and Cr). Since humans are more susceptible to changes in light than in color, YCbCr discards half the chrominance data (one-third of the overall data) with little discernible difference to image quality. Media that uses YCbCr takes up less disk space than media that uses RGB, and less bandwidth is required to play it.

YCbCr is the only color space available for SD media, because SD requires lower bandwidths and might need to maintain backwards compatibility with black-and-white displays. When you only need SD output, you only need to work in the YCbCr color space.

Newer HD technologies can display detailed images with sharp changes in color. Because some color data is missing, YCbCr media does not take full advantage of HD display hardware. The limited color information available in YCbCr also means that the results of effects processing are not as good as they could be with RGB media.

Understanding the RGB Color Space

RGB produces higher quality images and effects, but takes up more space.

RGB separates images into their constituting colors: red (R), green (G), and blue (B) and does not discard any of the chrominance data. As a result, video images look sharper, particularly those with fast motion or abrupt changes in color. Newer HD formats support RGB only.

Because no color data is lost, your Avid editing application can make more precise calculations when processing effects using RGB media. The quality improvement over YCbCr processing is most noticeable in effects that perform color analysis, such as chroma keyers. Even if the original video data is in YCbCr, your should consider converting to RGB to process effects as precisely as possible.

The disadvantage of RGB is file size. Media that uses RGB takes up more disk space than media that uses YCbCr, and more bandwidth is required to play it. Some systems might not be able to handle playback of RGB material smoothly, particularly when you use the J-K-L keys to play at greater than normal speed or to play in reverse.

RGB media requires high bandwidth. For effective playback of multiple streams of video at higher resolutions, you should distribute the video tracks as evenly as possible among available drives, and target separate drives for audio and video.

Choosing a Color Space for Your Project

Your choice of a color space depends on both your input/output hardware and your desired output. For information on how to define the color space for a project, see "Changing the Project Color Space for an HD Project" on page 12.

If your hardware supports both RGB and YCbCr, choose the color space that corresponds to your output needs.

If your hardware supports only YCbCr, you can choose RGB for your project color space to maintain maximum quality throughout your workflow. Your Avid editing application converts your material to YCbCr right before sending it to the hardware for monitoring or output. However, choosing RGB in your project is only useful if your input media is in RGB. Otherwise, you should set your project color space to YCbCr.

The project color space specifies how your Avid editing application processes effects in real time. Your Avid editing application supports native processing of effects in either the RGB or YCbCr color spaces. For example, this means that RGB media does not need to be converted to YCbCr for processing, maintaining maximum video quality until the final output.

Mixing Media of Different Color Spaces

You can work with media of different color spaces in the same sequence. For example, you can mix SD YCbCr and HD RGB. When you mix media in this way, your video editing application converts media to the project's color space when necessary. This conversion takes place internally during the processing of real-time effects and prior to output.

The color space of your media depends on its format. Tape-based SD and HD media uses the YCbCr color space. Newer HD digital formats, such as R3D, use RGB. See “Resolution Specifications” in the Help for information about supported formats.

You can check the color space of the media for any clip in your project by viewing the Color Space bin heading in the bin that contains the clip. For more information, see “Moving, Aligning, and Deleting Bin Columns” in the Help.

Changing the Project Color Space for an HD Project

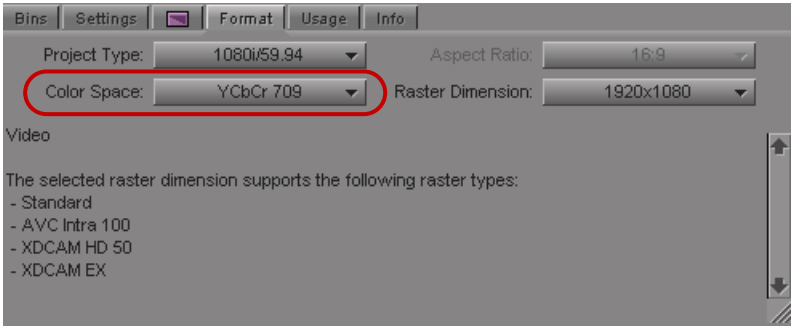
You typically set the color space for a project when you create the project (see “Creating a New Project” in the Help). However, you can change the color space at any time.

The RGB color space is only available in full HD projects. 720p and NTSC/PAL projects can only use the YCbCr color space.

Changing the project color space does not affect the rendering of titles and effects or change the color space of imported media. Your Avid editing application controls these according to their Media Creation Settings. For more information, see “Media Creation Settings” in the Help.

To change the project color space:

1. Click the Format tab in the Project window.
2. Click the Color Space menu, and select either RGB 709 or YCbCr 709, depending on the color space you want to use.



Color Space menu in the Format tab of the Project window

Your Avid editing application now displays video and processes real-time effects in the new color space. The final output is also in the new space.

Working with the Timeline Palette

The Timeline Palette

Your Avid editing application provides a quick way to edit sequences in the Timeline without having to enter a specific editing mode such as Trim mode. By using the Timeline palette, you can perform the following editing actions:

- Select and move segments in the Timeline
- Copy and delete segments
- Edit with Lift/Overwrite and Extract/Splice-in edits
- Create single- and dual-roller trims, such as ripple trims and overlap edits

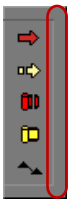
Timeline palette, located to the left of the Timeline, with the Timeline ruler at the top of the Timeline

The Timeline palette provides you with the most common tools you need for Timeline editing, as well as several buttons you can use to enable editing modes such as Effect mode or Color Correction mode.

Icon	Tool	Description
	Link Selection	Allows you to select segments in the Timeline that are linked by common source media and timecode.
	Lift/Overwrite	Replaces a section of the sequence with the selected source material.

Icon	Tool	Description
	Extract/Splice-in	Inserts marked source material into the sequence without replacing material already in the sequence.
	Overwrite Trim	Creates a single-roller trim and adds a black segment to fill the duration of trimmed frames.
	Ripple Trim	Creates a single-roller trim with no sync lock and maintains the duration of all other clips.
	Keyframe Selection	Lets you select and move audio keyframes in the Timeline.
	Trim Mode	Allows you to enter traditional Trim Mode without selecting a trim tool.
	Source/Record mode	Enters Source/Record mode.
	Effects mode	Enters Effects mode, opening the Effect Editor and changing the Record monitor to the Effect Preview monitor.
	Color Correction mode	Enters Color Correction mode, opening the color correction controls.
	Motion Effect	Opens the Motion Effect Editor, allowing you to edit Timewarp effects.

The editing tools at the top of the Timeline palette make up the Smart tool. The Smart tool lets you access the most common segment editing tools and to combine functions by selecting multiple tools.



The Smart tool, with all of the functions selected by the toggle bar (right)

The Smart Tool buttons also appear on the Smart Tool tab of the Command palette, so you can map them to the keyboard, a toolbar, or the Tool palette. For more information on mapping buttons, see “Mapping User-Selectable Buttons” in the Help.

When you combine functions on the Timeline palette, you modify how the mouse pointer functions in the Timeline:

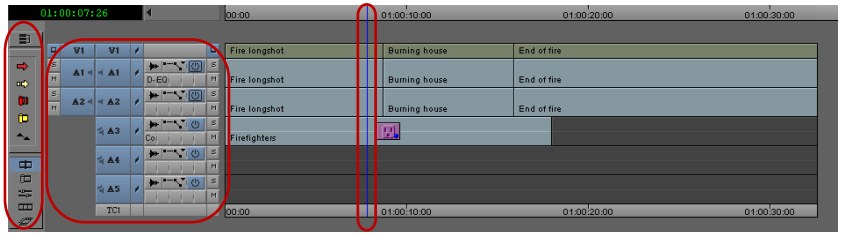
- When you select the Lift/Overwrite or Extract/Splice-in button, the mouse pointer changes to a segment edit pointer for either Lift/Overwrite or Extract/Splice-in edits. If you select both buttons, the segment edit depends on which region of the segment in the Timeline that you activate. For more information, see “Working with Segments” on page 17.
- When you select the Overwrite Trim or Ripple Trim button, the mouse pointer changes to a trim roller when you mouse over a transition point and lets you perform the selected trim edit. If you select both trim buttons, the trim edit depends on which region of the transition in the Timeline that you activate. For more information, see “Timeline Trim States” on page 32.
- The Keyframe Selection tools lets you select and move audio keyframes when you have any of the Timeline palette editing tools selected.
- The Smart tool toggle bar lets you turn off the Timeline palette editing tools. When you use the toggle bar to enable Timeline palette tools, the toggle bar enables the tools that you had previously selected.

Since using the Timeline palette tools change the behavior of the mouse pointer in the Timeline, you cannot scrub through the Timeline as you do in normal edit mode. Instead, you can use the Timeline ruler above the Timeline or the Timecode track to move the position indicator. (The Timeline ruler displays the master timecode for your sequence.) If you want to scrub through the Timeline without making segment edits, you can also turn off the segment tools by using the Smart tool toggle bar or by clicking the Timecode ruler or Timecode track to deselect the edit tools if you set this option in the Timeline Settings dialog box (see “Disabling the Smart Tool in the Timeline” in the Help).

Navigating in the Timeline

The Timeline window provides various controls for quickly moving through a sequence and adjusting your view of details displayed in the tracks while editing. You can use the position indicator, the Timeline scroll bar/position bar, the Timeline scale bar, the Zoom In and Zoom Back commands, or the Focus button. In addition, you can highlight marked sections of the sequence for visual reference.

You can also use the Video Quality Menu button in the Timeline bottom toolbar to control the quality level at which media plays back. For more information about the Video Quality Menu button, see “Real-Time Playback of Video Effects” on page 133.



Timeline window: (left to right) Timeline palette, Track Selector panel, Position indicator, with the Timeline bottom toolbar under the Timeline (left to right: Timeline Fast Menu, Focus, Toggle Source/Record in Timeline, Video Quality, DNxHD Native, Step In, Step Out, Scale bar Timeline scroll bar)

Controlling Movement in the Timeline

While working in the Timeline window, you can use modifier keys to control the movement of both the position indicator and any segments that you move.

The motion mode indicator in the Timeline toolbar displays a specific icon, depending on the keys you press to facilitate your movement within the Timeline.

Motion Mode Icon	Description
	Snaps the position indicator to head frame.
	Snaps the position indicator to tail frame.
	Snaps the position indicator to the edit point in a track above or below the current track.

To snap to the head of transitions:

- Press the Ctrl key (Windows) or Command key (Macintosh) as you drag either the position indicator or any selected segments.

To snap to the tail of transitions:

- Press Ctrl+Alt (Windows) or Command+Option (Macintosh) as you drag either the position indicator or any selected segments.

To snap the selected segments to an edit point in the track above or below the current track:

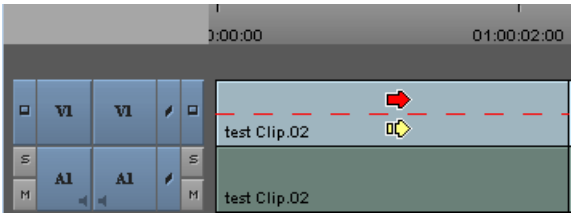
- Click a segment edit button in the Timeline palette, and then press Ctrl+Shift while dragging the segments.

Working with Segments

Your Avid editing application provides editing controls for moving, deleting, marking, and editing entire segments in the Timeline. A segment is a portion of a sequence between two clip transitions.

There are two basic ways to edit segments:

- Select one of the segment tools on the Timeline palette (Lift/Overwrite or Extract/Splice-in). This lets you manipulate segments by positioning the cursor over the segment and performing either a Lift/Overwrite or Extract/Splice-in edit.



Timeline showing the active segment selection zones

- Select both segment tools on the Timeline palette. This lets you edit segments by positioning the cursor over either the upper half of the segment (for Lift/Overwrite actions) or the lower half of the segment (for Extract/Splice-in actions) and then clicking the segment.

You can also edit directly from a bin, as described in “Bin Editing into the Timeline” on page 30.

Guidelines for Segment Editing

General Guidelines

- Moving a selection with an Extract/Splice-in edit deletes transition effects on either side of the selection. If the selection includes multiple segments around a transition effect, moving the segments preserves transition effects inside the selection.
- You can track the audio while moving segments by pressing the Caps Lock key to enable audio scrub. For more information, see “Using Audio Scrub” in the Help.

- You can select segments linked by common source media and timecode by enabling link selection. For more information, see “Linked Clips” on page 20.
- When you finish making an edit, the active segment tool continues to affect edits you make unless you deactivate the segment tool on the Timeline palette.

Guidelines When Selecting Segments

- You cannot simultaneously move segments separated along a track. You can, however, move segments separated on different tracks.
- You cannot overlap the source and destination tracks. For example, you can move audio segments from A3 and A4 to A1 and A2, but you cannot move them from A3 and A4 to A2 and A3 (A3 overlaps). You can move mono audio tracks only to other mono audio tracks, and you can move stereo audio tracks only to stereo tracks.
- With a group or with linked clips, you can click any selected segment to drag the entire group to a new position.
- You can select black filler as a segment, except when filler is used at the head or tail of a sequence.

Guidelines When Lassoing Segments

- Position the pointer above the tracks before dragging. If you click within the tracks, you either select a segment or a transition (if an edit tool is active on the Timeline palette) or you relocate the position indicator to that position. To lasso segments in the middle of the Timeline between multiple tracks, press and hold the Alt key (Windows) or Option key (Macintosh) while you drag the lasso.
- Lasso at least two transitions or all transitions included in multiple segments. If your lasso surrounds only one transition, you enter Trim mode.
- Drag from left to right. If you drag from right to left, you enter Trim mode with slip rollers selected.
- Link selection does not affect which segments you select when you lasso segments in the Timeline.

Selecting and Deselecting Segments

You can select segments for moving or editing by activating tools on the Timeline palette and then clicking segments in the Timeline, or you can lasso one or more segments. You can also select linked clips when you enable Link Selection. For more information, see “Linked Clips” on page 20.

You can then continue to select or deselect additional segments. The selected segment or group of segments becomes highlighted and remains in its original position during the move until you select its new position.

For additional guidelines when selecting and lassoing segments, see "Guidelines for Segment Editing" on page 17.

To select segments with the pointer:

1. Select one of the segment tools on the Timeline palette.

   The mouse pointer arrow changes to a large red or yellow arrow when inside the Timeline, depending on where you position the pointer or which segment tool you click.

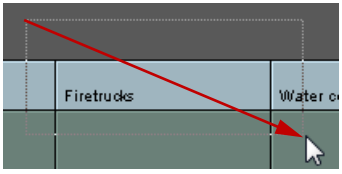
2. Click a segment in any track to select it. Shift+click to select additional segments. You can Shift+click a selected segment to deselect it.

   If you have Link Selection enabled, all segments linked to your selection are selected in the Timeline. If you Shift+click a selected segment, all segments linked to your selected are deselected as well.

3. (Option) If you enable Link Selection and want to select a single segment and not the segments linked to it, Alt+click (Windows) or Option+click (Macintosh) the segment.

To lasso segments:

- Draw a lasso beginning in the area above the tracks in the Timeline. Drag left to right and then down to select more than one segment.



When you draw a lasso, if neither segment tool in the Timeline palette is selected, Extract/Splice-in mode is enabled by default. To switch the mode, click the Lift/Overwrite button, after drawing the lasso.

To deselect one or more selected segments, do one of the following:

- To deselect an entire track, click the Track button in the Track Selector panel.

  For example, if you lasso segments on V1, V2, and A1, you can click the V2 and A1 Track buttons to leave only the segment on the middle track, V1, selected.

- Click one of the segment tools on the Timeline palette, and then Shift+click specific segments on any track.

  This deselects the segments you click on any track, leaving the remaining tracks selected. If you have Link Selection enabled, all segments linked to your selection are deselected in the Timeline.

- To deselect a linked segment if you have Link Selection enabled, Shift+Alt+click (Windows) or Shift+Option+click (Macintosh) the segment.

Linked Clips

Media objects in bins can contain media on more than one track, such as a master clip with a video track and two audio tracks. When you add media to a sequence that come from the same source and share the same timecode, the Timeline displays the associated tracks. By default, the Avid editing application treats these tracks as linked so that when you select a segment, the application automatically selects any linked segments. You can select linked clips for both segment editing and trim editing.

The following apply to linked clip selection:

- Track linking affects segments. If you use the same master clip in more than one place in your sequence, each segment maintains its own linking relationship unless the segments overlap in the Timeline.
- When you select a non-video track, clip linking selects only the first appropriate video segment. Other video segments are not selected.
- When you select a trim roller, clip linking selects trim rollers on all linked segments.
- You can turn off linked clip selection in the Timeline by using the Link Selection button.
- If you enable Link Selection, you can select a segment without selecting all segments linked to it by Alt+clicking (Windows) or Option+clicking (Macintosh) the segment.
- If you disable Link Selection, you can select a segment and all segments linked to it by Alt+clicking (Windows) or Option+clicking (Macintosh) the segment.
- A video segment cannot link to another video segment.
- Link selection operates across tracks, not along the same track. However, if a video segment links to an audio segment that includes a cut point, link selection operates on both audio segments.
- When two or more video tracks from the same clip overlap in the Timeline and sync is broken with the linked audio segments, link selection links to the video segment with the smallest sync break point.
- When you move a linked clip independently of the tracks to which it is linked so it no longer vertically overlaps the linked segments, the link relationship is broken.

Selecting Linked Clips

Link selection allows you to select segments in the Timeline that are linked by common source media and timecode. When you select a non-video segment that has more than one linked video segment, the video segment closest to the selected segment is selected. If sync breaks exist, the video segment with the smallest sync break is selected.

To enable or disable link selection in the Timeline, do one of the following:

- Click the Link Selection button.
- Press Shift+L.

To select linked clips:

1. Click a segment with linked clips.

   The application selects all linked segments.
2. (Option) If you want to select additional linked clips, Shift+click additional segments.
3. (Option) If you want to deselect selected segments, Shift+Alt+click (Windows) or Shift+Option+click (Macintosh) a linked segment.

Selecting Multiple Segments

Instead of lassoing segments in the Timeline to edit, you can select multiple segments on enabled tracks quickly by using the multiple segment selection buttons in the Edit tab of the Command palette. This allows you to select segments to the left or right of the position indicator, or to select all segments within In and Out marks. The multiple segment edit buttons also appear in the Timeline top toolbar if you create a new user profile (for information on creation user profiles, see “Managing User Profiles” in the Help).

When you use the multiple segment selection buttons, your Avid editing application activates the Segment Extract/Splice-in button if you have not selected one of the segment buttons on the Timeline palette.

You can also use the Shift key to add segments on enabled tracks to the current selection.

To select segments on enabled tracks using the multiple segment selection buttons:

1. Move the position indicator to the first or last segment you want to select.
2. Select Tools > Command Palette, and click the Edit tab.
3. Do one of the following:

- Click the Select Left button to select segments under the position bar and all segments to the left.

- Click the Select Right button to select segments under the position bar and all segments to the right.

- Click the Select In/Out button to select segments intersecting In and Out marks if both marks are present.

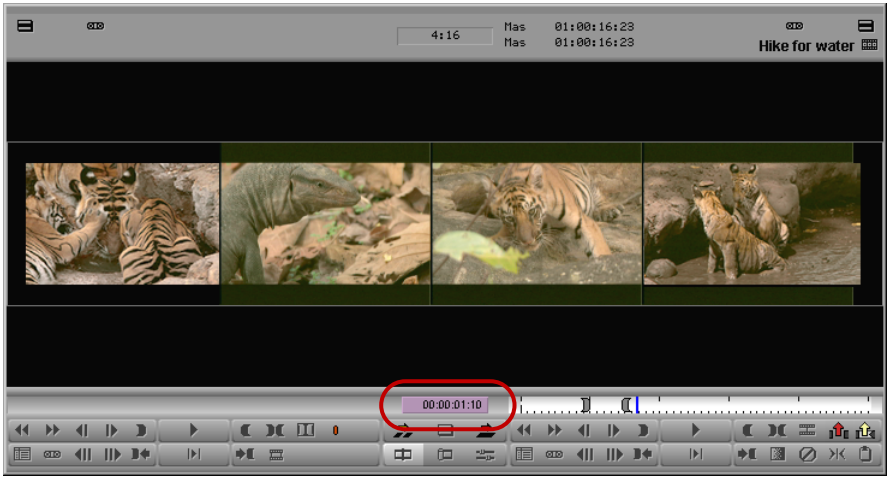
  If the Timeline has only an In mark or an Out mark, or no In and Out marks, the Select In/Out button selects all segments under the position bar.

Four-Frame Display

When you begin to drag the segments, the interface changes to the four-frame display:

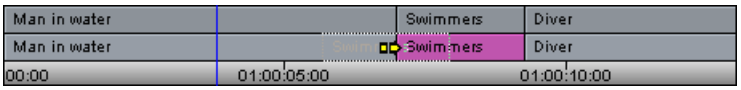
- The Source and Record monitors change to a four-frame monitor display. The two outer frames update while you drag the segment forward or backward in the Timeline, indicating the frames you pass as you drag the segment. The two outer frames in the four-frame display allow you to view and analyze the frames between which you might want to drop the selected segment.
- A centered numeric offset counter appears below the frame monitors. The offset counter tracks the number of frames or feet+frames (24p and 25p projects) that you move while dragging the selected segment from its starting point.

When you drag segments with only the Record monitor displayed, the interface changes to a two-frame display. Only the outer two frames in the four-frame display appear in the Record monitor.



Four-frame display. The two outer frames indicate ending and beginning frames of clips before and after the segment. The two inner frames represent the start and end frames of the segment. The offset counter is highlighted.

When you drag the segments, the original highlighted segment remains in place, while a “ghost” segment enclosed in a dotted white box moves along with the pointer until you release it at a new edit point.



When you release the segment into its new position, the actual lift (Overwrite) or extract (Splice-in) occurs. Until then, the segment position is preserved in the Timeline, allowing you to maintain your perspective of the sequence while selecting the new edit point.

Suppressing Four-Frame Display

The four-frame display of incoming or outgoing frames can occasionally slow the movement of segments as you drag them through the sequence. You can improve the speed of segment editing by suppressing the four-frame display.

To suppress the four-frame display:

1. Double-click Timeline in the Settings list in the Project window.

   The Timeline Settings dialog box opens.

2. Deselect the Show Four Frame Display option in the Display tab, and click OK.

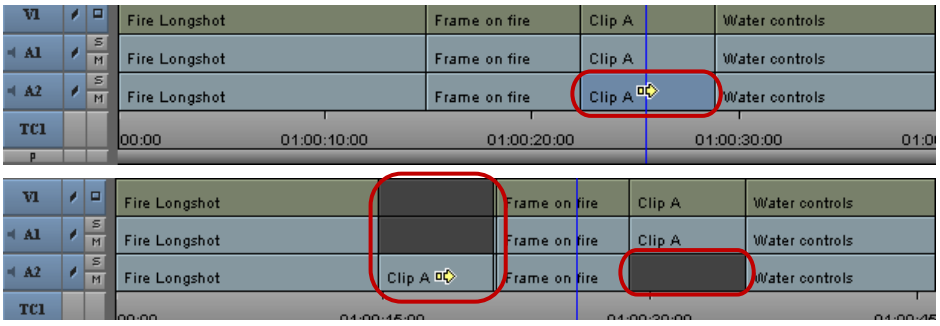
3. Select one of the segment tools on the Timeline palette.

   The mouse pointer arrow changes to a large red or yellow arrow when inside the Timeline, depending on where you position the pointer or which segment tool you click.

4. Click the segment, and drag it to its new position.

   As you drag the segment, the monitors maintain their Source/Record configuration rather than shift to the four-frame display or two-frame display.



Top: before segment drag sync lock, showing the segment that will move. Bottom: after segment drag sync lock, showing the moved segment and filler added after the move (left), and the filler left in the original location (right).

Maintaining Sync with Segment Edits

When you use the Lift/Overwrite tool, the application adds filler to the sequence to maintain sync. When you move segments in the Timeline using Extract/Splice-in, the sync might be broken.

To maintain sync when you use Extract/Splice-in, select the Segment Drag Sync Locks option in the Edit tab of the Timeline Settings dialog box. After you move a segment in the Timeline with Extract/Splice-in, this option maintains sync by adding filler to the following locations:

- Where the segment was moved from in the sequence
- On all other sync-locked tracks that correspond to the new location of the segment you moved

You can move either an audio segment or a video segment. You can also maintain sync for some edits if you enable link selection in the Timeline (see "Linked Clips" on page 20).

To move a segment and keep sync:

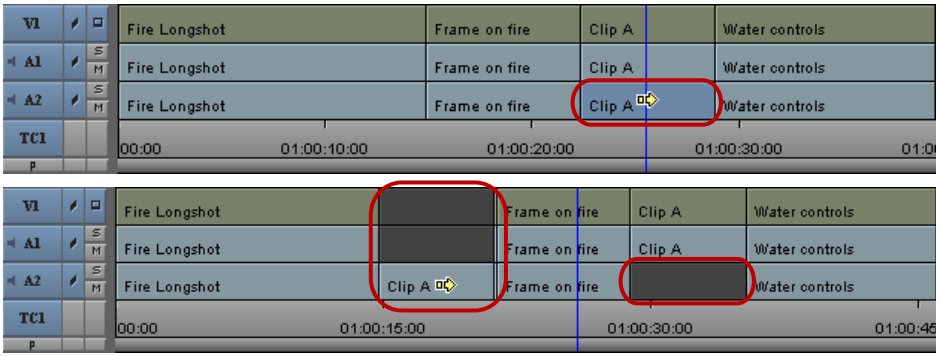
1. Double-click Timeline in the Settings list in the Project window.

   The Timeline Settings dialog box opens.

2. Select the Segment Drag Sync Locks option in the Edit tab.
3. Click OK.
4. In the Track Selector panel, click the Sync Lock button for the video, audio and data tracks that you want to keep in sync.
5. Click the Extract/Splice-in button.

6. Click an audio or video segment, and drag it to the new location.

In the following example, an audio segment in track A2 is moved. The new location for the audio segment has filler added to the video track. All segments remain in sync.



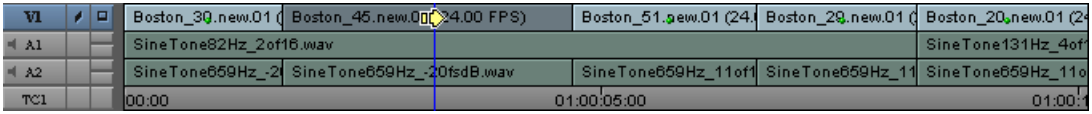
Top: before segment drag sync lock, showing the segment that will move. Bottom: after segment drag sync lock, showing the moved segment and filler added after the move (left), and the filler left in the original location (right).

Editing Segments

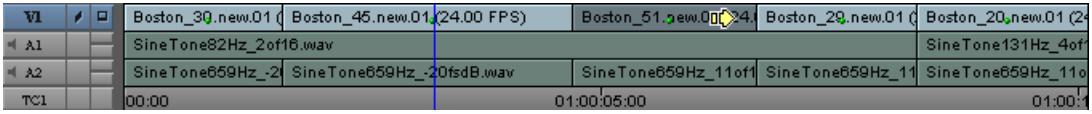
Segment editing provides two tools in the Timeline palette for editing segments:

- Use the Extract/Splice-in tool to move the selected segments in the same track in the Timeline.

  Like the standard Splice-in function, the Extract/Splice-in Timeline edit inserts the segment into the new position. However, as an additional function, it extracts (removes) the segment from its previous position and closes the gap.



Segment selected for Splice-in edit in the Timeline

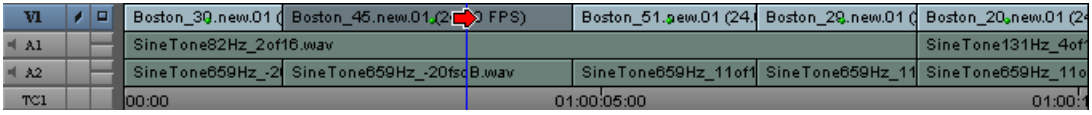


Segment after a Splice-in edit, with the selected clip moved to its new location in the Timeline and the surrounding clips unchanged

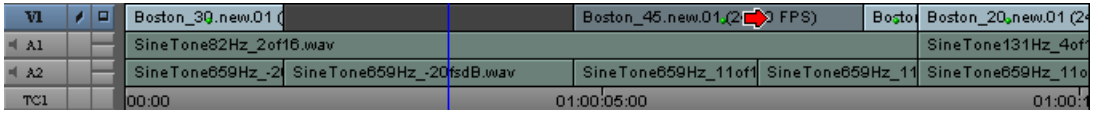
If you turn on sync lock, the Splice-in edit adds black filler to maintain sync. For information on maintaining sync in the sequence when using Extract/Splice-in, see "Maintaining Sync with Segment Edits" on page 23.

- Use the Lift/Overwrite tool to replace existing material at the new position, while leaving blank space in the previous position. This does not affect the total duration of the sequence and the material in the sequence remains in sync.

  Like the standard Overwrite function, the Lift/Overwrite Timeline edit deletes and replaces underlying material at the new position, effectively creating new edits. It also "lifts" the segments from the previous position, leaving black or silence of the same duration.



Segment selected for Overwrite edit in the Timeline



Segment after a Overwrite edit, with the selected clip moved to its new location in the Timeline, replacing the existing clip and leaving black filler in its original position

You can perform standard segment edits on multiple video and audio segments by selecting them and then dragging them to new positions in the Timeline. You can select either video or audio segments, or you can select both video and audio. If you enable link selection, you can automatically select linked segments.

The following limitations apply:

- Selected segments on the same track must be adjacent. If filler separates the segments, you must select the filler to move them in the Timeline.
- You can only move video tracks to other video tracks in the Timeline, and audio tracks to other audio tracks.
- You can move mono audio tracks only to other mono tracks and stereo tracks only to other stereo tracks.
- You cannot drop selected segments on locked tracks.
- If you select both a video and an audio segment, you can click either the video or the audio and drag it to any available track while the accompanying segment moves to the new position in the same track. This means that if you select a video segment, you can drag it to another track or a new position in the Timeline on the same track, but the selected audio segment moves only along its original track.

If the segment contains transition effects, and you move the segment, the transition effect remains. For information about how the system preserves transition effects, see "Transition Effect Preservation" in the Help.

You can also drag clips from the Source monitor or from a bin and drop them in the Timeline, moving the segments to the position in the sequence you want. The following limitations apply when you drag a clip from a bin or the Source monitor to the Timeline:

- The type of segment edit you perform when you drag from a bin or a monitor depends on which segment tool you enable on the Timeline palette. If you do not select a segment tool, or if you select both tools, your Avid editing application uses the default segment edit tool specified in the Edit tab of the Timeline Settings dialog box. For more information, see "Setting the Default Segment Edit Tool" in the Help.
- You can drop video clips on any available video track.

- If you move audio segments only, you can drop the selection on any available audio tracks. If you move both audio and video, you can drop the audio only on the highest-level audio tracks but you can move mono audio only to mono tracks and stereo only to stereo tracks. Audio added to the Timeline maintains sync with the associated video, regardless of the target track.
- If you enable video and audio Source tracks in the Track Selector panel, video and audio tracks in your clip are added to your sequence. If you disable either the video or audio tracks, only the enabled tracks from your clip are added to the sequence. For example, if you disable all video tracks in the Track Selector panel, and then drag a clip from the Source monitor to the Timeline, only audio tracks are added to the sequence.

Moving Segments with Drag and Drop

You cannot move segments to locked tracks. If you attempt to drop a selection on a locked track, the move fails and all selected segments return to their original position in the Timeline.

If you move audio segments, you can only move segments on mono tracks to other mono tracks and segments on stereo tracks to stereo tracks.

To perform a segment edit:

1. Do one of the following:

   - Select both of the segment tools on the Timeline palette, and then position the mouse pointer over the top of the segment (for Lift/Overwrite operations) or the bottom of the segment (for Extract/Splice-in operations).
   - Select one of the segment tools on the Timeline palette.

   The mouse pointer arrow changes to a large red or yellow arrow when inside the Timeline, depending on where you position the pointer or which segment tool you click.

2. Click the segment you want to move (Shift+click to select multiple segments), and drag it to its new position. If you enable link selection, all linked segments move when you drag the selected segment (see “Selecting Linked Clips” on page 20).

   Use the four-frame monitor display, the offset counter, and the segment image in the Timeline to carefully determine the new position. You can also snap to the head or tail of the new edit point (see “Controlling Movement in the Timeline” on page 16).

   If you select multiple segments on the same track, they must be adjacent segments (horizontally contiguous). You can select black filler segments.

3. Release the mouse button.

   If you used the Extract/Splice-in method, the system extracts the selected segment from its old position, closes the gap left by its removal, and then splices the material back into the sequence at the newly selected location.

If you used the Lift/Overwrite method, the system lifts the selected segment from its old position, leaving black filler, and then overwrites the material onto the sequence at the newly selected location.

If the segment contains transition effects, and you move or extract the segment, the transition effect remains. For information about how the system preserves transition effects, see "Transition Effect Preservation" in the Help.

To cancel a segment move, do one of the following:

- If you have not dropped the selected segment at a new location, drag the selection out of the Timeline window and release the mouse button.
- If you have dropped the selected segment at a new location, select Edit > Undo.

Deleting Segments

You can use the segment tools in the Timeline palette to delete whole segments in the Timeline quickly without having to mark In and Out points. You can also select multiple segments in separate tracks anywhere along the Timeline to delete them all at once.

By default, your Avid editing application deletes the selected segment and leaves blank space or silence in its place (a Lift segment edit). You can use In and Out points to perform a standard Extract edit.

You can also delete segments by using the Cut command. See "Cutting, Copying, and Pasting in the Timeline" on page 30.

To delete segments quickly:

1. Do one of the following:

   - Select both of the segment tools on the Timeline palette, and then position the mouse pointer over the top of the segment (for Lift/Overwrite operations) or the bottom of the segment (for Extract/Splice-in operations).
   - Select one of the segment tools on the Timeline palette.

   The mouse pointer arrow changes to a large red or yellow arrow when inside the Timeline, depending on where you position the pointer or which segment tool you click.

   - Lift/Overwrite (red) deletes the segments but leaves blank space or silence in their place. The total duration of the sequence remains the same, and sync is maintained.
   - Extract/Splice-in (yellow) deletes the segments and closes the remaining gaps. The total duration of the sequence is shortened, and any synchronized tracks lose sync.

2. Select one or multiple segments.
3. Press the Delete key.

The system deletes the segments and any effects applied to them.

If the segment contains transition effects, and you delete the segment, the transition effect remains. For information about how the system preserves transition effects, see "Transition Effect Preservation" in the Help.

Marking Clips and Sequences

As an alternative to marking sections of the Timeline in Source/Record mode for deleting, copying, subclipping, rendering, or creating an EDL or digital cut, you can use the segment tools to mark segments quickly.

To mark segments in the Timeline:

1. Do one of the following:

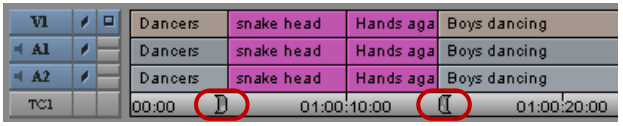
   - Select both of the segment tools on the Timeline palette, and then position the mouse pointer over the top of the segment (for Lift/Overwrite operations) or the bottom of the segment (for Extract/Splice-in operations).
   - Select one of the segment tools on the Timeline palette.

   The mouse pointer arrow changes to a large red or yellow arrow when inside the Timeline, depending on where you position the pointer or which segment tool you click.

2. Click one or more segments to highlight a section of the sequence.

3. Click the Mark Clip button.

   The system marks an In point at the start and an Out point at the end of the selected segments. If you selected more than one track, the In and Out points mark where the edit points across tracks line up.



Cutting, Copying, and Pasting in the Timeline

You can use the shortcut keys for cutting, copying, and pasting segments selected in the Timeline.

To cut or copy and paste segments:

1. Do one of the following:

   - Select both of the segment tools on the Timeline palette, and then position the mouse pointer over the top of the segment (for Lift/Overwrite operations) or the bottom of the segment (for Extract/Splice-in operations).
   - Select one of the segment tools on the Timeline palette.

   The mouse pointer arrow changes to a large red or yellow arrow when inside the Timeline, depending on where you position the pointer or which segment tool you click.

2. Click the segment to highlight it.
3. Press Ctrl+C (Windows) or Command+C (Macintosh) to copy, or Ctrl+X (Windows) or Command+X (Macintosh) to cut.
4. Move the position indicator to the new In point, and press Ctrl+V (Windows) or Command+V (Macintosh) to paste the segment in the Timeline.

Bin Editing into the Timeline

You can use the segment tools on the Timeline palette to edit clips directly from a bin into the sequence in the Timeline. Bin editing lets you bypass the process of loading clips into the monitor, setting marks, and clicking the Splice-in button or Overwrite button.

You can also use keyboard shortcut keys to edit clips directly from a bin into the sequence in the Timeline.

For information on editing multiple clips directly from the bin into the RecordSource/Record monitor, see “Creating an Instant Rough Cut” in the Help.

To activate bin editing:

1. Double-click Bin in the Settings list in the Project window.

   The Bin settings dialog box opens.

2. Select the “Enable edit from bin (Splice, Overwrite)” option.
3. Click OK.

To perform a direct edit from a bin into your Timeline:

1. (Option) For a more accurate edit, mark In and Out points for each clip or create subclips. Otherwise, the entire clip is edited into the sequence.
2. Click one of the segment tools in the Timeline palette:

- Lift/Overwrite (red) acts as an overwrite edit, causing the clip to overwrite material of the same length in the sequence while maintaining the same duration of the sequence.

- Extract/Splice-in (yellow) acts as a splice edit, inserting the clip into the sequence, moving existing material down, and lengthening the total duration.

   If you do not select a segment tool, or if you select both tools, your Avid editing application defaults to the segment tool specified in the Timeline Settings dialog box. For more information, see "Setting the Default Segment Edit Tool" in the Help.

3. Drag a clip from the bin into the Timeline.

   You can edit only one clip at a time.

   The pointer changes to the selected segment icon, and the interface changes to the four-frame monitor display. As you drag, a white outline of the clip indicates the segment position.

4. When you find the right placement for the clip, release the mouse button.

   The Timeline reflects the new edit. After the edit is completed, the segment tool you selected remains active until you click the active segment tool button to deactivate it.

To perform a direct edit from a bin into a sequence:

1. Mark an In or Out point in the Timeline, or move the position indicator to the location where you want the clip to appear.
2. Select a clip in the bin.
3. Do one of the following:

   - Press the V key to perform a splice-in edit, which inserts the clip into the sequence and moves existing material down, lengthening the total duration of the sequence.
   - Press the B key to perform an overwrite edit, which causes the clip to overwrite material of the same length in the sequence while maintaining the same duration of the sequence.

   The Timeline reflects the new edit.

Trimming with the Timeline Palette

You can perform basic trim edits by using the trim tools on the Timeline palette and without entering Trim mode. This lets you create trims quickly in your sequence which you can later fine-tune by using the full functionality of Trim mode.

You can make the following kinds of trim edits using the Timeline palette:

- Trim away — single-roller trims which add black while trimming
- Ripple trim — single-roller trims with no sync lock
- Dual-roller trim — edits that move the transition boundary between segments without affecting the duration of the sequence

Some trims, such as trim away edits, maintain sync between video and audio clips. Other trims, such as ripple trims, might break sync. For more information on keeping video and audio clips in sync, see “Maintaining Sync While Trimming” in the Help.

The following limitations apply to trim edits:

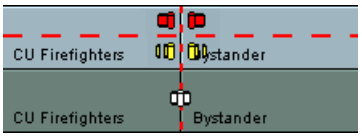
- You cannot trim a clip so that its duration equals zero frames.
- You can only trim until you encounter another segment in the same track. If you trim multiple clips, you can trim until any of the transitions encounters a segment in the same track or until the reach the duration of the shortest clip in the group.
- You cannot trim away beyond the duration of the selected clip.
- When trimming away, you might break sync if you trim the outgoing frames on the A-side of the transition when you trim in the direction of the incoming frames on the B-side. To preserve sync, you can use a dual-roller trim instead.

Timeline Trim States

When you trim using the Timeline palette, the kind of edit you can perform depends on which trim tools you select and the position of the mouse pointer relative to the transition you want to trim. If you enable both the Trim Away and Ripple Trim buttons and then hover the pointer over the upper half of your clip, you can perform a trim away edit on either the outgoing frames (A-side) or the incoming frames (B-side). When you hover the pointer over the lower half of your clip, you can perform a ripple trim. Positioning the pointer over the transition between clips lets you perform a dual-roller trim.

When you select one of the trim buttons on the Timeline palette, you can perform only that type of trim on your sequence.

As you move the pointer back and forth across a transition, notice that the roller icon changes from an A-side roller (facing left), to a dual roller, to a B-side roller (facing right) to indicate the type of trim.



Trim icons for the outgoing frames of the A-side clip (left) and the incoming frames of the B-side clip (right)

The following table describes the kinds of trim you can perform in each zone adjacent to your transition.

Icon	Trim Type	Trim Zone
	Trim away (outgoing)	Upper right corner of the outgoing clip
	Trim away (incoming)	Upper left corner of the incoming clip
	Ripple trim (outgoing)	Lower right corner of the outgoing clip
	Ripple trim (incoming)	Lower left corner of the incoming clip
	Dual-roller trim	Transition between outgoing and incoming clips

Single-Roller Trimming with Sync

If you want to trim one side of a transition but still maintain synchronization between video and audio, you can create the trim on either the A-side (outgoing frames) or the B-side (incoming frames) of a transition while maintaining the overall duration of the track and the sync relationships. Sometimes simply called “trimming away,” this procedure adds a black segment to fill the duration of trimmed frames. For more information on preserving sync by adding black filler, see “Maintaining Sync While Trimming” in the Help.

To add black filler using the Timeline palette to trim segments:

1. Click a transition to select it for trimming. Shift+click to select multiple clips aligned at the same transition.

   If you enable link selection, clicking a transition also selects transitions on linked segments (see “Selecting Linked Clips” on page 20).

2. Do one of the following:

- If you selected the Trim Away button on the Timeline palette, position the mouse pointer over the transition you want to trim.
- If you selected both the Trim Away button and the Trim Ripple button in the Timeline palette, position the mouse pointer over the upper corner of either the outgoing or incoming clip next to the transition you want to trim.

The cursor changes to a red single-roller trim icon.

3. Click and drag in the direction you want to trim.

   The new incoming frame displays in the Record monitor as you trim, and a black segment is added without changing the duration of sequence.

   After you add black filler to a video track, you can replace the filler with footage by performing a replace edit. For more information, see “Performing a Replace Edit” in the Help.

Single-Roller Trimming with No Sync Lock

If you make a single-roller trim on either the outgoing or the incoming frames of your transition on an unlocked track, you can move the rest of the your sequence in the direction of the trimmed segment while maintaining the duration of all other clips. This “ripples” the effects of your trim along the sequence. However, rippling a trim can change the duration of your sequence if you select all tracks, and it can break synchronization with any unselected track. For more information about preserving sync, see “Maintaining Sync While Trimming” in the Help.

To ripple a trim using the Timeline palette to trim segments:

1. Click a transition to select it for trimming. Shift+click to select multiple clips aligned at the same transition.

   If you enable link selection, clicking a transition also selects transitions on linked segments (see “Selecting Linked Clips” on page 20).

2. Do one of the following:
   - If you selected the Trim Ripple button on the Timeline palette, position the mouse pointer over the transition you want to trim.
   - If you selected both the Trim Ripple button and the Trim Away button on the Timeline palette, position the mouse pointer over the upper corner of either the outgoing or incoming clip next to the transition you want to trim.

   The cursor changes to a red single-roller trim icon.

3. Click and drag in the direction you want to trim.

   The new outgoing frame displays in the Source monitor as you trim, and all segments located on the selected tracks move with the trim.

Timeline Shortcuts

For more information, see “Using the Timeline.” in the Help.

Windows Shortcut	Macintosh Shortcut	Result
Ctrl + click near transition in Timeline	Command + click near transition in Timeline	Snaps to first frame of transition or mark or to next audio keyframe
Alt + Ctrl + click near transition in Timeline	Option + Command + click near transition in Timeline	Snaps to last frame of transition or mark or to next audio keyframe
Shift+L	Shift+L	Enables or disables link selection.
Alt + drag segment in Timeline	Option + drag segment in Timeline	Enables single-frame motion for moving segments
Ctrl + L	Command + L	Enlarges highlighted track in Timeline
Ctrl + K	Command + K	Reduces highlighted track in Timeline
Ctrl +] (right bracket)	Command +] (right bracket)	Shows more detail in Timeline
Ctrl + [(left bracket)	Command + [(left bracket)	Shows less detail in Timeline
Ctrl + F	Command + F	Opens Find Text dialog box for clip name, locator, and Timeline text searches
Shift+Ctrl+N	Shift+Command+N	Creates new sequence
Ctrl + Y	Command + Y	Creates new video track
Ctrl + U	Command + U	Creates new audio mono track
Shift+Ctrl+U	Shift+Command+U	Creates new audio stereo track
Alt + New Video Track or New Audio Track (Clip menu)	Option + New Video Track or New Audio Track (Clip menu)	Opens a dialog box with choice of track number
Ctrl + click Track Monitor icon	Command + click Track Monitor icon	Solos video or audio track
Shift + click segments	Shift + click segments	Enables selection of multiple segments
Ctrl + Shift + drag segment in Timeline	Control + drag segment in Timeline	Restricts motion to vertical
Ctrl + drag segment in Timeline	Command + drag segment in Timeline	Snaps to head of transition, mark, or position indicator
Alt + Ctrl + drag segment in Timeline	Option + Command + drag segment in Timeline	Snaps to tail of transition, mark, or position indicator

Windows Shortcut	Macintosh Shortcut	Result
Ctrl + drag Track Selector button	Option + drag Track Selector button	Repositions tracks vertically in Timeline
Ctrl + drag Track Selector border up or down	Option + drag Track Selector border up or down	Resizes the track
Lasso one or more segments by dragging pointer from left to right	Lasso one or more segments by dragging pointer from left to right	Activates the previously used segment tool (Extract/Splice-in or Lift/Overwrite) and selects all segments inside lasso
Alt + lasso one or more segments below the top track by dragging pointer from left to right	Option + lasso one or more segments below the top track by dragging pointer from left to right	Activates the previously used segment tool (Extract/Splice-in or Lift/Overwrite) and selects all segments inside lasso
Lasso a transition	Lasso a transition	Activates Trim mode
Lasso a segment by dragging pointer from right to left	Lasso a segment by dragging pointer from right to left	Activates Trim mode with slip rollers selected.
Alt + lasso a segment below the top track by dragging pointer from right to left	Option + lasso a segment below the top track by dragging pointer from right to left	Activates Trim mode with slip rollers selected.
Lasso Track Selector panel	Lasso Track Selector panel	Reverses current track selection
Ctrl + A	Command + A	Selects all record tracks
Ctrl + Shift + A	Command + Shift + A	Deselects all record tracks
Click segment in Timeline, and then:	Click segment in Timeline, and then:	Places match frame in Source monitor without marking IN point at frame
Alt +  (in Fast menu)	Option +  (in Fast menu)	

Timeline Palette Shortcuts

Shortcut	Result
Shift + Tab	Turns off or restores active buttons in the Smart tool.
Shift + A	Enables or disables the Lift/Overwrite tool.
Shift + S	Enables or disables the Extract/Splice-in tool.
Shift + D	Enables or disables the Trim Away tool.

Shortcut	Result
Shift + F	Enables or disables the Trim Ripple tool.
Shift + G	Enables or disables the Keyframe Selection tool.

File Based Metadata Enhancements

The following includes new features and enhancements made to the Avid editing system, Avid EDL Manager and Avid Filmscribe that include file based metadata, film, timecode, and other miscellaneous items.

File Based Metadata Changes - Avid Editor

- You can now enter bin metadata column values for imported and AMA linked media. Previous to this release you could only perform changes to tape captured media.
- You can use the Modify command (Right-click a clip in the bin and choose Modify) to change the data of an imported or file-based clip.
- You can now use the AutoSequence command (Bin >AutoSequence) on imported or AMA linked subclips in a sequence.
- The source filename (user-defined name) now displays in a new bin column under the heading “Source File.”
- When you perform a Reverse Match Frame, the system searches all selected tracks in the Record monitor for the frame on all selected tracks in the Source monitor. Previously, it only searched the topmost selected track.
- You can now select multiple clips or subclips from multiple open bins when you perform a Clip > Relink. In the Relink dialog box, select the option, “Selected Items in All Open Bins.” You do not have to move the selected clips into one bin, you can select from multiple open bins.
- You can now Relink a sequence to an imported or linked (AMA) clip, based on the Source File name. Select “Version Separator” to have the system ignore characters in the file name. This is helpful when you need to relink to a newer version of the sequence that has a different name. For example, if the original source file name was “1080p/24_Version1” and the new source file name is “1080p/24_Version2,” you can enter an “_” (underscore) in the Version Separator and when you relink, the system ignores the characters after the “_” (underscore), overwriting Version 1 with Version 2.
- The Relink option "Allow relinking to source tapes with compatible rates," has been removed since the system now relinks clips and subclips to a new project format automatically.

- Select Clip Text > Clip Tracks from the Timeline Fast menu to display the destination track (V1, A1, A2, etc.) for the clips in the Timeline. For example, if you patch the A1 audio track to A14 in the Timeline, if you select the option Clip Tracks, A1 displays in the clip located on A14 in the Timeline.
- New AutoSync options added, they include:
  - Keep audio on clip with video: Use this option if you want to keep the selected video clip's audio tracks. Specify which audio tracks you want to keep from the Start and End range. Off by default.
  - Include audio from audio-only clips: Use this option to keep the selected audio tracks with the audio-only clip. Specify which audio tracks you want to keep from the Start and End range. Off by default.
  - Collapse Audio Tracks: Use this option to remove any unused audio tracks and then move the audio tracks to the next available tracks. For example, if you have 8 audio tracks but tracks A2, A4, A6 and A8 did not have audio. If you select this option, tracks A2, A4, A6 and A8 would be removed and A1, A3, A5 and A7 would move into the A1 through A4 tracks. Off by default.
- ALE now supports file based clips in addition to tape based clips. To create an ALE from a shot log with file based clips, select "Source File" as a bin heading in the shot log. The converted shot log (.ALE) will import into a Media Composer bin and Source File appears as a bin heading listing the original file names. To export an ALE from Avid Media Composer with Source File information, display the Source File bin heading and then export the bin as ALE.
- In the Effect Editor, when you apply a Timecode Burn-In Effect, a new selection (Other Counters) has been added to the Reader menu. Select Other Counters to display a submenu, the Bin Timecode Column. Click this submenu to display auxiliary timecodes and film related options.

Film Changes - Avid Editor

- You can enter your own custom key numbers for all clips (including captured, imported, and file-based clips) in the KN Start column in the bin. You no longer need to provide a Tape name.
- You can enter custom timecodes for all clips (including captured, imported, and file-based clips) in the Auxiliary TC and Sound TC columns in the bin. You no longer need to provide a Tape name or Soundroll value (for Sound TC).
- To choose a different timecode (other than Start) or a different tape name when you batch capture, use the new option "Alternate Source Options" in the Batch Capture dialog box. See "Alternate Source Capture" in the Help for more information.

FilmScribe Changes

- FilmScribe now supports file based media (imported or AMA linked media).
- The source filename (user-defined name) now displays in a new bin column under the heading “Source File.”

EDL Manager Changes

- Removed the Update button from the main window of the Avid EDL Manager. When you choose from the Source TC menu, for example the Source and Record timecode or Tracks, the system automatically updates the information, you do not have to click the Update button.
- Replaced the Right and Left Arrow buttons with Get Sequence and Send Sequence buttons. Get Sequence takes the sequence you are currently editing and makes an EDL. Send Sequence creates an Avid sequence from an imported EDL and sends it to the Avid editor.
- Changed the Master, Sources, and Dupe View buttons in the Avid EDL Manager main window to tabs (Master EDL, Sources, Dupe List).
- Added a Source File option to the Comments tab of the Options window.
- You can now select a Tape or File Name from the Reel ID Type menu of the Options window.
- Added new EDL Types (edit controller format) to the EDL Type pop-up menu:
  File_16 - Equivalent to the CMX_3600 but with a 16-character source name limit
  File_32 - Equivalent to the CMX_3600 but with a 32-character source name limit

  Both of these edit controller formats support 24 audio channels and there is no limit to events or sources. Use these new formats (File_16 and File_32) when you create a file-based EDL.
- EDL Manager now supports file based media (imported or AMA linked media). The source name and start and end timecode display in the EDL Manager window.

Alternate Source Capture

Alternate source capture allows you to choose a different source name (Tape) and timecode (Start) to use when you perform a batch capture. This is helpful when the clips used in your sequence are from a submaster source tape that is different than the original master tape. For example, if during production you record RGB to HDCAM SR and then make color corrected selects to HDCAM for the offline workflow, when mastering, it is best to go back to the original master tape and color correct from the HD RGB sources. When you create the original HDCAM tapes, the metadata displays as:

TAPE	Color corrected submaster
START	Timecode from color corrected submaster
Camroll	Tape name from original field HDCAM SR master
Auxiliary TC 1	Timecode from original field master

When you perform a batch capture of the Timeline or source clips, you can select and frame accurately batch capture from either the HDCAM submaster or the HDCAM SR master.

You can also use an alternate tape name if the original tape name was incorrectly logged. You can use any custom column in the bin as a source name when you batch capture in addition to Labroll, Camroll, and Soundroll, or you can correct for timecode offsets and store them in the Auxiliary TC column and batch capture from that.

When you use an alternate tape source, the tape does not have to display in the list of tapes. You can create a temporary tape for the capture process and remove it from the list once the batch capture is complete.

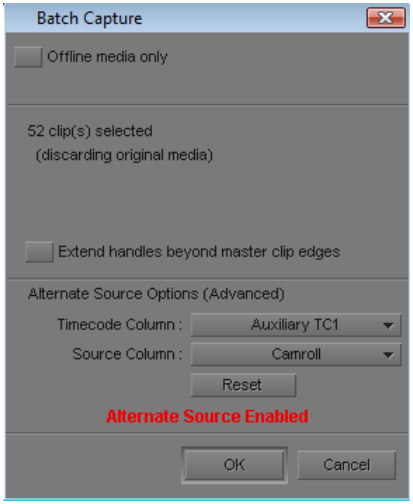
For more information and additional steps to batch capture, see "Preparing for Capture" in the Help and "Batch Capturing Clips" in the Help.

To batch capture with an alternate source:

1. In a bin, select the clips you want to batch capture.
2. Select Tools > Capture to open the Capture tool.

   The Capture Tool opens.
3. Open the bin that stores the clips you want to batch capture.
4. Select the clips to batch capture:
5. Select Clip > Batch Capture.

   The Batch Capture dialog box opens.



6. Under the Alternate Source Options (Advanced), select the type of timecode from the Timecode Column menu that you want to batch capture from.

   Options depend on your project type. Timecode options can include: Start, Auxiliary TC1- TC5, Sound TC.

   If you choose a timecode other than Start, a message displays informing you that an Alternate Source is enabled.

7. Select the tape source from the Source Column menu that you want to batch capture from.

   Options depend on your project type and custom columns. Tape options can include: Tape, Camroll, Labroll, Soundroll, Custom Tape.

To set the Timecode Column and Source Column menu selections back to the defaults (Start and Tape), click Reset.

8. Click OK.

   If any clips you select do not have the alternate source options you selected (for example, a clip does not have an Auxiliary timecode), a message displays and asks you if you want to skip those clips. Click Continue to continue with the batch process and skip those clips.

9. A message opens and asks you to mount the (alternate) tape.

   You can choose to mount the tape or skip this particular clip.

10. Load the tape into the tape deck and click Mounted.

    The deck rolls to the alternate source timecode and begins the capture process.

Your Avid editing application captures each clip from the alternate source timecode and tape.

Selecting Clips and Sequences

To select a clip or sequence in a bin, do one of the following:

- Click the clip or sequence icon (Brief view or Text view).
- Click in the picture area of the clip or sequence (Frame or Script view).

Ctrl+click (Windows) or Cmd+click (Macintosh) toggles the selection between selected and deselected states. Double-clicking a clip loads it into the Source monitor.

To select multiple clips or sequences in a bin, do one of the following:

- Ctrl+click (Windows) or Cmd+click (Macintosh) clips to add them to your selection.
- Select a clip, and then Shift+click another clip to select a range of items. If you then Shift+click another clip, the range covers all clips from the one you originally selected to the new clip. In Frame view, the range of items includes all clips within a rectangular region bounded by the first and last clips selected.
- Lasso several items. Click the mouse pointer outside the first item and drag it to surround the items with a white dotted line.

Selecting a single item deselects any other selections.

To reverse your selection:

- Select Bin > Reverse Selection.

  The items that you previously selected are deselected, and those items that were previously deselected are selected.

Sorting Clips and Sequences

You can automatically sort clips and sequences in Brief view and Text view only. If you need to view sorted clips in Script or Frame view, sort them in Text view first and then return to Script or Frame view.

To sort clips in ascending or descending order:

1. With a bin in Text view, do one of the following:
   - Double-click the heading of the column that you want to use as the criterion.
   - Right-click the column heading and select Sort on Column, Ascending or Sort on Column, Descending.

If the Sort command appears dimmed in the menu, you have not selected a column.

2. To reverse the order of the sort, do one of the following:
   - Double-click the column heading again.
   - Right-click the column heading and select the reverse order for the Sort on Column command.

To reapply the last sort, do one of the following:

- Select Bin > Sort Again with no column selected.

  This step is useful after you add new clips to a sorted bin.

- Click the column heading and select Bin > Sort.

To perform a multilevel sort using the information in the bins:

1. With a bin in Text view, arrange the columns in the bin to establish the primary column.

   The column that appears farthest to the left in the bin has higher sort priority.

2. Select the headings for the columns you want to contribute to the sort criterion. Cmd+click (Macintosh) or Ctrl+click (Windows) columns to add them to your selection. You can also Shift+click headings to select a range of columns.
3. Select Bin > Sort.

   The objects in the bin sort.

To sort clips by color:

1. Click the Color column heading in the bin.
2. Do one of the following:
   - Double-click the column heading.
   - Select Bin > Sort.

   The objects in the bin sort by color. Colors sort by hue, saturation, and value.

Updating and Reverting Existing Effects in Sequences

If you are working with a sequence that already contains effects, you might need to update some of those effects.

If you apply color corrections to a sequence in the current version of your Avid editing application, you might need to save a duplicate version of the sequence with a reverted color corrections format that you can open in older versions of Avid editing applications.

The following table summarizes the types of effects that you can update or revert to their original format:

Effect Type	Description
Standard keyframe effects	In the current version of your Avid editing application, many effects use advanced keyframes only. You can no longer apply or use standard keyframe versions of those effects. If an existing sequence contains standard keyframe versions of any effects that now use advanced keyframes, you must update those effects to their advanced keyframe versions. *This also applies to Title Effect clips in a sequence that still use standard keyframes. When you update these, you change the clip in the bin as well as the Title Effect segment in the sequence itself.* You can update the standard keyframe effects in a sequence by loading the sequence or by using the Update Effects command.
Color Correction	You must update color corrections in sequences created in older versions of Avid editing applications that did not support keyframeable color correction before you can work with them in the current version. Color corrections in recent versions store parameter information differently to support keyframing. If you apply color corrections to a sequence in the current version of your Avid editing application and want to open that sequence in a version of an Avid editing application that does not support keyframeable color correction, you must revert the color corrections to the earlier format. This creates a duplicate sequence that stores color correction parameter information in an appropriate format for use in the older version. You can update color corrections in a sequence by loading the sequence or by using the Update Effects command.
Traditional motion effects	You can update traditional motion effects in a sequence to Timewarp effects by using the Update Effects command. This provides you with superior tools for adjusting the effects.
Promotable, missing AVX1 plug-ins	You can update these effects to AVX2 effects by using the Update Effects command. For more information on AVX effects, including other options for promoting AVX1 effects, see "Working with Plug-In Effects" on page 169.

To update standard keyframe effects or color corrections by loading a sequence:

1. Load the sequence, for example, by dragging it to a monitor.

   The Update Sequence dialog box opens.

   If the sequence contains standard keyframe versions of effects that are now available in advanced keyframe versions, a message informs you that you must update the effects.

If the sequence contains incompatible color corrections from an older version of your Avid editing application, a message informs you that you must update the color corrections.

2. (Option) If you want your Avid editing application to update sequences that you open in the future without displaying the Update Sequence dialog box, select "Do not ask again when loading a sequence."
3. Click OK.

   Your Avid editing application creates a copy of the sequence, updates the effects and color corrections in the copy that require updating, and opens the copy.

   The name of the new sequence uses a suffix indicating that it is an updated sequence. If the original sequence is named *MySequence*, the updated copy is named, for example, *MySequence.updated.01*. Both the original sequence and the updated copy are available in the bin.

To update effects and color corrections in a sequence using the Update Effects command:

1. Select the sequence in a bin.
2. Right-click the sequence, and select Update Effects.

   The Update Sequence dialog box opens.

   Messages inform you if the sequence contains standard keyframe effects or color corrections that require updating.

   If the sequence contains motion effects or AVX effects that you can choose to update, check boxes appear for those effect types.
3. (Option) Select the optional effect types that you want to update.
4. Click OK to update the effects, or Cancel to take no action.

   If you click OK, your Avid editing application creates a copy of the sequence and updates the effects and color corrections in the copy that require updating or that you chose to update.

   The name of the new sequence uses a suffix indicating that it is an updated sequence. If the original sequence is named *MySequence*, the updated copy is named, for example, *MySequence.updated.01*. Both the original sequence and the updated copy are available in the bin.

To save a sequence with reverted color corrections that you can open in older versions of Avid editing applications:

1. Select the sequence in a bin.
2. Right-click the sequence, and select Revert Effects.

   A message box appears.

3. Do one of the following:

   - If the message box indicates that the sequence includes color corrections that you must modify for use in versions of Avid editing applications that do not support keyframeable color correction, click OK to save a new version of the sequence, or Cancel to take no action.

     If you click OK, your Avid editing application saves a new version of the sequence. The name of the new sequence uses a suffix indicating that it is a compatible copy, for example, *MySequence.reverted.01*.

   - If the message box indicates that you do not need to revert any effects, click OK.

Using the Info Window

The Info window displays statistical information about clips and sequences. You can open the Info window from the Source monitor, the Record monitor, a pop-up monitor, a bin, or a Script window. The Info window updates the information automatically.

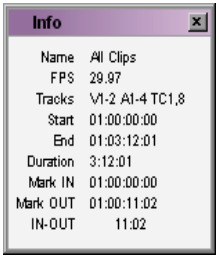
You can cut, copy, and paste information from the Info window, but you cannot edit or change any information within the window.

To display information from the Record monitor:

1. Do one of the following:

   - Right-click the monitor and select Get Info.
   - Place the mouse pointer over the monitor and press Ctrl+I (Windows) or Command+I (Macintosh).

   The Info window opens. Only fields with data are displayed.

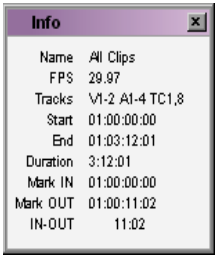


To display information from a bin:

1. Select a clip or sequence in a bin. You can use any bin view, and you can Ctrl+click to select multiple media objects.
2. Do one of the following:

- Press Ctrl+I (Windows) or Command+I (Macintosh).
- Right-click the clip or sequence and select Get Info.

The Info window opens. Only fields with data are displayed.

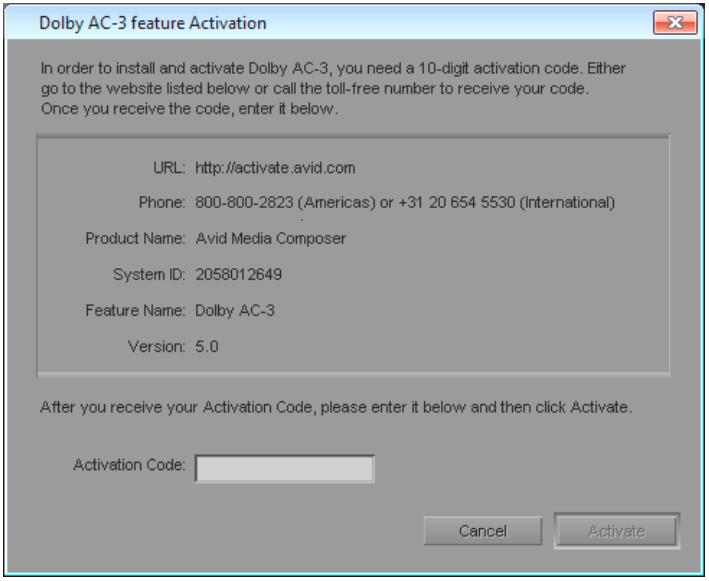


If you select more than 8 media objects, a dialog box asks if you want to open information windows for all selected items.

AVCHD Import

You can now import AVCHD material by selecting an AVCHD transport stream (.mts) file in the Select Files to Import dialog box. To display only AVCHD transport stream files, select the AVCHD item from the Files of Type menu (Windows) or the Enable menu (Macintosh). For more information, see "Importing Media Files" in the Help.

If you are not connected to the internet the first time you import .mts files, you will receive the following dialog box. Follow the onscreen directions to activate this feature. If you are connected to the internet, activation is automatic. There is no additional cost when activating this feature.



Baseband Capture to DVCPro HD and XDCAM HD

If you have appropriate Avid input/output hardware, you can now capture to the DVCPro HD and XDCAM HD 50 video resolutions over HD-SDI or HD component connections. This capability is available in all 720p and 1080i project types and in the 1080p/29.97 project type. Select HD-SDI or HD Component in the Video menu of the Capture Tool, and then select DVCPro HD MXF or XDCAM HD 50Mbit MXF. For more information on resolutions, see “Resolution Specifications” in the Help.

Capture to the XDCAM HD 50 resolution is a processor-intensive operation. You might experience problems with capture to XDCAM HD 50 on slower systems.

Mixing Down Audio Tracks

When you work with multiple audio tracks while editing your material, you might need to mix down the final audio to a multichannel track or to a mono track. When you mix down audio, your Avid editing application inserts the mixdown audio in the next available track in the Timeline by default. You can override the default target track by selecting another one in the Audio Mixdown dialog box.

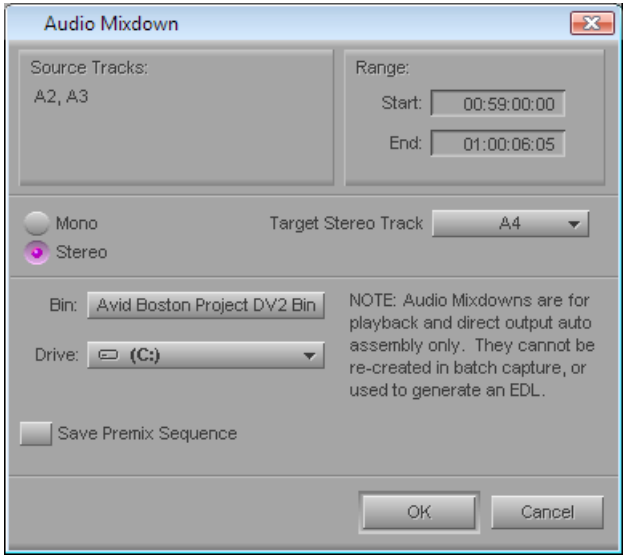
You cannot mix down compressed audio.

To mix down several edited audio tracks to one or two audio tracks:

1. Load a sequence into the Record monitor.
2. Click the Track buttons in the Track Selector panel to select the audio tracks you want to mix down.
3. Mark an In point and an Out point at the start and end of the material you want to mix down.

   If you do not mark the section of audio you want to mix down, the system mixes down all of the selected audio tracks.
4. Select Special > Audio Mixdown.

   The Audio Mixdown dialog box opens. The Source Tracks area lists the source audio tracks and the Range area lists the start and end timecodes for the section of audio you have selected to mix down.



5. Select Mono or Stereo, and select the target track to which you want to mix down the audio.

   A mono mixdown goes to the next available mono track in the Timeline, and a stereo mixdown goes to the next available stereo track. If there are no appropriate tracks in the Timeline, the mixdown operation creates them.
6. Select a drive and a bin.

   The drive is the media drive where the system stores the media files for the mixed-down audio.

7. Select Save Premix Sequence if you want to save the sequence before mixing down the audio.
8. Click OK.

   Your Avid editing application mixes down the audio, displays the new master clip in the bin, and edits the mixdown clip into the sequence.

Ancillary Data Track

With an Avid Nitris DX or an Avid Mojo DX you can preserve ancillary data with a Data track. A Data track adds a separate track to the Timeline and allows you to capture and store ancillary data as a separate MXF file. For more information, see “Preserving HD Closed Captioning and Ancillary Data” on page 55.

Preserving HD Closed Captioning and Ancillary Data

Unlike SD closed captioning data, which is transferred in the vertical blanking interval (VBI), HD closed captioning and ancillary data packets are transferred in the HD-SDI data stream.

In certain circumstances, your Avid editing application lets you capture closed captioning and other ancillary data in HD, preserve this data during editing, and output the data through the HD-SDI port of your Avid input/output hardware. Your Avid editing application lets you turn ancillary data preservation on and off and to control which data is preserved.

Depending on your input/output hardware and the version of software you have, there are two methods for preserving ancillary data. The Legacy method embeds the ancillary data in a DNxHD video file, and the Data Track method adds a separate data track to the Timeline and lets you capture and store ancillary data as a separate MXF file. You need to choose whether you want to use the new Data Track method or the legacy embedded method.

For both methods, you can only monitor and view the data on a client monitor capable of handling ancillary data.

Your Avid editing application can capture and preserve any of the following four types of ancillary data by default:

- Closed Captioning (CEA 608, CEA 708): Closed captioning ancillary data packets are captured from the HD-SDI source according to the SMPTE 334M standard.
- Program Description (AFD): AFD ancillary data packets are captured from the HD-SDI source according to the SMPTE 334M standard.
- Ancillary Time Code (ATC): Ancillary time code packets are captured from the HD-SDI source.

The options that you set for ancillary data preservation are associated with the project. When you create a new project, you must set the ancillary data options you need for that project.

Data Track Method

The Data Track method stores ancillary data as a separate MXF file. A D (Data) track is added to your sequence, along with the video and audio track. You can edit clips on the D track, just as you would any other clip.

When you use the Data Track method, ancillary data preservation is subject to the following requirements and limitations:

- You can capture and output the MXF media using Avid Nitris DX or Avid Mojo DX input/output hardware only.
- You can control which types of ancillary data are captured through the Capture Settings tab in the Media Creation tool. The data you capture is the same as the data you output.
- Four data slots are available, and the maximum size is selectable.
- To view and monitor ancillary data, you must connect an ancillary data capable device to the output of your Avid hardware .
- You cannot add an effect to the Data track.
- Ancillary data is not supported when crossconvert or downconvert are enabled.
- You cannot patch a Data track.
- Multicamera (group clips) is not supported with a Data track.
- A Data track is not allowed when you use mixed rate clips.
- You cannot transcode a data clip.
- You must output through the HD-SDI port of your Avid input/output hardware. Ancillary data is only supported through the HD-SDI input/output of your Avid hardware.
- There is no support for a Data track in the Avid FilmScribe application.
- At this time, the following resolutions/projects are not supported with a data track: RGB, 720p/23, 720p/25 and 720p/29.94.
- Data tracks are supported when you export a sequence to a playback device through the Transfer > Send to Playback option (exporting a sequence with Data tracks to an Avid Interplay Transfer environment). For information about Send to Playback with a Data track, see your Avid Interplay documentation.
- At this time, there is no support to export a sequence with a data track through the File > Send To template options (ProTools, DigiDelivery, etc.).

Adding a Data Track

You can add one Data track directly to the Timeline or you can extract the ancillary data from a video clip to create the Data track.

If you have a clip with ancillary data that you brought in through the Legacy method, the best way to bring this clip onto a data track is to use the procedure by extracting ancillary data from a clip. When you add a Data track by extracting a clip, the clip needs to meet the following criteria, or you will receive an error message:

- The clip must be a master clip
- The clip should not have a Data track associated with it already
- The media needs to be DNxHD format
- The media needs to be online

To add the Data Track to a sequence in the Timeline:

- With a sequence loaded in the Record monitor, select Clip > New Data Track.
- Right-click in the Timeline, and select New Data Track.

  The new Data Track appears in the Timeline.

To add a Data Track through extracting ancillary data from a clip:

1. Select the clip (that includes ancillary data) in the bin.
2. Choose Clip > Extract DNxHD Data, or Right-click the clip in the bin and choose Extract DNxHD Data.

   The Confirm dialog box appears.

   If the clip does not meet all the requirements to extract an ancillary data clip, a dialog box appears that informs you of the problem. Open the Console window (Tools > Console) to get more information about the problem.
3. Click Continue or Cancel.

   The system adds the Data track with the clip to the Timeline. The clip in the bin displays D1 in the Track column.

To playback the D1 track, you must have the ancillary data turned on in the Media Creation Settings > Capture tab. See "Controlling Ancillary Data through a Settings Window - Data Track Method" on page 55.

Moving from Legacy Method to Data Track Method

The following explains what you need to know when you capture ancillary data with the Legacy method and move to the Data Track method. You might need to perform additional steps when you move sequences or clips from the legacy method to the data track method.

- You should not mix SMPTE 436M (data track) ancillary data media with legacy method media. If you have a sequence that includes media from both methods, only one method plays. If you select SMPTE 436M (data track) in the Media Creation Capture tab, only the SMPTE 436M (data track method) clip plays. If you select Legacy method in the Media Creation Capture tab, only the Legacy method clip plays. If you want to play both methods, you need to perform a Clip > Extract DNxHD Data on the Legacy clip and cut that clip into your sequence.
- Subclips created in the legacy method will not include a data track when you bring the subclip into a sequence or bin with data tracks. Only the master clip will include the data track. You cannot add a data track to a legacy subclip. You need to recreate the subclips again to add the data track.

Ancillary Data and Avid Editing Functions

The table below describes if you can use a particular editing function with the new Data Track method or with the Legacy method.

How Data Tracks Are Handled in the Data Track Method and the Legacy Method

	Data Track Method	Legacy Method
Create a D track	Yes	No
Play	Yes (Avid Nitris DX or Avid Mojo DX only)	No
Edit	Yes	Yes
Capture	Yes (Avid Nitris DX or Avid Mojo DX only)	No
Transcode	No	No
Consolidate	Yes	No
Mixdown	Yes	No
Import (AAF)	Yes	Yes
Export (AAF)	Yes	No

How Ancillary Data Embedded in DNxHD Media Is Handled in the Data Track Method and the Legacy Method

	Data Track Method	Legacy Method
Create a D track	Not Applicable	Not Applicable
Play	Not Applicable	Yes (with Avid Nitris DX, Avid Mojo DX or Avid Adrenaline only)
Edit	Not Applicable	Not Applicable
Capture	Not Applicable	Yes (with Avid Nitris DX, Avid Mojo DX or Avid Adrenaline only)
Transcode	Not Applicable	Not Applicable
		Yes (with Avid Nitris DX, Avid Mojo DX, or Avid Adrenaline and source and destination media must be DNxHD)
Consolidate	Not Applicable	Yes
Mixdown	Not Applicable	Yes
Import (AAF with embedded media)	Not Applicable	Not Applicable
	Yes (with Avid Nitris DX, Avid Mojo DX or Avid Adrenaline only)	Yes (with Avid Nitris DX, Avid Mojo DX or Avid Adrenaline only)
Export (AAF with embedded media)	Not Applicable	Not Applicable
	Yes (with Avid Nitris DX, Avid Mojo DX or Avid Adrenaline only)	Yes (with Avid Nitris DX, Avid Mojo DX or Avid Adrenaline only)

Even though Avid preserves ancillary data, if you move a sequence with a data track to and from different systems (with and without supported Avid input/output hardware), be aware that when you perform the editing functions listed in the above tables, ancillary data might not always be preserved the way you expect.

Legacy Method

When you use the legacy method, ancillary data preservation is subject to the following requirements and limitations:

- You must capture and output the HD media using Avid Nitris DX, Avid Mojo DX, Avid Adrenaline or Avid DNxchange® input/output hardware.

Avid Nitris (classic) or software only systems do not support capture and output of HD ancillary data.

- Due to software DNx codec performance requirements, you must have a dual quad core system in order to capture DNxHD 220 or 220x with ancillary data on the Avid Nitris DX or the Avid Mojo DX platform.
- Ancillary data can only be preserved when it resides on the V1 video track.
- You can control which types of ancillary data you capture through the Capture Settings tab in the Media Creation tool or by using Console commands. The data you capture is the same as the data you output.
- Four data slots are available, and the maximum size of the four data slots combined is 256 bytes, of which 7 bytes per enabled slot is for Avid control data. You might need to disable some data slots in order to have enough space for the data you need to preserve.
- (Avid Adrenaline) You must limit your editing to Full Quality. Any other actions make the ancillary data unusable and prevent it from being preserved.
- You must output through the HD-SDI port of your Avid input/output hardware. Ancillary data is only supported through the HD-SDI input/output of your Avid hardware.
- Ancillary data is not supported when crossconvert or downconvert is enabled.
- You cannot playback a D-track in Legacy mode.

Controlling Ancillary Data through a Settings Window - Data Track Method

This feature is only available with an Avid Nitris DX or an Avid Mojo DX. Choose SMPTE 436M to capture ancillary data to an MXF file (data track method) or choose Legacy to capture ancillary data to a DNxHD video file (legacy method). You can also set the slots through the Media Creation Settings.

To switch the ancillary data feature on and set options for ancillary data in a Settings window:

1. Do one of the following:
   - Double-click Media Creation in the Settings list.
   - Select Tools > Media Creation.

2. Click the Capture tab.
3. From the Ancillary Data Mode Setting, select SMPTE 436M or Legacy.

   The system enables all four slots.
4. Select a Data Type for each slot you want to display ancillary data for.

   The default DID and SDID number displays for that slot.
5. Select Enabled next to the appropriate slot.
6. Deselect Enabled for those slots you do not want to capture ancillary data for.
7. Click OK.

For more information about ancillary data options, see "Media Creation Settings" in the Help.

Controlling Ancillary Data through a Settings Window - Legacy Method

This feature is only available with an Avid Adrenaline. You can turn the ancillary data option on and off and set the slots through the Media Creation Settings.

To switch the ancillary data feature on and off through a Settings window:

1. Do one of the following:
   - Double-click Media Creation in the Settings list.
   - Select Tools > Media Creation.
2. Click the Capture tab.
3. Select Ancillary Data Enabled.

   A check mark appears. The system enables all four slots.
4. Click OK.
5. To turn off the ancillary data feature, click Capture Ancillary Data again to deselect the feature.

To set options for ancillary data preservation:

1. Double-click Media Creation in the Settings list.
2. Click the Capture tab.
3. Select Capture Ancillary Data.

   A check mark appears.
4. Select a Data Type for each slot you want to display ancillary data for.

   The default DID and SDID number displays for that slot.

The DID and SDID information captured with the data clip displays in the bin.

5. Select Enabled next to the appropriate slot.
6. (Option) Select Custom from the Data Type and enter the custom DID and SDID numbers.
7. Deselect Enabled for those slots you do not want to capture ancillary data for.
8. Click OK.

For more information about ancillary data options, see "Media Creation Settings" in the Help.

Controlling Ancillary Data with a Console Command (Legacy Method only)

You can turn the ancillary data option on and off and set the slots with Console Commands.

To switch the ancillary data feature on and off with a Console command:

1. Select Tools > Console.
2. Type the following command:

   `Embeddnxcc`

To set the default for ancillary data preservation for all four slots:

1. Select Tools > Console.
2. Type the following command:

   `Embeddnxccdefault`

   The default for all four slots is set to the values listed in the table below.

   The following table lists the DID and SDID number values for the four ancillary data packets that your Avid editing application can capture and preserve by default:

Data Packet	DID	SDID
CEA 708	61	01
CEA 608	61	02
AFD	41	05
ATC	60	60

The slot 3 default has changed from DTV to AFD, which is different from previous releases.

To set options for ancillary data preservation for a single slot:

1. Select Tools > Console.
2. Type the following command with the appropriate options:

   ```
   Embeddnxccoptions <slot> <on/off> <optional DID & SDID>
   ```

   The following table describes the options you can set in the command:

Option	Description
Slot	A value from 1 to 4 that specifies a data slot
On/Off	A value of 1 or 0
DID	A hex number (for example, 0x61)
SDID	A hex number (for example, 0x60)

   For example:

   - To turn off data slot 1, type `Embeddnxccoptions 1 0`
   - To set data slot 2 to hold CEA 708 data, type `Embeddnxccoptions 2 1 0x61 0x01`
   - To set data slot 4 to hold a custom data type, type `Embeddnxccoptions 4 1 0x`*`aa`* `0x`*`bb`*
     where *aa* and *bb* are the DID and SDID of the custom data type

To view the current status of each slot:

1. Select Tools > Console.
2. Type the following command:

   ```
   Embeddnxccoptions
   ```

Capturing Ancillary Data with a Data Track

While you capture video and audio clips, if your Avid editing system has an Avid Nitris DX or an Avid Mojo DX attached, you can also capture clips with ancillary data.

You perform the same steps included in “Preparing for Capture” in the Help and “Capturing Media” in the Help to capture video and audio media. Make sure you select the Data track (D) Channel Selection in the Capture tool. You also need to select the appropriate ancillary data options in the Capture tab of the Media Creation Settings window.

To capture clips with ancillary data:

1. Prepare your deck for capture. Follow the steps in “Preparing for Capture” in the Help and “Setting Up the Capture Tool” on page 141. This includes selecting the D Channel Selection button in the Capture Tool.
2. Select SMPTE 436M and the type of ancillary data you want to capture in the Capture tab of the Media Creation Settings window. Follow the steps in “Controlling Ancillary Data through a Settings Window - Data Track Method” on page 55.
3. Decide on your method of capture, see “Capturing Media” in the Help for more information.

   Depending on the options you select, ancillary data clips along with the video and audio clips you selected to capture, appear in the bin.

Performing a Data Mixdown

With the Data Track method, a data mixdown lets you combine several clips into one new master clip. You can use data mixdown after you finish building your sequence and want to make it into one piece.

Data mixdown is useful when you want to:

- Combine multiple ancillary data clips into one master clip.
- Finalize a complex sequence before you consolidate, export, or transfer.

With data mixdown, your end result is a new master clip made up of all the data clips on the data track. That track becomes one clip.

You cannot generate an edit decision list (EDL) for a sequence that contains a data track. To work around this, you can either remove the data track or maintain a version of the sequence that does not contain a data track.

To perform a data mixdown:

1. Select the Record Track Monitor button in the Track Selector panel for the data track.
2. Mark an In point and an Out point around the area to mix down, or clear the In and Out points to mixdown the entire sequence.
3. Select Special > Data Mixdown.

   The Data Mixdown dialog box opens.
4. Select a target bin and target drive for storing the new master clip, and then click OK.

   A progress indicator appears. When the data mixdown finishes, a new clip appears in the bin along with the sequence, and a new media file is created on the target drive.

Exporting a Sequence with Data Tracks

When you have completed work on a sequence with a data track, you can export the data track sequence to create an XDCAM HD file. You must use an XDCAM HD device. The XDCAM HD file serves as a wrapper for information about the sequence, with links to the media in the sequence.

The XDCAM HD file exports with the data track and ancillary data, however, if you attempt to import the same file into your Avid editing system, the data track and ancillary data do not import.

For complete information about the export process, see "Understanding Export" in the Help.

To export to an XDCAM device:

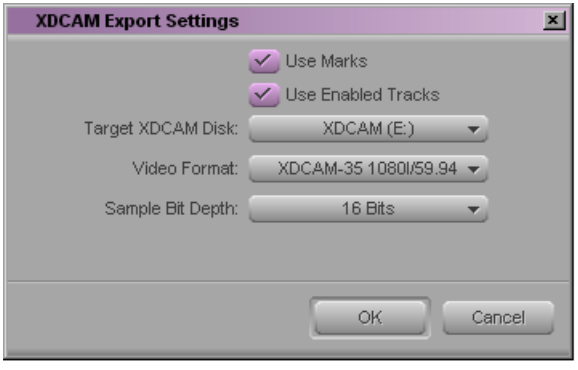
1. Connect your XDCAM HD device.
2. Select the appropriate mode on your XDCAM HD device that corresponds to the video format that you will be exporting.

   For example, set your XDCAM device to 1080i 59.94 if you want to export a clip or sequence at XDCAM-35 1080I/59.94.
3. Select the sequence or clips to export, or select the data track.
4. With an XDCAM HD HD device connected to your system, select Output > Export to Device > XDCAM.

   If you have a sequence loaded in the Record monitor, the sequence is exported when you select Export to Device.

   You can also right-click the clip or sequence in a bin and select Export to Device.

   The XDCAM Export Settings dialog box opens.



5. (Option) Select Use Marks.

When Use Marks is selected, the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.

6. (Option) Select Use Enabled Tracks.

   When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.

7. Select an XDCAM HD disk from the Target XDCAM Disk list.

   If the target XDCAM disk you are exporting to already has other clips on it, you are only allowed to export a clip with the same number of audio tracks. For example, if the target XDCAM disk has a clip with 4 tracks of audio, you cannot export a new XDCAM clip with 2 tracks. You either have to reformat the disk and wipe it clean or add two dummy tracks to your 2-track sequence before you export.

8. Select a video format.

   Select XDCAM-50, XDCAM-35, XDCAM-25, or XDCAM-17.
   For HD, a single disk can have clips with mixed bit rates (17.5, 25, and 35 Mbits). Additionally, a sequence that is being exported to an HD XDCAM disk can have mixed bit rates, as well.

   If you use the Sony PDW HD1500 or the Sony PDW 1500 XDCAM device, export of up to 8 tracks of audio is supported for the MPEG IMX and XDCAM HD 50 Mbits formats. For other formats or devices that do not support 8 tracks, the system mixes down to audio tracks 1 and 2 during export.

9. Select a Sample Bit Depth: 16 or 24 bits.

   For HD projects, select 16 bits. XDCAM HD devices are not capable of handling 24 bits, except for the Sony PDW HD1500 device, which is capable of handling 24 bits.

10. Click OK.

    Sony applies its own file-naming convention. All exported clips are given a new sequential name of Cxxxx.mxf, for example, C0019.mxf.

    A progress bar appears displaying the new Sony XDCAM HD sequential clip name. The sequence is exported.

Email Settings

The Email Settings dialog box lets you configure your Avid editing application so that it can notify you by email when a render operation completes.

Some mobile telephone services can deliver email as a text message or notify you by text message when an email has been received. If your service includes this feature, consider using it as a convenient way to receive your render notification.

Option	Description
Server Settings	Use the options in this area to define the server settings that your Avid editing application uses to communicate with your email account and send email notifications. Check the documentation for your email application, or talk to your internet service provider or information technology department, to obtain the information you need to define these settings correctly. Your email account must use the SMTP protocol for outgoing mail.
SMTP Server	Defines the SMTP (outgoing mail) server address for your email account. Typically, this address has one of the following formats: `smtp.`*`service_name`*`.com` or `smtp.mail.`*`service_name`*`.com`.
Port	Defines the port that the SMTP server uses. The default value, 25, is used by several common email services, but your server might require a different port number.
Authenticate with username/password	When this option is selected, your Avid editing application includes username and password information to authenticate any email it sends. Type the username and password for your email account in the Username and Password text boxes. Some email services require authentication as a security measure.
Store password after closing project	When this option is selected, your Avid editing application saves the password in the Password text box when the current project closes. This eliminates the need to re-enter the password each time you open a project.
Use SSL	When this option is selected, your Avid editing application uses the Secure Sockets Layer (SSL) security protocol when sending email notifications. Some email services require this as a security measure.
Email Settings	
From Name	Defines the name that appears in the From header field of an email your Avid editing application sends.
From Address	Defines the email address for the account that your Avid editing application uses to send the email.
To Address	Defines the email address to which your Avid editing application sends the email.
Send Email Events	
Render Complete	When this option is selected, your Avid editing application sends an email notification when a render operation completes. You must have the Server Settings and Email Settings options configured correctly, and the Enable Sending of Email option selected.
Master Email Control	
Enable Sending of Email	When this option is selected, your Avid editing application is able to send email notifications.

Option	Description
Send Test Email	Click this button to send a test email using the current Server Settings and Email Settings options.

File Based Media - AMA

You can link, import, or export clips and sequences from many third-party volumes or third-party files to and from the Avid editing system. You can manipulate and edit this media as you would any other clip or sequence.

You obtain this media from a third-party device (a camera, reader, or drive), from a CD or DVD, from a folder on your system, or from a virtual volume (a server connected to your system). To move the media into your Avid editing system, you have the option to use the AMA method (Avid Media Access) which links the file based media directly into a bin through an AMA plug-in, or you can use the non-AMA method which imports the media onto your system. When you work with high-resolution media, the AMA method is the preferred and the faster method.

This chapter describes the AMA method and those plug-ins Avid supports.

For information to import and export XDCAM and P2 media, see "Importing Files" in the Help and "Exporting Frames, Clips, or Sequences" in the Help.

The following topics provide information on the file based media Avid supports:

- XDCAM and XDCAM EX Media
- P2 Media
- Canon XF Media
- GFCAM Media
- RED Media
- The Avid Media Access (AMA) Workflow
- Workflows for Editing with AMA

XDCAM and XDCAM EX Media

The Sony® XDCAM™ decks and camcorders use an optical disk with either a capacity of 23.3 or 50 GB to store recorded media. The XDCAM devices record media in high-resolution MPEG IMX™, DVCAM™, and XDCAM HD formats or corresponding

low-resolution or compressed (proxy) media (MPEG-4). This lets you work with the compressed or low-resolution media in an off-line editing session and then later conform or link the compressed media to the corresponding high-resolution media.

Your Avid editing application supports high-resolution XDCAM EX media. Sony's XDCAM EX media is stored on a card.

Sony's XDCAM EX cameras and readers and JVC's cameras and readers running in XDCAM EX mode, use an SxS card to store recorded media. The XDCAM EX devices can record media in high-resolution XDCAM HD formats.

The XDCAM and XDCAM EX AMA plug-in should be installed on your system. To link XDCAM, XDCAM EX or low resolution (proxy) XDCAM media through the AMA method, use Link to AMA Volumes. For more information, see "The Avid Media Access (AMA) Workflow" on page 94 and "Linking Media with AMA" on page 97.

For specific XDCAM and XDCAM EX workflow steps, see "Workflow for Editing XDCAM and XDCAM EX Clips with AMA" on page 107.

XDCAM and XDCAM EX Formats and Resolutions

Resolution/Bit Rate	Frame Rate/Raster	Number of Audio Channels (maximum)
XDCAM HD:	1080i/59.94, 1080i/50, 1080p/23.976, 720p/50, 720p/59.94, 1440 x 1080, 1280 x 720 (25/35mb)	2 or 4
XDCAM HD 17.5 Mbits		2 or 4
XDCAM HD 25 Mbits		2 or 4
XDCAM HD 35 Mbits		2 or 4
XDCAM HD 50 Mbits (24-bit audio)	1080i/59.94, 1080i/50, 1080p/23.976, 1080p/25, 1080p/29, 720p/59.94, 720p/50, 1920 x 1080, 1280 x 720	8
XDCAM EX 25Mbits	1080i/59.94, 1080i/50, 1080p/23.976	2 or 4
XDCAM EX 35 Mbits	1080i/59.94, 1080i/50, 1080p/23.976, 1080p/25, 1080p/29.97, 720p/59, 720p/50, 720p/29.976, 720p/25, 720p/23.98, 1920 x 1080, 1440 x 1080, 1280 x 720	2 or 4

Resolution/Bit Rate	Frame Rate/Raster	Number of Audio Channels (maximum)
XDCAM EX DV-AVI: DV 25 411 DV 25 420	 SD NTSC 30i SD PAL 25i	2
DVCAM: DV 25 411 DV 25 420	 SD NTSC 30i SD PAL 25i	4
MPEG IMX (16 and 24-bit audio) MPEG 30 MPEG 40 MPEG 50	 SD NTSC 30i and PAL 25i SD NTSC 30i and PAL 25i SD NTSC 30i and PAL 25i	4 or 8
MPEG-4 (compressed media)	SD NTSC 30i and PAL 25i	4 or 8

The above listed formats and resolutions support 16-bit audio, except where noted.

Working with XDCAM HD Media

Your Avid editing application supports linking of both low-resolution (proxy) and high-resolution XDCAM HD media.

XDCAM HD media is recorded in one of the following resolutions:

- XDCAM HD LP (long play) (17.5 mb/sec)
- XDCAM HD SP (standard play) (25 mb/sec)
- XDCAM HD HQ (high quality) (35 mb/sec)
- XDCAM HD HQ (high quality) (50 mb/sec)

You can play XDCAM HD media to a Client monitor or output a digital cut as Best Performance (yellow/yellow) or Draft Quality (yellow/green). However, if you work with Adrenaline hardware, to play or output as Full Quality (green/green), you must transcode the XDCAM HD media to a DNxHD resolution or another compatible resolution. If you use Avid Nitris DX or Avid Mojo DX, you can play out the back of the HD-SDI.

Working with AMA XDCAM Multiple Resolution Media

The XDCAM AMA plug-in allows you to link to low-resolution (proxy) or high-resolution audio or video media. To link to the AMA XDCAM multiple resolution media, see "Working with AMA Multiple Resolution Media" on page 100.

The AMA multiple resolution feature supports specific XDCAM devices which include a /PROAV folder. For example, the Sony PDWU1 Professional Disc Drive Unit. See your Sony documentation for information on how to enable the /PROAV directory for your device.

Avid editing systems do not support XDCAM proxy audio.

Installing the XDCAM Drivers

Before you use XDCAM or XDCAM EX devices, you need to load the appropriate drivers. Your XDCAM device should include a CD that includes the driver.

To install XDCAM or XDCAM EX drivers:

- Follow the instructions included with your XDCAM or XDCAM EX device.

Download the most up to date driver from the Sony website, www.sony.com.

Connecting the XDCAM or XDCAM EX Device

Use an IEEE-compliant 1394 (i.LINK) port on your computer to connect the XDCAM device to your system, or use a USB port on your computer to connect the XDCAM EX device to your system. The XDCAM interface is configured to use the SBP2 protocol so you can access the XDCAM device as a disk volume on your system.

If you use Avid Adrenaline, Avid Mojo, or Avid Mojo SDI input/output hardware, the 1394 port on your computer must be on a bus separate from the one used by the hardware.

(XDCAM disk only) Multiple XDCAM devices can connect to your system at one time. Each device appears as a separate optical drive, similar to a CD-ROM or DVD-ROM drive. The drive's volume label carries an XDCAM identifier — for example, `XDCAM (E:)`.

XDCAM EX devices use a USB 2.0 connection only.

(XDCAM only) To use the XDCAM device with your Avid editing application, you need to install the appropriate device driver included with the Sony XDCAM deck or camera. For more information, see "Installing the XDCAM Drivers" on page 66.

Spanned Clips and XDCAM EX

Spanned clips are clips that extend from one card to another. Avid supports working with spanned XDCAM EX clips in your Avid editing application.

For more information about spanned clips, see "Spanned Clips and P2" on page 73.

Ejecting an XDCAM EX Card

To properly eject a card from an XDCAM EX device while your Avid editing application is running, choose to “Safely Remove Hardware” from your Windows Vista or Windows 7 system.

This command removes the actual XDCAM EX device from your system, not just the card. However, it prevents the occurrence of any unmount messages from your Avid editing application.

To eject an XDCAM EX card from its device:

1. With an XDCAM EX card inserted in the XDCAM EX device and your Avid editing application running, click the Safely Remove Hardware icon located at the bottom right-hand corner of the taskbar.
2. Select Safely Remove XDCAM EX device name.

   This removes the XDCAM EX device from your system.
3. To use the card again, unplug and then plug-in the XDCAM EX device from your system using the USB cable.

   This allows your Avid editing application to read the XDCAM EX card.

Copying XDCAM or XDCAM EX Files to a FireWire or Network Drive

After you insert the XDCAM EX cards or XDCAM disk, you can copy the media to a FireWire drive or a network drive and then eject the card or disk. You might find it convenient to copy several cards or disks to other drives so you can reuse the cards or disks. Your Avid editing application supports XDCAM and XDCAM EX copies as though they were actual cards or disks.

You can work with media on a card/disk or work with media on another drive, but you cannot work with media that is stored in both places simultaneously. To avoid the problem, eject the card or disk after you copy the XDCAM or XDCAM EX files to the other drive.

To copy the XDCAM EX card or XDCAM disk to another drive:

1. On the drive, set up a folder for each XDCAM EX card or XDCAM disk you want to copy.

   Avid recommends that you do not place the media folder at the top level of the drive.
2. Give each folder a unique name that identifies the XDCAM EX card or XDCAM disk.

   The name does not have to be the same as the actual card or disk name.
3. Navigate to the actual XDCAM EX card or XDCAM disk and select the folder with the media.

4. Do one of the following:
   - Copy and paste the contents of the card or disk media folder to the folder on the other drive.
   - Click the card or disk folder and drag it to the folder on the other drive.
5. Eject the card or disk.

P2 Media

Panasonic's P2 equipment records DV, DVCPRO, and DVCPRO 50 media on compact, solid-state memory cards (P2 cards). Avid editing applications support editing of media directly from these memory cards, without the need to capture. You can also write your sequence back to the P2 card.

The following are recognized as P2 cards by your Avid editing application:

- Panasonic P2 cards in an attached reader or camera or in a laptop PC Card slot.
- Synthetic P2 cards. A complete copy of a P2 card copied to the root of a drive or mounted as a drive, for example, by mapping to a drive letter.

The P2 AMA plug-in should be installed on your system. To link P2 media through the AMA method, use Link to AMA Volumes. For more information, see "The Avid Media Access (AMA) Workflow" on page 94 and "Linking Media with AMA" on page 97.

For specific P2 workflow steps, see "Workflow for Editing P2 Clips with AMA" on page 110.

Panasonic P2 Formats

Avid editing applications support the following resolutions, captured by Panasonic P2 equipment at frame rates of 30i NTSC and 25i PAL:

Panasonic Format	Avid Format	Number of Audio Channels
DV	DV 25 411 (NTSC) DV 25 420 (PAL)	2
DVCPRO	DV 25 411 (NTSC and PAL)	2
DVCPRO HD	720p 1080i	4
DVCPRO 50	DV 50 (NTSC and PAL)	4

Avid editing applications support one video track and up to four tracks of 48 kHz, 16-bit audio, the maximum you can record on Panasonic P2 equipment.

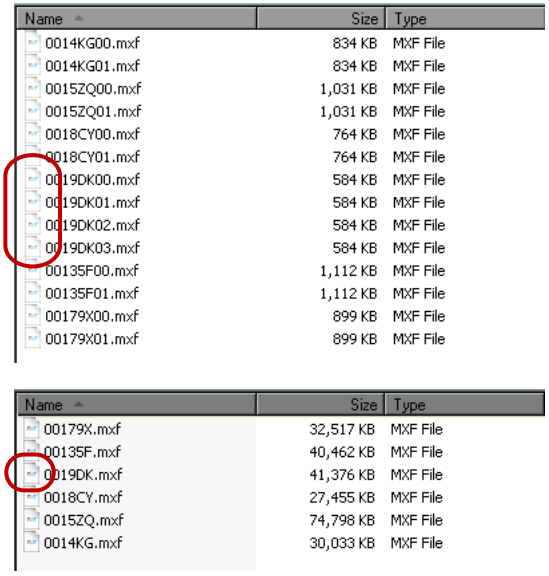
P2 Files and Folders

Panasonic P2 video and audio media is recorded in MXF format, one of the two media file formats you can use in Avid editing applications. Each P2 card stores MXF files in two folders:

- (Windows) *drive:*\Contents\Audio

  (Macintosh) Macintosh HD/Contents/Audio
- (Windows) *drive:*\Contents\Video

  (Macintosh) Macintosh HD/Contents/Video



Examples of MXF audio and video files contained in the Audio and Video folders. Top: four audio tracks for a single clip. Bottom: the corresponding video track.

Panasonic P2 devices write individual MXF audio and video media files for each track of each clip. For example, a P2 clip that includes one track of video and four tracks of audio is stored on the P2 card as five individual media files. Within your Avid editing application the five media files are represented as a single clip with audio and video.

Installing the Panasonic P2 Drivers

Before you use a Panasonic P2 device, load the appropriate drivers. Your P2 device should include a CD that includes the driver.

To install Panasonic P2 drivers:

- Follow the instructions included with your P2 equipment.

Download the most up-to-date driver from the Panasonic website, www.panasonic.com.

Preparing to Mount P2 Cards as Drives

You can mount P2 cards as drives on your desktop. To your Avid editing application, these mounted cards function as individual media drives.

P2 cards can function as media drives even though the MXF files are not contained in an Avid MediaFiles folder.

After you install the appropriate Panasonic driver, you can mount the cards as drives from any of these devices:

Device	Description
PCMCIA card slot	Notebook computers typically include a PCMCIA card slot that will accept individual P2 cards.
P2 drive	Panasonic offers P2 card-reading peripherals such as the AJ-PCD10 memory card drive. You can connect this drive, or *card reader* through a USB port, or you can install it as an internal drive on a desktop PC. This card reader provides access to five P2 cards at one time.
P2 camera or deck	Panasonic cameras and decks, such as the AJ-SPD850, provide access to P2 cards through a USB port.

Setting up a P2 Card Reader (Windows only)

Before using a P2 card reader with a Windows system, you need to set Autoplay options.

To set up a P2 card reader for the first time:

1. Make sure your Avid editing application is not running.
2. Make sure the appropriate driver is installed.

   See "Installing the Panasonic P2 Drivers" on page 69.
3. Connect the card reader to a USB port.
4. Insert a P2 card into each slot.

   Each P2 card displays as a single lettered drive on the Windows desktop.
5. Open Windows Explorer, right-click a drive letter, and select Autoplay from the menu.

6. In the Autoplay dialog box, select “Take no action” and then “Always do the selected action.”
7. Repeat the last two steps for each drive letter associated with the reader.

Mounting P2 Cards as Drives

If you don’t have enough cards to fill all the slots, you can reuse a card in multiple slots to perform the following drive letter setup.

(Windows only) Some card slots of the P2 drive might require drive letters that have already been assigned to existing network drives. If your computer does not display all five card slots as drives, reassign the network drives or restart your system.

To mount one or more P2 cards as drives:

1. Make sure your Avid editing application is not running.
2. Make sure the appropriate driver is installed.

   See “Installing the Panasonic P2 Drivers” on page 69.
3. Connect the card reader, camera, or deck to a USB port.
4. (Windows) Set up the P2 card reader.

   See “Preparing to Mount P2 Cards as Drives” on page 70.
5. Insert one or more P2 cards (up to five).

   (Windows) Each P2 card displays as a single lettered drive on the Windows desktop.

   (Macintosh) Each card appears as a single drive with the label “No Name.” Volumes with duplicate names are renamed sequentially (No Name1, No Name2, and so on). However, this is not visible to the editor.

   Before you start your Avid editing application, Avid recommends that you rename each P2 card to its unique serial number as shown on the card edge when it’s mounted in the reader. For example, P21 = Card1, P22 = Card2, P23 = Card3.

The P2 name changes back to “No Name” when you reformat the card in the camera.

6. Start your Avid editing application and open a project.
7. Insert the P2 cards.

   The P2 cards automatically display on the desktop.

To unmount a P2 drive:

1. Select File > Unmount.

   The list displays all drives currently available.

2. Select the P2 drive you want to unmount.
3. Ctrl+click (Windows) or Shift+click (Macintosh) to select additional drives.
4. Select Unmount.

   The drives are no longer available to your Avid editing application and you can safely eject the P2 card from the reader on your Windows or Macintosh system.

Copying P2 Files to a FireWire or Network Drive

After you mount the P2 drives, you can copy the P2 media to a FireWire drive or a network drive and then eject the card. You might find it convenient to copy several P2 cards to other drives so you can reuse the cards. Your Avid editing application supports P2 copies as though they were actual P2 cards.

You can connect a FireWire drive, for example, and store the contents of several P2 cards on it so you can keep using the cards in the camera.

You can work with media on a P2 card or work with media on another drive, but you cannot work with media that is stored in both places simultaneously. To avoid the problem, eject the P2 card after you copy the P2 files to the other drive.

To copy the P2 cards to another drive:

1. On the drive, set up a folder for each P2 card you want to copy.

   Avid recommends that you do not place the media folder at the top level of the drive.
2. Give each folder a unique name that identifies the P2 card.

   The name does not have to be the same as the actual P2 card name.
3. Navigate to the actual P2 card and select the Contents folder.
4. Do one of the following:
   - Copy and paste the Contents folder to the folder on the other drive.
   - Click the Contents folder and drag it to the folder on the other drive.
5. Eject the P2 card.

Changing P2 Cards in the Card Reader

You can change (“hot-swap”) cards while you work in your Avid editing application.

To change one or more cards in the P2 card reader:

1. Remove the old card or cards and insert the new ones.
2. Select File > Mount All.

Sharing P2 Clips and Sequences

If you work in an Avid Unity workgroup environment, you can share sequences that contain P2 clips in an Avid Unity workspace. However, you can share P2 clips only if you transcode or consolidate them to a workspace.

- In an MXF workgroup, you can either consolidate or transcode P2 clips to a workspace. If you transcode, you must transcode P2 MXF files to another MXF resolution.
- In an OMF workgroup, you must transcode P2 clips to a workspace. You must transcode P2 MXF files to OMF files.

If you consolidate or transcode clips to an Avid Unity workspace, it automatically checks all related metadata into the asset manager. This makes the clips accessible to other users.

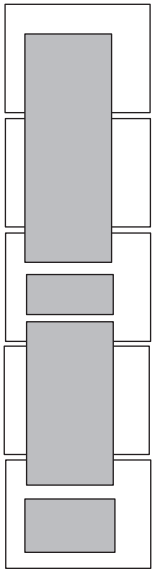
For more information on workgroup support, see the Avid Interplay Help.

Some card slots of the P2 drive might require drive letters that have already been assigned to existing network drives. If your computer does not display all five card slots as drives, reassign the network drives or restart your system.

Spanned Clips and P2

Spanned clips are clips that extend from one card to another. Avid supports working with spanned P2 clips in your Avid editing application.

The following illustration shows how clips can span multiple cards.



Example of spanned P2 clips. The white rectangles represent P2 cards and the gray rectangles represent clips. The first and third clips span multiple cards.

When you work with spanned clips, consider the following:

- If you remove a card that contains a spanned clip, for example Card 2 in the above example, and you try to play Clip 1, it plays until it reaches the portion of the clip that resides on Card 2. Media Offline appears until you reach the media on Card 3. Avid recommends that you do not place another card in the removed card's place unless you remove all the cards that contain the spanned clip (Cards 1 and 3 in this example).
- You can mix cards that contain spanned and unspanned master clips. However, if you eject a card which contains a chunk of a spanned clip and insert another card, the master clips in the newly inserted card are not visible in the Media Tool but the media files are visible. To work around this, remove all the cards which contain chunks of the spanned clip and choose File > Unmount followed by File > Mount All (non-AMA method). All the master clips are visible.
- P2 and XDCAM EX spanned media covers multiple drives, but the bin displays only one drive letter. The drive letter in the bin might be any of the drives, but is usually the highest lettered drive where the media exists.
- If necessary, copy all spanned clips to another drive to ensure a clip's integrity before you swap out the cards.

Canon XF Media

The Canon XF305 and Canon XF300 camera records MPEG-2 media onto compact flash cards. Through the Canon XF AMA plug-in and the MXF AMA plug-in, you can link to Canon MPEG-2 media through the AMA method.

You can edit directly from a flash card, without having to capture. You can link to a Canon XF flash card and reader attached to your system or copy a Canon XF flash card to the root of a drive.

The Canon XF AMA plug-in and the Avid MXF AMA plug-in should be installed on your system. To link media through the AMA method, use Link to AMA Volumes. For more information, see "The Avid Media Access (AMA) Workflow" on page 94 and "Linking Media with AMA" on page 97.

For specific Canon XF workflow steps, see "Workflow for Editing Canon XF Clips with AMA" on page 111.

Canon XF Formats and Resolutions

The following table lists the formats and resolutions available when you work with GFCAM media:

Resolution/Bit Rate	Raster/Frame Rate	Number of Audio Channels (maximum)
MPEG-2 HD 50 and 35Mbits 25Mbits	1920 x 1080, 1280 x 720 1440 x 1080	4

Canon XF Files and Folders

Canon XF video and audio media files record in MXF format.

Each card stores the video and audio files in:

- (Windows) drive:\CONTENTS\CLIPS
- (Macintosh) Macintosh HD/CONTENTS/CLIPS

AMA does not recognize clips if the folder names in the selected path contain double-byte characters (DBCS). AMA recognizes folders with the directory path that includes ASCII alphanumeric characters.

Connecting the Canon XF Camera or CF Card Reader

You can connect the Canon XF camera or a CF card reader directly through an industry-standard USB 2.0 port on your computer. See the Canon XF documentation for information on connecting the camera or a card.

The flash card mounts as individual media drives on your desktop and then link to your Avid editing system through AMA.

Spanned Clips and Canon XF

Spanned clips are clips that extend from one card to another. Avid supports working with spanned Canon XF clips in your Avid editing application.

For more information about spanned clips, see "Spanned Clips and P2" on page 73.

Copying Canon XF Files to a FireWire or Network Drive

After you mount the flash card, you can copy the Canon XF media to a FireWire drive or a network drive and then eject the flash card. You might find it convenient to copy several flash cards to other drives so you can reuse the cards.

You can connect a FireWire drive, for example, and store the contents of several flash cards on the drive so you can keep using the flash cards in the camera.

To copy the Canon XF flash cards to another drive:

1. On the drive, set up a folder for each flash card you want to copy.

   Avid recommends that you do not place the media folder at the top level of the drive.
2. Give each folder a unique name that identifies the flash card.

   The name does not have to be the same as the actual flash card name.
3. Navigate to the actual flash card and select the CONTENTS folder.
4. Do one of the following:
   - Copy and paste the CONTENTS folder to the folder on the other drive.
   - Click the CONTENTS folder and drag it to the folder on the other drive.
5. Eject the flash card.

GFCAM Media

The Ikegami GFCAM HDS-V10 is a tapeless camera/recorder that uses flash memory instead of video tapes as a recording medium. GFCAM devices record MPEG-2 Long GOP/I-Frame media onto a GFPAK™, a removable high-speed storage medium.

You can edit directly from a GFPAK, without having to capture. You can link to a GFPAK attached to your system or copy a GFPAK to the root of a drive.

GFCAM is only available through the AMA method.

The GFCAM AMA plug-in should be installed on your system. To link GFCAM media through the AMA method, use Link to AMA Volumes. For more information, see "The Avid Media Access (AMA) Workflow" on page 94 and "Linking Media with AMA" on page 97.

For specific GFCAM workflow steps, see "Workflow for Editing GFCAM Clips with AMA" on page 111.

GFCAM Formats and Resolutions

The following table lists the formats and resolutions available when you work with GFCAM media:

Resolution/Bit Rate	Raster/Frame Rate	Number of Audio Channels (maximum)
MPEG-2 HD LongGOP 50 Mbits, 102 Mbits	(1080i/59.94, 1080i/50, 1080p/23.98 pulldown, 1080p/29.97, 1080p/25, 720p/59, 720p/50, 720p/25, 720p/23.98 pulldown) 1440 x 1080	4
DVCAM: DV 25 411 DV 25 420	 SD NTSC 30i, PAL 25i SD PAL 25i	4
MPEG IMX (NTSC and PAL): MPEG 30 MPEG 40 MPEG 50		4
MPEG-2 HD I-Frame 100 Mbits		4

1080p/23.98 pulldown and 720p/23.98 pulldown record at 59.94fps and are only compatible with 1080i/59.94 and 720p/59.94 projects.

1080p/29.97 records as PSF at 59.94fps and is only compatible with 1080i/59.94 projects.

1080p/25 and 720p/25 record as PSF at 50fps and are only compatible with 1080i/50 and 720p/50 projects.

GFCAM Files and Folders

GFCAM video and audio media files record in MXF format.

Each GFPAK stores the video MXF files in:

- (Windows) drive:\BINxxx\VIDEO
- (Macintosh) Macintosh HD/BINxxx/VIDEO

Each GFPAK stores the audio MXF files in:

- (Windows) drive:\BINxxx\AUDIO
- (Macintosh) Macintosh HD/BINxxx/AUDIO

The GFCAM video file directory stores MXF files regulated by SMPTE 390M (MXF OP-Atom) and SMPTE 381M (MXF mapping MPEG streams into MXF GC). If a video clip needs to split, such as under the FAT32 file system, the system creates multiple MXF files for that clip.

The GFCAM audio file directory stores MXF files regulated by SMPTE 382 (MXF mapping AES3 and BWF into the MXF GC). Each file has an AES channel that consists of two audio channels. For example, the system creates two MXF files from two AES channels (four audio channels). If an audio clip splits, the system creates multiple audio files for that clip.

Connecting the GFPAK Device

You connect the GFPAK directly through an industry-standard USB 2.0 port on your computer. Use a cable to connect the GFPAK to a Windows system or a Macintosh system.

The GFPAK mounts as individual media drives on your desktop and then link to your Avid editing system through AMA.

Spanned Clips and GFCAM

GFCAM allows gapless recording over several GFPAKs, however, each GFPAK handles the contents as a separate clip. If you record across three GFPAKs, you create three separate clips. You can then edit those clips together into one continuous sequence.

Copying GFCAM Files to a FireWire or Network Drive

After you mount the GFPAK, you can copy the GFCAM media to a FireWire drive or a network drive and then eject the GFPAK. You might find it convenient to copy several GFPAKs to other drives so you can reuse the GFPAK. Your Avid editing application supports GFCAM copies as though they were actual GFPAKs.

You can connect a FireWire drive, for example, and store the contents of several GFPAKs on the drive so you can keep using the GFPAKs in the camera.

To copy the GFPAK to another drive:

1. On the drive, set up a folder for each GFPAK you want to copy.

   Avid recommends that you do not place the media folder at the top level of the drive.

2. Give each folder a unique name that identifies the GFPAK.

   The name does not have to be the same as the actual GFPAK name.

3. Navigate to the actual GFPAK and select the contents of the folder.

4. Do one of the following:

   - Copy and paste the contents of the GFPAK media folder to the folder on the other drive.
   - Click the GFPAK folder and drag it to the folder on the other drive.

5. Remove the GFPAK.

Working with Shot Marks and Check Marks with GFCAM Media

GFCAM products use Shot Marks and Check Marks to store metadata about media clips.

Shot Marks allow GFCAM cameras to mark events such as clip start points or audio clipping. Press the RET button on the GFCAM device while you record or playback to set a Shot Mark. For a description of Shot Marks, see your GFCAM documentation.

In the AMA method, Shot Marks are brought over automatically and appear as locators in your Avid editing application. There is no text associated with a Shot Mark, just a marked location (or a locator). For information about editing locators, see “Using Locators” in the Help.

A Check Mark flags a “good shot.” The AMA method translates this good shot clip with the word “true” in a new bin column named Check Mark. If there are no Check Marks associated with a clip, a Check Mark heading does not appear.

RED Media

The RED Digital Cinema Company produces a high performance digital cinema camera with the quality of 35mm film and the convenience of pure digital. The RED ONE camera generates a 4K (or 2K - 4.5K) full resolution REDCODE™ RAW (.R3D) file.

Media is stored on a REDFlash card or a RED drive. You can link to a specific R3D file on the volume or link to the entire volume.

RED ONE cameras record metadata which displays in an Avid bin. The metadata includes: edge code, timecode, lens parameters, audio settings and any video image processing information.

Your Avid editing application supports RED R3D files as high quality HD media. Once you link the clips through AMA, you can change and fine-tune the clip color settings through the Source Settings dialog.

The RED AMA plug-in should be installed on your system. To link RED media through the AMA method, use Link to AMA Volumes. For more information, see "The Avid Media Access (AMA) Workflow" on page 94 and "Linking Media with AMA" on page 97.

For specific RED workflow steps, see "Workflow for Editing RED Clips with AMA" on page 112.

Avid supports the use of the REDRocket Accelerator card for transcoding, rendering and mixdown at half or full debayer settings. Playback is not supported. We do not use the video output connections on the card. The card is not supported on 32-bit Windows operating systems.

RED Formats and Resolutions

The following table lists the formats and resolutions available when you work with RED media:

Media Type	Resolution	Number of Audio Channels (maximum)
RED R3D	2K 2:1 2K 16:9 2K ANA 3K 2:1 3K 16:9 3K ANA 4K 2:1 4K 16:9 4K ANA 4.5K	4

RED Files and Folders

The RED Camera records a unique clip name and additional files that include the REDCODE RAW files and an optional QuickTime reference file placed in a clip folder (.RDC).

The system names clips by Camera Letter + Reel Number + Month + Day + a two digit alphanumeric random number.

For example: A001_C002_0502A6.RDC

A = camera A, 001 = reel 001, C002 = clip 002, and 0502 = May 2, A6 = two digit random number (to help avoid duplicate files names).

Each clip folder (.RMD) is at the root directory. In each of these folders is the .RDC folder which contains the video, audio, and metadata files:

- (Windows) drive:*camera+reel_date*.RMD*camera+reel_clip_date+random number*.RDC
- (Macintosh) Macintosh HD/*camera+reel_date*.RMD/*camera+reel_clip_date+random number*.RDC

AMA detects folders named with RMD and RDC and files named .R3D.

Connecting the RED ONE Drive or Card

Connect the RED Drive directly through an industry-standard USB or FireWire port on your computer, or insert the RED Card into the RED camera and connect to your computer.

The drive or card mounts as individual media drives on your desktop and then link to your Avid editing system through AMA.

See RED documentation for specific information about the RED ONE camera, REDFlash card and RED drive.

Spanned Clips and RED

You cannot span media across multiple cards. Each clip is recorded as a separate clip, regardless of how many cards you use. There is a 2GB limit on a single master clip. As you record footage, once a 2GB file is captured, an R3D file is created (.001). The camera continues to record and the next 2GB (or less) of media creates another R3D file (.002) until you end recording. So, you can have several R3D files in one clip folder but they are all associated with one master clip. When you link these files/folders through the AMA method, one master clip appears in your bin

Copying RED Files to a FireWire or Network Drive

After you attach the RED drive or insert a REDFlash card, you can copy the RED media to a FireWire drive or a network drive and then disconnect the drive. You might find it convenient to copy several cards to other drives so you can reuse the cards quickly.

You can connect a FireWire drive, for example, and store the contents of several cards on it so you can keep using the cards in the camera.

To copy the REDFlash cards to another drive:

1. On the drive, set up a folder for each card or drive you want to copy.

   Avid recommends that you do not place the media folder at the top level of the drive.

2. Give each folder a unique name that identifies the card or drive.

   The name does not have to be the same as the actual drive or card name.

3. Navigate to the actual drive or card and select the contents of the folder.

   You can select the top directory of several RDC folders (containing an R3D file and a color metadata file such as RSX or RMD).

4. Do one of the following:

   - Copy and paste the contents of the folder to the folder on the other drive.
   - Click the drive or card folder and drag it to the folder on the other drive.

5. Remove the drive.

Adjusting RED Source Settings

When you link to R3D (RED) files, the Avid editing system reads each REDCODE RAW file directly. You can then change the clip's color values: color balance, exposure, and contrast in the Source Settings window. This color value information is encoded with the R3D file through an RLX, RSX or RMD file. These files hold the camera's original color values of your clip.

The RLX, RSX or RMD files might be created if you set the color values outside of the Avid editing application. These files can be loaded and applied to the associated RED clip through the Source Settings window.

When a RED clip displays in the bin, the system displays the metadata columns of the clip's color values. For example: Color Space, Gamma Space, Kelvin, Tint. You can export this information to ALE (Avid Log Exchange) and XML (through Avid FilmScribe) for downstream use in your workflow.

The Source Settings window also has three color spaces to choose from: REDSpace, Camera RGB, and REC.709. You can set up different color options (or presets) in each of these color spaces and then apply their color values to multiple clips.

To change the RED source settings:

1. Link the RED clip through the AMA Link to Volume option.

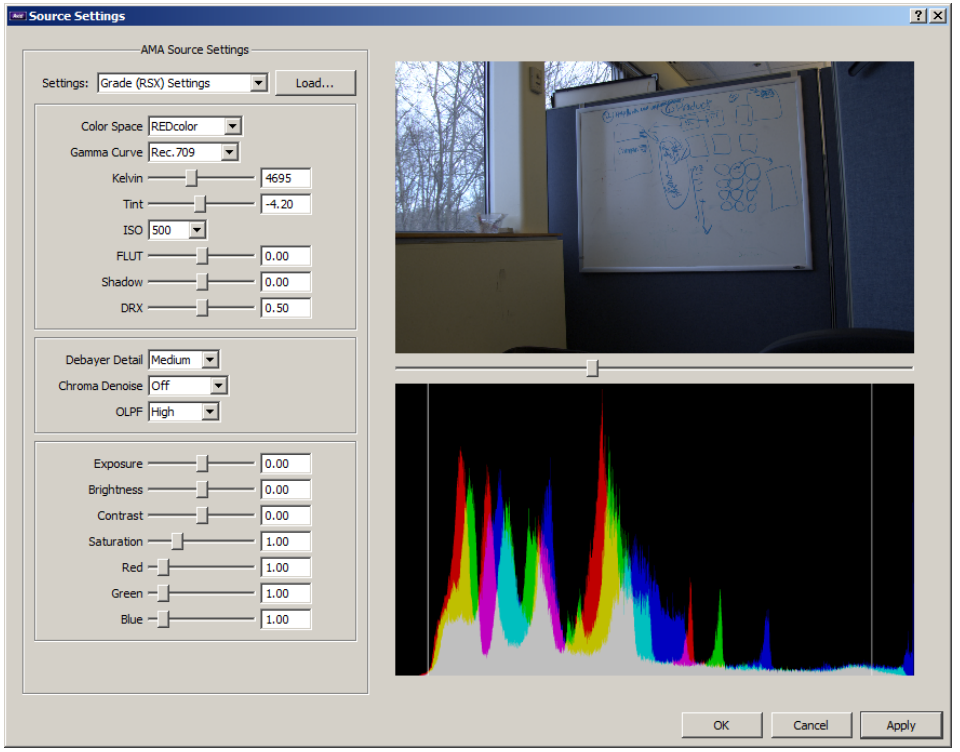
   See "The Avid Media Access (AMA) Workflow" on page 94 and "Linking Media with AMA" on page 97 for information on linking.

2. Right-click the RED clip in the bin and select Set Source Settings.

   The Source Settings dialog box opens. The clip displays in the video area.

   You can choose from the Settings menu to select a camera metadata setting or an RSX, RLX or RMD setting (template), or adjust your own custom parameters. This procedure details the custom parameters.

   For information on settings (templates) in the Settings menu and how to apply a setting, see "Using Source Settings" on page 86 and "Applying a Source Setting" on page 87.



3. Drag the video slider to the frame you want to view.

   The new frame displays and the histogram updates.

   The histogram is a tool that helps you more precisely adjust Source Settings. For more information about the histogram, see "Understanding the Source Settings Histogram" on page 88.

4. Set the appropriate options:

Option	Description
Color Space	Choose from: Camera RGB: as close to RAW REC.709: SMPTE standard color space for HD REDcolor: newest, more accurate color science from RED REDSpace (default): based on the camera's RGB but more saturated
Gamma Curve	Lets you override the gamma curve. Choose from: REC.709: a REC.709 gamma curve with a linear portion at black and a gamma at 2.2 curve REDLog: maps the 12-bit sensor data on to a 10-bit curve with minimal loss REDSpace: (default) based on REC.709 but with more contrast REDGamma: gamma curve from RED with a smoother highlight rolloff
Kelvin	Adjusts the RGB color to compensate for red - blue tinting of the scene at different color temperatures of the ambient light while you shoot. Common values are 3200 (tungsten) and 5600 (daylight). Click and drag the slider from 1700 to 9400. Default is 5600.
Tint	Adjusts the RGB color to compensate for yellow - green tinting of the scene at different color temperatures of the ambient light while you shoot. This is valuable when the ambient light source contains a significant amount of yellow or green, such as fluorescent. Click and drag the slider from -100 to 100. Default is 0.00.
ISO	Allows the ISO level to change from 50 to 2000. Default is 320.
FLUT™	The latest color science developed by RED. Allows you to balance your mid-grays in the center of the histogram without pushing highlight details over the edge.
Shadow	Adjusts the overall black level of the image without affecting the white level. Click and drag the slider from 0.00 to 1.00. Default is 0.00.
DRX	Lets you recover potentially lost dynamic range by extending and balancing highlights, taking into account the rendering intent of the desired Klevin and Tint white balance. Click and drag the slider from 0.00 to 1.00. Default is 0.00.
Debayer Detail	Choose from High (default), Medium, or Low. This setting is ignored when you use REDRocket.

Option	Description
Chroma Denoise	Choose from Off (default), Minimum, Milder, Mild, Strong, or Maximum.
OLPF	Controls the optical low-pass filter. Choose from Off (default), Low, Medium, or High. The system ignores this setting when you use REDRocket.
Exposure	Allows adjustment to the clip exposure. Click and drag the slider from -7.00 to 7.00. Default is 0.00.
Brightness	Adjusts the overall brightness of the image. Lifts blacks without affecting the white level. Click and drag the slider from -10.00 to 10.00. Default is 0.00.
Contrast	Adjusts the tonal range of the image, which usually improves sharpness and detail. When you increase the Contrast, it increases tonal separation between adjacent gray levels but decreases the total number of discreet gray levels in the image. Click and drag the slider from -1.00 to 1.00. Default is 0.00.
Saturation	Affects the intensity of the red, green and blue channels. As the value increases color saturation increases. As the value decreases, so does the color decrease. If the value is set to high, colors might clip. If the level is set to 0.00, a monochromatic image with only gray tones appear. Click and drag the slider from 0.00 to 4.00. Default is 1.00
Red	Increases or decreases the camera's sensitivity to red light by amplifying the R channel digital video signal received from the sensor. A 0 (zero) no Red is visible, the image has a strong cyan cast. Click and drag the slider from 0.00 to 10.00. Default is 1.00.
Green	Increases or decreases the camera's sensitivity to green light by amplifying the G channel digital video signal received from the sensor. At 0 (zero), no green is visible, the image has a strong magenta cast. Click and drag the slider from 0.00 to 10.00. Default is 1.00.
Blue	Increases or decreases the camera's sensitivity to blue light by amplifying the B channel digital video signal received from the sensor. At 0 (zero), no blue light is visible, the image has a strong yellow cast. Click and drag the slider from 0.00 to 10.00. Default is 1.00.

5. Click Apply.

   The changes apply to your clip. You can continue to make additional changes.

If the clip is in the Source viewer, the changes are reflected in the Source viewer and in the Client monitor (if you have one attached).

If you click Cancel after you click Apply, the Set Source Settings window closes with the changes you made.

6. Click OK to save your change and close the window.

   The system updates the bin column metadata with the new parameters.

If you make changes in the Source Settings window and then relink the clip through AMA again, you still keep all the parameters that you set.

Using Source Settings

Source Settings lets you choose from a selection of preset templates or you can create your own look. Each source setting has its own color values associated with it. There are a few different ways to obtain source settings:

- Camera and default source settings are included with the RED AMA plugin
- Link a RED clip from RED Alert! (imports the RSX source setting)
- Load a source setting onto your system (for example, an RLX, RSX, or RMD)
- Create a custom source setting

You cannot change the default RSX and RLX source settings, these are predefined. Once you make a change to a parameter, the setting becomes a Custom setting. At this time, you can only have one Custom setting.

You can load multiple RSX and RLX source settings. As you link a RED clip from RED Alert! (RSX) or load an RLX file, the setting appears in the Source Settings menu.

Source Settings are helpful when you want to apply one setting to multiple clips in your bin.

Different subclips from the same master clip can have different source settings.

When you edit a clip into a sequence, the material you edit in uses the clip's current attribute values or RED source settings. If you change the RED source settings at a later point in your workflow, the sequence does not automatically adjust for the change. If you want the sequence to use the RED source settings for clips that you have changed since you edited, you must refresh the sequence. For procedures on how to refresh your sequence, see "Refreshing Sequences to Use Current Clip Attributes" in the Help.

Applying a Source Setting

To apply a source setting to a RED clip:

1. Right-click a RED clip in the bin (or Shift-click multiple clips), then choose Set Source Settings.

   The Set Source Settings window opens and your clip displays in the viewer.

2. Select a setting (template) from the Source Settings menu.

   Source Settings vary depending on the files or templates loaded on your system.

Setting	Origin
Camera Metadata Settings	Default
Default Settings	Default
Grade (RSX) Settings	RED Alert!
filename RLX Setting	RED Alert!
Grade (RMD) Setting	REDCINE-X
Custom	User created in Avid

3. Click Apply.

   The settings apply to the clip and if the clip is loaded in the Timeline, the video updates and displays in a Client monitor (if one is attached) and the Source monitor.

4. Click OK to save your settings and close the window.

   The system updates the bin column RED metadata with the parameters.

   If you make additional changes after you select a setting, the system creates a Custom setting and Custom appears in the Settings list. You cannot make changes to a system generated setting, however you can use a system setting and make changes to create your own Custom setting.

To import additional source settings:

1. From the Source Settings window, click the Load button.

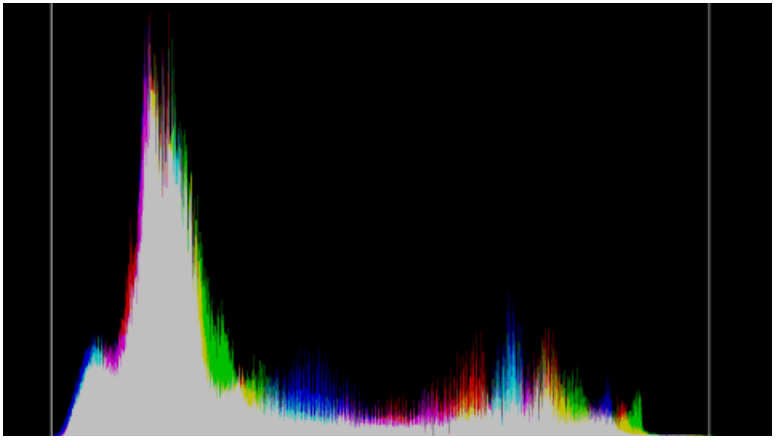
   The Load External Settings window opens.

2. Browse to the Settings file.
3. Change the filter to display RSX, RLX or RMD files.
4. Select your setting and click OK.

The new source setting appears in the Source Settings menu, and is immediately applied to the clip.

Understanding the Source Settings Histogram

The histogram in the Source Settings window helps you visualize the distribution of color values in an image. You can use the histogram to adjust the Source Settings of your AMA media more precisely while avoiding clipping and color imbalance.

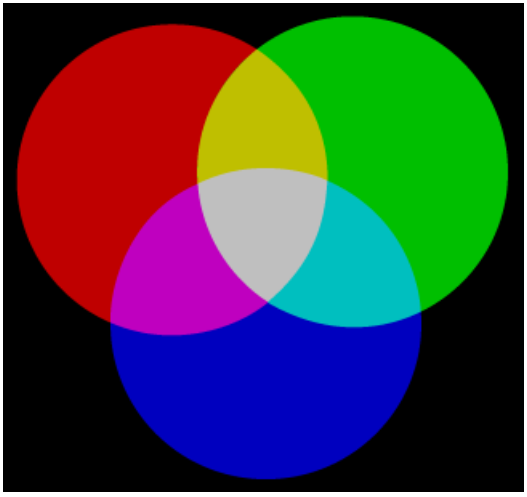


Example of a Source Settings histogram. The histogram plots color values on the horizontal axis and the percentage or proportional number of pixels on the vertical axis. The vertical lines represent the black point (left) and the white point (right), so the area between them is the safe color range.

The histogram plots color values that can be represented by the image bit-depth on the horizontal axis. Therefore, the width of the histogram is the same as the width of the image. The histogram plots the percentage, or proportional number of pixels in the image, with each particular color value on the vertical axis. The vertical axis is scaled according to the height of the maximum value in the plot. Whenever the histogram changes, the vertical axis rescales according to the new maximum.

Pixels with color values that are out of range are grouped into either the maximum or minimum color values on the plot. Spikes in either the highest or lowest color values might indicate loss of color information due to clipping.

Your Avid editing application draws separate histograms for the red, green, and blue color components. The histograms for each color stack on top of one another, with the fill color changing appropriately to indicate overlap. The following illustration shows the colors produced by overlap.



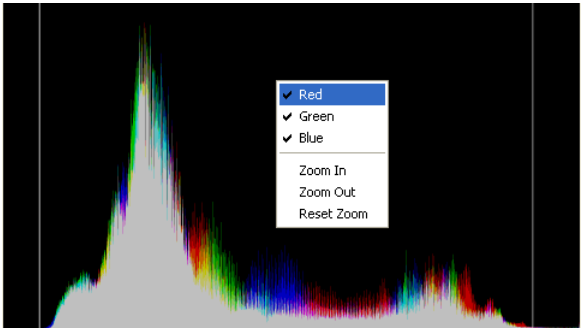
Adjusting the Source Settings Histogram

You can adjust the Source Settings Histogram in two ways. You can toggle drawing a histogram for an individual color, and you can zoom the vertical axis.

To adjust the Source Settings Histogram:

- Right-click anywhere inside the histogram graph, and then select one of the following options.

Option	Result
Red Green Blue	Enables or disables the histogram display for the selected color. A check mark indicates that the histogram for that particular color displays.
Zoom In	Zooms in on the lower half of the vertical axis. Changes the scaling of the vertical axis so that the height is half that of the maximum value in the plot. You can zoom in indefinitely to display, for example, 1/4, 1/8, or 1/16 of the maximum value.
Zoom Out	Zooms out of the vertical axis by a factor of two. Changes the scaling of the vertical axis to be twice that of the maximum value in the plot. You can zoom out indefinitely to display, for example, 4, 8, or 16 times the height of the maximum value.
Reset Zoom	Resets the zoom so that the vertical axis boundary is equal to the maximum value in the plot.



Preparing your RED Clip for Transcode, Mixdown, or Render

If you want to take a RED clip and offline it to another application, you can create a different resolution RED file, depending on your requirements. This changes the speed and quality of the clip, which could affect the playback performance. The higher the video quality the slower the process (transcode, mixdown, render). The lower the video quality the faster the process. Before you transcode, mixdown or render your clip or sequence, set the appropriate quality in the Media Creation dialog box.

If you apply any Reformat options (stretch, letterbox, etc.) to your clip, when you perform a transcode, the reformatting options will apply.

To prepare your RED clip for transcoding, mixdown or rendering:

1. Before you transcode, mixdown or render, select Tools > Media Creation.
2. Click the Mixdown & Transcode tab or click the Render tab.
3. Select the playback quality from the R3D Source Quality (Debayer) menu.
   - Full
   - Half (Best Quality)
   - Half (Good Quality)
   - Quarter
   - Eighth
   - Sixteenth
4. Click OK.
5. Transcode, mixdown or render your clip or sequence as required.

   For information about transcoding, see “Using the Transcode Command” in the Help.

   For information about mixdown, see “Performing a Video Mixdown” in the Help.

   For information about render, see “Basics of Effects Rendering” in the Help.

QuickTime Media

To link QuickTime media through the AMA method, you first need to create a QuickTime movie from a third-party application or through the Avid editing system. The third-party applications that supports creating a QuickTime movie include Adobe AfterEffects® and Final Cut Pro. This is done through the QuickTime Export dialog box which uses the Avid QuickTime Codecs. These codecs automatically install on your Avid editing system. At this time, Avid supports the Same as Source and Custom export settings options when you export with the Avid QuickTime codecs. This process creates an Avid compressed QuickTime media file, with a .mov extension. AMA only detects and links to Avid compressed QuickTime media.

For information about exporting a QuickTime movie, see "Exporting QuickTime Movies"in the Help.

QuickTime files use the .mov file name extension. After you link a QuickTime file through AMA, the file drops the .mov file name extension. QuickTime media is linked at the data rate at which it was recorded.

The Quicktime AMA plug-in should be installed on your system. To link QuickTime media through the AMA method, use Link to AMA File(s). For more information, see "The Avid Media Access (AMA) Workflow" on page 94 and "Linking Media with AMA" on page 97.

For specific QuickTime workflow steps, see "Workflow for Editing QuickTime Clips with AMA" on page 113.

Supported QuickTime AMA Codecs and Resolutions

You can create a QuickTime movie on an Avid editing system or from a third-party application such as Adobe After Effects with a supported QuickTime AMA codec. QuickTime codecs are installed automatically on your Avid editing system, or you can install the Avid codec on the system which runs the third-party application.

If you can play the QuickTime movie with the QuickTime player, you should be able to link and play the same file with Avid's QuickTime AMA Plug-in. Performance will vary depending on the codec and the CPU.

The 1:1 SD 8-bit (Meridien) codec is not supported with QuickTime AMA.

Twenty-four is the maximum number of audio channels supported for all resolutions.

For information on how to install the QuickTime codecs, see "Installing or Copying the Avid Codecs for QuickTime on Other Systems" in the Avid Help.

MXF Media

Material Exchange Format (MXF) is a wrapper or container format which encapsulates media and rich production metadata into a single file, which is useful for media storage and exchange. It is an open technology that can is implemented by different manufacturers.

MXF is designed to be flexible enough for use in all stages of content creation, from acquisition, to authoring, to distribution. The primary benefit of MXF is that it provides greater workflow efficiency by preserving useful metadata as media files make their way through the content creation process. The MXF format is independent of the type of content that it contains, so an MXF file can contain video and/or audio at any resolution or compression. In many instances MXF files encapsulate media which is already formatted to one of the existing industry standards.

MXF allows for easy exchange of material between file servers, tape streamers and digital archives. MXF is an ideal interchange format to enable workflow efficiencies in news broadcasting, post production, asset management, and archiving applications.

You can select the MXF format when you capture, link, create titles, or render effects. See "Media Creation Settings" in the Help.

The MXF AMA plug-in should be installed on your system. To link MXF media through the AMA method, use Link to AMA File(s). For more information, see "The Avid Media Access (AMA) Workflow" on page 94 and "Linking Media with AMA" on page 97.

For specific MXF workflow steps, see "Workflow for Editing MXF Clips with AMA" on page 114.

MXF Media and AMA

To link supported MXF media through the AMA method, you first need to obtain an MXF file from a supported vendor or through the Avid editing system. Then use the AMA MXF plug-in to link to Avid supported MXF files. For the list of supported MXF files, see "MXF Formats and Resolutions" on page 92.

MXF Formats and Resolutions

The following table lists the formats and resolution by vendor that have been qualified with the MXF plug-in:

Company	Resolution/Bit Rate	Raster/Frame Rate	Number of Audio Channels (maximum)
Omneon, Rhozet	D10	SD 30i	4 or 8
Sony	XDCAM HD	1080i/59.94, 1080i/50, 1080p/23.976, 1440 x 1080	4
	XDCAM HD 17.5 Mbits		4
	XDCAM HD 25 Mbits		4
	XDCAM HD 35 Mbits		4
	HDV (25 Mbits CBR)	1080i59, 1080i50	4
	XDCAM HD 50 Mbits	1080i/59.94, 1080i/50, 1080p/23.976, 1080p/25, 1080p/29, 720p/59, 720p/50,1920 x 1080, 1280 x 720	8
Sony	XDCAM EX 25Mbits	1080i/59.94, 1080i/50, 1080p/23.976	2 or 4
Sony	XDCAM EX 35 Mbits	1080i/59.94, 1080i/50, 1080p/23.976, 1080p/29.97, 1080p/25, 720p/59, 720p/50, 1920 x 1080, 1440 x 1080, 1280 x 720	2 or 4
Sony	XDCAM EX DV-AVI:		2
	DV 25 411	SD NTSC 30i and PAL 25i	
	DV 25 420	SD PAL 25i	
Sony, Canon	DVCAM:		4
	DV 25 411	SD NTSC 30i and PAL 25i	
	DV 25 420	SD PAL 25i	
Canon	DVCPRO:		2
	DV 25 411	SD NTSC 30i and PAL 25i	
Canon	DVCPRO HD	720p	4
		1080i	
Canon	DVCPRO 50:		4
	DV 50	SD NTSC 30i and PAL 25i	

Company	Resolution/Bit Rate	Raster/Frame Rate	Number of Audio Channels (maximum)
Sony, Ikegami	MPEG IMX: MPEG 30 MPEG 40 MPEG 50	 SD NTSC 30i and PAL 25i SD NTSC 30i and PAL 25i SD NTSC 30i and PAL 25i	4 or 8
Sony	MPEG-4 (proxy media)	SD NTSC 30i and PAL 25i	4 or 8
Canon XF	MPEG-2 HD 50 and 35Mbits 25Mbits	1920 x 1080, 1280 x 720 1440 x 1080	4
Ikegami	MPEG-2 HD LongGOP 50 Mbits	1080i/59.94, 1080i/50, 1080p/23.98 pulldown, 1080p/29.97, 1080p/25, 720p/59, 720p/50, 720p/25, 720p/23.98 pulldown, 1440 x 1080	4
	1080p/23.98 pulldown and 720p/23.98 pulldown record at 59.94fps and are only compatible with 1080i/59.94 and 720p/59.94 projects. 1080p/29.97 records as PSF at 59.94fps and is only compatible with 1080i/59.94 projects. 1080p/25 and 720p/25 record as PSF at 50fps and are only compatible with 1080i/50 and 720p/50 projects.		
Ikegami	MPEG-2 HD I-Frame 100 Mbits		4

The Avid Media Access (AMA) Workflow

Avid Media Access (AMA) is a plug-in architecture that lets you link directly to clips from a third-party volume (for example, a P2, XDCAM or GFCAM device) or to a file based media clip (for example, QuickTime or MXF) into a bin without storing the media directly on your system. AMA lets you be more productive by browsing and editing directly from the device or volume.

The bin lets you log, browse, and view these clips in the usual way. Once the third-party device is disconnected, the bin still exists with the clips, although the media displays as offline. When you reconnect the device, the media appears online. The system automatically displays the media; you do not need to mount the drives.

The AMA method also allows for more metadata to be brought into the bin which gives you more information about the media. For example, essence marks (or locators) associated with the clip are automatically brought into your bin.

To display metadata information in your bin, see “Adding a Metadata Bin Column Heading” in the Help.

The following considerations and limitations apply:

- When the AMA setting is activated, the non-AMA method does not appear in the File menu. Deactivate the AMA setting to display the File > Import P2 (and Import XDCAM Proxy) option. The AMA setting is on by default.
- The Link to AMA File(s) menu choice is available for third-party AMA file based media plug-ins. To see the available AMA plug-ins available for your Avid editing application, go to www.avid.com. You must have a third-party plug-in installed on your system for the option to display.
- Windows UNC (Universal Naming Convention) paths are not supported with AMA media. To link AMA media, map it to the drive.
- When you render an audio effect on an AMA media clip, all audio media files are written as PCM (MXF), regardless of what you set for the audio file format.
- The Dynamic Relink option is not supported with AMA clips.
- Avid does not support MultiCamera editing with AMA clips.
- You should not mix workflows. Either use the AMA method or use the traditional import/batch import method.

Selecting the AMA Settings

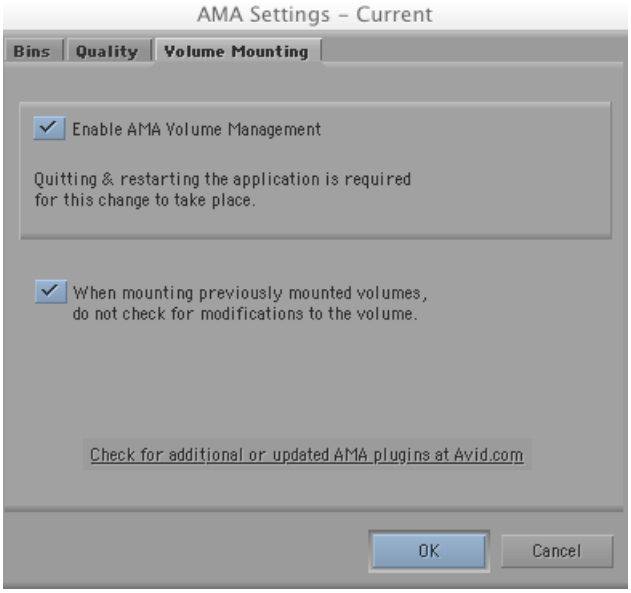
You can set options in the AMA Settings dialog box to turn AMA on or off (on by default), to automatically mount your volumes, and to customize your bin.

To check for and download additional or updated AMA plug-ins, click the link to www.avid.com.

To set up AMA:

1. In the Project window, click the Settings tab.
2. Double-click AMA.

   The AMA Settings dialog box appears.



3. Click the Volume Mounting tab.
4. Select “Enable AMA Volume Management.”

   By default, this option is selected. If you deselect the option and then reselect it, you must quit and restart your Avid editing application. When this option is selected, the File > Import menu item is no longer available.
5. If you want the system to automatically scan drives (volumes) every time, select the option “When mounting previously mounted volumes, do not check for modifications to the volume.” This option is off by default.
6. If you remount a volume, deselect the option “When mounting previously mounted volumes, do not check for modifications to the volume,” and the system checks the modification date of the device or drive against the last time the clips were linked. If the date is the same, the clips come back online. If the date is different, the system links the clips again, and links any new clips added to the volume. This option is off by default.

If you restart your Avid editing application, the system automatically rescans the drives regardless of the options you’ve selected.

7. To customize your bin, click the Bins tab.

   By default, the system links your clips into a new bin using the same name as your project name. If you want to change the bin name or want to use an already existing bin, you can make these changes in the Bins tab.

   For more information on Bins options, see “AMA Settings: Bins Tab” in the Help.

Depending on your AMA Settings, every time you insert a card into a reader , the system creates a new bin whether the same card or device has been previously inserted or not.

8. Click OK.

Viewing Installed AMA Plug-ins

Once you download and install a third-party plug-in from www.avid.com\ama, you can enter a console command to view a list and the version number of the plug-ins installed on your system.

To display the list of installed AMA plugins:

1. Select Tools > Console.
2. In the command entry text box, type: **`AMA_ListPlugins`**
3. Press Enter (Windows) or Return (Macintosh).

   AMA_ListPlugins displays a list of the plugins installed on your system.

Understanding Linking with AMA

Linking lets you point to media on a device or point to the media directly on your system. The media physically resides on your system or it can reside on an external device. The device can be a camera, a card reader, an optical disk, a virtual volume on your desktop or on a server. The media points to the most recent source. For example, if you link the clips to a virtual volume on your desktop, the drive column displays the desktop as the location where the clips are linked to. If you then insert a card into a reader with the same media, the clips point to the media on the card. If you remove the card, the clips point to the media on the card and the clips appear offline. The card being the most recent source. Once the card is reinserted, the clips in the bin appear online.

Linking Media with AMA

If you link to media which originates on a volume (P2, XDCAM EX, XDCAM, or GFCAM), use the File > Link to AMA Volume(s) option. If you link directly to the media file clip (QuickTime or MXF), use the File > Link to AMA File(s) option.

For optimum viewing and playing, Avid recommends a single clip length should not exceed more than 12 hours.

The decompose option from the Clip menu is not available with AMA. You do not need to decompose clips when you use the AMA method.

To link clips on a volume automatically with AMA:

1. Insert a P2 card, an XDCAM EX card, an XDCAM disk, RED card, into the device.

   The system scans the device and links the clips into a bin (based on the AMA settings).

To manually link clips from another volume with AMA:

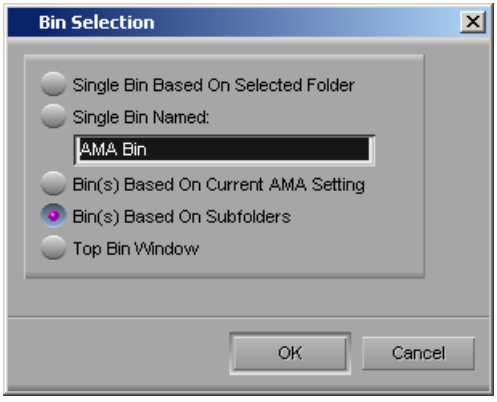
1. Select File > Link to AMA Volumes.

   The Browse For Folder dialog box opens.

2. Navigate to the P2, XDCAM, RED or GFCAM clips, and then click OK.

   For P2, navigate one level above the Contents folder. For XDCAM disks, navigate to one level above the Clip folder. For XDCAM EX, navigate to one level above the BPAV folder. For RED, navigate to the root directory of the RED card. For GFCAM, navigate to the root directory of the GFPAK.

   Depending if you are using an existing bin or creating a new bin, the Bin Selection dialog box opens.



3. Select Bin Selection options.

Option	Description
Single Bin Based On Selected Folder	Places all linked clips into one default bin.
Single Bin Named	Lets you create a new bin and type in a new bin name. Places all linked clips into that bin.
Bin(s) Based on Current AMA Setting	Places the clips in the bin(s) you set up in the AMA Settings Bins tab.
Bin(s) Based on Subfolders	Places the clips in bin(s) based on their subfolders.

Option	Description
Top Bin Window	Places the clips in the active bin.

If you relink a sequence and the bin that stores the AMA referenced clips is closed, the media does not relink. Before you relink, open the bin of the referenced clips.

4. Click OK.

   The clips appear in the bin or bins depending on the options you selected, they highlight in yellow.

To manually link clips from a file with AMA:

1. Select File > Link to AMA File(s).

   You can also right-click a bin and select Link to AMA File(s).

The system ignores the settings you have selected in the AMA Volume Mounting settings.

2. If there is no active bin, a dialog box appears asking you to select a bin.

   The Select file(s) for AMA linking dialog box opens.

3. From the AMA Plugin Filter menu, select the type of file.

Option	Description
All AMA Plugins Files	Searches and displays all files.
QuickTime	Searches and displays only QuickTime files.
MXF	Searches and displays only MXF files.
RED R3D	Searches and displays only RED files.

4. Select the file(s) you want to link. Ctrl+click or Shift+click to select multiple files.
5. Click Open.

   The clips appear in the active bin, they highlight in yellow.

   If the system cannot link a file, an error message displays informing you to open the Console window for more information about the file(s) in error.

   If you move the clip from the original drive to another drive on your system, the clip displays as offline in your bin.

If you move a source file from one location to another and then back to the original location, you might need to refresh the bin to redisplay the clip. Close and reopen the bin to refresh the bin.

Working with AMA Multiple Resolution Media

If you choose to link to low-resolution media, you can link to any combination of proxy or high-resolution audio or video media. For instance, you can link to the most compressed (proxy) video and the highest quality audio.

Disks can take some time spinning up to link the high-resolution media, so linking to the low-resolution media saves you time. You can edit with the low-resolution media and once you are finished, you can relink to the high-resolution media.

At this time, Avid AMA supports linking to multiple resolution XDCAM media only.

For specific XDCAM multiple resolution workflow steps, see "Workflow for Editing XDCAM Multiple Resolution Clips with AMA" on page 108.

Linking to AMA Multiple Resolution Media

Before you link to low-resolution or high-resolution media, you need to select the video and audio quality in the AMA Settings Quality tab.

The steps below highlight linking to low-resolution media. You can also link to high-resolution media.

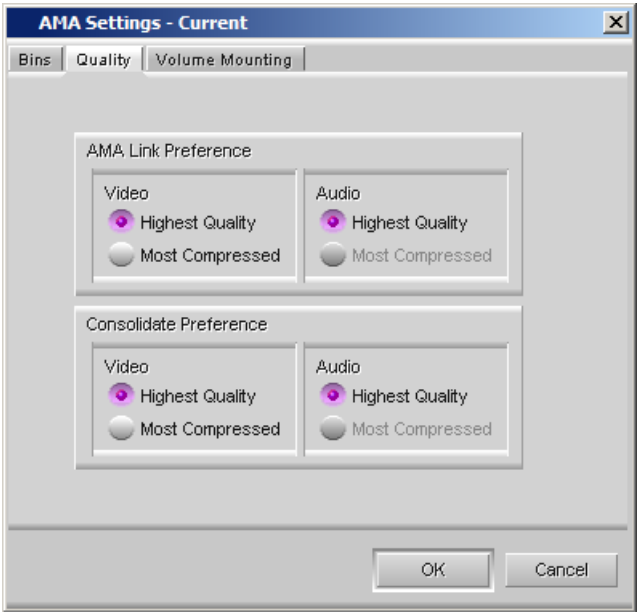
For information about linking with AMA, see "The Avid Media Access (AMA) Workflow" on page 94.

To link to low-resolution media:

1. In the Project window, click the Settings tab.
2. Double-click AMA.

   The AMA Settings dialog box appears.

   For information about the AMA Settings, see "AMA Settings" in the Help.
3. Click the Quality tab.



4. Click the appropriate resolution for your video in the AMA Link Preference section, and click OK.

   If a particular resolution is not available, it will be grayed out.

5. Insert the disk into the device.
6. Select Bin Selection options from the Bins tab.

   For information on bin selection options, see “Linking Media with AMA” on page 97.

7. Select File > Link to AMA Volume.

   The Browse for Folder dialog box opens.

8. Navigate to the clips, and then click OK.

   The clips appear in the bin or bins depending on the bin options you select. Clips highlight in yellow.

   The Video column in the bin displays the project type of the clip.

Switching Between Multiple Resolution Media

Once you link to the low-resolution or high-resolution media and complete your edits, you can easily switch from low to high and high to low-resolution media. When you switch to a different resolution, the system replaces the clip in the bin with the new clip and resolution.

The steps below highlight switching from low-resolution to high-resolution media. You can also switch from high-resolution to low-resolution.

For XDCAM, if you use the Sony PDZ-1 software to assign a User Disc ID, the Avid editing system displays this information in a bin column and knows what disk name is associated with each clip.

To switch from low-resolution to high-resolution media:

1. Insert the disk in the device.
2. Select the low-resolution clips in the bin.
3. Right-click the bin and select Modify AMA Resolutions.

   The AMA Resolutions Quality dialog box appears.

4. Click the Highest Quality for your video (audio is always set to Highest Quality) and click OK.

   The highest quality clips replace the most compressed (low-resolution) clips in the bin, they highlight in yellow.

   If the bin contains clips from multiple volumes, you will be prompted to insert another disk.

Consolidating Multiple Resolution Media

When you are ready to move your media to shared storage, you can link to your resolution and consolidate at the same time.

The steps below highlight consolidating high-resolution media. You can also consolidate low-resolution media.

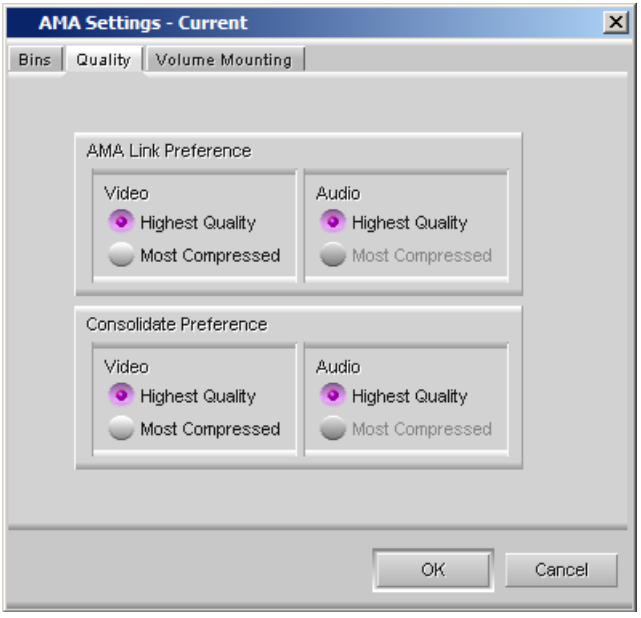
For information on why you should consolidate, see “Consolidating Media” in the Help.

To consolidate high-resolution media:

1. In the Project window, click the Settings tab.
2. Double-click AMA.

   The AMA Settings dialog box appears.

   For information about the AMA Settings, see “AMA Settings” in the Help.
3. Click the Quality tab.



4. Click the appropriate resolution for your video in the Consolidate Preference section, and click OK.

   If a particular resolution is not available, it will be grayed out.
5. To consolidate the clip, follow the steps in “Using the Consolidate Command” in the Help.

   The resolutions you select in the Consolidate Preference area of the AMA Settings Quality tab displays in the Transcode/Consolidate dialog box when you consolidate or transcode.

Relinking to AMA Files

After you link AMA QuickTime files into your sequence, you have the option to make changes (in a third party applications, such as Adobe After Effects) to that file. If you change the filename or change the location of the file, the best way to link that clip back into your

sequence is through the relink option. Relinking to an AMA file allows you to link to a different file. This process only works if the targeted file is compatible with the old file, for example the file has the same duration, edit rate or number of tracks.

This feature is helpful when you have a group of linked clips that were moved to a different folder or drive. You can relink the clips to the new location. You can also use this feature to toggle between different versions of a QuickTime movie, for example a low-resolution version of the movie is myMovie_DV.mov and the high-resolution version of the movie is myMovie_1to1.mov. You can relink to both of these versions, to see which clip works better in your sequence.

At this time, Relink to AMA File(s) is only available with AMA QuickTime files.

To relink to an AMA QuickTime file:

1. Link to an AMA QuickTime file.

   The clips highlight yellow in the bin.

   For information on linking, see "Linking Media with AMA" on page 97.
2. If you then decide to change the original clip in the bin in your third-party application, create the new movie file.
3. In your bin, select the clip or clips you want to relink.
4. Select File > Relink to AMA File(s).

   The Select file to relink AMA clip dialog box opens asking you to locate the new file.
5. Locate the new file.

   If you have multiple clips selected in the bin, the system prompts you for the location of each file, one at a time.
6. Click Open.

   The new clip highlights in the bin.

If the new file is not compatible with the clip in the bin (it does not have the same duration, edit rate or number of tracks), the clip in the bin retains its original link.

The AMA Plug-in Log File

The Avid system creates an AMA plug-in log file when you link clips. The log file records errors and information about the clips. If you experience any problems while you link clips or if you receive an error message, check the AMA log file to get more information about the error (for example: a corrupt file or a bad filename). You can view the log file from the following location on your system:

- (Windows) drive:\Program Files\Avid\Media Composer\Avid FatalError Reports. The name of the log file is AMALoggerMM_DD_YY.log.
- (Macintosh) Volume/Users/Shared/AvidMediaComposer/Avid FatalError Reports. The name of the log file is AMALoggerMM_DD_YY.log.

Using Virtual Volumes

You can use a virtual volume to copy media from a card or disk. This lets you use the card or disk again. A virtual volume can be a folder on your desktop or a folder located on a server. However, the virtual volume folder should reside one level down from the root level in order for the system to display it as a virtual volume. The following are examples of virtual volumes:

- C:\Desktop\BPAV
- Z:\P2\Card 1
- Z:\GFPAK\

With the AMA method, all drives and virtual volumes associated with your bin mount automatically. You cannot remove a volume while in AMA, however you can remove a virtual volume.

To unmount a virtual volume:

1. Choose File > Unmount.

   The Unmount dialog box opens.

2. Select the virtual volume you want to remove.
3. Click OK.

   The system removes the virtual volume from your system and clips linked to this virtual volume appear offline. When you restart your Avid editing application, the system scans the system for virtual volumes and the clips appear online.

Virtual Volumes and AMA Bins

If you select Volume Name in the AMA Bin Settings tab, the system names the bin the same name as the virtual volume drive name. If you continue to use the same virtual volume to link other media through AMA, the system continues to place the linked media in the same bin. If you want to create a new bin for different types of media you link through AMA, you can either create a new virtual volume drive for each type of media (XDCAM, XDCAM EX, P2, GFCAM, etc.) or you can create a new bin every time you link to new media on a virtual volume.

To create a new bin on the same virtual volume:

1. Before you link your media through AMA, click the Settings tab in the Project window.
2. Double-click AMA.
3. Click the Bins tab.
4. Select "Create a new bin" and specify a new bin name.
5. Click OK.
6. Select File > Link to AMA Volumes.

   The media appears in the newly created bin. Repeat these steps for each type of media.

Deleting Clips

You can delete master clips, but you cannot delete media files that reside on drives. Your Avid editing application treats files as read-only devices.

You can delete master clips and media files the same way you delete other master clips and media files. However, you might not be able to delete files that you moved rather than copied. If you cannot delete master clips and media files, first unlock the clips as described in the second procedure, and then delete them.

To delete files from cards/volumes:

1. Quit your Avid editing application.
2. On the desktop, navigate to the drive.
3. Select the files you want to delete and press the Delete key.

To delete files on a local drive in your Avid editing application:

1. In a bin, select the clips you want to delete.
2. (Option) Right-click and select Unlock Bin Selection.
3. Press the Delete key.

   The Delete dialog box opens.

4. Select Delete master clips and Delete associated media files.
5. Click OK.

Workflows for Editing with AMA

The following topics include high-level procedures of a typical workflow you might use when you edit with a particular media type and AMA.

Workflow for Editing XDCAM and XDCAM EX Clips with AMA

The following steps describe a typical workflow for editing XDCAM and XDCAM EX clips with AMA.

Do not mix AMA and traditional workflows. Either use AMA when you work with an XDCAM device or use the traditional import/batch import workflow.

You should be aware of the following:

- Playback performance from an optical disk is very slow. To create a sequence with multiple effects or layered tracks, Avid suggests that you consolidate the media to a local drive, instead of working directly from the optical disk.
- Avid has turned off redrawing of waveforms in the Timeline when you link to XDCAM clips that reside on a disk. This allows for a faster linking process. When the media is consolidated, the waveforms redraw.
- When you link XDCAM clips from an optical disk, Avid recommends that you do not display the bin in Frame view or Script view due to performance issues.

A typical workflow is as follows:

1. The Sony XDCAM and XDCAM EX AMA plug-in should be installed on your system.
2. For XDCAM, install the appropriate Sony XDCAM drivers.

   You do not need drivers for XDCAM EX.
3. Insert the XDCAM disk or XDCAM EX card.

   The system links the XDCAM clips into a bin. The media itself remains on the disk. The clips point directly to the high-resolution media on the disk.

   For XDCAM clips from an optical disk, a progress bar appears to show you how much time is left to link the media.

If you use multiple cards and you remove one of the cards, your media displays offline.

4. Use the master clips to edit the sequence.
5. (Option) Rename the clips to help organize your material.

6. You can either transfer your media to your hard drive and then transcode or consolidate your sequence or clips, or consolidate directly from the XDCAM disk.

When you consolidate, if you want to keep your AMA clips linked to the original source, select the option "Keep Master clips linked to media on the original drive," in the Copying Media Files dialog box.

Consolidating your media helps when you work with multiple cards. If you remove a card from the reader, consolidating lets you view your sequence with all the media online.

Due to the design of the Nitris input/output hardware, playback of XDCAM or XDCAM EX media on an Avid Symphony using Nitris causes dropped frames. To allow for full performance playback, transcode the XDCAM media into DNxHD media to play the video on your Avid Symphony system with Avid Nitris input/output hardware.

For information on consolidating your sequence, see "Consolidating Media" in the Help. For information on transcoding your sequence, see "Using the Transcode Command" in the Help.

7. Remove the XDCAM disk or XDCAM EX card.

Workflow for Editing XDCAM Multiple Resolution Clips with AMA

The following steps describe a typical workflow for editing XDCAM multiple resolution clips with AMA.

Do not mix AMA and traditional workflows. Either use AMA when you work with an XDCAM device or use the traditional import/batch import workflow.

You should be aware of the following:

- Playback performance from an optical disk is very slow. To create a sequence with multiple effects or layered tracks, Avid suggests that you consolidate the media to a local drive, instead of working directly from the optical disk.
- Avid has turned off redrawing of waveforms in the Timeline when you link to XDCAM clips that reside on a disk. This allows for a faster linking process. When the media is consolidated, the waveforms redraw.
- When you link XDCAM clips from an optical disk, Avid recommends that you do not display the bin in Frame view or Script view due to performance issues.

A typical workflow is as follows:

1. Use Sony's PDZ-1 software to associate your low-resolution clips with metadata to identify the clip in the Avid bin. This includes entering a User Disc ID in the Disc Properties window.
2. The Sony XDCAM and XDCAM EX AMA plug-in should be installed on your system.
3. Install the appropriate Sony XDCAM drivers.
4. In the Project window, click the Settings tab.
5. Double-click AMA.

   The AMA Settings dialog box appears.
6. Click the Quality tab.
7. Click the appropriate resolution for your video and audio in the AMA Link Preference section, and click OK.
8. Insert the XDCAM disk in the XDCAM device.
9. Select Bin Selection options from the Bins tab.

   For information on bin selection options, see "Linking Media with AMA" on page 97.
10. Select File > Link to AMA Volume.

    The Browse for Folder dialog box opens.
11. Navigate to the XDCAM clips, and then click OK.

    The clips appear in the bin or bins depending on the bin options you selected, they highlight in yellow.
12. Edit the sequence.
13. Right-click the bin and select Modify AMA Resolutions to relink your low-resolution to high-resolution media.
14. To consolidate your media, see "Consolidating Multiple Resolution Media" on page 102.

When you consolidate, if you want to keep your AMA clips linked to the original source, select the option "Keep Master clips linked to media on the original drive," in the Copying Media Files dialog box.

15. Click the Highest Quality for your video and audio and click OK.

    The highest quality clips appear in the bin along with the low resolution (most compressed) clips, they highlight in yellow.

    If the system cannot find the corresponding low-resolution clip, it might be because you inserted the wrong XDCAM disk. If you insert the wrong disk, the system displays a message that informs you to insert the correct disk. If you used Sony's PDZ-1 software

and provided a disk name in the User Disc ID field, the system message displays the disk label name. If you did not use the PDZ-1 software, the system asks you to insert the disk containing the (low-resolution) clip selected in the bin.

16. Remove the XDCAM disk.

Workflow for Editing P2 Clips with AMA

The following steps describe a typical workflow for editing P2 clips with AMA.

Do not mix AMA and traditional workflows. Either use AMA when you work with an XDCAM device or use the traditional import/batch import workflow.

A typical workflow is as follows:

1. The Panasonic P2 AMA plug-in should be installed on your system.
2. Install the appropriate Panasonic P2 driver.
3. Mount one or more P2 cards (up to five).

   The system links the P2 clips automatically into a bin.

If you use multiple P2 cards and you remove one of the cards, your media displays offline.

4. Use the master clips to edit and output a sequence.
5. (Option) Rename the clips to organize your material.
6. Consolidate or transcode your sequence or clips.

   The media consolidates to the destination you set in the Media Creation dialog box.

   Consolidating your media helps when you work with multiple P2 cards. If a card is removed from the reader, consolidating lets you view your sequence with all the media online.

When you consolidate, if you want to keep your AMA clips linked to the original source, select the option "Keep Master clips linked to media on the original drive," in the Copying Media Files dialog box.

When you transcode a sequence, the system automatically defaults to convert both audio and video. You cannot transcode video only with P2.

For information on consolidating your sequence, see "Consolidating Media" in the Help. For information on transcoding your sequence, see "Using the Transcode Command" in the Help.

7. Remove the P2 card.

Workflow for Editing Canon XF Clips with AMA

A typical workflow is as follows:

1. The Canon XF AMA plug-in and the MXF AMA plug-in should be installed on your system.
2. Mount the flash cards.

   The system links the Canon XF clips automatically into a bin.

If you use multiple flash cards and you remove one of the cards, your media displays offline.

3. Use the master clips to edit and output a sequence.
4. (Option) Rename the clips to organize your material.
5. Consolidate or transcode your sequence or clips.

   The media consolidates to the destination you set in the Media Creation dialog box.

   Consolidating your media helps when you work with multiple P2 cards. If a card is removed from the reader, consolidating lets you view your sequence with all the media online.

When you consolidate, if you want to keep your AMA clips linked to the original source, select the option "Keep Master clips linked to media on the original drive," in the Copying Media Files dialog box.

For information on consolidating your sequence, see "Consolidating Media" in the Help. For information on transcoding your sequence, see "Using the Transcode Command" in the Help.

6. Remove the flash card.

Workflow for Editing GFCAM Clips with AMA

A typical workflow is as follows:

1. The GFCAM AMA plug-in should be installed on your system.
2. Insert the GFPAK.

   Your Avid editing system links the GFCAM clips automatically into a bin. The media itself remains on the disk. The clips point directly to the high-resolution media on the disk.

If you use multiple GFPAKs and you remove one of the GFPAKs, your media displays offline.

3. Use the master clips to edit the sequence.

4. (Option) Rename the clips to organize your material.
5. Consolidate or transcode your sequence or clips.

   Consolidating your media helps when you work with multiple GFPAKs. If a GFPAK is unplugged, consolidating lets you view your sequence with all the media online.

When you consolidate, if you want to keep your AMA clips linked to the original source, select the option "Keep Master clips linked to media on the original drive," in the Copying Media Files dialog box.

When you transcode a sequence, the system automatically defaults to convert both audio and video. You cannot transcode video only with GFCAM.

6. Disconnect the GFPAK.

Workflow for Editing RED Clips with AMA

Once you have linked the RED clips from a RED drive or card, you can transcode the media from your sequence. Transcoding your media is helpful when you work with multiple resolutions.

You cannot consolidate the RED media in your Avid editing application.

A typical workflow is as follows:

1. The RED AMA plug-in should be installed on your system.
2. Attach the RED drive or insert a REDFlash card.

   Your Avid editing system links the RED clips automatically into a bin. The media itself remains on the disk. The clips point directly to the high-resolution media on the disk. All metadata information displays as columns in the bin.

If you use multiple cards and you remove one of the cards, your media displays offline.

3. Right-clip the clip in the bin and select Set Source Settings.

   For detailed information to set clip parameters, see "Adjusting RED Source Settings" on page 82.
4. Use the master clips to edit the sequence.
5. (Option) Rename the clips to help you organize your material.
6. Choose the video quality from the Transcode & Consolidate tab of the Media Creation setting.

   For more information, see "Preparing your RED Clip for Transcode, Mixdown, or Render" on page 90.

7. Transcode your sequence or clips to an HD or SD resolution.

   Avid supports the use of the REDRocket Accelerator card for transcoding, rendering and mixdown at half or full debayer settings. Playback is not supported. We do not use the video output connections on the card. The card is not supported on 32-bit Windows operating systems.

   If you need to output to a resolution higher than HD, then export an AFE of your sequence for the conform process on an Avid DS. If your high-resolution media is on a shared storage device and Avid DS has access to the device, Avid DS automatically relinks to the RED files.

8. Remove the RED drive or card.

Workflow for Editing QuickTime Clips with AMA

There are a few guidelines you should follow when you link QuickTime files through AMA.

When the QuickTime clip appears in your bin, you can make changes to the clip in After Effects or Final Cut Pro, and have those changes update in the bin. Follow these steps to understand the QuickTime AMA workflow.

A QuickTime AMA workflow is as follows:

1. The Avid QuickTime AMA plug-in should be installed on your system.
2. Create a QuickTime movie with a supported codec in Adobe AfterEffects or Apple's Final Cut Pro.

   Avid supports the Same as Source and Custom export settings options when you export with Avid QuickTime codec.

See Adobe and Apple documentation for information on how to create a QuickTime movie.

3. Move the created .mov file onto your Avid editing system.
4. Open a bin.

   If there is no active bin, a dialog box appears asking you to select a bin.

5. Select File > Link to AMA File(s).

   You can also right-click a bin and select Link to AMA File(s).

For information about AMA, see "The Avid Media Access (AMA) Workflow" on page 94.

   The Select file(s) for AMA linking dialog box opens.

6. From the AMA Plugin Filter menu, select QuickTime.
7. Locate and select the .mov file(s) you want to link. Ctrl+click or Shift+click to select multiple files.

8. Click Open.

   The clips appear in the active bin, and highlights in yellow.

9. Use the linked clips to edit your sequence.

10. If you need to change the QuickTime clip in After Effects or FCP, open the existing file in After Effects or FCP and make the change.

    If you change the number of tracks, change the duration of the clip or change the clips file name, when you relink through AMA, the system creates a new clip and will not overwrite or replace the existing clip in the bin.

    If you change the number of tracks, the duration, or edit rate, but *not* the file name, any clips linked to the sequence will unlink and the clips display Media Offline.

If you change the file name or the location of the clip, you can Relink to AMA files. For more information, see "Relinking to AMA Files" on page 103.

11. From your Avid editing application, select Clear Monitor from the Clip Name menu above the monitors.

    This clears the monitors and Timeline of any old clips.

12. Render or export the newly changed QuickTime movie out of AfterEffects or FCP to the same folder location as the original file. Accept all overwrite prompts. Once the changed QuickTime movie is exported or rendered, refocus or open (if FCP or AfterEffects are on the same system) your Avid editing application.

    The updated clip appears in your bin (and sequence) and replaces the old clip. If the clip is in the Source or Record monitor, it also will update.

13. Continue to edit your sequence or consolidate or transcode your sequence or clip.

When you consolidate, if you want to keep your AMA clips linked to the original source, select the option "Keep Master clips linked to media on the original drive," in the Copying Media Files dialog box.

For information on consolidating your sequence, see "Consolidating Media" in the Help. For information on transcoding your sequence, see "Using the Transcode Command" in the Help.

Workflow for Editing MXF Clips with AMA

A typical workflow is as follows:

1. The MXF AMA plug-in should be installed on your system.
2. Create a supported MXF file (create a supported MXF file from your third party application, for example: Rhozet or Omneon).

3. Move the .mxf file onto your Avid editing system.
4. Using the AMA method, link to the MXF clips automatically into a bin.
5. Use the linked clips to edit your sequence.
6. (Option) Rename the clips to help organize your material.
7. Consolidate or transcode your sequence or clips.

   The media consolidates to the destination you set in the Media Creation dialog box.

When you consolidate, if you want to keep your AMA clips linked to the original source, select the option "Keep Master clips linked to media on the original drive," in the Copying Media Files dialog box.

Multichannel Audio

Working with Multiple Tracks

Your Avid editing application lets you edit up to 24 tracks of video and 24 tracks of audio, including multichannel audio tracks, and one data track. While working with multiple tracks, you can use the Track Selector panel to select, manipulate, delete, lock, patch, and monitor your tracks. You can use multiple tracks to layer audio effects and sound or to add video titles and other effects.

Multichannel audio tracks contain more than one channel of audio in a single track. Stereo multichannel tracks, for example, contain two stereo channels in one track. You can edit multichannel audio tracks in the same way that you edit mono audio tracks.

Multiple video tracks do not immediately play back at the same time until you apply an appropriate effect that composites the layers. Multiple audio layers, however, do play back immediately if correctly monitored.

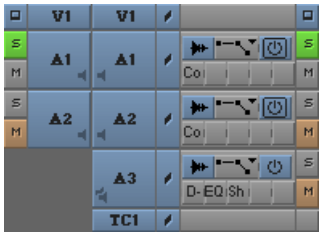
Occasionally, effects editing involves a procedure known as nesting. Nesting involves stepping into existing tracks to reveal added layers for combining multiple images and digital video effects. When you apply an effect, you can step out to view and render the effect as one segment on the track. You can nest up to 24 additional tracks within each track.

For more information on nesting techniques, see "Nesting Effects" in the Help.

Understanding the Track Selector Panel

The Track Selector panel provides a quick display of track information. You can see which tracks are available, active, patched, monitored, or locked on the source and record sides at any time. The Track Selector panel can look very different depending on the nature of the source material or the work underway in the sequence. The following configuration shows only one example.

You cannot patch a data (D) track.



Track Selector and Track Control panels, with Source tracks (left) and Record tracks (right). See the following table for a list of Track Selector buttons.

Icon	Button
	Video Track Monitor button
	Video Track, Source and Record
	Sync Lock button
	Audio Mono Track Monitor button
	Audio Stereo Track Monitor button
	Audio Track, Source and Record
	Timecode button

The source side of the panel displays only those tracks available for the clip currently loaded. For example, a clip that has audio captured only for track A1 does not display an A2 track in the Track Selector panel.

The record side of the panel displays only those tracks currently in use for the sequence. When you edit source material with a track selected that does not yet exist on the record side, by default the track appears on the record side after the edit takes place.

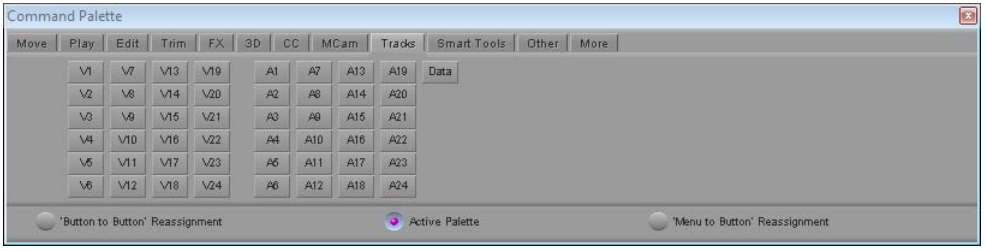
Selecting Tracks

You can select tracks on the source side or the record side of the Track Selector panel to control your options for editing. For example, you might select the source and record tracks for V1, A1, and A2 to edit picture and audio from the source clip into the sequence. To edit the picture without sound, select only V1 source and record tracks. To edit the sound without the picture, select only A1 and A2 source and record tracks.

The following guidelines apply to track selection when you edit:

- You can edit selected tracks on the source side directly into the sequence, assuming you have selected parallel tracks on the record side.
- You cannot edit deselected tracks on the source side into the sequence, regardless of record track selections.
- You cannot edit deselected tracks on the record side into the sequence, regardless of source track selections.

The Tracks tab of the Command Palette contains buttons for all available Timeline tracks. You can map these buttons to any mappable button location or to the keyboard, or you can use them directly in the Command Palette. For more information, see “Mapping User-Selectable Buttons” in the Help and “Activating Commands from the Command Palette” in the Help.



Track buttons in the Tracks tab of the Command Palette

To select one or more tracks, do one of the following:

- Click the Track button of any inactive track to select the track.
- Drag a lasso around multiple tracks to select them at once.
- With the Timeline active, select Edit > Select All Tracks to select all tracks on the record and source sides.

- Click the Cycle Picture/Sound button in the Edit tab of the Command palette to cycle among selected video tracks, audio tracks, data track, or all tracks.

To use a Command Palette button for track selection, do one of the following:

1. Click the appropriate button in the location to which you have mapped it.
2. Press the key on the keyboard that you have associated with the track button.
3. In the Tracks tab of the Command Palette, select Active Palette, and then click the track button.

To deselect a track:

- Click the Track button of any active track.

Understanding Track Monitoring

The following information describes how track monitoring functions and your options for monitoring tracks. For procedures on monitoring or soloing tracks, see "Monitoring and Soloing Tracks" on page 120.

Monitoring Video

The Video Track Monitor button determines whether you see video during playback. You can turn it off at any time to monitor only audio during editing. When there are multiple video tracks, all tracks below the monitored track are active during playback. The Video Track Monitor button displays a Monitor icon when the track is monitored for playback and output.

When you edit with multiple tracks, you can activate the monitoring of a lower track to monitor only the video on that track and below. You can use this feature when you have multiple layers of video effects and need to isolate lower tracks for viewing. You can also monitor a solo track.

If you monitor a video track below the topmost track, return monitoring to the topmost track to view, export, mix down, or record all the tracks together. Unmonitored tracks are not included in playback.

Monitoring Audio

You can monitor up to 16 audio tracks at a time.

The following characteristics apply to audio track monitoring:

- The system pans odd-numbered mono tracks to the left speaker and even-numbered mono tracks to the right speaker by default. Stereo tracks include channels for the left and right speakers, with the stereo mix panned to the center.
- If your sequence includes more than 16 audio tracks, you can select any 16 tracks to monitor at one time by selecting the Audio Track Monitor button for each audio track you want to monitor. The Audio Track Monitor button displays either with a black border (primary monitored audio track) or without the black border (monitored audio track), when you select the audio track for monitoring playback and output.
- An Audio Track Monitor button with a black border indicates that the tracks are the primary monitored tracks and audio information is not dropped when the play speed increases during scrubbing. By default, the Avid editing application sets the two top audio tracks as the primary monitored tracks. For more information about setting an audio track to ensure it is not dropped during scrubbing, see “Selecting Tracks for Audio Scrubbing” in the Help.
- To hear more than 16 tracks at once, you must mix down some of them to a maximum of 16. For more information, see “Mixing Down Audio Tracks” on page 48.
- By default, all monitored audio tracks are selected for scrubbing. To isolate specific audio tracks for scrubbing, see “Soloing Audio Tracks” on page 158.
- By default, Direct Out maps all audio tracks in numerical sequence to existing output channels.
- You can customize the output of audio tracks, as described in “Setting Audio Output Options” on page 134.

Advantages of Solo Monitoring

When editing, you can isolate individual video or audio tracks for monitoring without having to deselect monitoring of all other tracks.

Solo monitoring provides several advantages:

- You can eliminate slow cueing and playback when working with a complex sequence by monitoring a specific track.
- You can view any individual layer of a composited effect.

- You can isolate an individual audio track with a single mouse click (without manually deselecting the other audio tracks).
- You can isolate audio tracks for audio scrubbing without having to deselect monitoring of all other audio tracks.

Monitoring and Soloing Tracks

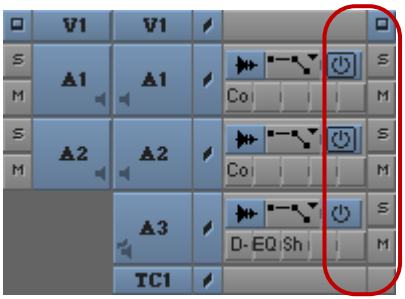
The Track Monitor buttons allow you to choose which tracks to monitor in the Source monitor, the Record monitor, and the speakers. You can monitor a single track or monitor multiple tracks at the same time. You can also isolate, or solo, an individual track for monitoring without having to deselect other tracks.

For more information on monitoring video and audio tracks, and on the benefits of solo monitoring, see "Understanding Track Monitoring" on page 118.

You cannot monitor or solo a data (D) track.

To activate or deactivate monitoring for a track:

- Click the Track Monitor button for the track on either the source-side or the record-side.



Track Selection panel, with video and audio tracks selected for monitoring

To select a track for solo monitoring:

1. Ctrl+click (Windows) or Command+click (Macintosh) the Track Monitor button for the video track you want to solo monitor.
2. Click the Solo button for the audio track you want to solo monitor.

   The Track Monitor button changes to green with a black Monitor icon (video track) and the Solo button changes to green (audio track) to indicate solo monitoring. The Mute button on all other audio tracks changes to orange.

Track Selection panel, with video and audio tracks selected for solo monitoring

To deselect solo monitoring:

- Click the Track Monitor button or the Solo button again.

Patching Tracks

When working with multiple tracks, you can encounter a circumstance in which you must edit source audio or video onto a track other than the parallel track displayed in the Track Selector panel. To edit the source material onto another record track above or below it, you must patch the source track to the targeted record track.

You can perform only one patch per edit, but there is no limit on the number of times you can patch from the same source track. Audio can patch only to audio, and video only to video. Also, you can only patch multichannel audio tracks to multichannel audio tracks, or mono tracks to mono tracks. Your Avid editing application dims the track selector buttons on tracks with unsupported track formats when you patch tracks.

You can also patch tracks by using the Auto-Patching option in the Edit tab of the Timeline Settings dialog box. For more information, see "Timeline Settings" in the Help.

When you patch from one video track to another, the Video Track Monitor icon moves to the track you are patching to if you selected the Auto-Monitoring option in the Edit tab of the Timeline Settings dialog box. Return to monitoring the topmost track, when necessary, to play back and output all video tracks.

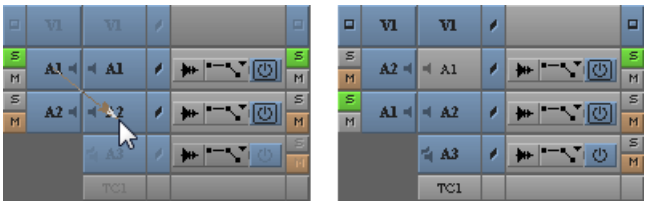
You cannot patch a data (D1) track to another track.

To patch a track:

- Drag from a source track (audio or video) to the targeted record track (a white arrow appears during the patch). You can also drag from a record track to a targeted source track.

  Track selection buttons for tracks with unsupported track formats dim as you drag the source track to a record track and you cannot patch to those tracks. For example, if you patch a source mono audio track, then all record stereo and record video tracks are disabled and you can only patch to a record mono audio track.

If you move the mouse pointer over a track selector button, and then press and hold the mouse button, a list of available tracks displays.



Audio patch from a source track to an audio record track (left) and the new source track order identifying the patch (right).

After you patch tracks, it is helpful to display the destination track of the clips in the Timeline. Select Clip Text > Clip Tracks from the Timeline Fast menu to display the destination track.

To undo a patch:

1. Click in the Record monitor or Timeline.
2. Select Special > Restore Default Patch, or manually repatch to the previous track.

   The selected source track moves beside the record track to which it is patched as soon as you draw the arrow and release the mouse. The patched track remains highlighted in preparation for your edit. You can proceed to select any other tracks required for the edit.

   After you make the edit, you can continue to work on the same track or patch to a different track as necessary.

Understanding Locking and Sync Locking

Your Avid editing application provides two ways of locking tracks, locking tracks and sync locking tracks. You can sync lock selected tracks so that trimming one track also trims the other tracks. Sync locking is useful when you work with multiple tracks and want to maintain sync between two or more tracks.

Locking tracks prevents further editing from being performed on them and can help in the following workflows:

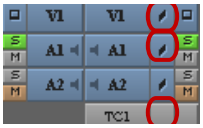
- For video or picture editing, you can lock tracks when you have completed a set of complex, multilayer edits and want to avoid making accidental changes while you work on adjacent tracks.
- For audio editing, you can lock audio tracks containing sync dialog that should be maintained while you edit adjacent video tracks or audio tracks.
- For projects involving multiple editors, you can lock tracks to prevent unnecessary or accidental changes.

For more information on using the sync lock feature in Trim mode, see "Understanding Sync Lock" in the Help.

The Sync Lock and Lock buttons of the Track Selector panel display different icons for sync-locked and locked tracks. For more information on applying the locks, see "Locking and Sync Locking Tracks" on page 123.

Locking and Sync Locking Tracks

The following illustration shows the location of the Sync Lock and Lock buttons in the Track Selector panel, and the icons that appear on these buttons. For more information on your options for locking tracks, see "Understanding Locking and Sync Locking" on page 122.



Top to bottom: Lock icon, Sync Lock icon, and Sync Lock All button in the Track Selector panel

To lock tracks:

1. Select the tracks you want to lock (Source, Record, or both).
2. Do one of the following:
   - Select Clip > Lock Tracks.
   - Right-click in the Timeline, and select Lock Tracks.
   - If you want to lock a single track, right-click the track selector button and select Lock Track.

   The Lock icon indicates that the selected tracks are locked. No further editing can occur on locked tracks until you unlock them.

To unlock tracks:

1. Select the tracks you want to unlock.
2. Do one of the following:
   - Select Clip > Unlock Tracks.
   - Right-click in the Timeline, and select Unlock Tracks.
   - If you want to unlock a single track, right-click the track selector button and select Unlock Track.

   The Lock icon disappears and the tracks are unlocked.

To sync lock tracks, do one of the following:

- Click a Sync Lock button to activate the Sync Lock icon for each synchronized track.
- Click the Sync Lock All button to switch sync lock on and off for all tracks.

To resume editing on individual tracks:

- Click a Sync Lock button or the Sync Lock All button to remove the Sync Lock icon.

Adding and Deleting Tracks

Your Avid editing application lets you create up to 24 video and 24 audio tracks in the Timeline when building a sequence. (You can monitor 16 audio tracks at a time.) You can add meta tracks, which are used with the MetaSync application. For more information, see "MetaSync Guide" in the Help. You can also add a data track, which is used for ancillary data. For more information, see "Preserving HD Closed Captioning and Ancillary Data" on page 50.

By default, new tracks are numbered consecutively. For example, if a sequence contains video tracks numbered V1 and V2, a new video track is numbered V3. However, you can customize the numbering, and you can also assign custom names to tracks.

You can remove one or more tracks from a sequence if you no longer need the tracks. When you delete a track, you remove it permanently from the sequence. If you want to remove the track temporarily, hide the tracks as described in "Customizing Timeline Views" in the Help.

To add a new track to a sequence, do one of the following:

- With a sequence loaded in the Record monitor, select the type of track you want to add:
  - Select Clip > New Video Track.
  - Select Clip > New Audio Track Mono.
  - Select Clip > New Audio Track Stereo.
  - Select Clip > New Meta Track.

- Select Clip > New Data Track.

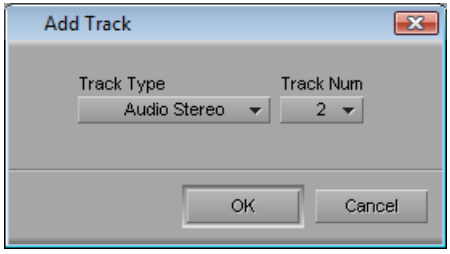
- Right-click in the Timeline, and select one of the following:
  - New Video Track.
  - New Audio Track Mono.
  - New Audio Track Stereo.
  - New Meta Track.
  - New Data Track.

  The new track appears in the Timeline.

To add a new track to a sequence and customize its numbering:

1. Press and hold the Alt key (Windows) or Option key (Macintosh) and select the type of track you want to add:
   - Select Clip > New Video Track.
   - Select Clip > New Audio Track Mono.
   - Select Clip > New Audio Track Stereo.
   - Select Clip > New Meta Track.
   - Select Clip > New Data Track.

   The Add Track dialog box opens.



2. (Option) Select the type of track you want to add (for example, a video or an audio stereo track) by clicking the Track Type menu, and selecting that option.
3. (Option) Select a track number other than the default number displayed in the dialog box by selecting another number from the Track Number menu.
4. Click OK.

   One of the following occurs:

   - The new track appears in the Timeline and in the Track Selector panel. Stereo tracks in the Timeline display with a horizontal divider, indicating two channels of audio.

- If you selected the number of an existing track in step 3, a dialog box asks if you want to insert the new track. Click Insert to add the new track below the current track with that number. Your Avid editing application labels the new track with the number you selected and renumbers the existing tracks in consecutive order.

To add a custom name to a track in the Timeline:

1. Right-click the Track Selector button, and select Rename Track.

   The Comments window opens.

2. Type a new name for the track.
3. Click OK.

To remove a custom track name:

1. Right-click the Track Selector button, and select Rename Track.

   The Comments window opens.

2. Click Remove.

   The track name returns to the default track name, such as V1.

To delete one or more tracks from a sequence:

1. Click one or more Track Selector buttons to select the tracks you want to delete.
2. Press the Delete key.

   The Delete Track(s) dialog box opens.

3. Click OK.

   The tracks are deleted.

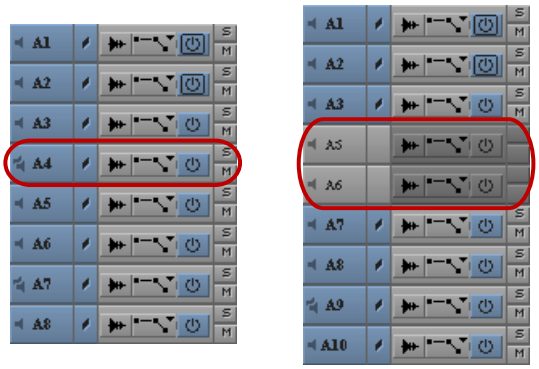
Splitting Stereo Tracks to Mono Tracks

You can split a stereo audio track in the Timeline into separate mono tracks if you want to edit separate audio channels or if you need to export a sequence either to an older version of the Avid editing application or to Avid Pro Tools. You can also split a clip or sequence with stereo tracks to mono from a bin. You can split individual stereo tracks to mono, or you can split all stereo tracks in your sequence.

When you split a stereo track, the original stereo track becomes a mono track and a new mono track is added below the original track. For example, if you split a stereo track on A1 in the Timeline, the application makes A1 a mono track holding one stereo channel and adds a second mono track on A2 for the other stereo channel. If A2 already exists in the Timeline, the application renumbers tracks to allow for the split mono tracks. Also, the application renumbers tracks to preserve the odd and even track numbers for left and right mono channels. Renumbered tracks start at the highest track available.

If you duplicate a clip in a bin and split the copy to mono, or if you edit a stereo clip into a sequence on multiple tracks and split one track to mono, your sequence can contain both a stereo and a mono instance of the same master clip. This does not cause a problem with editing, playback, or any other operation.

If splitting stereo tracks to mono tracks causes your sequence to exceed 24 audio tracks, or if splitting to mono cannot maintain the relative order of tracks or the left/right channel alignment, the Avid editing application cannot complete the operation and an error message displays. You can reduce the number of audio tracks in your sequence and retry the operation.



Stereo track A4 (left) split into mono tracks A4 and A5 (right)

When the Avid editing application splits a stereo track to two mono tracks, it changes some audio properties of the track:

- Removes stereo track effects such as RTAS plug-in effects.
- Converts stereo AudioSuite plug-in effects to mono effects.
- Applies any existing gain automation to the resulting mono tracks.
- Applies any existing pan automation to the resulting mono tracks, panning odd-numbered tracks to the left and even-numbered tracks to the right.
- Clears rendered effects. If you have effects on audio segments on stereo tracks, you need to render them after splitting the tracks to mono.

When you split all tracks in a sequent to mono, the Avid editing application automatically duplicates your original sequence and saves a copy to your bin before splitting stereo tracks to mono.

To split a stereo audio track to mono, do the following:

- Right-click the stereo track you want to split, and select Split Track to Mono.
- Right-click a stereo clip in a bin that you want to split, and select Split Track to Mono.

The stereo track splits into two mono tracks, with the second mono track added below the original stereo track. A copy of your original sequence is saved to your bin as *[sequence_name]*.Copy.*[number]*.

To split all stereo audio tracks in the Timeline to mono, do one of the following:

- Right-click in the Timeline, and select Split All Tracks to Mono.
- Select Clip > Split All Tracks to Mono.

  All stereo tracks in the Timeline split into two separate mono tracks, with the new mono tracks added below each original stereo track. . A copy of your original sequence is saved to your bin as *[sequence_name]*.Copy.*[number]*.

Backtiming Edits

Backtiming an edit is effectively the reverse of the process you normally use for marking footage: instead of marking from the In points forward, you mark according to the Out points. For example, you might have a track of audio (music or voice) that ends at a specific point, and you want to synchronize a video clip to end on a particular clip. You can backtime the edit to match the end points of the tracks.

Consider the following:

- Your Avid editing application needs only three marks to perform a backtimed edit. The In and Out points set on the record side always take precedence.
- If you do not mark an In point in the sequence, your Avid editing application uses the In point and Out point in the source clip (if both are marked) to determine the In point in the sequence. If you do not set both marks in the source clip, the system uses the position indicator as the In point.
- If you do not mark an Out point in the clip and an Out point in the sequence, your Avid editing application uses the end of the source clip as the Out point.
- If you mark Out points in both the Source monitor and in the Record monitor, your Avid editing application uses the Out point on the record side.

To backtime an edit:

1. Mark In and Out points in the sequence where you want the edit to start and end.
2. Select the appropriate tracks.
3. Load the source clip into the Source monitor.
4. Mark an Out point for the source clip to synchronize to the Out point in the sequence.
5. 
   Click the Overwrite button.

   The source material is added to the sequence, with the synchronized ending.

Working with Multichannel Audio Tracks

Audio tracks in the Timeline represent either a single channel of audio (mono) or multiple channels (such as two stereo channels). You can edit multichannel audio tracks in the same way you edit mono audio tracks.

Avid editing applications currently only support stereo multichannel tracks. For information on using surround sound multichannel audio, see *"Working with Surround Sound or 5.1 Audio (Avid Nitris DX and Avid Mojo DX Only)" on page 136.*

The Track Formats column in the bin Text view displays the format for all multichannel audio tracks in a master clip. You can modify the audio format by grouping or ungrouping selected audio tracks. You can modify audio formats for master clips only. Track formats for sequences, group clips, or subclips cannot be modified.

You use the Modify command to set or change the multichannel formats for your audio tracks. For example, this lets you create a stereo track from two associated mono tracks or to split a stereo track into two separate audio tracks. You can set the multichannel format for multiple master clips at the same time.

You can also split stereo tracks in the Timeline into two mono tracks. for more information, see

To set the multichannel audio format for audio tracks:

1. Open the bin and click the Text tab.
2. Click the icon to the left of the clip you want to modify. Ctrl+click (Windows) or Cmd+click (Macintosh) each additional object you want to modify.
3. Select Clip > Modify.

   The Modify dialog box opens.
4. Click the Modify Options menu, and select Set Multichannel Audio.

   The Modify dialog box displays the audio tracks for all selected clips with format buttons beneath paired tracks. If an audio track is not used by the selected clips, it does not appear.

Track formats for sequences, group clips, or subclips cannot be modified.

5. Click the Format buttons to cycle through the available options until you find the appropriate format:

Option		Description
--	Mixed tracks	Does not modify the audio track formats. The Mixed Format Tracks button appears only when you select more than one clip and the clips contain both mono and stereo tracks.
oo	Mono tracks	Sets the paired audio tracks to two mono tracks.
∞	Stereo track	Sets the paired audio tracks to one stereo track.

6. Click OK.

   The bin information updates to reflect the audio format modifications. Check the Track Formats column in bin Text view to see all multichannel audio tracks.

Displaying Track Formats in Bins

You can select a bin heading to display the track formats in the bin. Multichannel formats appear in the Track Formats column for master clips and list the audio tracks in the clip that combine multiple channels in a single audio track. For example, a track format marked as "Stereo A1A2" indicates that the clip includes a stereo track with two channels.

To add the Track Formats column to a bin:

1. With a bin in Text view, select Bin > Choose Column.

   The Bin Column Selection dialog box opens.

2. Click Track Formats in the list to select it.
3. Click OK.

   The Track Formats column appears in the bin.

Audio Displays in the Timeline

You can display audio waveforms in the Timeline to help you visually locate points in an audio track for editing or trimming. There are two types of waveform plots, Energy or Sample, which you select from the Timeline Fast menu. For more information, see "Displaying Audio Waveforms" on page 131.

If you have a sequence with several different sample rates, you can identify a specific sample rate by color. For more information, see "Identifying Sample Rates by Color" in the Help.

Waveforms for stereo tracks in the Timeline display waveforms for both channels within a single track, separated by a horizontal divider.

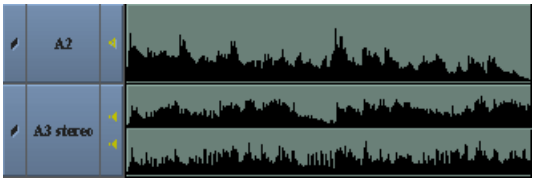
Displaying Audio Waveforms

To display audio waveforms:

1. To search for a point in a known section of the tracks, zoom in and show more detail in the sequence to isolate a section of the audio. With less audio to display, the system draws the waveform plot faster.
2. Click the Timeline Fast menu button, and select Audio Data > *waveform plot*.

   Your choice of plot type is a matter of visual preference:

   - Energy plot displays only the peaks of the audio amplitude in the waveform from the baseline. It is a graphical representation of the mathematical Energy Function for audio waveforms.



Waveform Energy Plot, Mono and Stereo Tracks

   - Sample plot displays the entire amplitude of the audio waveform. This is the same as the sample voltage values seen on an analog oscilloscope waveform.

Waveform Sample Plot, Mono and Stereo Tracks

After you make a selection, the waveform appears in the selected tracks.

Press Ctrl+period (Windows) or Command+period (Macintosh) at any time during the redraw of the waveform plot to stop the redraw.

3. (Option) Maximize the visibility of your waveform display using one of the following procedures:
   - Continue to expand or shrink your view of the Timeline by using the scale bar, spreading out the waveform plots to show detailed variations in the audio levels.
   - To enlarge the height of selected audio tracks and subsequently the waveform displays, press Ctrl+L (Windows) or Command+L (Macintosh).
   - To reduce the height of selected audio tracks and subsequently the waveform displays, press Ctrl+K (Windows) or Command+K (Macintosh).
   - To enlarge the size of the sample plot image without enlarging its track, press Ctrl+Alt+L (Windows) or Command+Option+L (Macintosh).

     This procedure is useful when you view detail in loud passages.
   - To reduce the size of the sample plot image without reducing its track, press Ctrl+Alt+K (Windows) or Command+Option+K (Macintosh).

     This procedure is useful when you view detail in quiet passages.

You can select Show Marked Waveforms in the Timeline Settings dialog box to narrow the view of the tracks in the Timeline. This option allows the Timeline to display faster because the waveform displays only between the Mark In and the Mark Out points.

4. Move through the audio shown in the waveform using any of the playback methods.

   You hear sound as you track the audio visually. When the position indicator reaches the point you want in the waveform, you can mark, trim, or perform any other function.

Audio waveform plots can slow your navigation through the Timeline. Therefore, you might want to use them selectively. To do this, you can create a custom Timeline view, as described in "Customizing Timeline Views" in the Help.

After you have created a customized waveform view, you can select it from the Timeline View menu when needed and return to another view when you finish.

Modifying How Your Avid Editing Application Interprets Pan

The way you record footage in the field and capture it with your Avid editing application affects the way sound pans between the speakers. By default, the system pans mono audio tracks 1 and 3 to the left speaker output and pans mono tracks 2 and 4 to the right speaker output.

When you adjust pan values on multichannel stereo tracks, you pan the stereo mix of the left/right audio pair for the clip. For example, when you pan to the right output channel, you move the full stereo mix further to the right channel.

You can set global pan settings before or during editing by using the Audio Settings dialog box or the Audio Project Settings dialog box. You can also set pan for individual mono clips by using the Center Pan command.

To modify the way the system interprets pan during playback:

- Set the default pan values in the Audio Settings dialog box, which you access from the Settings list in the Project window.

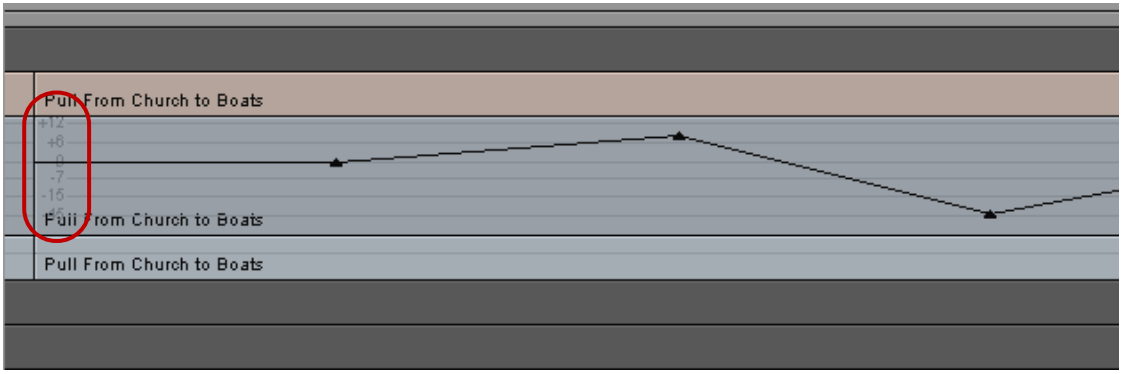
  By default, the mono audio tracks for clips alternate with track 1 on the left speaker and track 2 on the right speaker for monitoring and output. The All Tracks Centered option instructs the system to center the pan of all tracks between the two speakers for monitoring and output. The system pans stereo tracks to the center by default, with the left speaker panned full left and the right speaker panned full right.

- Click the Mix Mode Selection Menu button in the Output tab in the Audio Project Settings window, and select one of the following modes:

Mode	Description
Stereo	Uses the default pan settings and lets you create pan effects.
Mono	Pans all mono tracks to center during output. This mode ignores pan effects.
Direct Out	This mode uses the default pan settings and ignores pan/vol effects.

Using Automation Gain and Pan

Automation gain and pan lets you change the volume or pan values of a segment by adding and manipulating automation gain or automation pan keyframes in the Timeline. The following illustration shows an expanded audio track containing gain keyframe information.



Your Avid editing application uses a linear ramp to change the volume or pan from one keyframe to the next.

You adjust automation gain and pan directly in the Timeline or by using the Audio Mixer tool.

Setting Audio Output Options

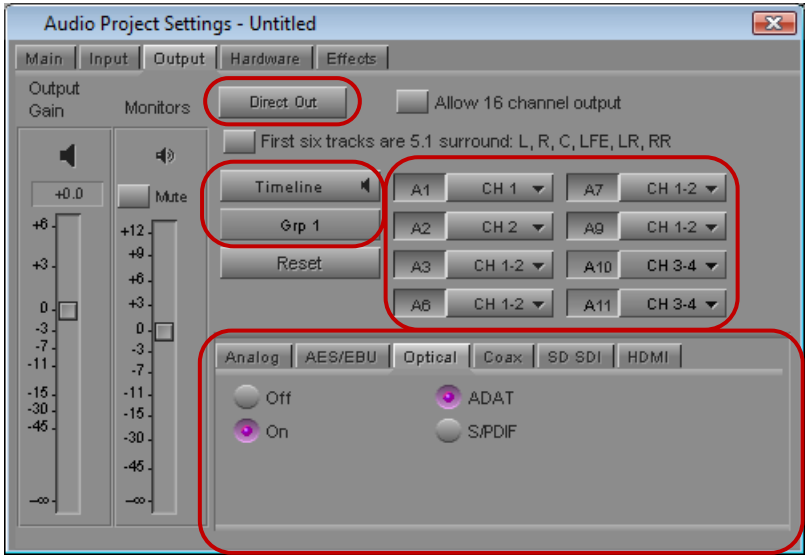
The Audio Project Settings dialog box contains options for audio output, such as how audio tracks in the sequence are mapped to output channels.

To set audio output options:

1. Double-click Audio Project in the Settings list in the Project window.

   The Audio Project Settings dialog box opens.

2. Click the Output tab.



Audio Project Settings dialog box: Mixed Mode Selection Menu button (top), All or Timeline Track Maps menu and Which Set of Track Maps button (left), Output Track Maps (right), Output Format and Channels options (bottom)

3. Click the Mix Mode Selection Menu button, and select a type of output.
   - Select Stereo to mix the monitored audio tracks into a stereo pair (two paired mono channels) with applied pan effects.
   - Select Mono to map all the monitored tracks to a pair of mono channels, with all channels panned to center and pan effects bypassed.
   - Select Direct Out to map monitored tracks directly to up to sixteen channels of output (depending on how many audio output channels are currently enabled in your hardware configuration). By default, Direct Out maps all audio tracks in numerical sequence to existing output channels. Mono tracks are mapped to single output channels, and stereo tracks are mapped to pairs of output channels. You can remap a track to any channel by clicking a Channel Assignment menu and by selecting another channel.

     Direct out ignores pan effects.

You cannot map a mono track to a channel pair or a stereo track to a single channel.

   If you want to output 16 channels, click the “Allow 16 channel output” button. For more information, see “Enabling 16-Channel Audio Output” in the Help.

4. (Option) Depending on your type of output, you can make additional adjustments:
   - By default, Stereo directs the mixed tracks to mono output channels 1 and 2. You can also direct mixed tracks to output channels 3 & 4, 5 & 6, or 7 & 8.

- If you select Direct Out, you can select All or Timeline from the “All or Timeline Track Maps” menu
  - All lets you preset values for all possible audio tracks, with each track treated as a mono track.
  - Timeline lets you assign output channels to the tracks monitored in the Timeline, with multichannel stereo pairs mapped by default to channel pairs.

  Click the Reset button to reassign the tracks to the default channels that are currently available. You might need to reset the defaults track mappings if your hardware configuration has changed.

If you want to map output channels to audio tracks not listed in the Output Track Maps area, click the Which Set of Track Maps button to display other available audio tracks. The maximum number of available tracks is 24.

5. Select the output format and assign the output channels in the tabbed interface at the bottom of the dialog box.

   Options vary depending on the type of input/output hardware you have attached to your system.

   For more information, see “Audio Project Settings: Output Tab” in the Help.
6. (Option) To disable the customized volume, real-time EQ, or automation gain effects you applied with the other audio tools, click the Effects tab and select Clip Gain, RT EQ, or Auto Gain in the Effect Bypass panel.
7. Close the Audio Project Settings dialog box.

Working with Surround Sound or 5.1 Audio (Avid Nitris DX and Avid Mojo DX Only)

Avid editors with certain Avid input/output hardware attached let you receive audio as channels of premixed surround sound. You can hear this audio as either mixdown stereo or as true 5.1 surround sound using six speakers.

Six-channel digital surround sound systems use the 5.1 speaker format and constitute a standard in major motion pictures, music, and digital television. This format consists of three speakers across the front, two speakers in the rear, and a sixth channel called Low-Frequency Effects (LFE) sent to a subwoofer.

When you do not use 5.1 surround sound, the Direct Out stereo mix of the output mono channels have all odd channels mixed to the left and all even channels mixed to the right. Output stereo channels use the left and right speaker channels, with the stereo mix panned to the center.

The Output tab in the Audio Project settings dialog box lets you select the 5.1 option to designate a project with surround sound audio. If you have more than six tracks, or the tracks are given in a different order, you can use the Direct Out channel map to designate which tracks of the sequence go to which channels. The following table lists the default format for mono tracks.

Track	Channel
A1	Left (L)
A2	Right (R)
A3	Center front (C)
A4	Low Frequency Effects (LFE)
A5	Left Rear (LR)
A6	Right Rear (RR)

The Direct Out channel map affects the audio on the desktop monitors and the output to your tape deck. You may need to reset the channels prior to a Digital Cut to preserve a required channel order on the output tape.

Stereo tracks use the following default mapping:

Track	Channel
A1	Left/Right front (1-2)
A2	Center/Low Frequency Effects (LFE) (3-4)
A3	Left/Right Rear (5-6)

To designate a project as surround sound audio:

1. Double-click Audio Project in the Settings tab of the Project window.

   The Audio Project Settings window opens.

2. Click the Output tab.
3. Click the Mix Mode Selection Menu button to select Direct Out.
4. Select First six tracks are 5.1 surround: L, R, C, LFE, LR, RR.

   A check mark appears.

5. If necessary, assign the tracks and channels through the Direct Out channel menu.

Deselect this option if you are editing stereo media.

For the monitors and headphones, the mono audio is mixed down to stereo by panning the center and LFE channels to the center and the LR and RR channels to the L and R. For surround sound outputs, the stereo channels are routed to the correct speakers.

Audio Project Settings: Output Tab

The options that appear in this tab depend on your audio configuration and the hardware installed on your system. Your options might differ from those listed here.

The following table describes options available in the Output tab of the Audio Projects Settings dialog box.

Option	Description
Output Gain	Lets you set the volume of global audio output.
Monitors Volume	Available with software-only configurations. Lets you adjust the volume of the desktop speakers. Use the Mute button to mute audio output to speakers or headphones.

Option	Description
Mix Mode Selection button	Modifies the way that the system interprets audio values during playback: • Stereo: Mixes the currently monitored audio tracks into a stereo pair. Depending on your Avid input/output hardware, you can customize the mix using the Stereo Mix Tracks option. • Mono: Pans all the currently monitored tracks to center. This mode also ignores pan effects. • Direct Out (available depending on your Avid input/output hardware): Maps mono and multichannel tracks directly to up to sixteen channels of output. By default, Direct Out maps the first eight audio tracks in numerical sequence to the first eight output channels. You can remap a track to any channel by clicking the Channel Assignment menu and selecting another channel. *Pan settings are ignored during a Direct Out operation.*
Stereo Mix Tracks	This option is available depending on your Avid input/output hardware. Lets you customize the mix of mono tracks with Stereo selected in the Mix Mode Selection Menu button. Your Avid editing application sends a stereo mix to the two mono channels you select. Material panned to the left are sent to the odd channel, and material panned to the right are sent to the even channel. The number of channels available depends on the audio output you select or on the options you select in the SD SDI tab.
First six tracks are 5.1 surround: L, R, C, LFE, LR, RR	Available when you select Direct Out with the Mix Mode Selection Menu button. Available when you use or an Avid Mojo DX. You can use this option when the media in the Timeline is set up as surround sound media even if your speakers are set up as stereo. You can use the Direct Out channel selections to reset which tracks go to which channels. Deselect this option if you are using stereo media in the Timeline.
All or Timeline Track Maps	Available when you select Direct Out with the Mix Mode Selection Menu button. Lets you map the track and output channels: • All: Lets you select between all available tracks, with each track treated as a mono track. • Timeline: Lets you assign output channels to the tracks monitored in the Timeline, with multichannel stereo pairs mapped by default to the available stereo channels.
Which Set of Track Maps	Available when you select Direct Out with the Mix Mode Selection Menu button. Lets you select which group of output tracks to map to audio channels. Groups of tracks display in multiples of 8, up to the maximum of 24 available audio tracks.

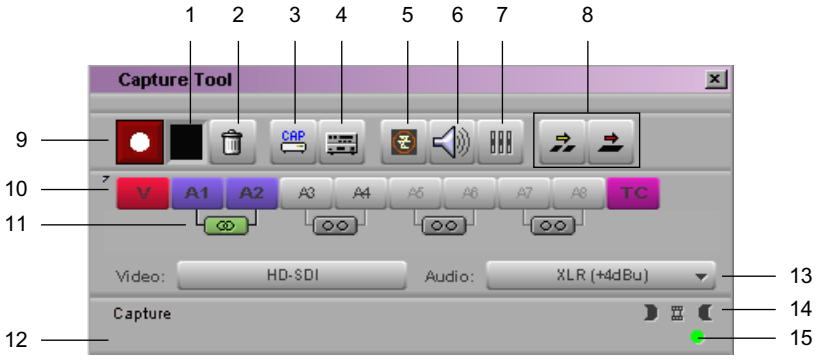
Option	Description
Reset	Available when you select Direct Out with the Mix Mode Selection Menu button. Reassigns the audio tracks of the sequence to the default channels that are currently available.
Output type option tab: Analog	Turns analog output on or off.
Output type option tab: SD SDI	Provides controls for SD SDI audio output. This option is available depending on your Avid input/output hardware. Some options available depend on the number of audio channels you are using, as follows: • 8 channel: Use the On or Off option to control whether to embed the audio with the video in SDI output • 16 channel: Use the Off option to turn SD SDI output off. Use the On outputs 1-8 or On outputs 9-16 option to assign the output channels to 1-8 or 9-16. Select one of the following based on the number of channels you want and the sample rate you want on the outgoing SDI signal: • 4 channels 20-bits • 4 channels 24-bits • 8 channels 20-bits • 8 channels 24-bits  *With some Avid input/output hardware devices, you must use 48-kHz audio when SDI is enabled. With Avid Nitris DX, you do not need 48-kHz audio since audio output automatically sources to 48-kHz.*  *Digital outputs such as AES, ADAT, SPDIF also source to 48-kHz.*
Output type option tab: HD SDI	Provides controls for HD SDI audio output from HD projects. (When you are in an HD project you can output either SD SDI or HD SDI.) Use the On or Off option to turn HD SDI output on or off. Select one of the following to specify the number of channels you want on the outgoing SDI signal: • 4 channels 24-bits • 8 channels 24-bits • 12 channels 24-bits (only available when you are using 16-channel audio) • 16 channels 24-bits (only available when you are using 16-channel audio) If you are using Avid Nitris DX hardware, a project sample rate of 48 kHz is required for 12- and 16-channel output.

Setting Up the Capture Tool

The Capture tool provides controls for cueing, marking, and logging footage, and specifies capturing parameters such as source and target locations. The topics in this section describe how to open and set up the Capture tool.

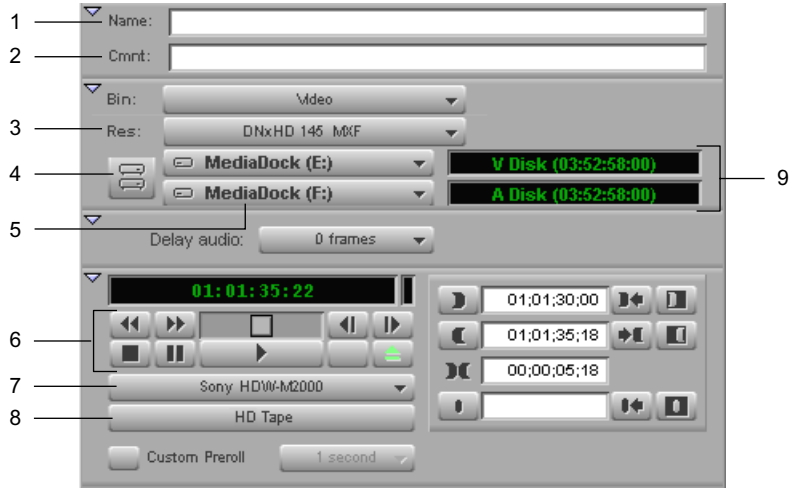
In Capture mode, the Client monitor displays the playback footage whenever the video track is selected in the Capture tool.

The following illustrations show the Capture tool for an HD project. Some items might not be available or might have minor differences in your Adit editing application model.



Top of Capture tool

1	Capture indicator	9	Record button
2	Trash	10	Channel Selection buttons
3	Capture/Log Mode button	11	Audio Channel Grouping buttons
4	Toggle Source button	12	Message bar
5	Video tool	13	Video and Audio Input menus
6	Audio tool	14	Subclip status indicator
7	Passthrough Mix tool	15	Video Lock icon
8	Edit to Timeline buttons (optional)		



Bottom of Capture tool

1	Clip Name text box	6	Deck controls
2	Clip comment text box	7	Deck Selection menu
3	Resolution menu	8	Source Tape Display button
4	Single/Dual Drive Mode button	9	Time remaining on target drives
5	Target Drive menus		

When you are working in a 24p NTSC project, the Capture tool includes a pulldown button. For more information, see “Setting the Pulldown Switch” in the Help.

When you are working in an Avid Interplay environment, the Capture tool lets you select either Local Bins or Remote Bins. See “Selecting a Target Bin” in the Help.

When you install your Avid editing application, an Incompatible Power Scheme warning button might appear in the top right corner of the Capture tool. Some Windows power schemes might affect the performance of your Avid editing application, including capturing media. Avid recommends the “Always On” power scheme for Windows XP and the “High Performance” power option for Windows Vista when working with Avid editing applications. For more information on Windows power schemes, see the Windows documentation.

Selecting Source Tracks and Audio Channels

You can select the tracks to capture from the source tape, and you can set the audio channel groupings if you capture stereo audio source media.

When you group audio tracks for multichannel capture or batch capture, your Avid editing application saves the grouping as a capture setting, independent of the hardware channels you select. The resulting clip uses the grouping setting and the used channels. For more information on audio channel groupings, see "Working with Multichannel Audio Tracks" on page 129.

When you batch capture, if the tracks are already logged into the bin then channel selection is made automatically unless you deselect the option "Capture the tracks logged for each clip" in the Batch tab of the Capture Settings dialog box. For more information on Batch Capture settings, see "Batch Capturing Clips" in the Help.

Batch capture uses the audio channel groupings currently specified on the master clip, not the groupings that display in the Capture tool when you batch capture previously-logged clips.

To select only those tracks you want to capture:

- Click the Channel Selection buttons in the Capture tool.

Channel Selection buttons in the Capture tool

If you do not see source video or hear source audio in Capture mode, click the Channel Selection buttons to ensure they are not the cause.

When you use an Avid-controlled deck, the TC (timecode) track is selected by default, and the system captures the timecode from the source tape. If you deselect the TC button, the system captures with time-of-day timecode. For more information, see "Capturing with Time-of-Day Timecode" in the Help.

To group tracks for multichannel capture:

- Click the Audio Channel Grouping buttons in the Capture tool for those tracks you want to capture as stereo audio tracks.

  The Audio Channel Grouping button turns green when you group tracks.

Audio Channel Grouping buttons in the Capture tool

When you capture stereo audio, you can view the multichannel audio format in the bin in the Track Formats column.

Batch Capturing from Logged Clips

After you import a log or manually log a group of clips into a bin, you can automate the capture process by using your Avid editing application's batch-capturing capabilities. When you batch capture, you open a bin, select the clips you want to capture, and select Clip > Batch Capture. Your Avid editing application automatically finds the start and end timecode for each clip and captures it. Source tapes from which you batch capture must have timecode that matches the timecode for the selected clips.

You can also use the batch-capturing process to recapture clips you have already captured. The recapturing process is described in "Recapturing and Decomposing" in the Help.

You cannot recapture a mixed-rate sequence without using decompose because you cannot batch capture material in formats other than the project format. A message box appears if you attempt to recapture such material. Instead, you can decompose the sequence, then recapture the resulting clips by opening the bin in projects that match each of the decomposed formats.

When you capture footage from an NTSC film-to-tape transfer with pulldown, the playback flickers in the Client monitor during capturing because the system is dropping occasional frames due to the pullin process. The footage plays back smoothly in your Avid editing application, however, after the pullin conversion is complete.

Batch Capturing Clips

To batch capture clips:

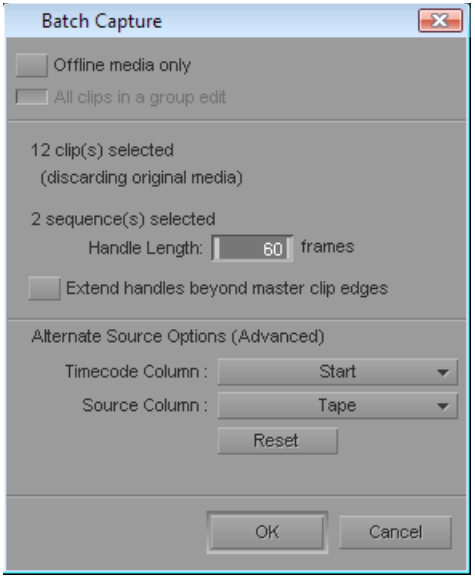
1. Select the proper Capture settings and set up the capture tools, as described in "Preparing for Capture" in the Help.
2. Open the bin that stores the clips you want to capture.
3. Select the clips to batch capture:

- Select Edit > Select All.
- Ctrl+click to select specific clips.

If you are batch capturing the original source master clips used in the sequence, the sequence is updated automatically. Therefore, you might want to deselect the sequence during this procedure. See "Recapturing and Decomposing" in the Help.

4. Select Clip > Batch Capture.

   The Batch Capture dialog box opens. If the clips you want to batch capture are not highlighted in the active bin, Batch Capture appears dimmed in the Clip menu.



5. Select options in the dialog box:
   - If the bin contains some clips that are already captured and you do not want to recapture those clips, select "Offline media only." If this option is not selected and some of the selected clips have media files, your Avid editing application deletes the media files and recaptures new media files.
   - Select "All clips in a group edit" to allow capturing of each clip in a group clip.
   - If your selections include a sequence for batch capturing, the dialog box prompts you for handle length information. Your Avid editing application creates new master clips based on the length of edited clips in the sequence.
   - (Option) Select "Extend handles beyond master clip edges" to allow the handles to extend before the beginning and after the end of the original master clip.

When you batch capture, deselecting this option prevents capturing across a discontinuous timecode error.

For example, if the starting timecode for a master clip is 1:00:10:00 and the resulting master clip after a decompose with handles causes the new master clip to begin at 1:00:09:00, batch capturing fails if there are any timecode discontinuities between 1:00:09:00 and 1:00:10:00.

For more information on handle lengths when recapturing, see "Decomposing Sequences" in the Help and "Recapturing a Sequence Without Using Decompose" in the Help.

6. Click OK.

   If you have not loaded a tape, your Avid editing application prompts you to load the first tape.

7. Load the tape into the tape deck and click Mounted.

   A dialog box opens.

8. Click OK to confirm the tape and deck entries and begin the capture process.

   Your Avid editing application captures each clip from the tape, in start timecode order.

9. If your Avid editing application needs another source tape, it prompts you for the tape. At this point, you have several options. Do one of the following:

   - Load the new tape and click Mounted to continue the capturing process.
   - Select Skip this clip to bypass just the first clip from the tape and continue capturing the remaining clips.
   - Select Skip this tape to bypass all the clips from the mounted tape. Your Avid editing application then prompts you for the next tape.
   - Click Abort to end the batch-capturing process.

   You can also stop capturing at any time by clicking the Trash button in the Capture tool.

To bypass specific clips in the process of batch capturing a particular tape, you must abort each clip manually by clicking the Trash button. Then click the Skip Clip button in the Abort window to continue.

When your Avid editing application has finished batch capturing, a dialog box notifies you that the process is complete.

Recording Voice-Over Narration

You can use the Audio Punch-in tool to record audio directly into the Timeline for voice-over narration.

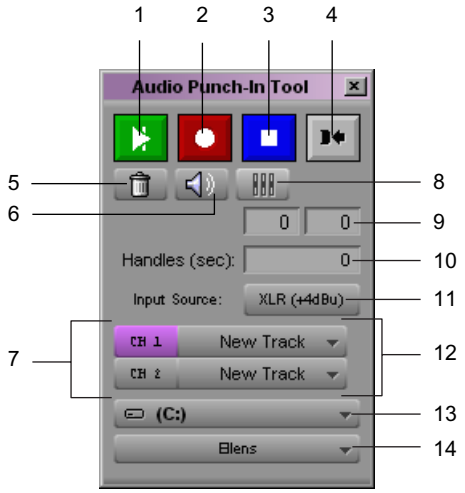
Recording voice-over narration directly into your Avid editing application saves you the extra steps of recording the narration to tape first, capturing the narration audio to your Avid system, and then editing the audio clip into the sequence.

Audio Punch-in Tool Features

You can use the Audio Punch-in tool to record voice-over narration directly into the Timeline. However, you can only record to mono tracks when you use the Audio Punch-In tool.

You can “rehearse” the voice-over while listening to the sequence. The voice-over is not recorded while you rehearse. You can continue to rehearse until you get it right. While recording, you can watch and listen to the sequence and hear the playback of edited sound tracks.

The following illustration shows the features of the Audio Punch-In tool. The following table describes the features of the tool.



	Audio Punch-In Tool Feature	Description
1	Play In/Out button	Starts playing with the ability to perform a real-time punch-in. The play loops from the In point to the Out point but stops looping once recording completes. This button blinks bright green while playing.
2	Record button	Starts and stops the recording. If you set an In point and Out point, recording automatically starts at the In point and stops at the Out point. This button blinks bright red while recording.

	Audio Punch-In Tool Feature	Description
3	Stop button	Stops playing or recording and saves the last recorded data. This button is bright blue when recording stops.
4	Go to Mark In button	Moves the position indicator to the In point. If there is no In point, your Avid editing application goes to where the position indicator was previously located or to the start of the sequence.
5	Cancel button	Stops a recording without saving the recorded data.
6	Audio Tool button	Opens the Audio tool so you can monitor and adjust the audio levels during recording.
7	Input Channels button	Identify the channels on the audio hardware used for recording. Click the appropriate button to select the channel. Alt+click (Windows) or Option+click (Macintosh) the button to display a menu and select another channel. The selected input channels are not used for playback. Do not select the same channels as mix output on the Audio Mixer tool.
8	Passthrough Mix Tool button	Opens the Passthrough Mix tool so you can monitor the audio levels during recording.
9	Preroll andpostroll text boxes	Let you provide audiovisual cues before the recording begins and after it ends. For preroll, your Avid editing application backs up the position indicator for the prescribed number of seconds. You can hear the audio during preroll. When starting a punch-in with the Record button, a preroll lets you provide the duration, in seconds, of the audiovisual cue before the recording begins.
		The Record button takes precedence over preroll. During preroll, if you press the Record button, the system starts recording immediately.
10	Handles text box	Instructs your Avid editing application to record audio at the beginning and end of the clip. This lets you perform trim edits on the audio. This feature applies only when you start recording with the Record button. You can record real-time punch-in only until the end of the handle.
11	Input Source menu	Includes several optional sources for audio input, depending on your system and audio board.
		To view the audio input sources available on your system, see the Input Source menu in the Input tab in the Audio Project Settings dialog box.

	Audio Punch-In Tool Feature	Description
12	Timeline Track menus	Allow you to specify where your Avid editing application places the audio in the Timeline. Select either New Track or an existing track. When you select an existing track, your Avid editing application overwrites the audio on that track and silences that portion during playback. You can only use mono audio tracks for punch-in. You cannot select stereo tracks or locked tracks.
13	Target Drive menu	Lets you choose a target drive.
14	Target Bin menu	Lets you choose a target bin.

Recording Voice-Over Narration Using Audio Punch-in

The steps below represent general guidelines for recording audio punch-ins, regardless of your scenario. You should determine when to add the In and Out points, when to use the Play In/Out button, and when to use the Record button, based on your needs. For more information, see the scenarios described in “Audio Punch-in Tool Scenarios” in the Help.

When performing an audio punch-in, the video resolution is dropped a quarter-frame due to bandwidth limitations.

To use the Audio Punch-In tool:

1. Load a sequence into the Timeline.
2. Select Tools > Audio Punch-In.

   The Audio Punch-In tool opens. For information on the buttons and other controls in the Audio Punch-In tool, see “Audio Punch-in Tool Features” on page 147.

Audio Punch-In tool. Top, left to right: Play In/Out button, Record button, and Stop button. Center: Input Source menu. Bottom left: Input Channels buttons. Bottom right: Timeline Track menus.

3. Select the input source and input channels that correspond to your hardware setup, and set other values in the window as appropriate.

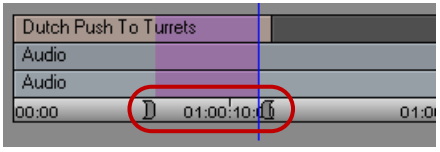
   To select the input channels you want, click and hold the appropriate Input Channels button.

4. Click the Timeline Track menus, and select either New Track or an existing track to specify where your Avid editing application places the audio voice-over in the Timeline.

   You can only use mono audio tracks for punch-in. You cannot select stereo tracks or locked tracks.

   You can replace part (or all) of an existing track, or you can create a new track for the voice-over.

5. (Option) Set In and Out points in the Timeline to specify the part of the sequence to which you want to add narration.



IN and OUT points set for a voice-over recording

6. Click the Play In/Out button or press the V key.

   Loop play begins over the entire sequence. If you set an In point and an Out point, loop play begins from the In point to the Out point.

   The Play In/Out button blinks bright green while playing.

7. When you are ready to start the voice-over, click the Record button or press the B key.

The Record button blinks bright red while recording, and the Play In/Out button is a steady green. The Audio Meter Channel button in the Audio tool becomes an I and changes to orange.

8. Continue to click the Record button to record additional voice-overs.

   During the audio punch-in process, you have the ability to record over the duration of the sequence or from the In point to the Out point.

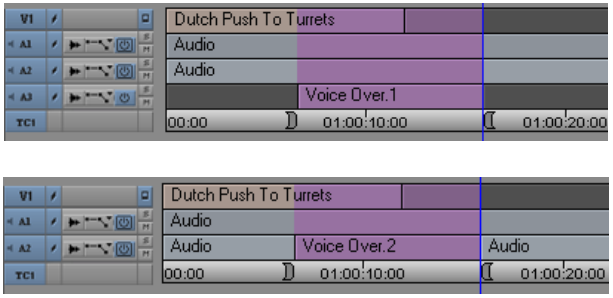
9. Click the Stop button, or press the space bar to stop play and recording.

   Your Avid editing application automatically names the voice-over and saves it as an audio clip. You can change the clip name as you would for any other clip. The position indicator stops to get ready for your next voice-over.

10. (Option) To go to the In point at any time, click the Go to Mark In button.

    Your Avid editing application creates one master clip, regardless of how many punch-ins you perform.

    The following illustrations show the results of adding a voice-over.



Examples of adding a voice-over in the Timeline. Top: voice-over adding a new track. Bottom: voice-over replacing a portion of a track.

Three Undo functions can be performed during one session. The first undo removes the most recent punch-in, the second undo removes the second-to-last punch-in, and the third undo removes all the punch-ins.

Setting Up the Matrox MX02 Mini

The Avid® Media Composer® and Avid NewsCutter® editing applications have been qualified for use with the Matrox® MX02™ Mini device. This device has been qualified for use with the editing application for video monitoring and audio monitoring only. The Avid editing application does not support using the input connectors on the MX02 Mini.

Note the following when working with the editing application and the Matrox MX02 Mini:

- There is no support for monitoring 10-bit media.
- When playing back media that is not supported, the client monitor will be disabled.
- The following Project Types are supported: 30i NTSC, 25P PAL, 25i PAL, 720P 25, 720P 29.97, 720P 50, 720P 59.94, 1080P 23.976, 1080P 24, 1080P 25, 1080i 50, 1080i 59/94

To ensure you are ready to work with the Matrox MX02 Mini, perform the following:

1. Check the Avid Media Composer or Avid NewsCutter editing application ReadMe to make sure your computer system or laptop has been qualified for use with the Matrox MX02 Mini. See the “Supported Hardware” topic.
2. Install the Matrox MX02 Mini software and hardware as described in the *Matrox MX02 Installation and User Guide* for your operating system (Windows or Mac OS). You can download the MXO2 Mini software and documentation from the “Downloads” section of the Matrox Support website at www.matrox.com/video/support.
3. Start your Avid editing application and specify your settings for monitoring video and audio output with MX02 Mini as explained in the Matrox documentation for your operating system.
    - For Windows users, see the document *Using Matrox MX02 Mini with Avid Media Composer and NewsCutter*.
    - For Mac OS users, see the document *Using Matrox MX02 Mini with Avid Media Composer*.

Customizing the Avid User Interface

The Interface Settings dialog box provides you with controls for customizing the brightness and the colors of the Avid user interface. For complete reference information on the Interface Settings dialog box, see “Interface Settings” on page 155.

The Interface Settings dialog box allows you to set the highlight color for buttons. You can also control the brightness of the user interface, which includes the following components:

- Application, tool, toolbar, and dialog box backgrounds
- Buttons and button contents
- Project background

The Avid editing application lets you modify the colors of some interface components using controls not included in the Interface Settings dialog box:

- Bin media object color — see “Assigning Colors to Objects in a Bin” in the Help.
- Timeline clip color — see “Displaying Clip Colors in the Timeline” in the Help.
- Timeline background and track colors — see “Changing the Timeline Background or Track Color” in the Help.
- Bin background color — see “Changing the Bin Background Color” in the Help.

Changing Interface Component Colors

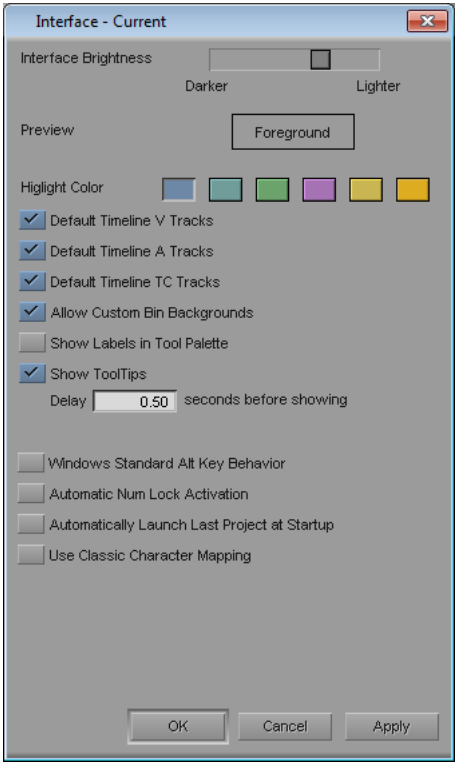
You can use a brightness selection slider and selection buttons to change the appearance of some interface components.

When you use the selection slider to modify interface settings, it overwrites any previous user settings. Avid recommends you save a copy of your user settings before you use the selection slider.

To set the brightness and color of interface components:

1. In the Project window, click the Settings tab, and then double-click Interface.

   The Interface dialog box opens.



2. Click a highlight color to change button highlight colors.
3. Click the Interface Brightness slider to adjust the brightness of the user interface. The Avid editing application provides several presets on the slider.
4. (Option) If you want to set the color of the video, audio, or timecode tracks to the default, select the appropriate option.
5. (Option) If you want to be able to set custom background colors for bins, select Allow Custom Bin Backgrounds.

   For more information, see “Changing the Bin Background Color” in the Help.
6. Do one of the following:

   - Click Apply to apply the changes you selected.

     If you click Cancel after you click Apply, interface components retain the colors you applied.
   - Click OK to close the dialog box and put the new setting into effect.
   - Click Cancel to close the dialog box.

     The changes you select do not take effect.

Interface Settings

Option	Description
Interface Brightness	Controls the brightness of the user interface.
Preview	Displays a preview of the foreground color as you move the Interface Brightness slider.
Highlight Color	Lets you select the color of button highlighting from available presets.
Default Timeline V Tracks	Selecting this option sets the color of all Timeline video tracks to the default. If you change the track color for a video track, this option changes to deselected.
Default Timeline A Tracks	Selecting this option sets the color of all Timeline audio tracks to the default. If you change the track color for an audio track, this option changes to deselected.
Default Timeline TC Tracks	Selecting this option sets the color of the Timeline timecode track to the default. If you change the track color for the timecode track, this option changes to deselected.
Allow Custom Bin Backgrounds	When you select this option, you can set custom background colors for bins.
Show Labels in Tool Palette	When this option is selected, your Avid editing application displays text labels with the icons on the Tool palette. This option is selected by default.
Show ToolTips	When this option is selected, your application displays labels for buttons and icons when you position the mouse pointer over them. This option is selected by default. You can also turn ToolTips on and off from the Help menu.
Delay *n* seconds before showing	Controls the length of the delay before tooltip labels display. This lets you move the mouse pointer across the interface without displaying the labels on items between the starting point and the destination of the mouse pointer.
Windows Standard Alt Key Behavior (Windows only)	Switches between standard Windows and Avid application Alt key behavior. When this option is selected, pressing and holding the Alt key together with another key works as a keyboard shortcut for certain Windows actions (for example, opening menus). When this option is deselected, pressing and releasing the Alt key and then pressing another key works as the Windows keyboard shortcut. Pressing and holding the Alt key together with another key works as a keyboard shortcut for certain Avid functions. This is the default option. For more information on Windows shortcuts, see the Windows documentation. For more information on Avid shortcuts, select Help > Shortcuts.

Option	Description
Automatic Num Lock Activation (Windows only)	When this option is selected, your application automatically sets the numeric keypad in numeric mode the next time you start the application. When this option is deselected, the Num Lock key on the keyboard controls the mode of the numeric keypad. With either selection, you can use the Num Lock key to change the mode of the numeric keypad.
Automatically Launch Last Project at Startup	When this option is selected, your application opens your last project when it starts.
Use Classic Character Mapping	When this option is selected, your application uses default text character mapping tables from older versions of Avid editing applications. These default mappings differ from current character mappings. Using the classic mappings might correct some text display problems in the Title Tool — for example, the display of Greek text or of special characters. For more information, see "Controlling Character Mapping for Title Text" in the Help.

New Audio Features

The Track Control Panel

Timeline tracks include a Track Control panel that provides features useful when you edit audio tracks. The Track Control panel arranges components in two rows of tools, and it allows you to do the following:

- Show or hide waveforms and clip gain, auto gain, and auto pan displays on individual tracks (see "Displaying Audio Waveforms" on page 161 and "Displaying Gain and Automation Pan Values" on page 163).
- Add, delete, move, and copy RTAS® (Real-Time AudioSuite) effects (see "Real-Time AudioSuite Plug-Ins" on page 163).
- Mark tracks as inactive or solo or mute tracks so you can monitor the audio on a track.

Track Control panel

Component	Description
Waveform	Turns on or off the waveform display for individual tracks.

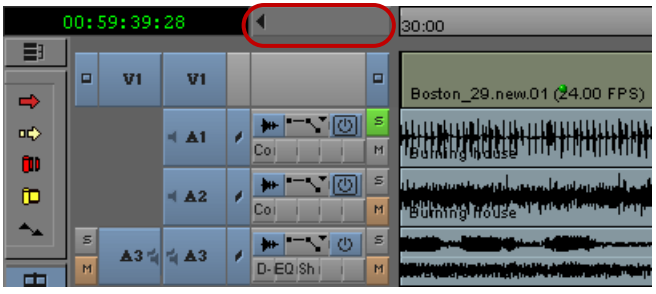
Component	Description
Clip Gain/Pan	Turns on or off the clip gain, auto gain, and auto pan display for individual tracks.
Inactive	Removes a track from audio monitoring so you can play back your sequence without process the plug-in effects or automation for the inactive track.
Solo	Allows you to monitor a single track of audio without deselecting other tracks.
RTAS plug-ins	Lists the RTAS plug-ins inserted on the track. Clicking the button for an existing RTAS insert opens the RTAS plug-in window so you can edit the plug-in parameters. Clicking a blank RTAS button opens the RTAS tool so you can insert a plug-in on the track.
Mute	Allows you to mute a single track of audio without deselecting it.

Using the Track Control Panel

The Track Control panel displays two rows of tools. If you reduce the size of the Timeline tracks, you might not see the Track Control panel tools. For more information on resizing Timeline tracks, see “Enlarging and Reducing Timeline Tracks” in the Help.”

To show the Track Control panel, do one of the following:

- Click the Timeline fast menu and select Track Control Panel. To hide the Track Control panel, deselect Track Control Panel.
- Click the Track Control Panel button above the Timeline.



Track Control panel, with the Track Control Panel button above the Timeline

Soloing Audio Tracks

You can solo multiple tracks in the Timeline, which lets you do the following:

- Listen to several tracks at once without deactivating or deselecting the other audio tracks off or reducing volume.
- Isolate audio tracks for audio scrubbing without having to deselect monitoring of all other audio tracks.

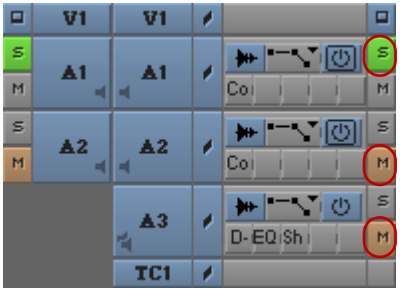
For more information about audio scrubbing, see “Using Audio Scrub” in the Help.

You can also use the Track Solo buttons in the Audio Mixer tool. See “Using the Track Solo and Track Mute Buttons” in the Help.

To solo an audio track:

- Click the Solo button in the Track Control panel for the track you want to solo.

  The Solo button turns green, and Mute buttons on all other audio tracks turn orange.



Solo button (green) and Mute buttons (orange) in the Track Control panel

To turn off soloing for the track:

- Click the Solo button again.

To turn off the solo feature for all audio tracks:

- Alt+click (Windows) or Option+click (Macintosh) the Solo button on any track.

Making Tracks Inactive

Unlike muted audio tracks, inactive or unmonitored audio tracks process no plug-in effects or automation. You can make any audio track inactive if you want to play back your sequence without audio information. This allows you to isolate parts of your sequence so you can see the effect of your audio edits.

The Audio Track Monitor button displays the monitoring status of the track:

Icon State	Description
	Primary monitored track — Audio information in these tracks is not dropped when the play speed increases during scrubbing.
	Monitored track — Audio information in these tracks might be dropped when the play speed increases during scrubbing, depending on your settings and track effects.
	Unmonitored track — Audio information is not processed for these tracks during playback.

To make an audio track inactive, do the following:

- Deselect the Audio Track Monitor button in the Track Control panel.

  You can click the Audio Track Monitor button again to restore monitoring to the track.

To make an audio track inactive using the Audio Mixer tool, do the following:

- In the Audio Mixer tool, right-click the Track Selector button and select Disable Track Monitoring.

  You can right-click the Track Selector button again and select Enable Track Monitoring to restore monitoring to the track.

Adjusting Volume

You can adjust your speaker or headphone volume without leaving your Avid editing application.

You can also mute audio in several ways:

- Using the Master Volume button in the Timeline
- Using the Mute button in the Play tab of the Command palette

  The Mute button lets you quickly make all audio tracks inactive or active during editing. This is convenient when you fine-tune complex audio and video edits, making it possible to shift quickly between the two. You can set your audio levels and speaker volumes and mute them whenever necessary without changing the settings.
- Using the Mute buttons in the Audio Mixer tool to mute selected tracks

  For more information, see “Using the Track Solo and Track Mute Buttons” in the Help.
- Using the Mute button in the Track Control panel.

  For more information, see “Soloing Audio Tracks” on page 158.

To adjust the volume control (software-only models):

1. From the Timeline, click and hold the Master Volume button.

Master Volume button (left) and Audio Meter menu button (right) in the Timeline

If you do not see the Master Volume button, click the Audio Meter menu button, and then select Show Audio Meters. The Master Volume button displays with the Audio Meters.

The Volume Control slider appears.

2. Continue to click and hold, and drag the volume control to the audio level you prefer.
3. Release the mouse button.

To adjust the volume control (models using Avid input/output hardware):

- Adjust the volume control on your Avid input/output hardware to the desired audio level.

Adjusting the volume control affects the volume only while you work in your Avid editing application. Once you exit your Avid editing application, the volume control defaults to your desktop setting.

To mute volume from the Timeline:

- Click the Master Volume button.

  A line appears through the button, and you cannot hear audio through your speakers or headphone.

To mute an individual audio track:

- Click the Mute button in the Track Control panel for the track you want to mute.

To mute all audio tracks:

- Ctrl+click (Windows) or Command+click (Macintosh) the Mute button on any track.

To turn the volume for audio tracks back on:

- Click the Mute button to deselect it.

Displaying Audio Waveforms

Audio waveforms in the Timeline display a sample plot of the entire amplitude of the track. This is the same as the sample voltage values seen on an analog oscilloscope waveform. You can display waveform plots for all audio tracks in the Timeline or you can select individual tracks for waveform display.

Audio waveform plots can slow your navigation through the Timeline. Therefore, you might want to display waveforms on only some of your audio tracks. To do this, you can activate per track settings, or you can create a custom Timeline view as described in “Customizing Timeline Views” in the Help.

You can also select Show Marked Waveforms in the Timeline Settings dialog box to narrow the view of the tracks in the Timeline. This option allows the Timeline to display faster because the waveform displays only between the Mark In and the Mark Out points.

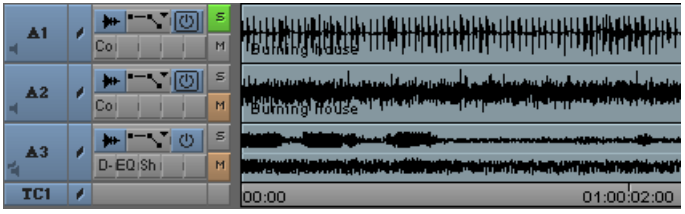
To display audio waveforms for all tracks:

1. To search for a point in a known section of the tracks, zoom in and show more detail in the sequence to isolate a section of the audio. With less audio to display, the system draws the waveform plot faster.
2. Do one of the following:

   - Click the Timeline fast menu and select Audio Date > Allow Per Track Settings, and then Alt+click (Windows) or Option+click (Macintosh) the Waveform button in the Track Control panel for any track.
   - Click the Timeline Fast menu button, and select Audio Data > Waveform.

   Press Ctrl+period (Windows) or Command+period (Macintosh) at any time during the redraw of the waveform plot to stop the redraw.

   The waveform appears in all audio tracks.



3. (Option) Maximize the visibility of your waveform display using one of the following procedures:

- Continue to expand or shrink your view of the Timeline by using the scale bar, spreading out the waveform plots to show detailed variations in the audio levels.
- To enlarge the height of selected audio tracks and subsequently the waveform display, press Ctrl+L (Windows) or Command+L (Macintosh).
- To reduce the height of selected audio tracks and subsequently the waveform display, press Ctrl+K (Windows) or Command+K (Macintosh).
- To enlarge the size of the waveform plot image without enlarging its track, press Ctrl+Alt+L (Windows) or Command+Option+L (Macintosh).

  This procedure is useful when you view detail in loud passages.
- To reduce the size of the sample plot image without reducing its track, press Ctrl+Alt+K (Windows) or Command+Option+K (Macintosh).

  This procedure is useful when you view detail in quiet passages.

4. Move through the audio shown in the waveform using any of the playback methods.

   You hear sound as you track the audio visually. When the position indicator reaches the point you want in the waveform, you can mark, trim, or perform any other function.

To display audio waveforms for selected tracks:

1. Click the Timeline fast menu and select Audio Data > Allow Per Track Settings.
2. Click the Timeline fast menu and select Audio Date > Allow Per Track Settings, and then click the Waveform button in the Track Control panel for the tracks you want to display audio waveform plots.

   The waveform appears in the selected tracks.

You can turn off all waveforms on selected tracks by disabling Allow Per Track Settings. This disables the display of waveforms, but it does not change the per track settings. Enabling per track settings again restores your per track waveform displays. You can also save the Allow Per Track Settings state as part of a customized Timeline view. For more information, see “Customizing Timeline Views” in the Help.

Displaying Gain and Automation Pan Values

You can view the clip gain and the automation gain values in the Timeline at the same time. You can also view automation pan values by selecting Auto Pan from the Timeline Fast menu.

You cannot display Auto Gain and Auto Pan values at the same time in the Timeline.

For more information on displaying audio waveforms and using per track settings, see

To turn on the display of clip gain values and automation gain values for all tracks, do one of the following:

- Click the Timeline fast menu and select Audio Date > Allow Per Track Settings, and then Alt+click (Windows) or Option+click (Macintosh) the Clip Gain button in the Track Control panel for any track.
- Click the Timeline Fast menu button, and select Audio Data > Auto Gain, Clip Gain, or both.

To turn on the display of clip gain values and automation gain values for selected tracks:

1. Click the Timeline fast menu and select Audio Data > Allow Per Track Settings.

2. Click the Clip Gain button in the Track Control panel for the tracks you want to display clip or automation gain information, and select Clip Gain or Auto Gain.

   The gain values appear in the selected tracks.

3. (Option) If you want to view both clip gain and auto gain values, repeat the previous step and select an additional gain value to display.

To turn on the display of automation pan values in the Timeline:

1. If you want to view automation pan values for all tracks, click the Timeline Fast Menu button and select Audio Data > Auto Pan.
2. If you want to view automation pan values for individual tracks, do the following:
   a. Click the Timeline fast menu and select Audio Data > Allow Per Track Settings.

   b. Click the Clip Gain button in the Track Control panel for the tracks you want to display automation pan information, and select Auto Pan.

   The pan values appear in the selected tracks.

Real-Time AudioSuite Plug-Ins

Your Avid editing application supports up to five RTAS plug-in inserts on each audio track. RTAS plug-ins are audio effects that you apply (or insert) on tracks, rather than on segments within your sequence. These inserts let you process audio material on a track in real time so

that you can apply the effects to a sequence and play them back or output them without rendering them first. This lets you add a type of audio track effect that Avid Pro Tools® also supports.

When you use more than one plug-in on a track, your Avid editing application processes them in a series. Each effect gets added to that of any previous effect (moving from left to right in the Track Control panel). You can only apply mono RTAS plug-ins to mono audio tracks and stereo plug-ins to stereo audio tracks.

Avid qualifies a number of RTAS plug-ins manufactured by Avid for use with the current version of your Avid editing application. This includes RTAS plug-ins in the DigiRack and Bomb Factory plug-ins series. For a description of available RTAS plug-ins, see "Avid AudioSuite Plug-Ins" in the Help.

Avid also supports some plug-ins from third-party vendors that you can purchase separately. These plug-ins have their own detailed documentation. For information on Avid and third-party plug-ins, go to the Avid Web site at www.avid.com.

Inserting an RTAS Plug-In on a Track in the Timeline

You can insert up to five RTAS plug-in track effects (inserts a through e) on an audio track. When you insert a plug-in effect to a track, you select the track where you want to apply the effect, which insert location you want to use on the track, and the specific effect you want to add to your sequence.

You can also insert an RTAS plug-in track effect by dragging an RTAS effect template from a bin to your sequence. For more information, see "Using RTAS Effect Templates" on page 169.

To insert an RTAS plug-in from the Timeline, do the following:

- Right-click the Record Track button or the Track Control panel for the track where you want to apply the insert and select RTAS Effects *[track number]* > Insert *[a-e]* > *[insert]*.

  The plug-in effect is inserted in the track.

To insert an RTAS plug-in using the RTAS insert button, do the following:

1. Click an RTAS insert button in the Track Control panel for the track where you want to apply the insert.

   The RTAS tool opens.

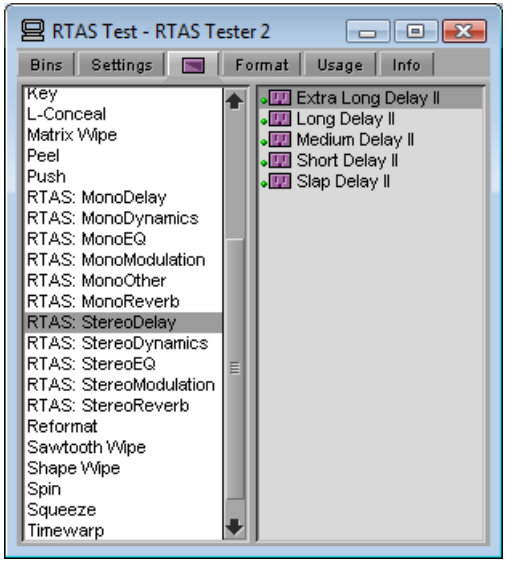
2. Click the Select Effect button, and select an RTAS plug-in effect:

   The plug-in effect is inserted in the track.

To insert an RTAS plug-in using the Effect Palette:

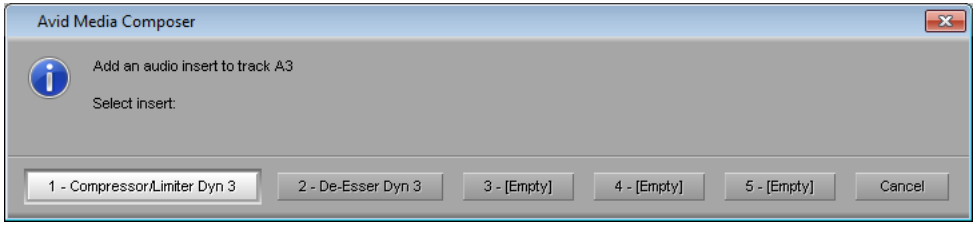
1. In the Project window, click the Effects tab.

   The Effect Palette appears.



2. Click an RTAS effect category, select the RTAS effect you want, and drag it to the segment or to the RTAS insert button where you want to apply the insert. You can only insert mono effects on a mono track, and stereo effects on a stereo track.

   The Select Insert dialog box opens.



3. Do one of the following:

   - If you want to add a new insert, click an [Empty] insert button.
   - If you want to replace an existing insert, click the appropriate insert button.

The plug-in effect is inserted in the track to which you dragged the effect icon.

Editing an RTAS Plug-In on a Track in the Timeline

After you insert an RTAS plug-in on an audio track, you can access the plug-in controls by using the Track Control panel or the RTAS tool. When you select an RTAS insert button in the Track Control panel or an effect in the RTAS tool, the controls for the plug-in appear in the RTAS tool window.

RTAS plug-inserts in the Track Control panel

RTAS tool: Select Track, Select Insert, and Select Effect buttons (left), Bypass button (center), and Save Effect button (right)

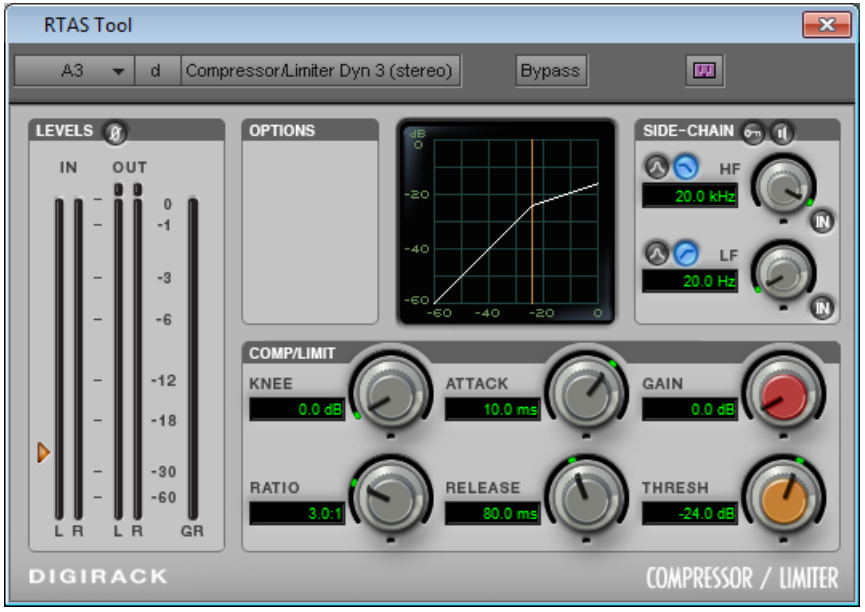
You can modify the parameters of the effect as you play your sequence so you can hear how your modifications affect the sound of your audio.

If you have more than one insert on a track, you can dynamically change the plug-in controls that display in the RTAS tool as you play your sequence.

To edit an RTAS effect:

1. If the Track Control panel is not visible, click the Track Control Panel button or click Timeline fast menu and select Track Control Panel.
2. Click the RTAS insert button for the RTAS effect you want to edit.

   If a plug-in is inserted on the track, the Select Effect button displays the name of the plug-in and the RTAS tool opens a window associated with the plug-in.



The Compressor/Limiter Dyn 3 plug-in window displayed in the RTAS too dialog box.

You can also open the RTAS tool by selecting Tools > RTAS or right-clicking the Record Track button for the track where you want to edit an insert and selecting RTAS tool. You can use the buttons in the RTAS tool to select a specific insert to edit.

3. (Option) If you want to change the plug-in effect for your insert, click the Select Effect button and select a new plug-in.
4. Make any necessary adjustments to your effect.

   If you play your sequence, you can modify the effect dynamically without stopping playback.
5. (Option) If you have multiple inserts on a track, do one of the following to change the plug-in controls that display in the RTAS tool:
   - Click the Select Track or the Select Insert button and select a different insert.
   - Press the arrow keys to cycle through the available inserts.

     Up and down arrow keys change the selected track. Right and left arrow keys change the selected insert.
6. (Option) Click the Bypass button if you want to play audio without processing the track effect. This lets you compare the audio with or without the plug-in effect.
7. To save your changes, do one of the following:

   - Click the Save Effect icon in the RTAS tool.
   - Close the RTAS tool.

Moving and Copying RTAS Inserts

You can move and copy RTAS inserts from one track to another. However, you can only move mono inserts to mono tracks and stereo inserts to stereo tracks.

RTAS plug-in effects on inserts a, b, and c in the Track Control panel

To move an RTAS insert from one position to another, do the following:

- Click an RTAS insert button and drag it to an RTAS insert button on a new track or to a new insert button on the same track. If the destination RTAS button already has an insert on it, the new insert replaces the existing one.

To copy an RTAS insert from one position to another, do the following:

- Alt+drag (Windows) or Option+drag (Macintosh) an insert button to an insert button on a new track or to a new insert button on the same track.

Ordering RTAS Inserts on a Track

When you combine RTAS plug-ins on an audio track, the order in which you insert them affects how your Avid editing application applies the effects. This can produce different results for your sequence. Your Avid editing application processes RTAS effects in order from left to right as they appear in the Track Control panel (insert a through insert e). For example, if you insert a compressor plug-in to the right of an EQ plug-in, your Avid editing application applies EQ effect first and then applies the compressor effect to the result.

You must have one empty insert on your audio track so you do not replace an existing insert when you reorder the inserts.

To modify the order of RTAS inserts on a track, do the following:

- Click an RTAS insert button and drag it to an empty insert button in the Track Control panel.

Removing RTAS Inserts on a Track

Removing an insert deletes the effect from the track.

To remove an RTAS insert:

1. Do one of the following:
   - Select Tools > RTAS.

- Right-click the Record Track button for the track where you want to edit an insert and select RTAS tool.
- Click the RTAS insert button for the RTAS effect.

The RTAS tool opens.

2. Click the Select Track button and select the track where you want to delete an insert.
3. Click the Select Insert button and select “no insert.”

   Your Avid editing application removes the insert from the track.
4. Close the RTAS tool to save your changes.

Using RTAS Effect Templates

If you apply an RTAS track effect and make a set of adjustments to it, you can quickly recreate the same sound on other tracks in your sequence or project. You can save an RTAS effect with its parameter settings to a bin as an effect template. You can then apply the template to other audio tracks at any time.

You can apply an RTAS track effect template with all its parameters directly to an RTAS insert button in the Track Selection panel or to clips in the Timeline.

To save an RTAS effect as a template, do one of the following:

- Click the Save Effect button in the RTAS tool and drag it to a bin.
- Click an RTAS button and drag it to a bin.

  A new RTAS track effect template appears in the bin, containing the parameter setting information for the effect. The new RTAS effect template is identified in the bin by an effect icon. By default, your Avid editing application names the template by the plug-in name.

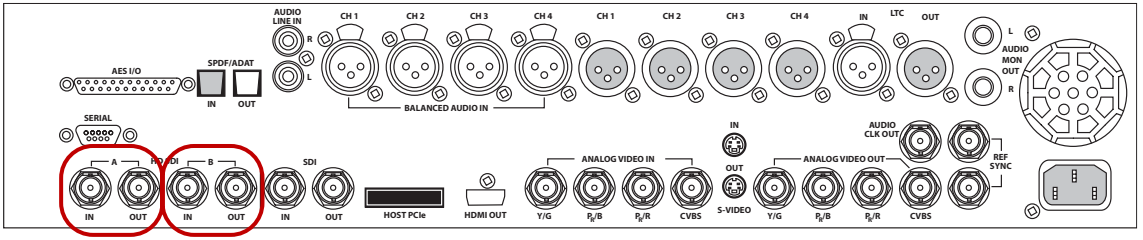
To apply an RTAS effect template to an audio track, do one of the following:

- Drag the RTAS effect template from the bin to an RTAS insert button in the Track Selection panel.
- Drag the RTAS effect template from the bin to a segment on the track where you want to apply the effect. The Select Insert dialog box opens so you can select the insert where you want to apply the effect.

  The RTAS effect is applied to the track.

Dual Link HD RGB Support

The Avid Media Composer and Avid Symphony editing applications with Nitris DX support RGB HD dual link. If you have a Nitris DX-based system, you can capture, monitor, and output projects in HD-RGB using the two HD SDI connections to handle the high-bandwidth resolutions.



RGB Dual Link does not support Universal Mastering. Universal Mastering is available in the YCbCr 709 Color Space only.

Crossconvert is not supported with RGB Dual Link SDI.

RGB media requires high bandwidth. For effective playback of multiple streams of video at higher resolutions, you should distribute the video tracks as evenly as possible among available drives, and target separate drives for audio and video.

See the following topics:

- HD RGB Capture
- HD RGB Playback to High Resolution Monitor
- HD RGB Digital Cut

HD RGB Capture

To setup:

1. Connect the Nitris DX to a dual link compliant camera or deck. Use the HD-SDI B IN and OUT connectors for dual ingest HD-RGB capture.
2. Open the Capture Tool window.
3. Select the RGB resolution.
4. See “Capturing Media” in the Help for details on performing a capture.

HD RGB Playback to High Resolution Monitor

To setup:

1. Connect the Nitris DX to a dual link high resolution monitor. Use the HD-SDI B IN and OUT connectors for dual ingest HD-RGB capture and output on Avid Media Composer or Avid Symphony connected to a Nitris DX.
2. Click the Format tab in the Project window.
3. Click the Color Space menu and select RGB.
4. Set the Video Quality button to Full Quality 10-bit.

   You can now playback video to the high resolution monitor.

HD RGB Digital Cut

To setup:

1. Connect the Nitris DX to a dual link compatible deck. Use the HD-SDI B IN and OUT connectors for dual ingest HD-RGB output on Avid Media Composer or Avid Symphony connected to a Nitris DX.
2. Open the Video Output Tool.
3. Select the HD RGB Dual Link SDI resolution.
4. See “Using the Digital Cut Tool” in the Help.

Timeline Settings Changes

The following changes have been added to the Timeline Settings:

- On the Display tab of the Timeline Settings dialog box, you can control the movement of the Timeline during playback. Options are Page (Timeline moves to the next section of the Timeline when the position indicator reaches the end of the visible Timeline), Scroll (Timeline scrolls under the position indicator, which remains stationary), and None (Timeline remains stationary while position indicator moves, even when it goes beyond the part of the Timeline displayed in the Timeline window). The legacy option just had "Scroll"; what's new is the paging Timeline.
- On the Edit tab of the Timeline Settings dialog box, you now have the option of disabling all editing tools in the Smart tool by clicking either the Timeline ruler or the Timecode track in the Timeline.
- You can also specify which segment edit tool -- Segment Insert or Segment Overwrite -- the application defaults to when you make a segment selection (for example, by lassoing segments) with no segment edit tool selected.

Enhanced Effects

The following effects are now realtime effects; **Illusion FX Category:** Color Mix, Crystal, Film Grain, Flare, Iris, Kaleidoscope, Lightning, Melt, Motion Blur, Pagecurl, Particle Blast, Particle Orbit, Particle Wind, Pattern Generator, Pinch, Radial Blur, Random Blend, Ripple, Rollup, Shear, Sparkler, Sphere, Swirl, Twist, Wave, **Image Category:** Blur, Mosaic, Paint

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