Avid® Media Composer | First®

User's Guide

Footage

Arri — Courtesy of Arri/Fauer — John Fauer, Inc.
Bell South "Anticipation" — Courtesy of Two Headed Monster — Tucker/Wayne Atlanta/GMS.
Canyonlands — Courtesy of the National Park Service/Department of the Interior.
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Saturn "Calvin Egg" — Courtesy of Cossette Communications.
"Tigers: Tracking a Legend" — Courtesy of www.wildlifeworlds.com, Carol Amore, Executive Producer.
" The Big Swell" — Courtesy of Swell Pictures, Inc.
Windhorse — Courtesy of Paul Wagner Productions.

Arizona Images — KNTV Production — Courtesy of Granite Broadcasting, Inc.,
Editor/Producer Bryan Foote.
Canyonlands — Courtesy of the National Park Service/Department of the Interior.
Ice Island — Courtesy of Kurtis Productions, Ltd.
Tornados + Belle Isle footage — Courtesy of KWTV News 9.
WCAU Fire Story — Courtesy of NBC-10, Philadelphia, PA.
Women in Sports – Paragliding — Courtesy of Legendary Entertainment, Inc.

Avid Media Composer | First User's Guide • Created 8/25/17

Contents

Using This Guide

This guide contains the task-oriented instructions, conceptual information, and reference information you need to use the features of your Avid editing application. The contents of this guide is also available in the Help.

This guide is intended for all users, from beginning to advanced.

Symbols and Conventions

Avid documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
	A note provides important related information, reminders, recommendations, and strong suggestions.
	A caution means that a specific action you take could cause harm to your computer or cause you to lose data.
	A warning describes an action that could cause you physical harm. Follow the guidelines in this document or on the unit itself when handling electrical equipment.
>	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.
▸	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
(Windows), (Windows only), (Mac), or (Mac only)	This text indicates that the information applies only to the specified operating system, either Windows or Mac OS X.
Bold font	Bold font is primarily used in task instructions to identify user interface items and keyboard sequences.
Italic font	Italic font is used to emphasize certain words and to indicate variables.
`Courier Bold font`	Courier Bold font identifies text that you type.
Ctrl+key or mouse action	Press and hold the first key while you press the last key or perform the mouse action. For example, Command+Option+C or Ctrl+drag.

If You Need Help

If you are having trouble using your Avid product:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.

2. Check the latest information that might have become available after the documentation was published. You should always check online for the most up-to-date release notes or ReadMe because the online version is updated whenever new information becomes available. To view these online versions, select ReadMe from the Help menu, or visit the Knowledge Base at www.avid.com/support.

3. Check the documentation that came with your Avid application or your hardware for maintenance or hardware-related issues.

4. Visit the online Knowledge Base at www.avid.com/support. Online services are available 24 hours per day, 7 days per week. Search this online Knowledge Base to find answers, to view error messages, to access troubleshooting tips, to download updates, and to read or join online message-board discussions.

5. For Avid Community support visit the Media Composer | First Community Forum where you can get help and advice from other Avid users.

6. Watch the Get Started Fast Tutorials.

Avid Training Services

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For information on courses/schedules, training centers, certifications, courseware, and books, please visit www.avid.com/support and follow the Training links, or call Avid Sales at 800-949-AVID (800-949-2843).

1 Media Composer | First Quick Start

The following topics provide a quick start for installing and using Media Composer | First. This document is meant to get you running quickly with Media Composer | First.

- Downloading and Installing Media Composer | First
- Launching Media Composer | First
- Creating a Project
- Accessing Your Footage
- Creating a Sequence
- Publishing Your Story

Downloading and Installing Media Composer | First

Use the following procedure to access and install Media Composer | First.

To access the download for Media Composer | First:

1. Go to http://www.avid.com/media-composer-first
2. You must have an Avid Master Account. Follow the on screen instructions to either Login in (if you already have an account) or create an Avid Master Account. The on screen instructions will step you through creating an Avid Master Account, verifying your email address, and downloading Media Composer | First. Once the download is complete, continue with installing the application.

(Windows) To install the Avid software:

1. Access the file you downloaded.
2. Click to launch the Media Composer | First installer. A window will open with instructions as well as options for choosing file locations and other custom settings.
3. Follow the on screen instructions.
4. When prompted, choose to restart the computer.

   The installation process adds a Media Composer | First icon to the Desktop icon and a pointer to your Avid editing application in the Start menu. The installation process also adds an Application Manager icon to the Toolbar menu. The Application Manager allows you to view the installed Avid applications and try new offerings.

5. Once you restart your system, the Application Manager launches.
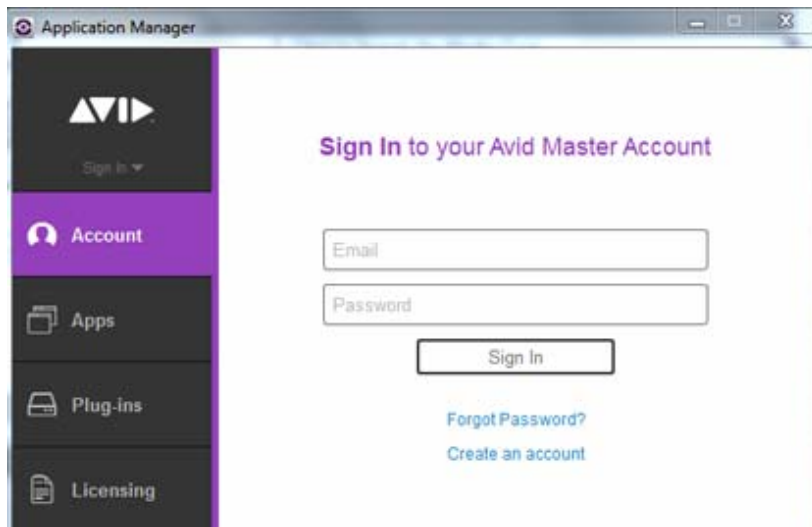
6. Sign In to your Avid Master Account. NOTE: You cannot launch Media Composer | First if you are not signed into your Avid Master Account. Continue with Launching Media Composer | First.

(Macintosh) To install Media Composer | First:

1. Access the file you downloaded.

2. Double-click the .pkg file with the editing application name.

3. Follow the on screen instructions.

4. When prompted, choose to restart the computer.

   The installation process adds a Media Composer First icon to the Dock. The installation process also adds an Application Manager icon to the Dock. The Application Manager allows you to view the installed Avid applications and try new offerings.

5. Once you restart, the Application Manager launches.
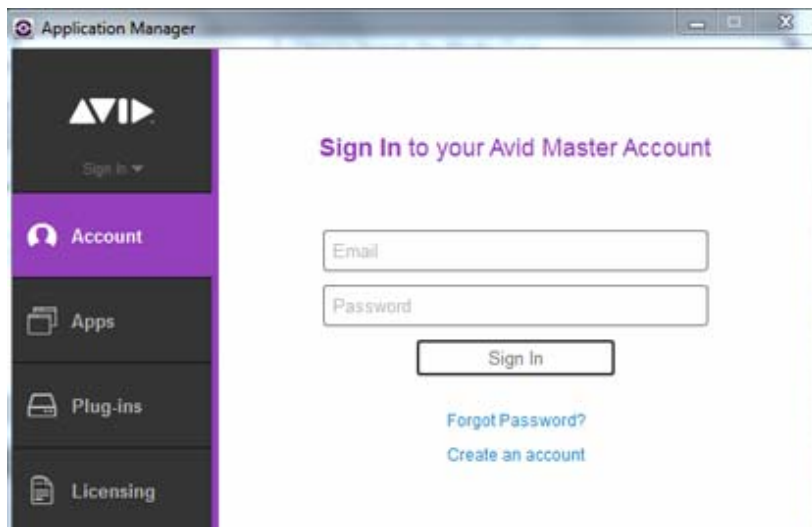
6. Sign In to your Avid Master Account. NOTE: You cannot launch Media Composer | First if you are not signed into your Avid Master Account. Continue with Launching Media Composer | First.

Launching Media Composer | First

Perform the following to launch Media Composer | First:

(Windows) To start your Avid editing application, do one of the following:

▶ Click Start > All Programs > Avid > Media Composer | First.

▶ Double-click the Media Composer | First desktop icon.

The Media Composer | First application opens.

(Macintosh) To start your Avid editing application, do one of the following:

▶ Click the alias icon for your Avid editing application on the Dock.

▶ Select Go > Applications, and double-click the Avid editing application folder. Then double-click the Media Composer | First application file.

The Media Composer | First application opens.
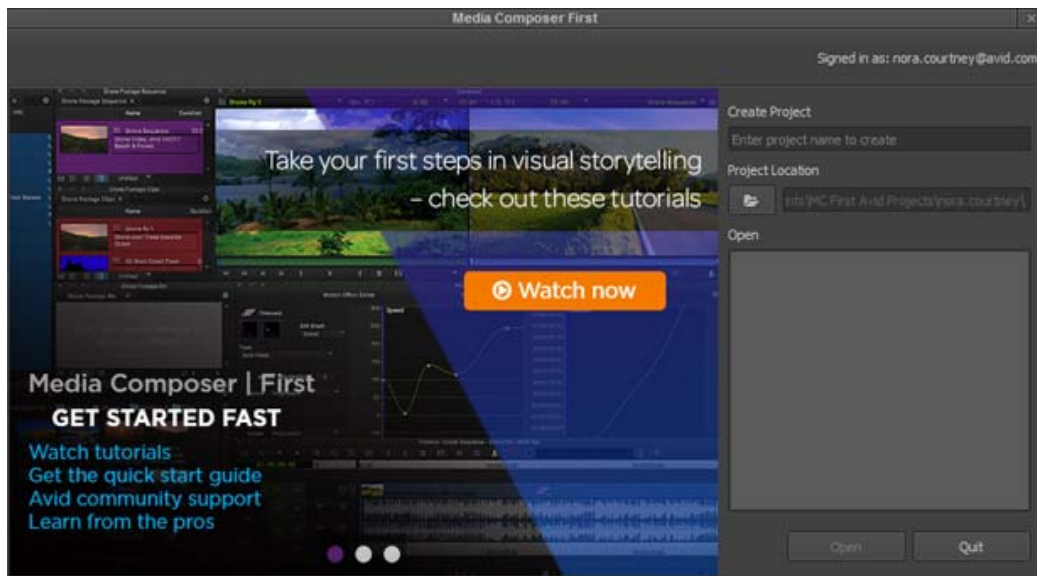
Creating a Project

When you first open Media Composer | First, a window opens where you can create a project or open an existing project.

To create a project:

1. Enter a name for your project in the Create Project text box.

2. Click Create.

The application opens with a default workspace.
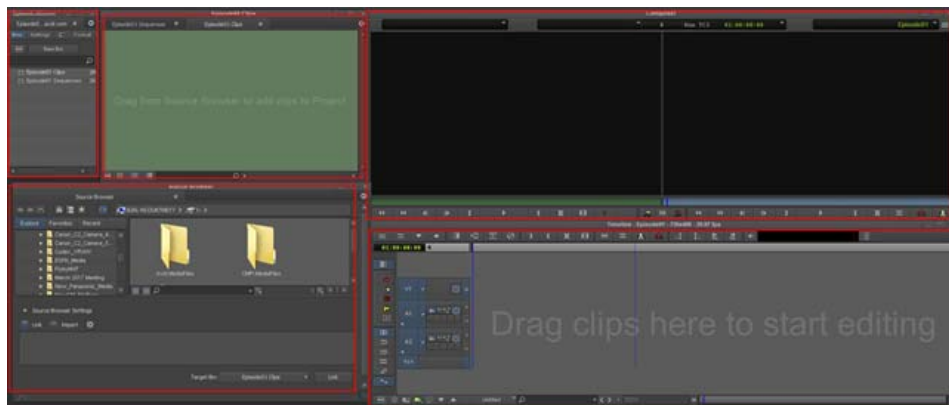
Top row: Project Window, Sequence Bin and Clip Bin, Source and Record monitors
Bottom row: Source Browser, Timeline

The following describes the windows that initially open when you create a project:

Window	Description
Project Window	The Project window is a central location for important information and tools that you need as you work on your project. The Project window has tabs that allow you to choose from the following: • Bins - lets you create and open bins. • Settings - lets you view and modify settings. • Effects icon - lets you access a library of effects. • Format - displays the Raster Dimension and Frame Rate. • Usage - lets you view information about the work session usage. • Info - lets you view information about system memory usage and system hardware configuration.
Sequence Bin and Clips Bin	Bins are locations for organizing and managing your media. You can create up to 5 bins.
Source and Record Monitors	The Source Monitor (left monitor) displays the currently loaded clip. The Record Monitor (right monitor) displays the frame at the current position of a loaded sequence in the Timeline.
Source Browser	The Source Browser window allows you to import or link your media. You can also preview your footage before you commit the clip(s) into a bin.

Window	Description
Timeline	Media Composer	First represents each edit and effect on the Timeline to help you track and manipulate the elements of your sequence. The Timeline continuously updates as you work, displaying icons and information that you can customize in various ways. The Timeline also has its own set of editing tools for creating and revising edits and transitions across multiple tracks.
	The audio and video tracks in the Timeline play in the Record monitor. You can continually edit your sequence and review your changes until you are pleased with the result.

Accessing Your Footage

Once you have created a project, use the Source Browser to access and preview your footage. Once you decide on the footage you want for your sequence, use the Source Browser to import or link to your media.

Accessing and Previewing Your Media

You can preview your media in the Source Browser before you commit the clip(s) into a bin.

To access and preview your media:

1. In the Explore area of the Source Browser window, browse to the location of the media you want to preview.

   The clips will populate the right pane of the Source Browser with the frame clip representation (thumbnails).
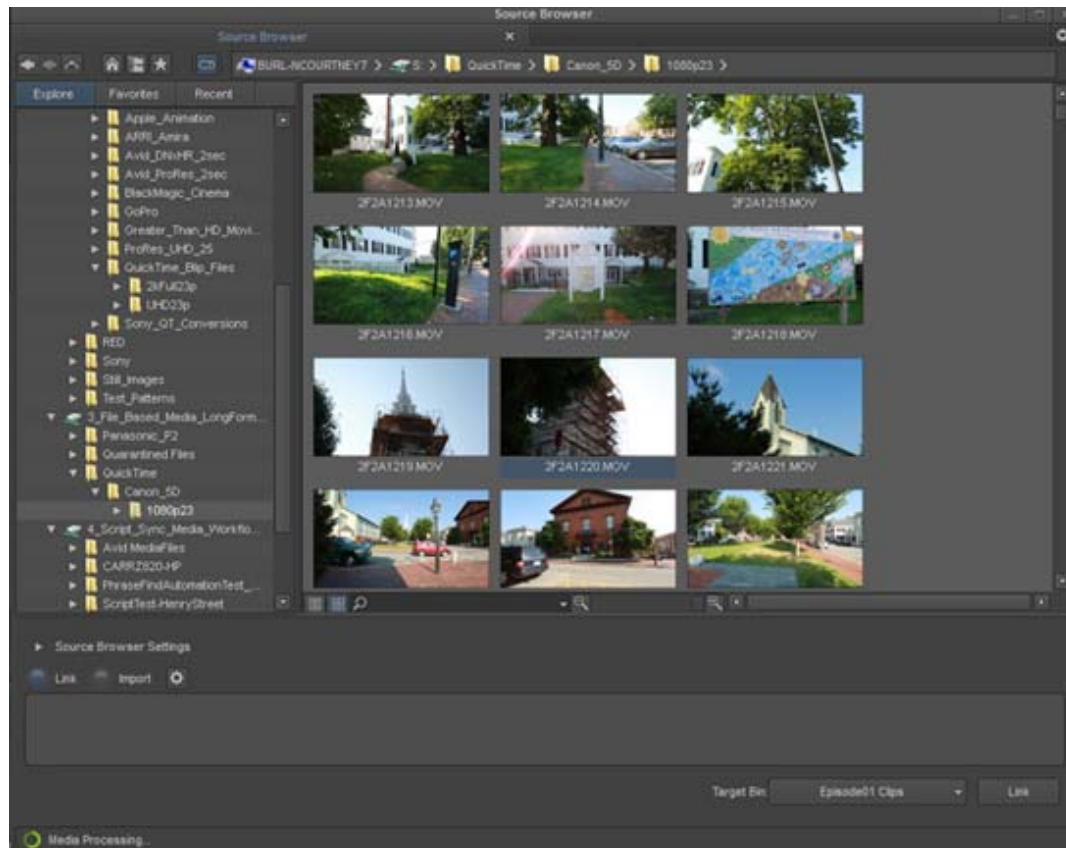
2. Press Ctrl + L (Windows) or Command + L (Mac) to enlarge the thumbnails.

3. Place your cursor so it hovers over the thumbnail of the clip. While hovering, move the cursor to the edges of the thumbnail to preview the footage. You can also use the JKL keys to shuttle through the thumbnail. (Use L to move forward, K to pause, and J to move backward.)

4. (Optional) You can drag a clip from the Source Browser to the Source monitor to review the clip. Dragging to the Source monitor does not commit the clip to the bin.

5. (Optional) You can also choose to view the clips in text view, rather than in thumbnail view by clicking the Text View button at the bottom of the display pane.

6. Continue with Importing or Linking Your Media.

   For additional details on the Source Browser, see "*Source Browser Overview*" in the Help.

Importing or Linking Your Media

In the Source Browser Window, you can choose to either import or link your media. Linking allows you to quickly link to the files without importing, transcoding, or copying them. Once you link to the files, you can immediately drag them to your Timeline and start editing. Importing will actually import the media files to the bin. (The import process can take longer than linking.)

To link or import the media files:

1. Once you have previewed the clips you want in the Source Browser window, select the Link button if you want to link to them or select the Import button if you want to import the files.

2. Select the clips you want and drag and drop them to the bin. (Ctrl+click or Shift+click to select multiple files.)

If you chose to Import, a Project Properties dialog box appears showing the image size and edit rate of the first clip you are importing to the bin. You can click OK to accept the selected clip size and edit rate, or select another raster size and edit rate from the menus.

If you chose to Link rather than import, the Project Properties dialog box will appear when you drag the first linked clip to the Timeline.
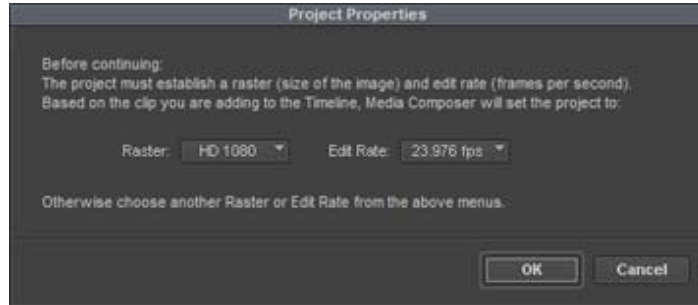
The clips appear in the bin. Linked clips appear with a link on the clip icon.
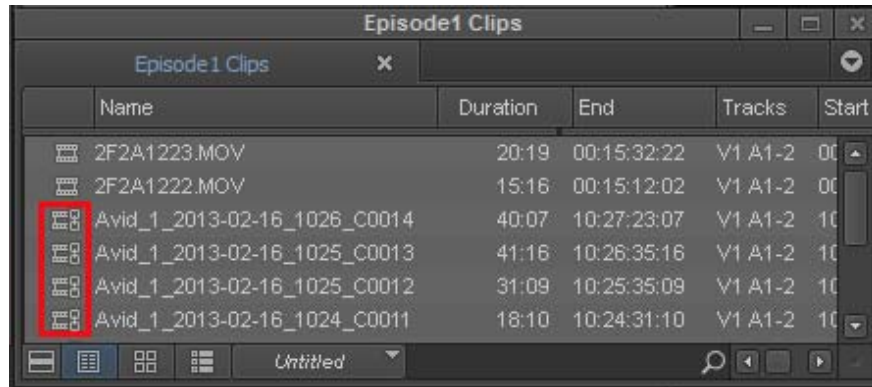
⬚ *You can also import or link clips by selecting them, right clicking and selecting Add to Bin.*

Creating a Sequence

Once you have your media in the bin, you can begin to assemble the clips into the Timeline to create your sequence. The following topics cover a basic workflow to edit your sequence.

- Marking IN and OUT Points
- Adding Clips to the Timeline
- Trimming
- Adding Effects to Your Sequence
- Adjusting Audio with "Ducking"
- Publishing Your Story

Marking IN and OUT Points

You can mark IN and OUT points in your footage to indicate selected material, for example, the portion of a clip that you want to edit into a sequence. You can also easily clear or move these marks. Even if your marks are not accurate now, your Avid editing application lets you trim the edit points and fine-tune the sequence later without reediting the material.

To mark IN and OUT points:

1. Double click a clip in the bin to load it into the Source monitor.

2. Play, step, or shuttle through the material by using the blue bar, J-K-L, or the Play, Rewind, and Fast forward buttons.

Blue bar, Rewind - Fast Forward- Step Backward - Step Forward buttons, Play button

3. Mark an IN point by doing the following:

   ▶ Click the Mark IN button under the monitor to mark an IN point and stop playback.

   In the monitor, a Sawtooth icon appears on the left to indicate the mark IN frame.

Sawtooth icon in the frame, and marked IN point, in the monitor

4. Continue moving through the material.

5. Mark an OUT point by doing the following:

▶ Click the Mark OUT button under the monitor to mark an OUT point and stop playback.

In the monitor, a Sawtooth icon appears on the right to indicate the mark OUT frame.

If you need to move a mark icon, simply press Alt (Windows) or Option (Mac) while dragging the icon to a new location.

6. Continue loading your clips in the Source Monitor and marking the material you want to add to your sequence with IN and OUT points. Once you have finished marking IN and OUT marks for your source material, continue with Adding Clips to the Timeline.

For more details on marking your footage, see "*Viewing and Marking Footage*" in the Help.

Adding Clips to the Timeline

You can create a sequence by loading the clips directly into the Timeline.

To create a sequence:

1. In the bin, select the first clip you want to add to the sequence and double-click to load the clip in the Source Monitor.

2. Drag the selected clip to the Timeline.

If the first clip you are dragging to the Timeline is a linked clip, the Project Properties dialog box opens.
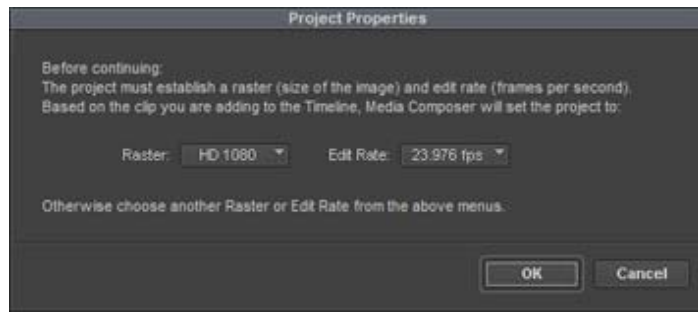
3. The dialog box shows the image size and edit rate of the first clip you are dragging to the Timeline. You can click OK to accept the selected clip size and edit rate, or select another raster size and edit rate from the menus.

The selected clip appears in the Record Monitor and a graphical representation appears in the Timeline.
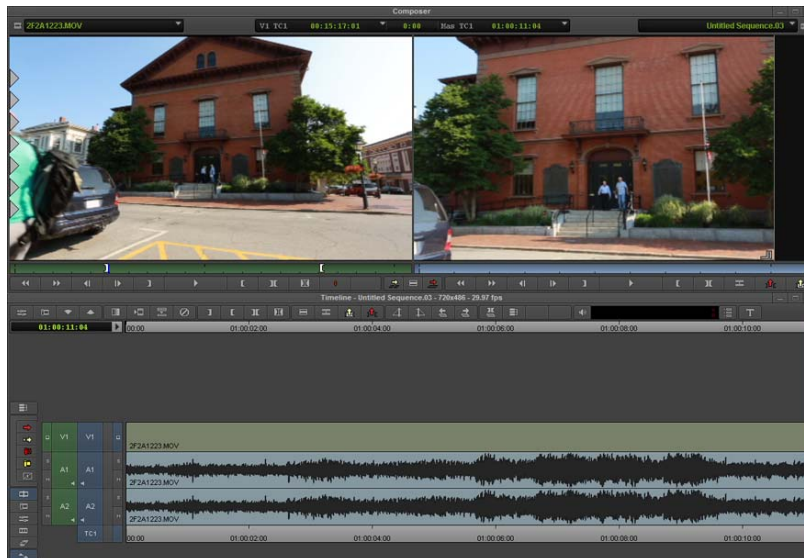
4. In the bin, double click to load the next clip you want to add to the sequence to the Source Monitor and click the Splice-In button below the Source Monitor.

5. Continue loading the clips in the Source Monitor and then click the Splice-In button to add the clip to the sequence.

6. Once you have finished adding clips to the sequence, you can edit the sequence by trimming, adding effects, and adjusting audio. See Editing the Sequence.

For more details on working in the Timeline, see "*Using the Timeline*" in the Help.

Editing the Sequence

Once you have added the clips you want to the sequence, you can continue to fine tune the sequence by trimming, adding effects, and adjusting audio.

Trimming

Basic editing of a sequence initially produces a rough cut, which is loosely defined as a series of straight-cut edits with many rough edges and few effects. After creating a rough cut, you can use trim edits to fine-tune the transitions between each clip or between whole segments.

To perform a trim:

1. Click the Trim mode button to enter Trim mode.

2. Once you enter Trim mode, the Composer monitor changes to display Trim mode for trimming transitions. Outgoing frames appear on the left monitor and incoming frames appear on the right. Trim rollers appear at the nearest transition in the Timeline.
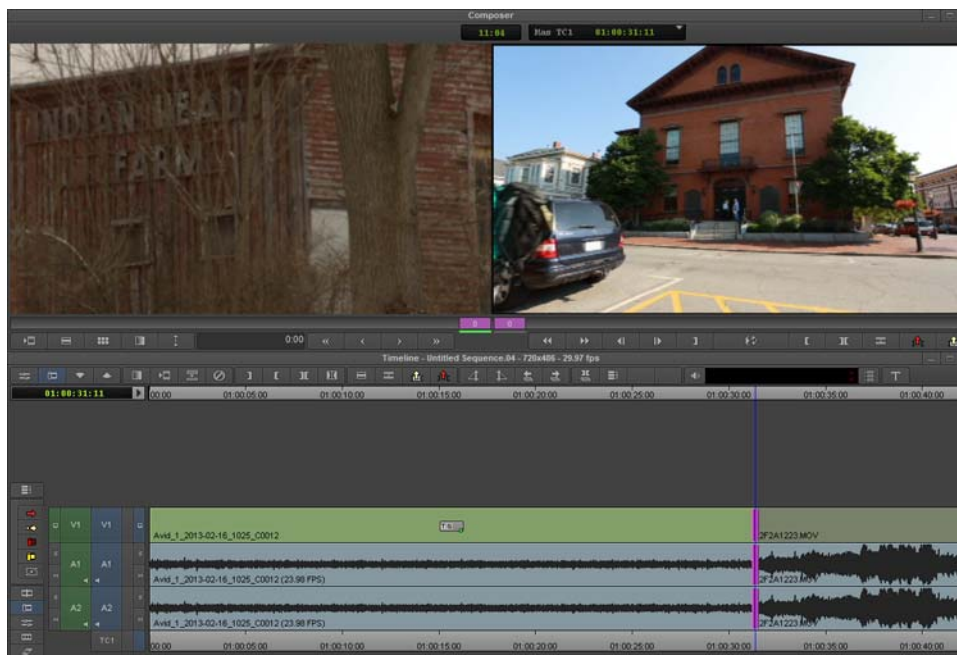
3. If you want to trim frames from the outgoing clip, click in the left monitor and then drag the trim roller at the transition in the Timeline to the left to trim the frames. If you want to trim frames from the incoming clip, click the right monitor and then drag the roller to trim the frames.

4. Continue trimming transitions if necessary. Once you are finished cleaning transitions, you can add effects to your sequence.

5. Exit Trim mode. There are multiple ways to exit Trim mode: click on another mode button, for example, the Source/Record mode button directly above the Trim mode button, or simply click in the TC 1 ruler at the bottom of the Timeline.

   For more details on using Trim mode, see "*Working with Trim Edits*" in the Help.

Adding Effects to Your Sequence

Media Composer | First provides a number of effects that you can add to your sequence. In this example, we'll add a simple fade to a transition.

To add a fade to a transition:

1. Place your cursor at a transition in your sequence.

2. Click the Quick Transition button in the Timeline Tool bar.
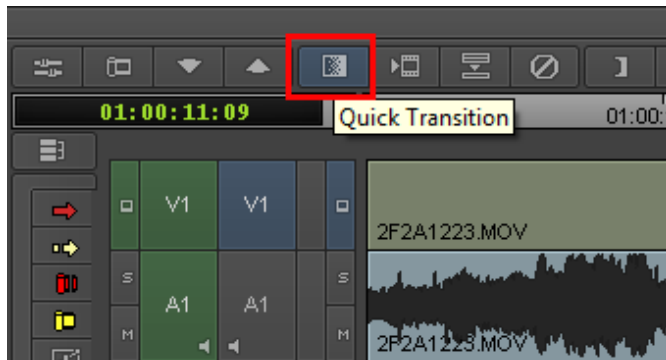
3. The Quick Transition dialog opens.

4. Type the number of frames to fade up and fade down, and click Add.

5. You can view the Fade effect by playing the segment in the Timeline.

   You can also add a number of effects from the Effect Palette. You can access the Effect Palette from the Tools menu.

Adjusting Audio with "Ducking"

Audio Ducking is a feature that allows you to reduce the audio level of one or more audio tracks when you want to hear the level of another audio track(s). For example, this is useful when you want to lower the music on one track in order to hear the dialog on another audio track.

To set Audio Ducking:

1. Load the sequence that contains audio tracks to which you want to apply Audio Ducking.

2. Right click in the Timeline and select Audio Ducking.

   The Audio Ducking dialog opens.
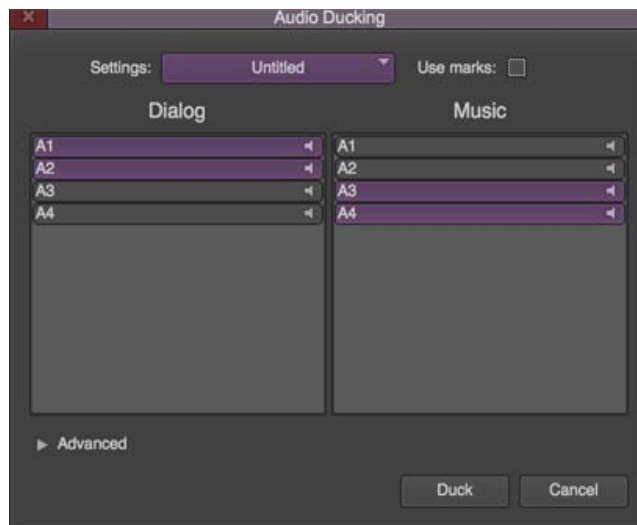
3. Select the Dialog and Music track(s) that you want to adjust.

4. (Optional) Select Use Marks if you want to set IN and OUT points to determine the starting and ending frames for applying audio ducking.

5. Click Duck.

   Keyframes are applied to the respective target tracks and you will visually see the ducking in the track(s).
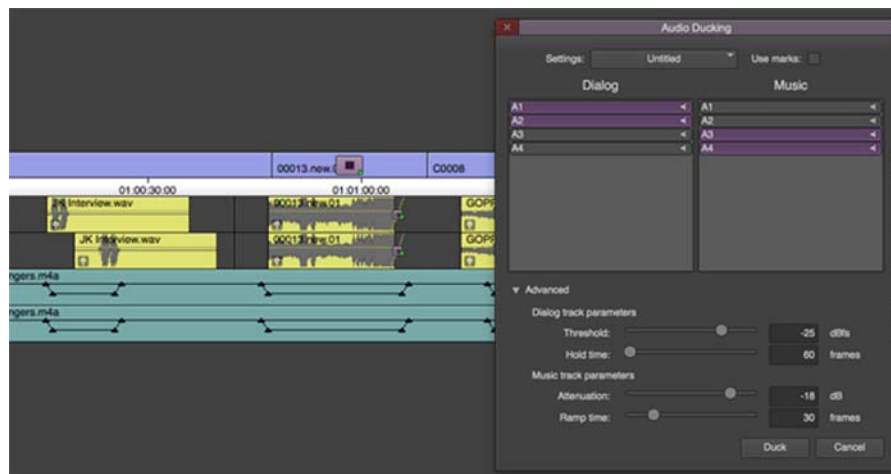
6. Play the sequence. The audio will playback with Audio Ducking applied.

7. (Optional) If you want to make adjustments to the Audio Ducking, click the Advanced opener in the Audio Ducking dialog and make adjustments by choosing from the following options:

Option	Meaning
Dialog track parameters	Threshold: Enter a value to set how aggressive key frames will be applied when analyzing the Dialog tracks.
	Hold time: Enter a value in frames to set how long a track will remain ducked after the last known peak above the threshold value in the Dialog tracks.

Option	Meaning
Music track parameters	Attenuation: Sets how much the volume will be reduced in the Music track(s).
	Ramp time: Sets how many frames it takes to ramp the Music track(s) down from or back to full volume.

Media Composer | First also provides several unique features that facilitate audio editing, such as audio scrub, waveform displays, and tools for adjusting and mixing audio levels and pan between speakers as well as the frequency ranges of segments.

For details on using these audio tools, see "*Working with Audio*" in the Help.

Publishing Your Story

When your sequence is finished, you can choose to save it to your local drive, or publish it to social media such as YouTube and Vimeo.

To publish your story to a local drive:

1. In the Sequences Bin, select the sequence you want to publish, right click, select Publish To > local drive.

2. Choose from the following options to publish your story.

Option	Description
Publish to..	Choose to publish to your local drive.
Set	Choose the Set button to select the location where you want to place the finished movie.
Type	Choose what type of output you want to publish. Select either Video and Audio, Video only, Still image, or Audio only
Format	Choose the kind of file to be created. The options for Format change according to the Type you selected:
	• Video and Audio: Choose QuickTime
	• Video only: Choose QuickTime
	• Still Image: Choose either PNG or JPEG.
	• Audio only: Choose Wave format, either Mono or Stereo
Codec	Choose a compression type. The options for Codec change depending upon the output Type you selected.
	• Video and Audio: Choose h264 (a common format for distribution of video content) or DNxHD.
	• Video only: Choose h264 (a common format for distribution of video content) or DNxHD.

Option	Description
Qualtiy	Set the quality for the compression. The options for Quality change depending upon the output Type you selected. • Video and Audio: Choose from Faster, Best, and Better • Video only: Choose from Faster, Best, and Better • Still Image: Choose from Best, Media, Least
Size	Set the image dimension for the Video and Audio or Video Only movie.
Audio Format	Choose the Audio Format. The options for Audio Format change depending upon the output Type you selected. • Video and Audio: Linear PCM • Audio only: Choose Wave format, either Mono or Stereo

3. Click OK.

A .mov will be saved to the local drive.

To publish your story to social media:

1. Select the sequence you want to publish, right click and select Publish To > *social media*. For example, YouTube or Vimeo.
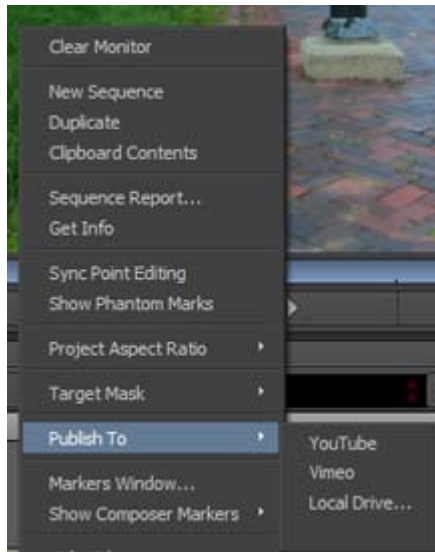
The Publish dialog opens.

2. Click the Login button.

Your social media login window opens.

3. Login to your account.

The first time you Login, you will receive a dialog asking you to allow Avid to access your account to upload your movies. The following is a sample of the Youtube permission dialog.
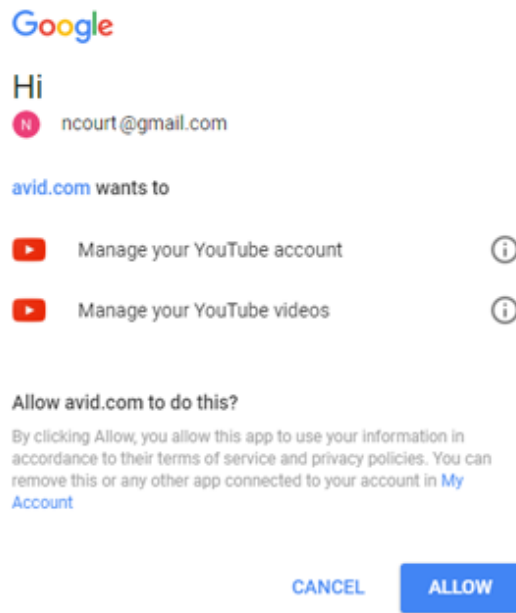
4. Choose to allow access to post your movie.

   You will be returned to the Publish dialog.

5. Choose from the following options to publish your story.

Option	Description
Publish to..	Choose to either publish to social media.
Set	Choose the Set button to select the location where you want to place the finished movie.
Type	Choose what type of output you want to publish. Select either Video and Audio, Video only, Still image, or Audio only
Format	Choose the kind of file to be created. The options for Format change according to the Type you selected: • Video and Audio: Choose QuickTime • Video only: Choose QuickTime • Still Image: Choose either PNG or JPEG. • Audio only: Choose Wave format, either Mono or Stereo
Codec	Choose a compression type. The options for Codec change depending upon the output Type you selected. • Video and Audio: Choose h264 (a common format for distribution of video content) or DNxHD. • Video only: Choose h264 (a common format for distribution of video content) or DNxHD.

Option	Description
Quality	Set the quality for the compression. The options for Quality change depending upon the output Type you selected.
	• Video and Audio: Choose from Faster, Best, and Better
	• Video only: Choose from Faster, Best, and Better
	• Still Image: Choose from Best, Media, Least
Size	Set the image dimension for the Video and Audio or Video Only movie.
Audio Format	Choose the Audio Format. The options for Audio Format change depending upon the output Type you selected.
	• Video and Audio: Linear PCM
	• Audio only: Choose Wave format, either Mono or Stereo

6. Click OK.

   A Publish to *social media* dialog box opens.
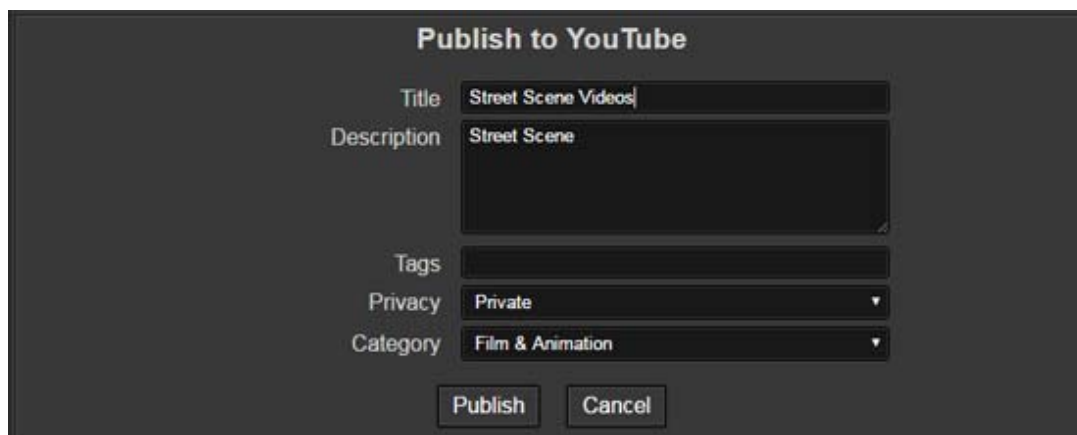
7. Enter the information you want to associate with your movie.

8. Click Publish.

   A publish progress dialog opens. Once the progress bar completes, your movie is uploaded to the selected social media site.

If you choose to upload to Vimeo and receive an error that the video is too long, click OK. The video should upload successfully.

In some instances, upload times might be slower on Windows 7 systems.

It might be useful to save profiles for publishing your movies. See Create a Publishing Profile.

Create a Publishing Profile

When you create movies for publishing, you can save the settings in the Publish dialog box as a profile so you can recall those settings when publishing a movie where you want to apply the same settings.

To create a Profile:

1. Right click a sequence and select Publish To > local drive or YouTube.

2. Select the desired settings for the Type of movie you want to Publish.

3. In the Profile name text field, enter a name for your profile.
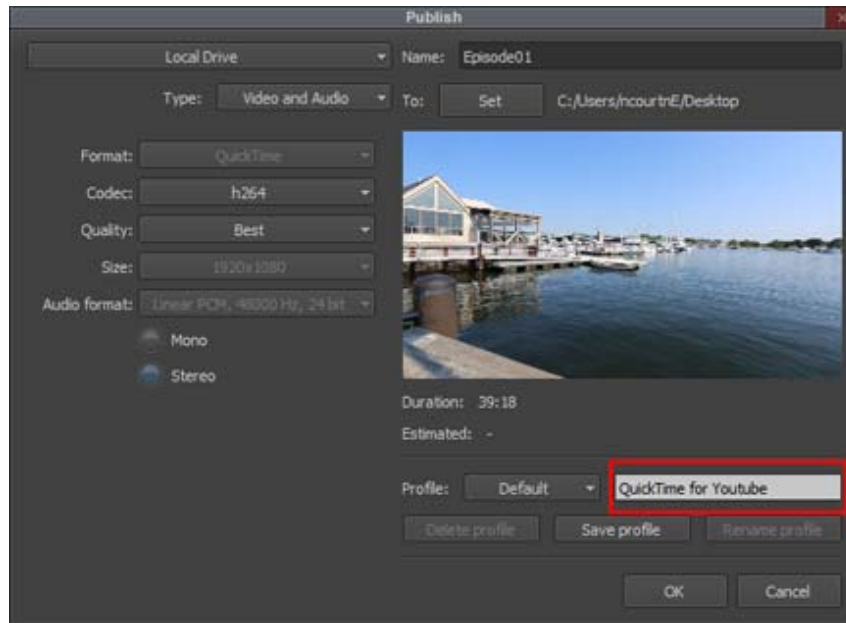
4. Click Save profile.

The saved profile appears in the Profile pull down menu. You can create multiple profiles to fit the different kinds of movies or audio files you create.

To rename a Profile:

1. In the Publish dialog, select the profile you want to rename from the Profile pull down menu.

2. Click Rename profile.

3. Type a new name for the profile.

The new profile name appears in the Profile pull down menu.

To delete a Profile:

1. In the Publish dialog, select the profile you want to delete from the Profile pull down menu.

2. Click Delete profile.

A message box opens.

3. Click Yes.

The selected profile is deleted.

2 **Starting a Project**

Your work begins when you turn on your system, start your Avid editing application, and open an existing project or create a new project. The following topics describe procedures for starting your work, as well as several techniques to safeguard and restore your work if necessary:

- Turning on Your Equipment
- Working with the Desktop
- Working with Projects
- Quitting and Turning Off Equipment
- Avid Projects and Avid Users Folders
- Changing Project and User Names
- Backing Up Your Project Information

Turning on Your Equipment

Avid recommends that you turn on your equipment in the following order:

1. Storage devices.
2. Peripheral devices (such as monitors and speakers).
3. Computer system.

📄 *Do not disconnect devices while you run your Avid editing application. Before you start your Avid editing application, make sure you connect all your devices first.*

Working with the Desktop

You can use some of the desktop navigation features of your operating system to speed your work or customize for your convenience while you edit. You can:

- Control how the Windows taskbar appears on the screen (Windows only).
- Use the Mac Dock as a quick way to launch your Avid editing application (Mac only).
- Use shortcut menus (also sometimes known as context menus) to quickly access editing commands.
- Use standard keyboard shortcuts to navigate and select options in dialog boxes and menus.
- Use the mouse scroll wheel for navigation and customize mouse button functions.

You also use the desktop for backups and transferring projects, as described in "Backing Up Your Project Information" on page 44 and "Avid Projects and Avid Users Folders" on page 40.

📄 *For information on the Windows desktop and icons, see your Microsoft® documentation. For information on the Mac System Folder and the desktop and icons, see your Apple documentation.*

Using the Windows Taskbar (Windows Only)

By default, the Windows taskbar always appears on the bottom of your screen, on top of your Avid editing application. You have two other choices:

• Keep the taskbar hidden behind your Avid editing application

• Set the taskbar to appear only when you drag the mouse pointer to it

If you keep the taskbar hidden while you run your Avid editing application and you minimize an application such as Help, you do not see the minimized icon in the taskbar.

For more information about the taskbar, see the Windows Help.

You can also drag the taskbar to the top, bottom, or either side of the monitor.

When you work in your Avid editing application, you can minimize windows (such as the Project window and bins). The icons appear in your Avid editing application window, not in the taskbar.

To see the taskbar and minimized icons:

▶ Minimize your Avid editing application.

To change the taskbar settings:

1. Right-click an unused part of the taskbar, and select Properties.

   The Taskbar and Start Menu Properties dialog box opens.

2. Select the options you want:

3. Click OK.

Using the Mac Dock (Mac Only)

You can place an application icon alias on the Dock for easy access to your Avid editing application. The Dock is hidden when your Avid editing application is active. For full information on using the Dock, see the Mac documentation.

To display the Dock:

▶ Move the mouse pointer to the edge of the screen where the Dock is hidden.

Using Shortcut Menus

In addition to standard menus to find a command you need, you can use shortcut menus. Shortcut menus show the most frequently used commands for a window or a screen object.

Most shortcut menus contain a What's This? command to access Help for the window or the object.

To use a shortcut menu:

▶ Right-click a window or a screen object.

Using the Keyboard for Navigating in Dialog Boxes and Menus

To navigate in dialog boxes and menus and to select and deselect options:

Option	Command
To move from tabbed page to tabbed page within a dialog box.	Press Page Up or Page Down.
To move from check box to check box or from option to option in a dialog box.	Press Tab.
To select or deselect a check box or an option in a dialog box.	Press Right Arrow, Left Arrow, or the space bar.
To move up or down in a menu, or increment a numeric value.	Press Up Arrow or Down Arrow.

Antivirus Applications

Antivirus programs that contain autoscanning features can interfere with the operation of your Avid editing application. Since virus scanning is a processor-and disk-intensive activity, it can interfere with capturing and playing real-time effects in your Avid editing application.

Avid recommends you do not scan files or schedule any background tasks such as virus scanning when you use your Avid editing application.

File deletion protection utilities also consume system resources and could interfere with the proper operation of your Avid editing application. These utilities automatically back up any files that you delete, even temporary files that you create and delete with your Avid editing application. This consumes a large amount of disk space.

Working with Projects

When you start the editing application, the system displays the window where you can create a new project or open an existing project.

You should also back up your project information regularly to a separate storage device, as described in "Backing Up Your Project Information" on page 44.

Setting Project-Naming Conventions

The system limits bins to 64 characters and project names to 56 characters. If you plan to move bins and projects from one platform to another, do not use the characters / \ : * ? " < > | or leading spaces, trailing spaces, or trailing periods, when you name a project, bin, and user.

Avid Projects and Avid Users Folders

When you create a new project or user profile, your Avid editing application creates files and folders in the Avid Projects and the Avid Users folders.

Locations of Avid Project Folders

By default, the system installs two Avid Projects folders:

	Private	**Shared**
Windows	drive:\Documents and Settings*Windows login name*\Documents\Avid Projects	drive:\Documents and Settings\All Users\Shared Documents\Shared Avid Projects
Mac	Macintosh HD/Users/*Mac login name*/Documents/Avid Projects	Macintosh HD/Users/Shared/Avid editing application/Shared Avid Projects

Locations of Avid Users Folders

The Avid Users folder is located in the application folder:

Windows	*drive*:\Documents and Settings\All Users\Shared Documents*Avid editing application*\Avid Users
Mac	Macintosh HD/Users/Shared/Avid editing application/Avid Users

📄 *(Windows only) The location of the Avid Users folder depends on the installation path for your Avid editing application.*

Files and Folders Created For Projects

When you create a new project, your Avid editing application creates a folder with the name that you entered when you created the project. The following three files are stored within the project folder:

- A project file (.avp)
- A project settings file (.xml)
- A bin file (.avb)

The project folder and the three files all use the project name you provide. The project folder is stored in the Avid Projects folder.

Your project settings are initially set to the default values. As you create additional bins for the project (see "Creating a New Bin" on page 47), additional bin (.avb) files are added to the project folder.

Files and Folders Created For User Profiles

When you create a new user profile, your Avid editing application creates a folder for the user and two files that are stored within the user folder:

- A user profile file (.ave)
- A user settings file (.xml)

The user folder and the two files all use the user profile name you provide. The new folder is stored in the Avid Users folder.

Opening and Closing Projects

When you launch Media Composer | First, the window opens where you can create a new project or open an existing proejct.

To open an existing project:

1. Launch Media Composer | First.
2. Click the name of the existing project under the Open list:

   The project opens.

To open a project automatically:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Double-click any Interface setting.

   The Interface Settings dialog box opens.

3. Select "Automatically Launch Last Project at Startup," and then click OK.

   The next time you start your Avid editing application, it opens your last project.

To close the current project, do one of the following:

▶ With the Project window active, select File > Close Project.

▶ Click the Close button in the Project window.

Deleting a Project

To delete a project:

1. Start your Avid editing application.
2. Click the project you want to delete.
3. Press the Delete key.
4. If you see a message asking if you want to delete the selected project and associated bins, click OK.

   The deleted project no longer appears when you launch the editing application.

⚠ **Deleting a project also deletes any bins that are in that project.**

📄 *Media related to a deleted project is not deleted with the project folder. For more information on deleting media files, see "Deleting Items from a Bin" on page 73 and "Deleting Media Files with the Media Tool" on page 98.*

Quitting and Turning Off Equipment

To quit your Avid editing application and leave it immediately:

▶ (Mac) Select *Avid editing application* > Quit *Avid editing application*.

▶ (Windows) Select File > Exit.

   The project closes and your Avid editing application quits.

To quit your Avid editing application and view the Select Project dialog box:

1. Click the Close button at the far right (Windows) or at the far left (Mac) of the Project window's title bar.

   The Select Project dialog box opens.

2. Click Quit.

   A message box opens.

3. Do one of the following:

   ▶ Click Leave to quit your Avid editing application.

   ▶ Click Cancel to return to the Select Project dialog box and select another project.

To turn off your equipment:

1. Turn off the system by doing the following:

   For a Windows system:

   a. Click the Start button, and select Shut Down.

      The Shut Down Windows dialog box opens.

   b. Click the menu, and select Shut down.

   c. Click OK.

   For a Mac system:

   ▶ Select Apple menu > Shut Down.

2. If you have an Avid input/output device attached to your system, turn it off.

3. Turn off peripheral devices (such as monitors and speakers).

4. Turn off external storage devices.

⚠ **Never remove media drives from your Avid system when it is turned on. Shut down the computer, and then remove the drives.**

5. Turn off all other hardware.

Changing Project and User Names

You cannot change project or user names from within your Avid editing application. You must change the names from your desktop before you start your Avid editing application. For information about the location of the Avid Projects and Avid Users folders, see "Avid Projects and Avid Users Folders" on page 40.

⚠ **When you change a user name or a project name, make sure you change the name of the folder and all the files in the folder that have the old name. Your Avid editing application does not automatically change the names of corresponding files in the folder.**

To change a project name or user name:

1. Navigate to the Avid Projects or Avid Users folder, and then double-click the folder to open it.

2. Click the name of the folder you want to change.

   The name highlights.

3. Type the new name of the folder.

4. Double-click the folder with the new name to open it.

   The folder contains profile, settings, and project files with the old name.

5. Change the old name of each file to the new name.

📄 *Do not change the name of the file MCState in the Avid Users folder.*

6. Close the windows, and restart your Avid editing application.

   The new project name or user name appears in the Select Project dialog box.

Backing Up Your Project Information

Although your Avid editing application automatically saves your bins, projects, and settings, you should back up these items frequently. Because the storage requirements are minimal, you can back up these files to a variety of storage devices, such as a thumb drive, a file server, etc.

To save your work on a drive or on removable media:

1. Mount the drive or insert the storage media..

2. (Windows only) From the Windows desktop, double-click the My Computer icon.

3. Double-click the icon for the destination storage drive or storage media to open it. Double-click any additional folders to target the appropriate storage location.

4. Navigate to the folder that contains the project folder or the user folder you want to save.

5. Drag a project folder or a user folder to the targeted storage location.

6. When the system finishes copying the files, unmount the drive or eject the media and store it.

To restore a project or user information from a backup storage device:

1. Mount the drive or insert the removable media that contains the backup copies you want to restore.

2. From the desktop, double-click the icons for the drive or storage media and for the internal hard drive (Windows) or for the Macintosh HD (Mac).

3. Drag the copies from the storage device to the appropriate folder on the internal hard drive (Windows) or `Macintosh HD/Users/Shared` (Mac).

   When you start your Avid editing application, the restored project and user profile appear in the Select Project dialog box.

📄 *If you restore a single bin or bins, you must relink them to the project from within the Project window. For more information, see "Opening and Closing Bins" on page 47.*

3 Working with the Project Window

The Project window provides controls for structuring and viewing important information about your current project. You can also modify User and Project settings from the Project window and display a list of effects.

The following topics describe features of the Project window:

- Overview of the Project Window
- Using the Bins Tab
- Using the Settings Tab
- Using the Format Tab
- Using the Usage Tab
- Using the Info Tab
- Customizing the Avid User Interface
- Using Workspaces

Overview of the Project Window

The Project window is a central location for important information and tools that you need as you work on your project.
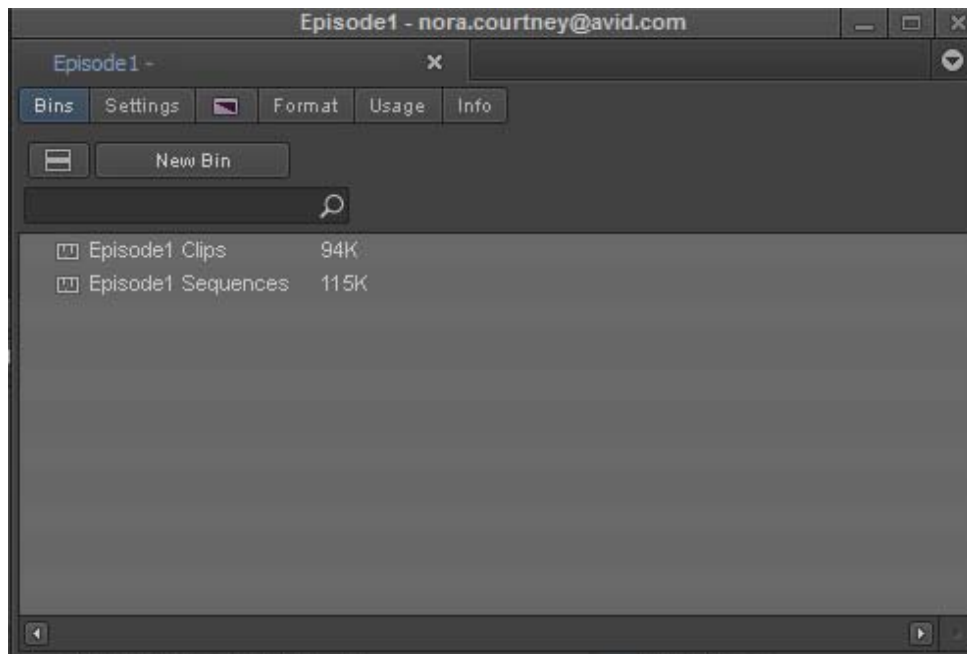
Project window information is organized in tabs.

Tab	Function
Bins	Lets you create and open bins. See "Using the Bins Tab" on page 46.
Settings	Lets you view and modify settings. See "Using the Settings Tab" on page 51.
Effects Icon	Lets you access a library of effects.See "Applying Effects" in the Help.
Format	Lets you view information about the format of the project. See "Using the Format Tab" on page 51.
Usage	Lets you view information about the work session usage. See "Using the Usage Tab" on page 51.
Info	Lets you view information about system memory usage and system hardware configuration.

Using the Bins Tab

When you create a project, your Avid editing application automatically creates a bin with the name of the new project, which displays in the Bins tab. You can rename this bin and create additional bins as you work in your project.

The word *bin* is a movie industry term that refers to a container that holds pieces of film. In your Avid editing application, bins contain master clips that are created when you capture source material. Bins also contain the sequences, subclips, group clips, and effect clips that you create during a project. From the Project window, you can view a list of bins associated with the project, and open, close, and create bins. You can also open bins that you create for other projects.

Media Composer | First allows you to create up to 5 bins. If you want to create more than 5 bins, you can upgrade to Media Composer.

Viewing a List of Bins

You can view a list of bins in the Project window.

To view a list of bins associated with the project:

▶ Click the Bins tab in the Project window.
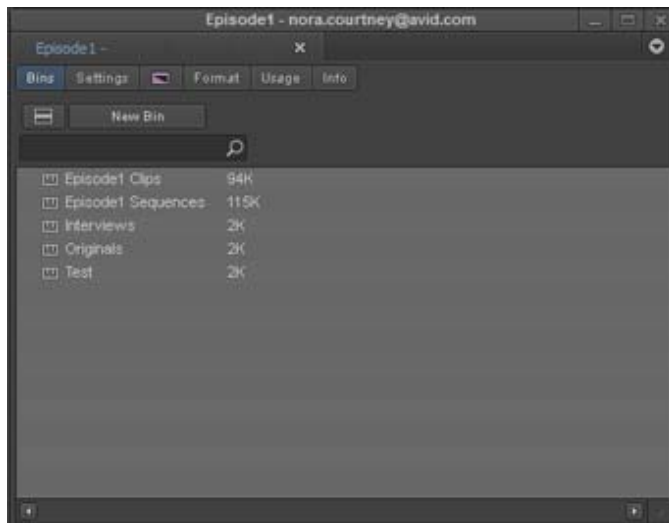
Creating a New Bin

To create a new bin from the Project window:

1. Do one of the following:

   ▸ Select File > New > New Bin.

   ▸ Click the New Bin button in the Project window.

   A new (empty) bin opens and is given the name of the project as displayed in the title bar of the Project window. The new bin appears in the Bins list in the Project window with a default name highlighted and a number appended to it.

2. In the Project window, click the new bin name and type in a new name.

3. Press Enter.

To place a bin in a folder:

▸ Drag the bin to the folder icon.

Renaming a Bin

Each new bin that you create takes the name of the project that appears in the title bar of the Project window and is numbered incrementally.

*If you plan to move bins and projects from one platform to another, do not use the characters / \ : * ? " < > | or leading spaces, trailing spaces, or trailing periods, when you name a project, bin, and user. Bins are limited to 64 characters and project names are limited to 56 characters.*

To change the name of a bin:

1. Click the bin name in the Bins list.

2. Type a new name.

Opening and Closing Bins

You can open a single bin or open multiple bins at once. You can also open a bin from another project.

⚠ **Never open a bin that is stored on a removable disk or equivalent device; otherwise, your Avid editing application cannot save your work. Always copy the bin to a project folder on the system drive before you open it.**

To open a bin directly:

1. Click the Bins tab.

2. Double-click the Bin icon next to the bin name.

   The bin opens in a separate window.

📄 *You can also open a bin by dragging it from the Bins tab in the Project window to an open bin. The bin opens as a tab in the existing bin.*

To open several bins at once from the Project window:

1. Click a Bin icon in the Bins list.

2. Ctrl+click (Windows) or Command+click (Mac) each additional bin you want to open.

3. Do one of the following:

   ▶ To open each bin in a separate window, right click the Bin icon and select Open Selected Bins.

   ▶ To open all bins as tabs in a single bin, right click the Bin icon and select Open Selected Bins In One Window.

   The selected bins open either in separate windows or in a single window with tabs indicating the bins.

📄 *You can also open multiple bins by dragging them from the Bins tab in the Project window to an open bin. The bins open as tabs in the existing bin.*

To open a bin from another project:

1. Select File > Open Bin.

   The Open a Bin dialog box opens.

2. Find and select the bin you want.

   Bins have the file name extension .avb.

3. Click Open.

   The bin appears in the Bins list in a folder called Other Bins. The name Other Bins appears in italic. You can rename this folder. This option is useful when you want to open a bin not currently displayed in the Project window.

📄 *The Other Bins folder disappears from the Bins list when you delete all the bins in the Other Bins folder. Deleting bins from the Other Bins folder does not remove the bins from your system; only the pointers to the bins are removed.*

To close a bin, do one of the following:

▶ Click the Close button.

▶ Select File > Close Bin.

To close all open bins except the active bin:

▶ Select Windows > Close All Bins But Active.

Displaying Folders of Bins in the Bins List

You can add folders to the Bins list to help organize your project. You can drag bins into folders or drag folders into folders.

To create a folder in a project:

1. Click the Fast menu button, and select New Folder.

   A new untitled folder appears.

2. Click the untitled folder name in the Bins list and rename it.

To show or hide the folder's contents in the Bins list in the Project window:

▶ Click the arrow next to a folder icon.

To view a list of only the folder contents and not the folders:

▶ Click the Fast Menu button, and select Flat View.

   The Trash icon and its contents disappear until Flat View is deselected.

Creating a Folder

To create a folder in a project:

1. Click the Bins tab in the Project window.

2. Click the Fast Menu button, and select New Folder.

   A new untitled folder appears.

3. Click the untitled folder name in the Bins list and rename it.

Deleting a Bin or Folder

You can delete bins and folders along with their contents from the Bins list. Deleted bins and folders are moved to a Trash folder in the Bins list until you empty the Trash. If you need a deleted bin or folder, you can retrieve it from the Trash. For more information, see "Viewing and Emptying the Trash" on page 49.

⚠ **Only bins and folders appear in the Trash. If you select a clip, subclip, or effect directly in a bin and press the Delete key, the item is permanently deleted and does not appear in the Trash.**

To delete a bin or folder from the Project window, do the following:

▶ Select the bin or the folder you want to delete in the Bins list, and press the Delete key.

   A Trash icon appears in the Bins list in the Project window. The Trash contains the deleted item.

📄 *The Trash is not visible in the Project window until you delete your first item.*

Viewing and Emptying the Trash

If you need to view the contents in the Trash or decide you do not want to delete those items, you must first move the bins and folders from the Trash.

⚠ **Emptying the trash permanently removes the bins or folders from the drive.**

📄 *If you change the name of the Trash icon, you cannot empty the Trash.*

To view items in the Trash:

1. Click the arrow next to the Trash icon in the Bins list.

2. Click the bins or folders you want to keep (or view), and drag them from the Trash to the Bins list in the Project window.

3. Double-click the bin or folder to view it.

To empty the Trash in the Bins list:

1. Click the Fast Menu button, and select Empty Trash.

   A message box opens.

2. Click Empty Trash to delete the bins or folders from the Trash and from your hard drive.

Saving Bins

Your Avid editing application automatically saves changes to your work on a regular basis. You can modify the frequency of the automatic backups.

You can also manually save a specific bin, selected bins, or all bins. You might want to do this immediately after performing an important edit.

When you work with bins, an asterisk appears before the bin name in the bin's title bar. The asterisk indicates that the changes to the bin have not been saved. After you save the bin, your Avid editing application removes the asterisk.

To adjust the frequency of automatic saves:

1. In the Project window, click the Settings tab, and then double-click Bin.

   The Bin Settings dialog box opens.

2. Type a number in the Auto-Save interval text box.

3. Click OK.

Saving Bins Manually

To save a specific bin:

1. Click the bin to activate it.

2. Select File > Save Bin.

To save selected bins:

1. In the Bins tab, click a Bin icon to select it, and then Ctrl+click any additional bins.

2. Select File > Save All.

   The system saves all the selected bins.

The Save Bin command appears dimmed if there were no changes since the last time the active bin was saved.

To save all the bins:

1. Click the Bins tab in the Project window.

2. Select File > Save All.

   The system saves all the bins for the project.

Using the Settings Tab

From the Settings tab in the Project window, you can view, select, open, and alter various User, Project, and Site settings. Each setting either displays information about that specific tool or window or lets you select options or preferences associated with that tool or window. For more information, see "Viewing and Modifying Settings" on page 391.

To view the Settings list:

▶ Click the Settings tab in the Project window.
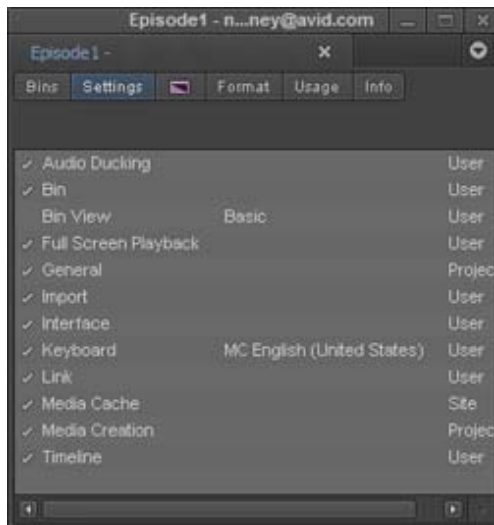
To open a setting:

▶ Double-click the setting in the Settings list.

Using the Format Tab

The Format tab in the Project window lets you view basic project information, such as raster dimension and frame rate.

To open the Format tab:

▶ Click the Format tab.

Using the Usage Tab

The Statistics feature gathers and reports information on system usage. You can use this information to support business functions such as resource management.

All statistics are gathered and reported by project. The file that contains this information is formatted so you can use it as input to software programs such as analysis applications, spreadsheets, or report generators.

Using the Info Tab

The Info display in the Project window lets you view your editing application version number, licensing type, GPU information, and a list of installed plug-ins. You can also view system memory information by access the Hardware tool. The items listed in this display are for information only and cannot be changed. The Hardware tool gives a visual representation of usage for each drive and provides operating system information.

To open the Info display:

▶ In the Project window, click the Info tab.

To open the Hardware tool:

▶ In the Project window, click the Info tab, and then click the Hardware button.

The Hardware tool opens.

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 397.

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" on page 75.

• Timeline clip color — see "Displaying Clip Colors in the Timeline" on page 175.

• Timeline track colors — see "Changing the Track Color" on page 177.

• Bin background color — see "Changing the Bin Background Color" on page 74.

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.
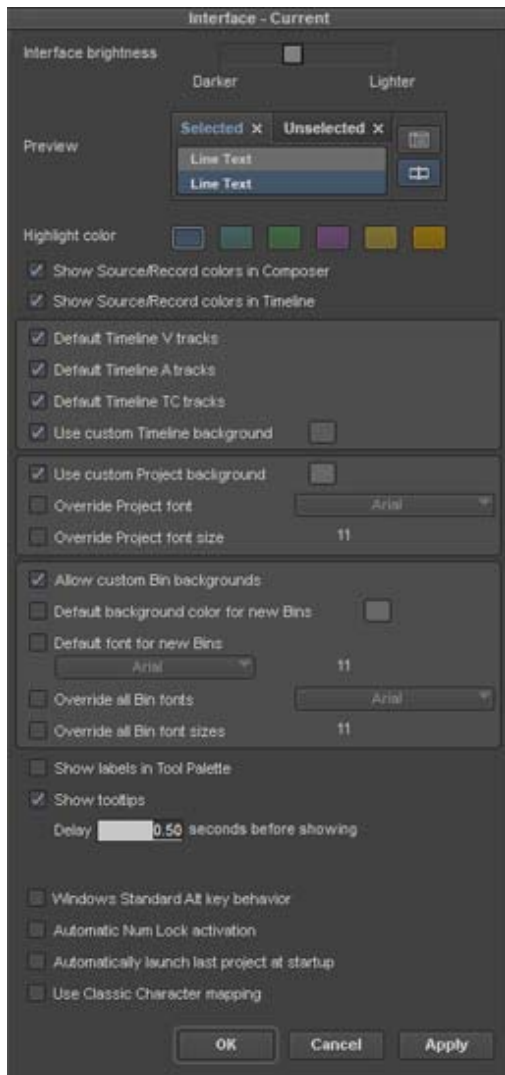
2. Click a highlight color to change button highlight colors.

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" on page 74.

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.

Changing Font and Point Size

You can change the default font and point sizes of the Project, Bin, Composer monitor and Timeline windows. You can vary the fonts and point sizes across these windows. For example, you can set the Project window to Helvetica, 13 pt.; set one Bin window to Times Roman, 11 pt.; and set another Bin window to Arial, 12 pt.

The table describes the windows you can change, and where these changes are saved.

Window	Location of Changes
Project	Changes the font and point size of the text in the Project window; saves as a Project setting.
Bin	Changes the font and point size of the text in the Bin window; saves as a Bin setting (not a Bin View setting).
Composer monitor	Changes the font and point size of the sequence or source clip name text; saves as a Composer setting.
Timeline	Changes the font and point size of clip text; saves as a Timeline View setting.

To change the font in the Project, Bin, Composer monitor, or Timeline window:

1. Click the Project, Bin, Composer monitor, or Timeline window to make it active.

2. Select Windows > Set Font.

   The Set Font dialog box opens.

3. Click the Font menu, and select a font.

Any font installed on the Avid system appears in the list. For information on adding fonts to your system, see the documentation for your operating system.

4. Type another point size for the font in the Size text box.

5. Click OK.

   The new font and point size appear in the active window.

   When you close the window, the last font and point size applied are saved with the window.

Overriding Bin and Project Font and Font Size

Normally, project window fonts are stored in the project file and bin fonts are stored in each bin. You can easily override these fonts for all bins and/or projects via the Interface Setting, which is a User setting. This is useful if you share projects and bins with other users or if you are switching between systems. The font and font size you want to see on a desktop might be different than the one you want to see on a laptop. You can set up multiple Interface Settings and switch between them easily. If you turn off the overrides, you will see the original project and bin fonts.

To override the bin or project font and font size:

1. In the Settings tab of the Project Window, open the Interface Settings.

   The Interface Settings dialog opens.
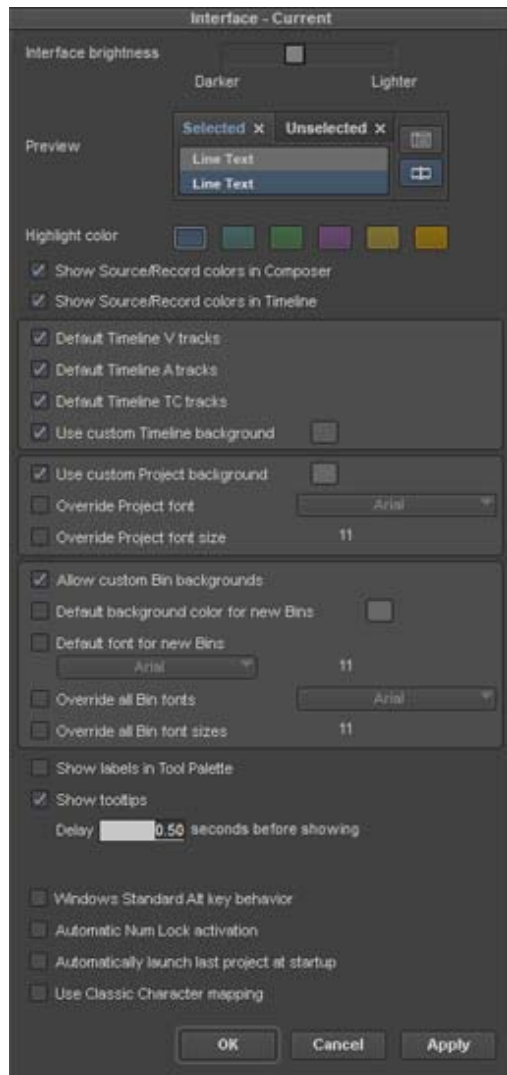
2. To override the Project font, click Override Project font and select the desired font from the pulldown menu.

3. To override the Project font size, click Override Project font size and enter a value in the text box.

4. To override all Bin fonts, click Override all Bin fonts and select the desired font from the pulldown menu.

5. To override all Bin font sizes, click Override all Bin font sizes and enter a value in the text box.

6. Click Apply.

   The project and bin font and font size change to the selected settings.

Setting the Media Cache

Media Composer allows you to establish how much memory can be utilized for caching thumbnails in memory as well as disk. Caching images in memory allows thumbnails to quickly be recalled as you load or scroll in bins, sequences or the Source Browser. Saving them to the disk cache allows

them to be recalled after relaunching the application and can avoid the need for the application to have to create them again. To specify the size of the Disk cache and Memory cache perform the following.

To set the Media Cache:

1. In the Settings list in the Project window, select Media Cache.

   The Media Cache dialog box opens.
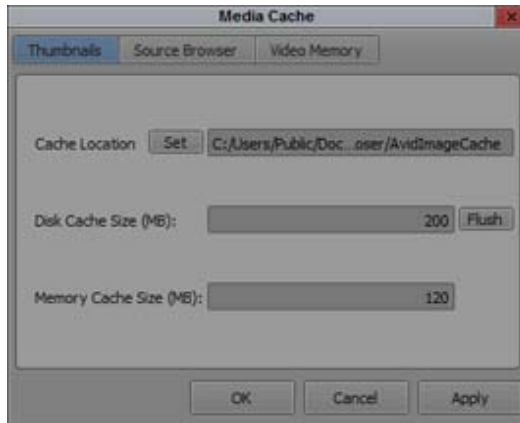
2. Click the Thumbnails tab.

3. If you want to change the default location of the Cache folder, click the Set button and choose the location for the Cache folder.

4. Enter a value for the Disk Cache Size and Memory Cache Size.

5. Click OK.

   You can clear the cache from the cache folder by clicking the Flush button in the Media Cache dialog.

6. Click the Source Browser button and repeat steps 3 to 5.

For information on Video Memory, see "Setting Video Memory and Video Frame Cache" in the Help.

Using Workspaces

Your Avid editing application provides default layouts of windows and tools designed to utilize the application interface efficiently. These layouts are organized as workspaces, and the default workspaces include the following:

• Single View Editing

• Source/Record Editing

• Full Screen Playback

• Effects Editing

• Color Correction

• Audio Editing

If you are accustomed to working with a particular group of windows arranged and sized in a particular setup, you can assign them to a workspace setting that you can then recall with a workspace button.

For example, during effects editing, you might want to display the Effect Palette and Effect Editor in particular locations and sizes.

While in a workspace, you can move tool windows or open and close tool windows. The next time you select that workspace, the tool windows appear with the arrangement you set for the workspace.

You can assign up to 12 buttons that let you switch between workspaces. Workspace settings are user settings, so different users can have separate workspace arrangements. This is useful if there is more than one user accessing the same Avid system. Each user can assign up to 12 workspaces.

To select a workspace, do the following:

▸ Select Windows > Workspaces > *workspacename*.

To customize the workspace:

1. For the workspace you want to customize, select Windows > Workspaces > *workspacename*.
2. Open other tools with which you want to work, and position them where you want them.
3. Select Windows > Workspaces > New Workspace.
4. Type a name for the new workspace in the Workspace Name text box.
5. Click OK.

   The new workspace appears in the Workspaces menu.

To remove your customizations:

1. Select Windows > Workspaces > Restore Current to Default.

   A message box warns you that the action deletes your custom workspace settings.
2. Click OK.

   The workspace settings revert to the default settings on which you based the customizations.

To delete a custom workspace:

1. Select Windows > Workspaces > Delete Workspace.

   The Delete Workspace dialog box opens.
2. Click OK.

   The active workspace is deleted.

Assigning a Workspace Button

When you assign a workspace to a button, the button displays the first two characters of the workspace or layout name. If the assigned workspace is not available — for example, if you deleted the workspace — the button remains visible but the label displays italicized characters. If you want to recreate the workspace with the same name, the italics change back to normal text.

To assign a workspace button:

1. Select Tools > Command Palette.

Workspace buttons in the Workspaces tab of the Command Palette

2. Click the Workspaces tab.

3. Select Button to Button Reassignment.

4. Click a workspace button and drag the button to a location on another palette (for example, the Tool palette) or the Keyboard setting.

   The workspace button appears in the new location.

4 **Using Tools**

The Tools menu provides quick access to essential tools that you can use in your projects. In addition to the tools available from the Tools menu, you can also access the Command Palette, the Avid Calculator and the Console Window. These tools are described in the following sections:

- Using the Tools Menu
- The Command Palette
- Using the Avid Calculator
- Using The Console Window

Using the Tools Menu

To open a tool:

▶ Select Tools > *tool name*.

The Command Palette

The Command palette provides a central location for all user-selectable buttons that you can map to various locations for ease of use. User-selectable buttons let you perform a wide range of commands with a single click of the mouse.

The Command palette organizes buttons by editing function. Tabs display each editing function and the buttons that perform those functions display in each tab. The functions include: Move, Play, Edit, Trim, FX (Effects), CC (Color Correction), MCam (MultiCamera), Other, More, and Smart Tool, Workspace, and Plug-ins.
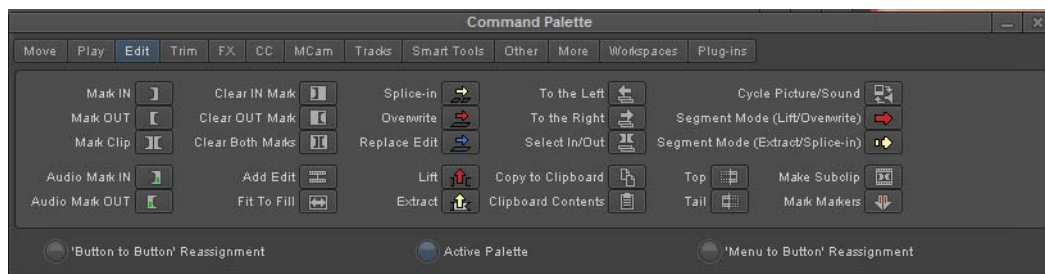
You can use the Command palette to:

• Map buttons to any Tool palette or the keyboard. See "Mapping User-Selectable Buttons" on page 61.

• Map menu commands to various buttons and keys. See "Mapping Menu Commands" on page 61.

• Directly activate a command. See "Activating Commands from the Command Palette" on page 62.

Understanding Button Mapping

Mapping user-selectable buttons lets you reconfigure Tool palettes, toolbars, or the keyboard in various combinations to suit different editing needs.

When you map buttons to the keyboard, the mapping might be specific to the current editing mode. For example, buttons mapped to the Page Up key or the Page Down key revert to the default key functions when you enter Effect mode. After you exit Effect mode, the keys return to the mapped function.

The following are examples of buttons you might want to map:

Buttons you use to subcatalog clips. Left to right: Make Subclip, Find Bin, and Add Marker.

Buttons you use for complex layering and effects. Top, left to right: Motion Effect, Remove Effect, Transition Corner Display, and Fade Effect. Bottom, left to right: Render Effect, Cycle Picture/Sound, Quick Transition.

When you remap buttons or commands, the system immediately saves your new configuration in one of the default settings that you open from the Project window. You can also save, rename, and recall multiple versions of any of these settings to serve various purposes.

Your Avid editing application saves button configurations as follows:

• Changes to the Keyboard palette are saved in the Keyboard settings.

• Changes to Tool palette in the Composer window are saved with the Composer settings.

• Changes to Command palettes while trimming are saved with Trim settings.

• Changes to the Tool palette are saved in the Interface settings.

The Blank Button

The Blank button in the Other tab of the Command palette lets you replace a defined button with an undefined button. If you do not need a specific button on the Tool palette, you can replace this button with a Blank button.

For more information on mapping the Blank button to a new location, see "Mapping User-Selectable Buttons" on page 61.

Mapping User-Selectable Buttons

To map buttons or keys on the keyboard by using the Command palette:

1. Do one of the following to open a window that has a user-selectable button:

   ▶ Activate the Playback, Source, or Record monitor in the Composer window.

   ▶ Click a Fast Menu button, and drag the Tool palette to open it.

   ▶ Activate the Source/Record monitor or the pop-up monitor, click the Fast Menu button, and drag to tear off the Tool palette.

   ▶ Open a clip in a pop-up monitor.

   ▶ Open the Keyboard palette from the Settings list in the Project window.

   ▶ Open the Mouse Settings dialog box from the Settings list in the Project window.

2. Select Tools > Command Palette.

   The Command palette opens.

3. Select Button to Button Reassignment at the bottom of the Command palette.

4. Click the tab from which you want to select a user-selectable button.

5. Drag the button from the Command palette to a button location on the other palette.

Mapping Menu Commands

You can also map menu commands directly onto any mappable button location or onto the keyboard. In some cases, you can avoid using menus altogether.

Before you map some commands, you must first establish the condition that enables the command. For example, before you map the Render In/Out command from the Clip menu, you must first mark IN and OUT points in the Timeline so that the menu command appears.

To map menu commands:

1. Do one of the following to open a window that has user-selectable buttons:

   ▶ Activate a monitor in the Composer window.

   ▶ Click a Fast Menu button, and drag the Tool palette to open it.

   ▶ Open a clip in a pop-up monitor.

   ▶ Open the Keyboard palette from the Settings list in the Project window.

2. Select Tools > Command Palette.

   The Command palette opens.

3. Select Menu to Button Reassignment.

4. Click a target button in the Keyboard palette or other palette (for example, the Command palette under a monitor).

5. Select the menu command you want to map to the target button.

   The initials for the menu command appear on the target button.
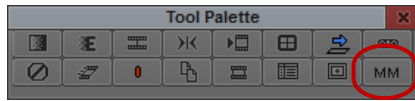
Example of a menu command — Composer > MultiCamera Mode (MM) — mapped to a button in the Tool Palette.

Activating Commands from the Command Palette

You can perform a command function directly from the Command palette. For example, you can click the Play button in the Command palette to play the material in the Source monitor.

To activate a command from the Command palette:

1. Select Tools > Command Palette.

   The Command palette opens.

2. Select Active Palette at the bottom of the Command palette.

3. Click the tab from which you want to select a command function.

4. Click the button in the Command palette for the function you want to perform.

Using the Avid Calculator

The Avid Calculator helps you calculate video durations, and convert timecode to different formats.

For example, you can:

• Convert drop-frame to non-drop-frame timecode values.

• Convert timecode durations between 30-fps and 25-fps projects.

• Convert a duration in video to the corresponding length in footage and frames for measuring 35mm film.

To use the Avid Calculator:

1. Select Tools > Calculator.

   The Avid Calculator opens.

2. Click the Format menu, and select a format.

3. Make calculations in one of the following ways:

   ▶ Click numbers and functions in the Avid Calculator.

   ▶ Enter numbers and functions using the numeric keypad.

   ▶ Enter numbers and functions using the top row of numbers on the keyboard.

   You do not need to enter leading zeros, colons, or semicolons for timecode.

To convert your totals at any time to another format:

▶ Click the Format menu, and select a different frame code or key number format.

   If you enter drop-frame timecode into the calculator while non-drop-frame timecode is selected in the format menu, the calculator converts the entered timecode to a non-drop-frame equivalent (and vice-versa).

Using The Console Window

The Console window provides a number of features including, finding your system ID number, viewing log error messages and getting information about your sequence.

⚠ **Do not use the programming features of the Console without guidance from Avid.**

The Console window provides quick access to bin information such as total duration of selected clips or total items in a bin including hidden items. You can also use the Console window to display information about a clip, segment, or sequence in the Timeline.

To display current system information:

1. Select Tools > Console.

   The Console window opens.

2. Scroll in the Console window to view your system information and ID.

   Your system ID is on a line beginning `System ID:`

To review errors logged to the Console window:

1. When an error occurs, close the message box and select Tools > Console.

2. Scroll through the Console window to find a log of the error to use when you contact your Avid Reseller or Avid Customer Support.

To get information with the Console window:

1. Select Tools > Console.

   The Console window opens.

2. Select the item about which you want information, for example:

   ▶ In the Timeline, move the position indicator to the selected clip or segment and select File > Get Position Info.

   ▶ In the bin, right-click and select Get Bin Info.

   Information about the clip appears in the Console window.

To make your mapped network drives available:

1. Open the Console window by selecting Tools > Console.

2. In the Console command line, type:

   `alldrives 1`

3. Press Enter.

   Network drives are now visible in your Avid editing application.

   Typing `alldrives` in the Console window turns this feature on and off. Typing `alldrives 2` restores the default behavior where only media drives are available.

   By default, network drives are filtered by resolution when the option Filter Network Drives Based on Resolution option is selected in the Media Creation settings. For more information, see .

5 Working with Bins

Bins provide powerful database tools for organizing and managing your material. Bin functionality lets you view bin objects and information in several different ways. You can rename, sort, sift, duplicate, assign colors, and delete clips and sequences, move or copy clips from one bin to another, and print single-clip frames or whole bins. You are limited to 5 bins in a project.

The following topics provide information on working with bins:

• Object Icons in Bins

• Bin Views

• Bin Procedures

• Working with Bin Columns

• Modifying Clip Information

• Printing Bins

• Filtering Items in the Bin

Object Icons in Bins

Bins use icons to identify clips, sequences, and other media objects that they display. The table describes all of the object icons that you might see in a bin display.

Not all these objects might be viewable in Media Composer | First.

Icon	Object Type	Description
	Master Clips	A clip that references audio and video media files formed from captured footage or imported files
	Local Storage Master Clip	A master clip that references media files located on local storage.
	Subclips	A clip that references a selected portion of a master clip
	Shared Storage Subclips	A subclip that references media files on a shared storage system
	Audio Clips	A clip that references audio media files formed from captured audio or imported files
	Shared Storage Audio Clips	An audio clip that references media files located on a shared storage system
	Sequences	A clip that represents an edited program, partial or complete, that you create from other clips

Icon	Object Type	Description(Continued)
🖼	Linked video clip	Indicates a file based video clip that links directly into a bin through an link plug-in.
🖼	Linked audio clip	Indicates a file based audio clip that links directly into a bin through a link plug-in.
◪	Effects	A clip that references an unrendered effect that you create.
🎞	Motion Effects	A file in the bin that references effect media files generated when you create motion effects
🖉	Rendered Effects	A clip that references an effect media file generated when you render an effect
⊞	Groups	(For MultiCamera editing) Clips containing two or more grouped clips, strung together sequentially according to common timecodes

Bin Views

You can display the contents of your bins in three different ways using the Bin View buttons at the bottom of the bin window.

Using Text View

Text view provides the most complete view of clip information. It uses database columns that you can rearrange and customize to suit your needs.

You can select individual or multiple headings to display or hide in the bin. For a complete description of each column heading, see .

To enter Text view:

▸ Click the Text View button in the bin.
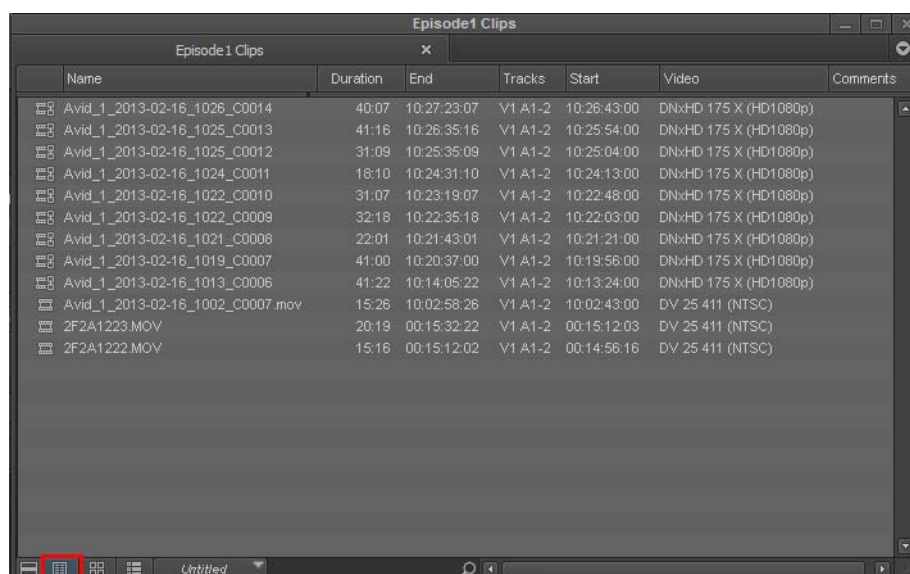
Text view in the bin. Bottom: Text view button.

To select column headings:

1. With a bin in Text view, do one of the following:

   ▶ Select Bin > Choose Column.

   ▶ Right-click and select Choose Column.

   The Bin Column Selection dialog box opens.

2. Select the headings you want to add to the bin:

   ▶ Click the name of a heading to select it.

   ▶ Click a selected heading to deselect it.

   ▶ Click All/None to select or deselect all the headings.

3. Click OK.

   Only the headings selected in the Bin Column Selection dialog box appear in the bin or bin view.

   For information on hiding columns, see "Moving, Aligning, and Deleting Bin Columns" on page 77.

To add more columns:

1. While in Text view, place your cursor in any column heading and right click and select Choose Columns.

   The Bin Column Selection dialog opens.

2. Click the column headings you want, and press Enter.

   Each of the additional columns appear to the right of the selected column.

If you do not select a column, the new columns will be placed at the far right of the bin.

Sorting in Bins

You can sort clips to arrange them in either numerical or alphabetical order, based on the data in the column you select as the sorting criteria. When you sort clips, any selected items in the bin remain active.

You can also sort clips by color if you have assigned colors to the clips. For more information, see "Assigning Colors to Objects in a Bin" on page 75.

If you want to sort clips in a customized order in Text view, you must first rearrange the clips in Script view, and then return to Text view. For information about Script view, see "Duplicating and Moving Clips and Sequences" on page 72.

Sorting Clips and Sequences

You can automatically sort clips and sequences in Text view. 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.

Understanding Bin Views

Use the Bin View menu (available in Text and Script view) to select different bin views. The Bin View menu appears to the right of the bin tabs. The following table describes the default bin views that are available.

View	Description
Bin (basic default)	Contains a basic set of headings such as Name, Duration, Drive, IN-OUT, Creation Date, TapeID, etc.
Custom	Lets you create and save customized views. The Name heading is only required column heading, which displays by default. Add, hide, or rearrange column headings to customize the view.

You can also create and save customized bin views, and then access them from the Bin View menu. For more information, see "Saving a Custom Bin View" on page 68.

When you create a new bin view, your Avid editing application saves the settings for the view so that you can alter, copy, or delete the settings at a later time. You can name and save bin views to suit your needs.

Bin view settings are also available in the Settings list of the Project window. For more information, see "Working with Settings" on page 390.

Bin tabs (top), Fast Menu button (bottom left), and Bin View menu (bottom right) in the bin

Saving a Custom Bin View

To save a bin view:

1. Open a bin, click the Text View button.

2. Resize, add, hide, or rearrange bin columns according to preference to customize your view.

   The Name column is the default and the only required column heading.

   The bin view name changes to an italic name with the file name extension *.n* to indicate that it no longer matches the original view. If you select a new bin view setting while the current setting is untitled or italic, the system discards the current setting.

3. Click the Bin View menu, and select Save as.

   The View Name dialog box opens.

4. Type a name for the custom view, and click OK.

To change a custom bin view with the Bin View dialog box:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Double-click the custom bin view you want to change.

   The Bin View dialog box opens.

3. Select and deselect the columns you want to display.

4. Click OK.

Using Frame View

In Frame view, each clip is represented by a single frame, with the name of the clip displayed below the frame. The system uses the head frame as the default.

You can perform the following functions in Frame view:

• Enlarge and reduce the sizes of the frames.

   You must enlarge or reduce all frames together, and you cannot change the sizes of individual frames.

• Rearrange the display of the frames in the bin by moving them.

• Realign the frames in a bin after you have changed their display.

• Select any frame to represent the footage.

• Play back the footage within any clip.

• Show border colors based on either the object type or clip color. You can also show icons in Frame view.

To enter Frame view:

▶   Click the Frame View button in the bin.
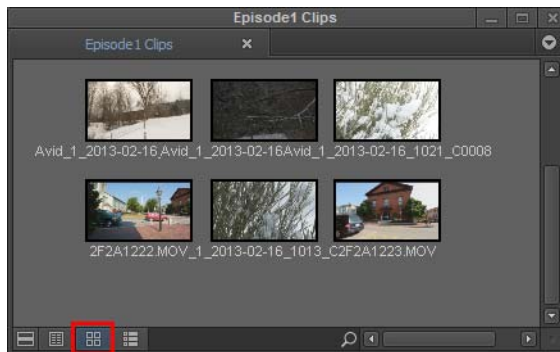
Frame view in the bin. Bottom: Frame View button

To enlarge the frame size:

▶   Select Edit > Enlarge Frame.

The display size increases each time you select this option, up to seven times.

To reduce the frame size:

▶   Select Edit > Reduce Frame.

The display size decreases each time you select this option, up to seven times.

To rearrange a single frame:

1. Click the frame, and drag it to its new position.

2. Click the background area of the bin to deselect the clips.

To rearrange multiple frames:

1. Do one of the following:

   ▶   Shift+click the frames.

   ▶   Lasso the frames by clicking the mouse pointer outside the first frame and drag it to surround the frames with a white dotted line.

2. Drag the selected frames to a new position in the bin.

3. Click the background area of the bin to deselect the clips.

To align all frames to an invisible grid:

▶   Select Bin > Align and Fill >Align to Grid.

To align selected frames to an invisible grid:

▶   Select Bin > Align and Fill > Align Selected to Grid.

To space the frames evenly to fill the Bin window:

▶   Select Bin > Align and Fill > Fill Window.

To arrange frames in the order in which they are sorted in Text view:

▶   Select Bin > Align and Fill> Fill Sorted.

To change the frame identifying the clip:

1. Select the clip that you want to change.

    Press and hold the K key (Pause) on the keyboard and press the L key (Play Forward) to roll the footage within the frame forward at slow speed. To move backward through the footage, press and hold the K key and press the J key (Play Reverse).

2. When you see the frame that you want to use, release the keys.

    Your Avid editing application saves your choice as part of the bin configuration.

To set Frame View border colors and icons:

1. Click the Settings tab in the Project Window.

2. Double-click Bin.

    The Bin Settings dialog opens.

3. In the Frame View pane select Show Border Colors.

4. Select one of the following options:

Option	Description
Use color based on object type	When selected, a colored border appears around the following: • Blue - Precomputes and source side motion effects • Green - Master clips • Dark Green - Subclips and Group clips • Red - Sequences • Purple - Media files in the Media Tool
Use clip Color	If you assigned colors to items in the bin in Text View, these same colors will be used as a border for the bin item when in Frame View.
Show icons	The applicable bin item icon, for example sequence, clip, subclip, title, etc. will appear in Frame View.

5. Click OK.

    The applicable borders and icons will appear in the bin when in Frame View.

Using Script View

Script view combines the features of Text view with Frame view and adds space for typing notes or script. The frames are displayed vertically on the left side of your screen with the text box next to each clip. As in Text view, each clip is represented by a single frame, and the head frame is the default. Clip information is displayed above the text box.

You can do the following in Script view:

• Add text.

• Use basic word processing procedures to highlight, delete, cut, copy, and paste text between script boxes.

• Rearrange clips.

- Select any frame to represent the footage.
- Play back the footage within any clip.

To enter Script view:

▶ Click the Script View button in the bin.
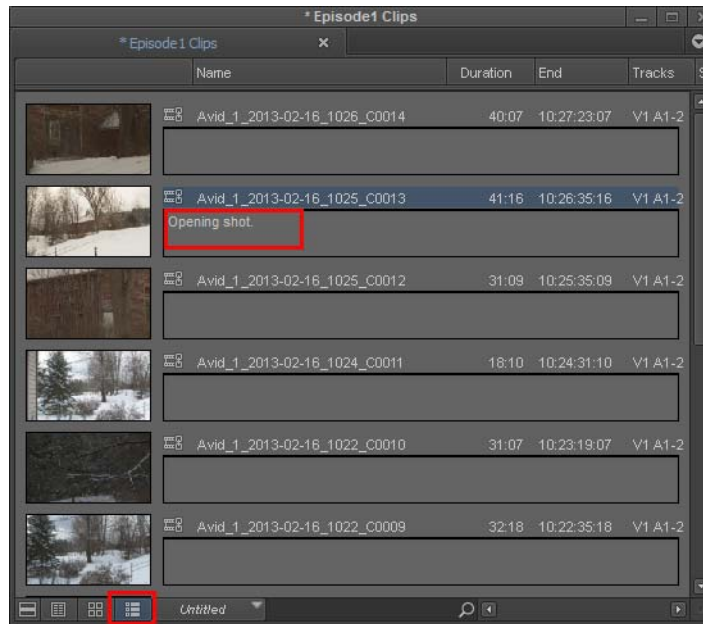
Script view in the bin. Bottom: Script Bin View button.

To type text in the script box:

1. Click the text box and begin typing.
2. (Option) If the text you type extends beyond the size of the script box, you can use the Page Up and Page Down keys on the keyboard to scroll through the text.

   This text does not appear in sequences edited from the clips, only in printouts of the bin in Script view.

To change the represented frame in Script view:

▶ Press the J-K-L keys to move through the clip.

To rearrange clips in Script view:

▶ Drag each clip up or down to a new location in the bin.

▶ Sort and sift clips in Text view, and then return to Script view to display selected clips in the sort order you want.

When you return to Text view, the order of the clips is changed there as well.

Bin Procedures

You can manipulate material in the bin in a variety of ways, including selecting, deleting, duplicating, moving, copying, and sifting clips and sequences.

When you work with bins, an asterisk appears before the bin name in the bin's title bar. The asterisk indicates that the changes to the bin have not been saved. Once you save the bin, the asterisk is removed.

Using the Bin Fast Menu

All Bin menu commands are also available in the Bin Fast menu located in the lower left corner of every bin. The Bin Fast menu is especially convenient when you work with several open bins and need to access Bin menu commands quickly.

To open the Bin Fast menu:

▶ Click the Fast Menu button.

Selecting Clips and Sequences

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

▶ Click the clip or sequence icon (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 > Select > Reverse.

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

Duplicating and Moving Clips and Sequences

When you duplicate a clip or sequence, your Avid editing application creates a separate clip linked to the same media files. You can move, rename, and manipulate this clip without affecting the original clip.

To duplicate clips or sequences:

1. Select the clip or sequence that you want to duplicate, or select multiple clips or sequences.

2. Select Edit > Duplicate.

A copy of the clip or sequence appears in the bin, with the original clip or sequence name followed by the file name extension .Copy.*n*, where *n* is the number of duplicates created from the original clip or sequence.

⚠ **Deleting media files for the duplicate clip or sequence also deletes the media files for the original clip or sequence.**

To move clips or sequences from one bin into another:

1. Create or open another bin.

   Give the bin a name that represents its purpose or contents.

2. Position or resize the original bin and the new bin so that you can see both of them at the same time.

3. Select the clips or sequences that you want to move.

4. Drag the clips or sequences to the new bin.

Deleting Items from a Bin

You can delete the following items from a bin:

- Clips

- Subclips

- Sequences

- Effect clips and their media files

- Motion effect clips and their media files

- Rendered effects clips and their media files

- Master clips and their media files

- Sources

- Groups

⚠ **When you delete media files, you can no longer see the deleted material. If you load a clip for which a media file has been deleted, a black screen appears with the words "Media Offline." If you need to use those clips again, you must recapture the media from tape or reimport graphics.**

To delete individual video and audio tracks from a clip, use the Media tool. For more information, see "Deleting Media Files with the Media Tool" on page 98.

(Windows) To delete clips, subclips, and sequences with their media files from a bin:

1. Select the clips, subclips, or sequences you want to delete.

2. Do one of the following:

   ‣ Select Edit > Delete.

   ‣ Press the Delete key.

   The Delete dialog box opens which displays the items that you selected. By default, media files are not selected for deletion.

3. Select the items you want to delete:

   ‣ Select clips and their associated media files for deletion.

▶ Select only the media files for deletion if you want to retain the clips to recapture later.

▶ Select only the clips for deletion (in case the media file is referenced by other clips in your project).

▶ Select the resolutions you want to delete.

The Resolutions to Delete section lists all video resolutions for the clips you selected. It also lists a single entry for all audio sample rates and compressed audio. Click All to delete all resolutions. However, you still need to select the individual media files that you want to delete. If you don't want to delete any media files, click None, and all media files are deselected.

The options in this section also let you delete only audio media, only data media or only video media from a clip, if that clip has separate media files for audio, data and video.

4. Click OK.

   If you choose to delete media files, a dialog box opens.

5. Click Delete.

   The selected clips, sequences, and media file are deleted.

📄 *When you select a title for deletion, you might see more than one resolution.*

(Macintosh) To delete clips, subclips, and sequences with their media files from a bin:

1. Select the clips, subclips, or sequences you want to delete.

2. Do one of the following:

   ▶ Select Edit > Delete.

   ▶ Press the Delete key.

   The Delete dialog box opens which displays information about the selected items.

3. Select the items you want to delete.

   ▶ Select clips and their associated media files for deletion.

   ▶ Select only the media files for deletion if you want to retain the clips for recapturing later.

   ▶ Select only the clips for deletion if the media file is referenced by another clip.

4. Click OK.

   If you choose to delete media files, a dialog box opens.

5. Click Delete.

   The selected clips, sequences, and media file are deleted.

Changing the Bin Background Color

You can customize the background color of the bin. Changes affect only the currently active bin. Also, you can reset the bin background color to the default color for your Interface settings.

To change the bin background color:

1. In the Settings list of the Project window, double-click Interface.

   The Interface Settings dialog box opens.

2. Select Allow Custom Bin Backgrounds, and then click OK.

3. Activate the bin you want to change.

In Text view, make sure no clips are selected.

4. Right click in the bin and select Set Background Color and click a color.

The bin color changes. The change applies to all bin views.

Assigning Colors to Objects in a Bin

You can assign colors to clips, subclips, sequences, and effect clips to help you manage and organize the bin objects. You can also display colors in bins and in the Timeline. For information on displaying colors in the Timeline, see "Displaying Clip Colors in the Timeline" on page 175.

Also, you can reset the clip color to the default color for your Interface settings.

Clip colors assigned to sequences, groups, motion effects, and title clips do not appear in the Timeline.

To add a Color column to a bin:

1. With a bin in Text view, select Bin > Choose Columns.

The Bin Column Selection dialog box opens.

2. In the column list, click Color.

3. Click OK.

The Color column appears in the bin. By default, a new column appears as the first column in the bin, to the left of all other columns. You can reposition the Color column by clicking the column heading and dragging it to a new location.

To assign a color to a clip, subclip, sequence, or effect clip in a bin:

1. With a bin in Text view, select the bin objects to which you want to assign a color.

2. Right-click in the Color column and click a color:

The color appears in the Color column (Text view only).

To reset clip color to the default, do one of the following:

▶ Right-click in the Color column and click None.

Selecting Offline Items in a Bin

Offline items are clips, subclips, or sequences that are missing some or all of their original media files or that have never been captured.

To identify offline items, do one of the following:

▶ Select Bin > Select > Offline Items.

▶ Click the Bin Fast Menu button, and then select Select > Offline Items.

The bin highlights all items that are missing media files. To identify offline items in the Timeline, see "Displaying Clip Colors in the Timeline" on page 175.

Selecting Media Relatives for an Object in a Bin

When you identify *media relatives* of a selected clip or sequence, your Avid editing application highlights all other clips linked to the selected clip, such as subclips or other sequences.

You can also use the Media tool to look at the captured video and audio data files stored on your media drives. For more information on the Media tool, see "Using the Media Tool" on page 97.

To identify media relatives:

1. Open the bin that contains the selected clip or sequence.

2. Open any other bins that might contain the media relatives that you want to find.

3. Resize and position the bins so that you can see their contents.

   Text view is the best display for viewing as many objects as possible.

4. Select the clip or sequence, and select Bin > Select > Media Relatives.

   The system highlights all related objects in all open bins.

Selecting Sources Used by an Object in a Bin

The Select Sources command identifies all the sources used by a particular object. For example, if you select a sequence as the object, the Select Sources command identifies every master clip, subclip, tape, and media file that is a source for that sequence.

To identify sources for a clip or sequence:

1. Select one or more objects in a bin.

2. Select Bin > Select > Sources.

   All sources for the selected objects in all open bins highlight.

Selecting Unreferenced Items in a Bin

When you select unreferenced clips, your Avid editing application highlights all clips not currently referenced by clips or sequences that are in the open bins. Any master clips, subclips, or effect clips you edited into sequences in the bins do not highlight.

📄 *The Select Unreferenced Clips option is useful for finding unused media.*

To identify unreferenced clips:

1. Open the bin containing the sequence or clip that is referenced.

2. Open all other bins containing clips that were used during editing.

3. Select Bin > Select > Unreferenced Clips.

   A message informs you that unreferenced clips highlight in open bins only (items in closed bins do not display).

4. Click OK.

   All unreferenced clips highlight in the open bins.

Working with Bin Columns

The topics in this section describe how to work with the columns of information that appear in the bin when you are in Text view.

For more information on Text view, see "Using Text View" on page 65. For information on modifying the information that appears in bin columns, see "Modifying Clip Information" on page 79.

Moving, Aligning, and Deleting Bin Columns

You can move, align, and delete columns in a bin.

When you align bin columns, the system maintains the same order of columns from left to right but spaces them according to the length of their contents. This is useful to remove spaces which remain after you move or rearrange columns.

When you delete a statistical column it is the same as hiding the column; you can restore the column at any time by using the Bin Column Selection option. When you delete a custom column, however, you must re-create the column.

For information to display and hide column headings in the bin, see "Using Text View" on page 65.

To move a text column in a bin:

1. Click the heading of the column that you want to move.

   The column is highlighted.

2. Drag the column to the position you want, and release the mouse button.

   A bounding outline of the column guides you as you drag it. The column appears in the new position, and columns to the right move to make room.

To align bin columns:

▶ Select Bin > Align and Fill > Align Columns.

To hide or delete a column:

1. Do one of the following to hide a column:

   ▶ Click the column heading in a bin, and then select Bin > Hide Column.

   ▶ Right-click a column heading and select Hide Column.

   The column disappears from the view, and surrounding columns close to fill the space.

2. Do one of the following to delete a column:

   ▶ Click the column heading in a bin, and then select Edit > Delete.

   ▶ Click the column heading in a bin, and then press the Delete key.

   The column disappears from the view, and surrounding columns close to fill the space.

3. When you delete a custom column, a confirmation dialog box opens. Select OK to delete the column or HIde to hide the column and save the custom information.

⚠ **If you delete a custom column, all information in the column is deleted. You must re-create the column to restore it.**

Adding Customized Columns to a Bin

In addition to the standard column headings, you can add your own column headings to describe information about clips and sequences. For example, you might want to add a column heading to describe what kind of shot (close-up, wide shot, master shot, extreme or close-up) is used in a clip.

To add a custom column:

1. While in Text or Script view, place your cursor in any column heading, right click and select Add Custom Column.

   The default name *Untitled* appears as the column heading name.

2. Type the desired name in the column heading and press Enter.

Changing a Custom Bin Column Heading

You can change the heading name of custom columns only. You cannot change any of the standard column headings.

To change the name of a custom column:

1. Right click on the column name and select Rename Column.

   The new column name appears.

Moving Within Column Cells

You can use the keyboard shortcuts described in the table to move from cell to cell in bin columns:

Shortcut	Description
Tab	Moves the pointer to the cell in the next column. You can continue to press the Tab key to move through the cells to the right until the cell in the last column highlight. The next time you press the Tab key, the cell in the first column highlights.
Shift+Tab	Moves the pointer left to the cell in the previous column. You can continue to press Shift+Tab to scroll through cells to the left until the cell in the first column highlights. The next time you press Shift+Tab, the cell in the last column highlights.
Enter	Enters any new information you type in the cell and moves the pointer down to the cell in the next row. You can continue to press Enter to scroll down the column until the last cell in the column highlights. The next time you press Enter, the first cell in the column highlights.
Shift+Enter	Moves the pointer up to the cell in the previous row. You can continue to press Shift+Enter until the cell in the top row highlights. The next time you press Shift+Enter the cell in the last row highlights.

Copying Information Between Columns

To copy column information to another column:

1. (Option) If you want to copy only the information on specific rows, select the rows that contain the clip information you want to copy.

2. Select the column that you want to copy.

3. Select Edit > Duplicate.

   The Select dialog box opens, to prompt you to target a column for the data.

4. Select the target column for the data, and click OK.

Modifying Clip Information

You can change or modify the information in certain columns for your master clips, subclips, tapes, and other objects stored in the bin. This is useful if some of the data is incorrect or if you need to conform information for organizational purposes.

The following conditions apply to modifying clip information:

- When you modify a clip's information, related objects automatically update to reflect the new data. For example, if you change the name of a clip, the updated name appears in the sequences that use the clip.

- You cannot modify some data after capture because changes would prevent you from playing back and editing the material successfully.

You can modify data in two ways:

- Modify some data directly for master clips, subclips, and other objects stored in a bin.

- Use the Modify command to change specific information for master clips only.

For more information, see .

Bin Column Headings

You can select individual or multiple headings to display or hide in a bin. For information on how to select column headings, see .

You can modify information in bin columns. For example, you can type a new name for a clip or correct the start and end timecodes. For more information, see and .

You can modify any data in the bin even while you log, prior to capture. After the footage is captured, however, you can modify information only in selected headings, with restrictions. For more information, see the following table.

⚠ **When you modify tape names and timecodes, the modification affects any key numbers you enter for the selected clips.**

The following table describes all bin column headings available in Avid editing applications, including information on which bin columns you can modify after you have captured footage. Depending on the model of your Avid editing application, you might not see all column headings.

Bin Column Heading	Description
Name	Heading always appears in the bin. The column contains the name of the clip or sequence.
Audio Bit Depth	Use audio bit depth when you work with audio files: 16 bit or 24 bit.
Audio Format	Audio format of master clips (AIFF-C or WAVE).
Audio SR	Audio resolution (sample rate).

Bin Column Heading	Description
Color	Color of the bin objects for organizing the objects. For more information, see "Assigning Colors to Objects in a Bin" on page 75. Modifiable after capture with no restrictions.
Color Space	Indicates the color space (RGB or YUV) of the clip.
Comments	Modifiable after capture with no restrictions.
Creation Date	Date and time you log or capture the clip.
Drive	Last known drive where the media for the master clip existed.
Duration	Length of the clip.
End	Timecode of the clip's tail frame.
Format	The format of a clip or sequence which you determine by the project type, such as 30i NTSC or 1080i/59.94. This is useful if you have both SD and HD clips in the same bin.
FPS	Play rate: the number of frames that display each second. The default is 29.97 for NTSC and 25 for PAL for video. The play rate is also 24 or 23.98.
Image Aspect Ratio	Indicates the shape of the image frame. Ratio of width to height.
IN-OUT	Length of the marked segment.
Mark IN	Timecode for the IN point, if you set one for the clip.
	Modifiable after capture — altering the mark IN also alters the IN to OUT duration. This replaces any previous mark.
Mark OUT	Timecode for the OUT point, if you set one for the clip.
	Modifiable after capture — altering the mark OUT also alters the IN to OUT duration. This replaces any previous mark.
Modified Date	Date and time a sequence was last edited or changed.
Offline	Track names for any media files offline.
Project	Project under which the media was originally captured.
Raster Dimension	Displays the raster dimension for the clip.
Scene	Scene number of the clip.
Source File	Specifies the source file name.
Source Path	Specifies the location of resources on local or remote storage using Universal Naming Convention (UNC).
Start	Timecode of the clip's head frame. Modifiable after capture with no restrictions.
Tracks	All tracks used by this media object.
Video	Clip video format (resolution, color space and field motion type).

Modifying Data in Bins

You can modify data in bin columns directly by typing in a selected text field. You can use the standard keyboard shortcuts for entering text — for example, press Ctrl+A (Windows) or Command+A (Macintosh) to select all text in a text field.

You can also use the Modify command for specialized control over groups of clip information. For example, you can use the Modify command to change the name of source tapes, or to increment or decrement the start and end timecodes by a specified length of time for one or several clips at once.

You can apply changes with the Modify command to master clips only. You cannot alter subclips and sequences in this way. You can modify the data of captured, imported and file-based clips. In addition, you can perform modifications that only alter the end timecodes or the tracks before capture.

⚠ **When you modify tape names and timecodes it affects any key numbers entered for the selected clips.**

To modify the clip data directly in a bin:

1. Click the Text View button in the bin to enter Text view.

2. Click the cell that you want to modify. Select only one item at a time.

   The timecode data highlights, as displayed in the following example.

3. Click the cell again to enter text.

   If the pointer does not change to an I-beam, you might be selecting a column that cannot be directly modified.

4. Type the new information, and press Enter.

To modify selected data using the Modify command:

1. Click the Text View button in the bin.

2. Click the icon to the left of the clip, sequence, or other object you want to modify. Ctrl+click (Windows) or Cmd+click (Macintosh) each additional object you want to modify.

3. Select Clip > Modify > Modify Clip.

   The Modify dialog box opens.

4. Click the Modify Options menu, and select an option.
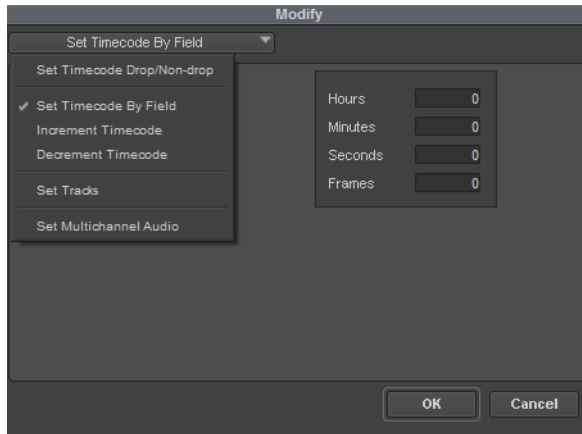
5. Select an option or type information into the text boxes.

   For more information, see "Modify Command Options" on page 82.

6. Click OK.

   The modification takes effect.

Modify Command Options

Type of Modification	Options	Description
Set Timecode Drop/Non-drop	Drop, Non-drop	Changes the timecode format between drop-frame and non-drop-frame. Setting must match the timecode format of the tape.
Set Timecode By Field	Start or End	Changes either the start or end timecode. You can only alter start timecodes after capture.
	Hour, Minutes, Seconds, Frames	Lets you enter custom timecode.
Increment Timecode	Start or End	Changes either the start or end timecode. If you increment the start timecode automatically, it modifies the end timecode by the same amount. You can only alter start timecodes after capture.
	Timecode text box	Lets you enter custom incremental timecode.
Decrement Timecode	Start or End	Changes either the start or end timecode. If you decrement the start timecode, it automatically modifies the end timecode by the same amount. You can only decrement start timecode after capture.
	Timecode text box	Lets you enter custom decremental timecode.
Set Tracks	V, A1, A2, A3, A4, A5, A6, A7, A8	Changes the clip's configuration of tracks.
Set Multichannel Audio	Mixed, Mono, Stereo	Lets you assign multichannel formats to audio tracks. For more information, see "Working with Multichannel Audio Tracks" on page 249.

Copying Information from Another Cell in a Custom Bin Column

To copy information from another cell in a custom column:

1. Press and hold the Alt key (Windows) or Option key (Macintosh) while you click in the destination cell to reveal a menu of all items entered in that column.

2. Select the text from the menu.

   The text appears in the cell.

Applying the Same Text to a Custom Column for Multiple Items

To apply the same text to a custom column for multiple items:

1. Select the items in the bin to which you want to apply the same text.

2. Right+click the custom column and select Set <column name> column for selected clips.

3. Enter the text you want to appear in the column for the selected items in the bin.

   The text appears in the cells.

Printing Bins

To print entire bins:

1. Make sure your printer is correctly set up.

2. Select the Text, Script, or Frame bin view of the bin you want to print.

3. Select File > Page Setup.

   The Page Setup dialog box opens, reflecting the specific options for your printer.

4. Select the appropriate options.

5. Click OK (Windows) or Print (Macintosh).

6. Select File > Print Bin.

   The Print dialog box opens, reflecting the specific options for your printer.

7. Select the Print options.

8. Click OK (Windows) or Print (Macintosh).

   The system prints the active bin.

To print a single frame of a clip or sequence:

1. Load a clip or sequence into the Source or Record monitor.

2. Select the frame you want to print.

3. Select File > Print Frame.

   The Print dialog box opens.

4. Select the Print options.

5. Click OK (Windows) or Print (Macintosh).

   The system prints the frame currently displayed in the active monitor.

Filtering Items in the Bin

The editing application bins include a quick filter text box that allows you to quickly filter out items in a bin that match the filter criteria. This is helpful when you have a large number of items in a bin and want to quickly filter for specific items.

To filter items in a bin:

1. Open the bin.

2. Enter text in the filter text box.
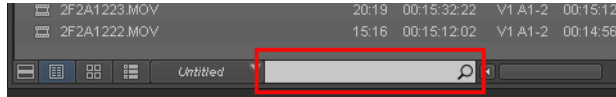
The search will display only those items in the bin that match the search criteria.

If individual columns are selected, the search is performed on the information in the selected columns. If no columns are selected, the search is performed on the Name column.

6 Ingesting Media

When ingesting media in Media Composer | First, you use the Source Browser. The Source Browser allows you to preview, scrub, and play the clip prior to linking or importing the clip. Once you preview your clips, use the Source Browser to either link or import your media. Ingesting media features are described in the following topics.

- Source Browser Overview
- Accessing and Previewing Your Media
- Linking Your Media
- Importing Your Media

Source Browser Overview

Within the Source Browser window you can easily navigate to your media, preview your media, and choose to link or import your media with the appropriate settings.
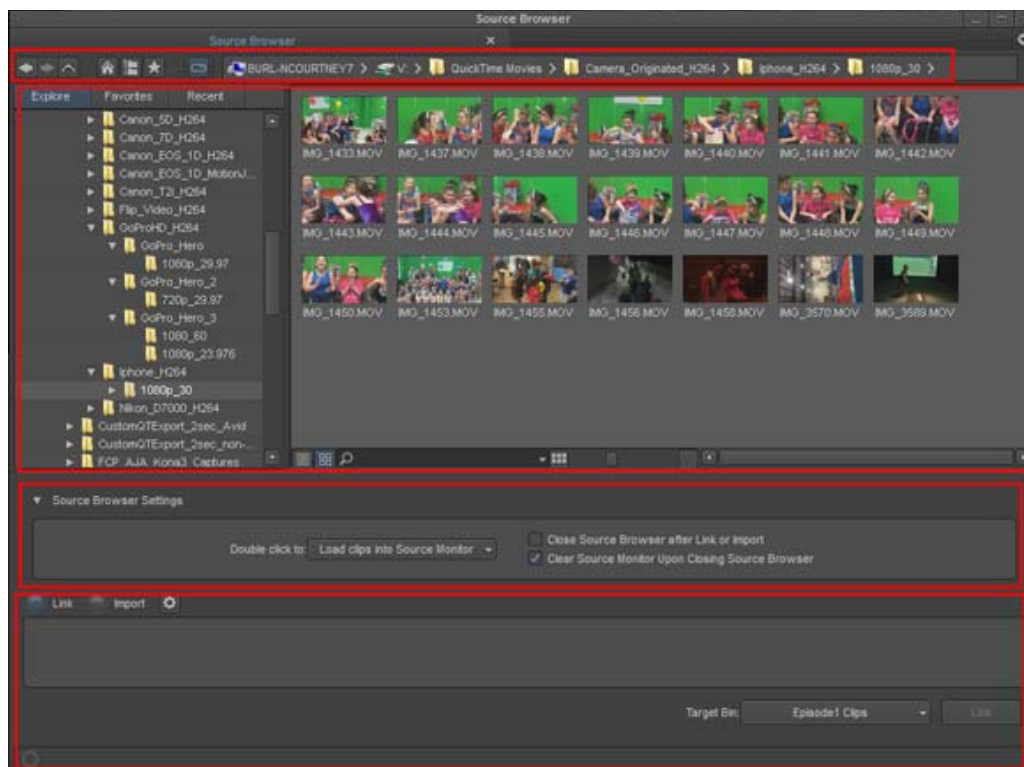
Source Browser in Frame View: (from top to bottom) Navigation tools and breadcrumbs; Middle area: Navigate and display media panes; Source Browser Settings. Bottom area: Link or Import and select Settings, Choose bin to commit media and Processing Media progress indicator

Navigation Tools and Breadcrumbs

The top area of the Source Browser provides navigation tools and shows the path to the currently displayed location of your media.

Item	Description
1	Navigation buttons: Click to move backward, forward, or up directory levels.
2	Home Button: Click to go to the home directory.
3	Collapse Directories Button: Click to collapse the directories to top levels.
4	Add or Remove Favorites: Click to add the selected folder to the Favorites tab.
5	Media Folder View Button: Click to view folders as media volumes. If you choose to display as media volumes, the Source display area will display the media as individual master clips. Other structural contents will not be displayed. When viewing a volume, you may see a "Media Processing" message in the display area. Once complete, the master clips will display.
6	Breadcrumbs: Displays the path to the currently selected folder.

Explore Media Drives Area of Source Browser

The left area of the Source Browser is where you navigate to your media drives. In this area you can also view your Favorite folders or media drives. You can also view the most recently viewed folders or drives.
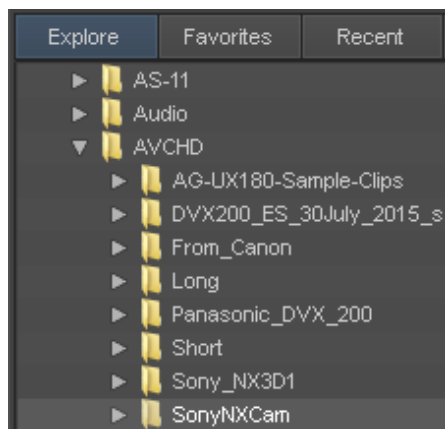
Display Media Area of Source Browser

The right pane of the Source Browser displays the media. You can choose to view the media in either Text view or Frame view.

Item	Description
1	Media display area.
2	Text View button. Click to display the media in text view
3	Frame View button: Click to display frame representations (thumbnails) of the media clips.
4	Search Field: Enter text in the search field to easily find clips.
5	Thumbnail slider: Move to enlarge or reduce the thumbnail. (Frame view only)
6	Scroll bar: Scroll to display more columns.

Source Browser Settings

The Source Browser Settings is where you configure the behavior of the Source Browser window.
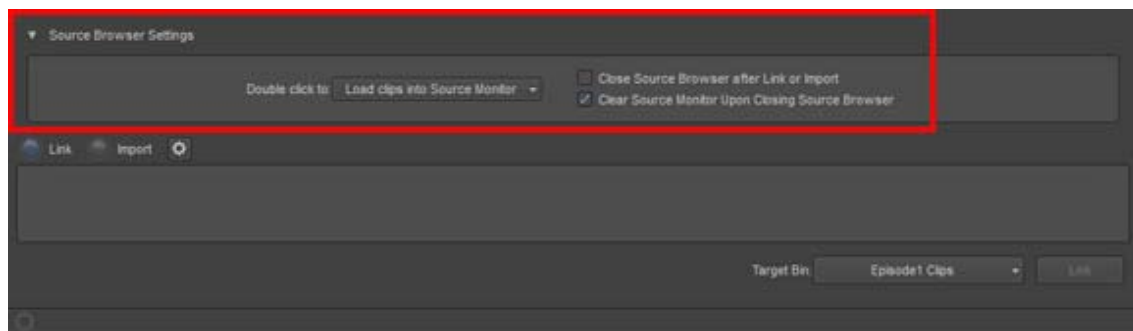
Choose from the following options:

Option	Description
Double Click to: Link or Import	Select this option if you want to double click on media files in the Source Browser to link or import them into the selected bin.
Double Click to: Load Clips in Source Monitor	Select this option if you want to double click on media files in the Source Browser to load them into the Source Monitor (without committing them to the bin.)
Close Source Browser after Link or Import	Select this option if you want to automatically close the Source Browser after the link or import process is complete
Clear Source Monitor Upon Closing Source Browser	Select this option if you want to clear all uncommitted Source Browser clips from the Source monitor after you close the Source Browser window.

Link or Import Area

The bottom area of the Source Browser is where you choose whether to import or link your media. You can also choose the Target Bin where you want to add the linked or imported clips. A Processing media indicator appears at the bottom of the Source Browser to show the progress of the media as it is populating the display area.
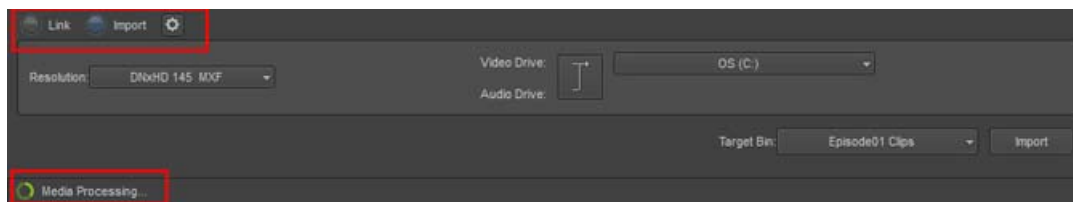
You can choose to Link or Import the media to your bin while the media is populating the display area. You do not need to wait for the processing indicator to be complete.

Accessing and Previewing Your Media

You can preview your media in the Source Browser before you commit the clip(s) into a bin.

To access and preview your media:

1. In the Explore area of the Source Browser window, browse to the location of the media you want to preview.

2. Click the Frame View button.

   The clips will populate the right pane of the Source Browser with the frame clip representation (thumbnails).

   Initially, thumbnails show the first frame of the clip. Any thumbnail playback will change the representation frame to the last one displayed.
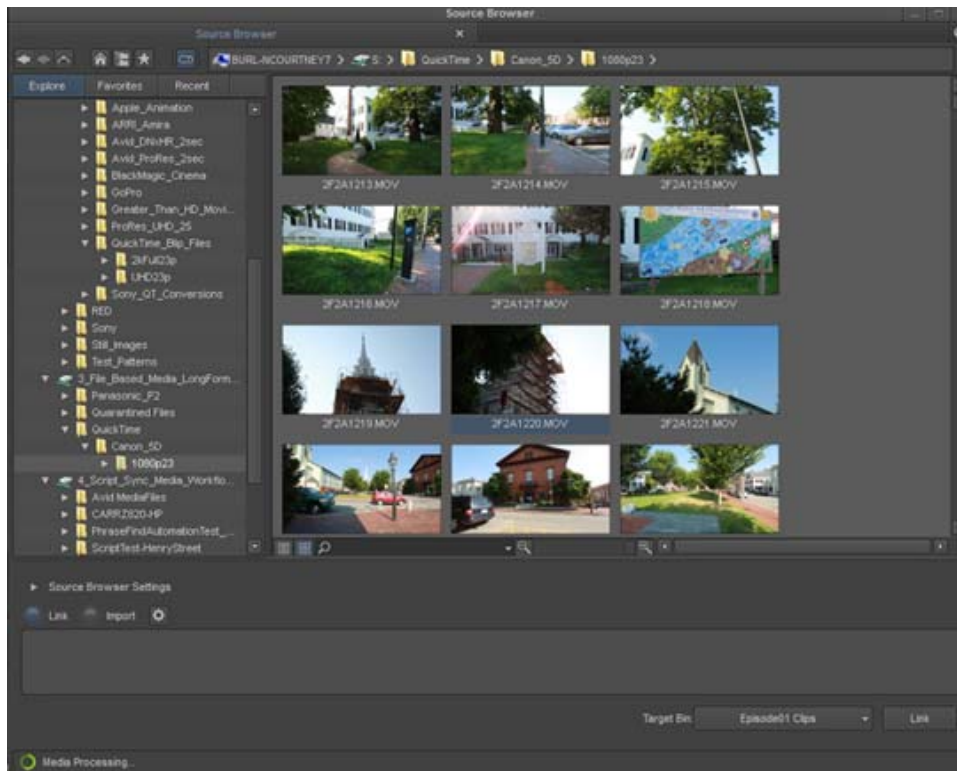
3. Press Ctrl + L (Windows) or Command + L (Mac) to enlarge the thumbnails.

4. Place your cursor so it hovers over the thumbnail of the clip. While hovering, move the cursor to the edges of the thumbnail to preview the footage. You can also use the JKL keys to shuttle through the thumbnail. (Use L to move forward, K to pause, and J to move backward.)

5. (Optional) You can drag a clip from the Source Browser to the Source monitor to review the clip. Dragging to the Source monitor does not commit the clip to the bin.

6. Continue with Linking Your Media or Importing Your Media

Linking Your Media

File-based media such as .mov, mp4, .mts, mxf, .wav, etc. files can be acquired 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 linking method which links the file based media directly into a bin through a plug-in, or you can use the import method which imports the media onto your system. Linking allows you to quickly link to the files without importing, transcoding, or copying them. Once you link to the files, you can immediately drag them to your Timeline and start editing. Importing will actually import the media files to the bin. The linking method is the preferred and the faster method. To import, see Importing Your Media.

The following Avid-supplied plug-ins are included with the editing application: Avid Generic Plug-in, QuickTime, AVCHD, MXF, and WaveAiff.

To see which plug-ins are installed on your system, click the Info button in the Project Window.

Some third party plug-ins are not included and installed with your Avid editing software. You must download and install them separately. This enables Avid and third-party camera manufacturers to update plug-ins outside of a software release. Go to the Avid Media Access page on the avid.com web site to make sure you download the latest plug-in for your specific third-party device.

> *See the documentation supplied by the third party plug-in vendor for details on using their plug-in.*

To link the media files:

1. Once you have previewed the clips you want in the Source Browser window, select the Link button.

2. Select the clips you want and drag and drop them to the bin. (Ctrl+click or Shift+click to select multiple files.)

   The clips appear in the bin. Linked clips appear with a link on the clip icon.
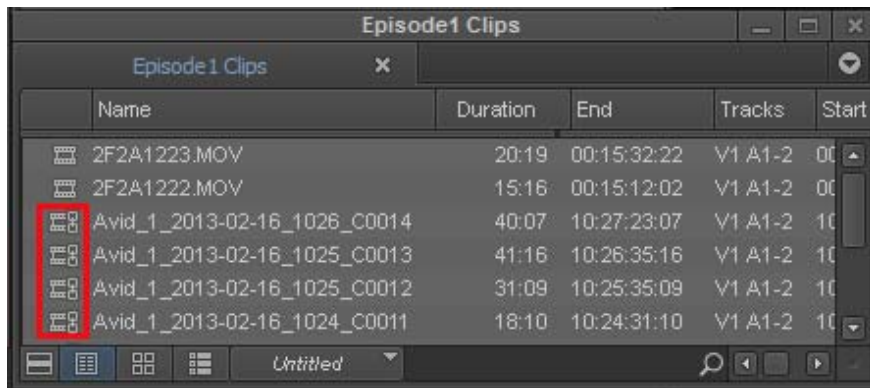
> *You can also import or link clips by selecting them, right clicking and selecting Add to Bin.*

To automatically link media from a third party device:

1. Make sure you have the appropriate 3rd party plug-in installed on your system.

2. Attach the camera and insert a card, disc or drive.

   The system links the clips automatically into a bin.

> *It is highly recommended for performance reasons, that you copy the entire media volume to an external HD drive if you plan on copying media from a card.*

3. Use the master clips to edit a sequence.

Linking with Multichannel Audio

You can use the Link Settings dialog box to define the audio track formats for the audio channels in your linked media, up to a maximum of 8 audio channels for the clips in your bins. This allows you to specify which source channels are treated as mono or multichannel audio tracks in your project, rather than having to modify the clips in your bin after you link to the media.

The mappings affect all media clips created when you link to your source media. If you want to use different mixes for different master clips or different projects, create a custom Link Settings template for each separate type of mix and then create your linked master clips.

Each stereo track requires two channels, but you can mix mono and stereo input channels for your linking operation as long as you do not exceed the maximum of 8 audio channels for each master clip.

To specify the multichannel audio mix for linked clips:

1. In the Project window, click the Settings tab.

2. Double-click Link.

   The Link Settings dialog box appears.

   For information about the Link Settings, see "Link Settings" on page 400.

3. Click Edit.

   The Set Multichannel Audio dialog box opens.

4. Click the format buttons to select one of the following audio track formats for each pair of source channels:

Button	Track Format
◇◇	Mono
⊙	Stereo

   You must map source audio channels in mono or stereo pairs. For example, you cannot map A1 to a mono track and A2 and A3 to a stereo track. Instead, map A1 and A2 to mono tracks, and A3 and A4 to a stereo track. If the source media does not have an audio channel on A2, the Avid editing application ignores the channel.

5. Click OK to close the Set Multichannel Audio dialog box, and then click OK to close the Link Settings dialog box.

   The Track Formats column in the bin Text view displays the format for all multichannel audio tracks in a master clip.

Relinking to Linked QuickTime Files

After you link QuickTime files into your sequence, you have the option to make changes (in a third party application, 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 a linked 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 File(s) is only available with QuickTime files.

To relink to QuickTime file(s):

1. Select the file(s) you want to relink by doing one of the following:

    ‣ Click a single file

    ‣ Shift+click to select multiple adjacent files

    ‣ Ctrl+click (Windows) or Command+click (Macintosh) to select multiple nonadjacent files

2. Right-click and select Relink to File(s).

    The Select file(s) to relink clip dialog box opens asking you to locate the new file(s).

3. Locate the folder where the files exist and select the files in the folder that require relinking.

4. Click OK.

    The clips appear linked in the bin. If all the clips you wanted to relink to do not reside in the selected folder, you will receive a dialog indicating how many files were not relinked. Open the Console window to see the name of the file or files that were not relinked.

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.

Importing Your Media

You should use the Import option in the Source Browser when importing files such as Adobe® Photoshop® graphic files and audio files.

Consider copying all graphics files to a single folder before you import the files. Using this folder helps you manage graphics from multiple sources and streamlines the reimporting process. Use the following procedures for Importing Media Files:

• Importing Media Files

• Importing Photoshop Files

• Importing Audio Files

Importing Media Files

To import your media files into a bin, perform the following.

To import files:

1. Select File > Input > Source Browser.

2. Select the Import button.

3. (Optional) If you want to change an import setting, simply click the Settings button at the bottom of the Source Browser to access the "Import Settings" on page 395 and make your changes

4. Select the files you want to import to the bin and either drag and drop them to the bin or select the Target Bin at the bottom right of the Source Browser window and click Import.

    The imported files appear in the bin.

📄 *You can also import clips by selecting them, right clicking and selecting Add to Bin.*

Importing Audio Files

When you import audio files, you can set the gain on a clip without opening the Audio Mix tool. This is especially useful when you import audio from a CD or an MP3 device and you would like to lower the decibel level for all files that you import. If you do not want to adjust the gain before import, start at step 6.

To adjust the gain before import:

1. In the Project window, click the Settings tab.

2. Double-click Import.

3. Click the Audio tab, and then select Apply attenuation/gain effect on Import.

4. Type a decibel level from 12 to -96 to adjust the volume, or use the Up and Down arrows on the keyboard to locate the decibel level you want to apply to all the imported clips.

5. Click OK.

    When your Avid editing application imports the files, it applies the gain adjustment to each file imported to a bin. If you later apply gain from the Clip menu to a clip that you adjusted the gain before import, your Avid editing application ignores the pre-import gain. For example, if you apply -6 dB before import, and then apply another -6 dB to the clip, the clip remains at -6 db and not -12 db. For each subsequent adjustment, your Avid editing application ignores the previous adjustment, except where the clip appears in a sequence. To adjust a clip's gain in a sequence, you must use the Audio Mix tool.

6. Select File > Input > Source Browser.

7. Select the Import button.

8. Select the audio files you want to import to the bin and either drag and drop them to the bin or select the Target Bin at the bottom right of the Source Browser window and click Import.

    The imported files appear in the bin.

📄 *You can also import clips by selecting them, right clicking and selecting Add to Bin.*

To adjust the gain after import:

1. Choose one of the following methods:

    ▸ Select the clip in the bin, and select Clip > Audio > Apply Gain.

    ▸ Right-click a single clip and select Audio > Apply Gain.

       The Apply Clip Gain menu opens.

2. Type a decibel level from 12 to -96 to adjust the volume, or use the Up and Down arrows on the keyboard to locate the decibel level you want to apply.

3. Click OK.

    The gain adjustment applies to the clip. If there was a gain previously associated with the clip, the new gain value override it.

Importing Photoshop Files

You can import both single-layer and multilayered graphics created in Adobe® Photoshop®. If you import multilayered graphics, you can preserve the original layers, and then edit them individually in your Avid editing application.

Single-Layer Photoshop Graphics

A single-layer graphic is a graphic file that was created either on a single layer or with multiple layers and subsequently flattened in Photoshop. Avid editing applications import this kind of graphic as a matte key or master clip, depending on the format of the Photoshop file.

- If the graphic uses a transparent background or an alpha channel, your Avid editing application creates a matte key.

- If the graphic uses a background color, your Avid editing application creates a master clip.

Single-layer files that contain transparency gradients or feathering and a transparent background do not import correctly. Partially transparent pixels display with either white or black blended into them, based on the percentage of transparency. To avoid this problem, create an additional layer in the original Photoshop file that contains at least one pixel of information, such as a spot drawn with a paintbrush. Then import it as a layered file, as described in "Importing Photoshop Files" on page 94. In the message box, click Select Layers and select only the layer that contains the graphic elements. Do not select the additional layer.

Multilayer Photoshop Graphics

A multilayered graphic is a graphic file that was created in Photoshop with two or more layers.

When you import a multilayered graphic, you can import each layer as a separate object (a matte key or master clip). You can then manipulate individual layers like any other matte key or master clip. You can also import the graphic as a flattened image, or select the layers to import.

Some layer options in Photoshop are not supported for import into your Avid editing application. For example, a title with a Drop Shadow and an Outer Glow effect would not keep these effects when imported.

For information on support for layer options and types, see the following tables.

Layer Option	Supported	Notes
Blending Mode	No	To preserve the blending mode (Dissolve, Multiply, and so on), merge the layer into another layer that does not use a special blending mode. Only normal mode is supported.
Opacity	Yes	The imported layer's Level is set to the opacity specified in Photoshop. You can adjust opacity levels with the Foreground Level control in the Effect Editor.
Layer Group	Partial	Import ignores layer grouping and instead imports all layers, including grouped layers, as individual layers. To preserve a clipping group, merge the grouped layers into the base layer.
Layer Set	Partial	All layers within a set are imported as individual layers.

Layer Option	Supported	Notes
Layer/Set Mask	No	Import ignores layer and set masks. To preserve a layer mask, apply it to the layer. To preserve a set mask, merge the set into an empty layer. To preserve a special layer's mask, rasterize the layer.
Layer Style	No	Import ignores layer styles. To preserve a layer style, you must convert the style into layers.

Special Layer Option	Supported	Notes
Type Layer	Yes	—
Solid Layer	Yes	Solid layers import as a graphic with a full-screen opaque alpha channel.
Gradient Layer	Yes	Gradient transparency is preserved.
Pattern Layer	Yes	—
Adjustment Layer	No	Adjustment layers include Levels, Curves, Color Balance, Brightness/Contrast, Hue/Saturation, Channel Mixer, Gradient Map, Invert, Threshold, and Posterize.

Example of Multilayered Photoshop Graphics Import

Your Avid editing application imports each layer as an individual matte key with alpha channel. During the import, your Avid editing application creates a sequence with each layer on a separate video track. This makes it easy to edit all layers into the final sequence. This sequence preserves the names and order of the layers as created in the original Photoshop file.

You can then edit the tracks as necessary to build up to the full collage.

To import a single-layer graphic, or a flattened multilayered Photoshop graphic:

▶ Follow the standard instructions for importing a graphic, as described in "Importing Your Media" on page 92.

To import a multilayered Photoshop file:

1. Prepare the Photoshop graphic for import.

2. Follow the standard instructions for importing a graphic, as described in "Importing Your Media" on page 92. To create the matte correctly, you need to click the Options button and select Alpha: Invert on Import.

3. After you select one or more files and click Open, a message box opens.

4. In the message box, do one of the following:

   ▶ Click Sequence of Layers if you want to preserve all layers. If the number of layers exceeds the number of tracks supported, your Avid editing application creates a sequence that contains the number of tracks supported. Additional layers are imported into the bin, but not as tracks in a sequence. This selection applies to all files you select for import.

   ▶ Click Flattened Image if you want to import the graphic as a single matte key or clip. Your Avid editing application flattens the file by combining the layers. This selection applies to all files you selected for import.

Hidden layers are not combined in the flattened image. Make sure all layers you want in the final image are visible. In addition, layers with partial transparency do not display properly in the flattened, imported image.

▶ Click Select Layers if you want to select which layers to preserve.

The Select Layers dialog box opens. Select the layers you want to import and click OK.

Your Avid editing application displays messages as it creates media for each layer. At the end of the process, the selected bin displays the objects.

To preserve layer effects:

1. For the first import, click Select Layers and select all layers except the layers that contain layer effects.

2. For the second import, open Photoshop, hide the layers you've already imported, and show the layers that contain layer effects. During the import, click Flattened Image.

The resulting image contains only the layers that contain layer effects.

7 Managing Media Files

In addition to the bins where you organize the clips that reference these media files, your Avid editing application provides tools for directly managing these media files. These tools and features are described in the following topics:

- Using the Media Tool
- Consolidating Media
- Transcoding Media
- Deleting Unreferenced Clips and Media

Using the Media Tool

The Media tool is your window into the video and audio data files stored on your media drives. The Media tool provides similar database tools for manipulating digital media files to those provided by bins for manipulating clips and sequences. The Media tool does not display sequences and subclips. Only master clips, Linked Master clips, precompute (rendered effect) clips, and associated media files are available for display.

Opening the Media Tool

To open the Media tool:

1. Select Tools > Media Tool.

   The Media Tool Display dialog box opens.
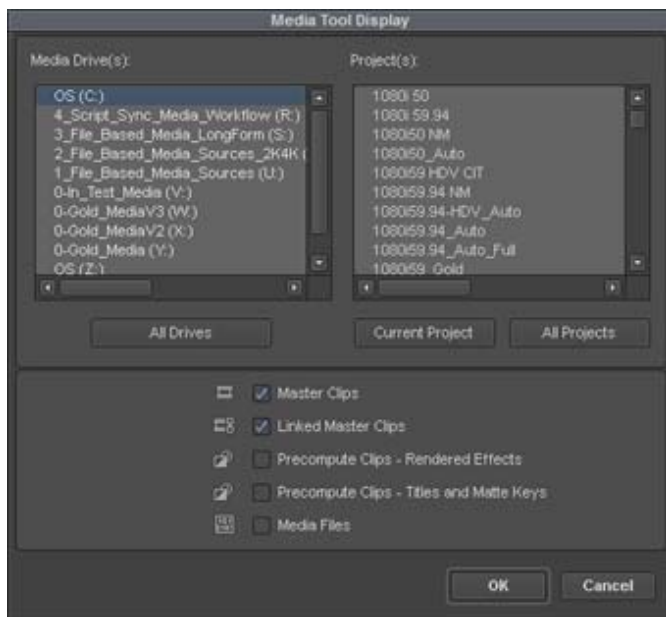
2. Select the media drives from which to load by doing one of the following:

   ▶ In the Media Drive(s) list, select individual media drives.

   ▶ Click the All Drives button.

   The Media tool loads the media database only for the drives you select. The more drives you select, the more memory is required for the Media tool to open.

3. Select the projects to load by doing one of the following:

   ▶ In the Projects list, select individual projects.

   ▶ Click the Current Project button.

   ▶ Click the All Projects button.

   Only projects with associated online media and the current project appear in the Project(s) list in the Media Tool Display dialog box.

4. Select Master Clips, Linked Master Clips, Precompute Clips - Rendered Effects, Precompute Clips - Titles and Matte Keys, Media Files, or any combination of the options.

5. Click OK.

   The Media tool opens.

Deleting Media Files with the Media Tool

You can use the Media tool to delete selected media files.

⚠ **IMPORTANT: You must be very careful about deleting media files. If you use the Media tool to delete selected media files, you no longer have access to the deleted material. DO NOT delete your media files unless you are certain you no longer need the media. If you load a clip for which a media file has been deleted, a black screen appears with the words "Media Offline."**

To delete selected media files:

1. Select Tools > Media Tool.

2. Select one or more media files (audio, video, or both) or master clips whose media files you want to delete.

3. Do one of the following:

   ▶ Select Edit > Delete.

   ▶ Press the Delete key.

   The Delete Media dialog box opens.
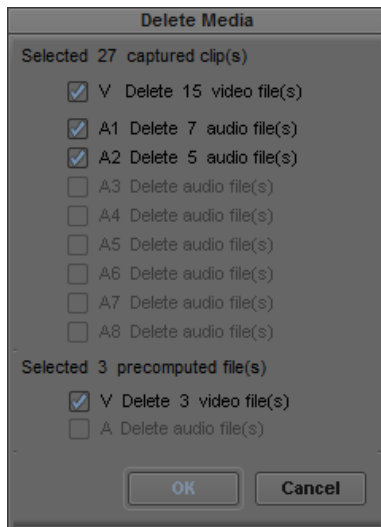
4. Select the media objects that you want to delete:

Option	Description
Video media file (V)	After deletion, the master clip linked to that file is black, with the message "Media Offline" displayed. Related subclips and sequences are affected in the same way.
Audio media file (A1, A2, A3, A4, A5, A6, A7, A8)	After deletion, the master clip linked to that file is silent. Subclips and sequences created from the master clip are affected in the same way.
Precompute media file (V, A)	After deletion, the section of the sequence with the effect is black, and the message "Media Offline" is displayed.
Audio mixdown file (A)	After deletion, the section of the sequence with the mixdown is silent.

5. Click OK.

   A dialog box opens, asking you to confirm the deletion.

   If there are metadata files associated with linked media, you can choose to delete the metadata files also.

6. Click Delete.

   The selected media files (and/or linked media metadata files) are deleted.

Consolidating Media

When you consolidate media files, your Avid editing application finds the media files or portions of media files associated with selected clips, subclips, or sequences. It then makes copies of them, and saves the copies on a target drive that you specify.

Consolidate only works for media that is in a format your Avid editing software understands natively. This is why some linked media will consolidate (such as XDCAM) and some will not (AVCHD, for example).

There are three basic reasons to use the Consolidate feature:

• To copy media onto one drive for storage or transfer to another system.

• To keep only the media required to play back a sequence, and delete the rest to use less storage space.

• To create backup files.

Master Clips

When you consolidate a master clip, your Avid editing application creates a new master clip with the file name extension *.new* that is linked to the new media files.

The new master clips are also numbered incrementally beginning with *.01*. Consolidating master clips does not save storage space because your Avid editing application copies the same amount of media for each clip.

Subclips

When you consolidate a subclip or group of subclips, your Avid editing application copies only the portion of the media files represented in the subclip and creates a new master clip that is the duration of the subclip and a new subclip. The file name extension *.new* is attached, along with incremental numbering beginning with *.01*.

Sequences

When you consolidate a sequence, your Avid editing application copies only the portions of media files edited into the sequence and creates new master clips for each clip in the sequence. The file name extension .new is attached to the master clips, along with incremental numbering beginning with *.01*. The original sequence is not renamed but a new sequence is automatically created with a name extension *consolidated.01*.

Consolidate finished sequences to:

• Create backup files.

• Preserve only the captured media required for playback, and delete the rest to use less storage space.

• Gather dispersed media onto one drive for storage or transfer to another system.

Because a consolidated sequence is linked to the new files by default, consider duplicating the sequence each time you consolidate if you need to maintain links to the original files.

To consolidate media:

1. Select a clip or sequence in a bin.

2. Select Clip > Transcode.

   The Transcode dialog box opens.
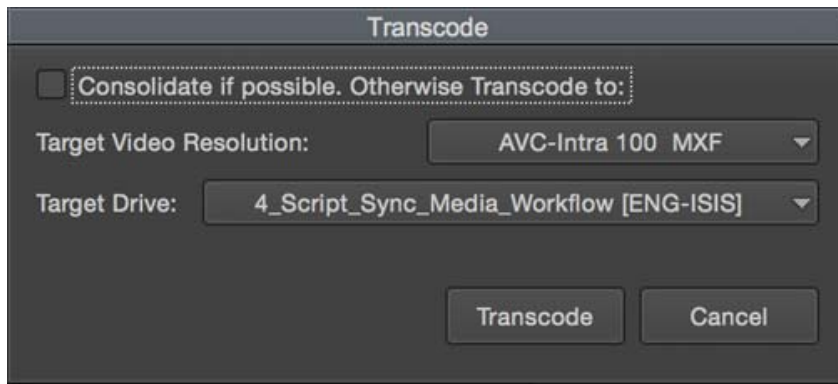
3. Enable the Consolidate if possible. Otherwise Transcode to option.

4. Click the Target Video Resolution menu, and select a video resolution.

5. Select the Target drive.

6. Click Transcode.

   If the media can be consolidated, the consolidated files appear in the target drive. If the media could not be consolidated, it will be transcoded to the selected resolution.

Transcoding Media

The Transcode feature lets you create new clips and new media files that use a different resolution. If you have a sequence composed of clips that use different resolutions, you can use the Transcode feature to create a sequence in which all clips use a single resolution.

To use the Transcode option:

1. Select a clip or sequence in a bin.

2. Select Clip > Transcode.

   The Transcode dialog box opens.
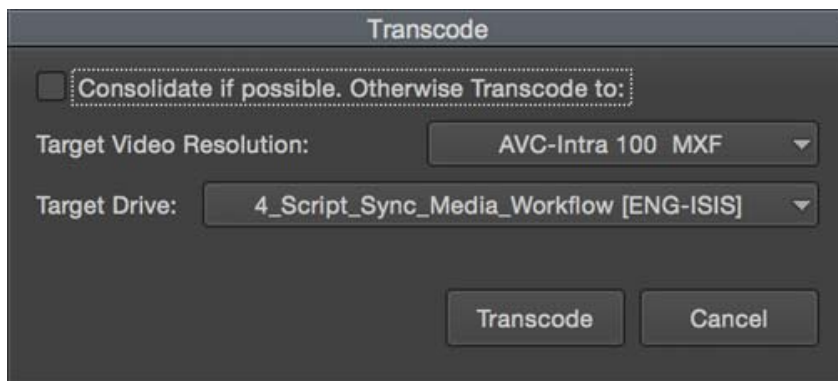
3. Click the Target Video Resolution menu, and select a video resolution.

4. Select the Target drive.

5. Click Transcode.

   Your Avid editing application creates new media files and clips, according to your selections.

For information on consolidating media, see "Consolidating Media" on page 99.

Deleting Unreferenced Clips and Media

Unlike the bin files stored in project folders, media files require considerable storage space. When you finish either a rough cut or a final version of a sequence, you can quickly free storage space by deleting the media and clips that are not referenced by the sequence. You perform this procedure only on clips selected in bins.

To delete all unreferenced clips and media files:

1. Select the sequence in the bin.

2. Select Bin > Select > Sources.

   All source clips for the sequence are highlighted in the bin.

⚠ **Motion effects are not counted as references by the sequence. If you want to keep motion effects, Ctrl+click (Windows) or Command+click (Macintosh) any motion effects to add them to the selection.**

3. Click the bin containing the highlighted clips to activate it.

4. Select Bin > Select > Reverse.

   All the clips in the bin that are not source clips for the sequence are now highlighted.

5. Press the Delete key, and then click the check boxes in the Delete dialog box to select the clips or the media files to delete.

6. Click OK.

   The selected clips and media files are deleted.

Finding a Related Media File

The Reveal File command lets you select a clip in a bin and automatically open its related media file. This command is useful if you want to delete, move, or label the media file.

To find a related media file:

1. Select the clip in a bin for which you want to find the media file.

   The clip is highlighted.

2. Select File > Reveal File.

   The system searches all available drives, opens Windows Explorer or the folder (Macintosh), and highlights related media files.

   (Windows only) If more than one file is related to the clip, a message box asks if you want to see the next file. If you click OK, you need to bring the Explorer window forward by pressing and holding the Alt key while pressing the Tab key until you select the Avid MediaFiles folder.

Sequence and Clip Information Summary

You can generate a report to display information about the contents of a sequence. For example, you can generate a list of the types of effects in your sequence or the location of a particular effect. You can also create a clip summary or a source summary. This allows you to display a list of clip names, tape names, offline clips, and path locations of imported clips contained in your selection.

You generate reports from the Sequence Report dialog box, which you can access from the Source monitor, the Record monitor, or directly from a sequence in a bin. The Sequence Report dialog box allows you to select your criteria and create a report that displays in a text editor. You can then search the summary for the exact information you want.

Example 1: Preparing for Online Editing

When you move your sequence from an offline system to an online system, you can run an effect summary and a source summary report. The Effect Summary displays a list of all effects, including a separate list of plug-ins used. The Source Summary lists all the tapes you need for recapture and all of the import paths for imported graphics.

Example 2: Finding Specific Effects

You use the Effect Summary and Effect Location List to find a particular effect. When you output the summary to a text editor, you can search the report to find all occurrences of the particular effect. In addition, you can type the start or end timecode value for each occurrence into the Source/Record monitor to go to the start of the effect in the Timeline. You might find this useful when you need to replace or modify a specific plug-in, for example.

Example 3: Plug-in Information

An Effect Summary displays a list of effects found in the selection, including how many times the sequence uses an effect. For plug-ins loaded on your system, a section displays a summary of the plug-ins used, displaying the name, the vendor, the version and the ID of the plug-in. This can help by providing a list of the plug-ins needed for online work.

If a plug-in is not loaded on your system when you generate the summary, if you select the option "Show Missing Effects Only" from the Sequence Report dialog box, the information displays "unavailable effect," in addition to the plug-in name, the plug-in ID (is this gone?), and other information associated with the effect. (Is the vendor and version number displayed). This is helpful when identifying the effect.

Creating a Summary of Effects and Source Information

Before you use the Sequence Report dialog box to create a summary of effects, source information, or clip information, you might want to do the following:

- Determine if you want the report to cover specific tracks or a section of the sequence between In and Out points. Loading a sequence in the Source/Record monitor before you generate a report allows you to select which part of the sequence about which you want information.

- Choose the summary options you want information on — types of effects, location of effects, source information, or clip information.

You can modify the sequence name and the starting timecode in the Sequence Report dialog box.

To generate a summary report:

1. Do one of the following:

   ▶ From a bin, right-click a sequence and select Sequence Report. You can select multiple sequences for generating reports.

   ▶ With a sequence loaded in a monitor, right-click the monitor and select Sequence Report.

   The Sequence Report dialog box opens.

2. (Option) Do the following:

   ▶ If you selected specific tracks, click Enabled Tracks Only.

   ▶ If you set In and Out points, click Use Marks.

   If you want to run a report on the entire sequence regardless of tracks or marks, do not select either of these options.

3. Select the Summary Info options you want to include in your report. For information on report options, see "Summary Information Options" on page 104.

4. Click Generate Report.

   The Save Summary Output File As dialog box opens.

5. Use the default file name or rename the report and choose a folder to save the report to, click Save.

   If you select more than 8 sequences, a dialog box asks if you want to generate sequence reports for all selected items.

   The application writes the report to a text file and opens a text editor.

Summary Information Options

The following options allow you to select which information to include in the sequence report.

Summary Option	Suboption	Description
Create Effect Summary		This displays the types of effects and how many were found in your sequence, the breakdown by effect type, and an effect plug-in summary. If you have selected individual tracks or selected IN and OUT points, only those effects that fall within those parameters appear.
Create Effect Location List		This displays the location of an effect. Depending on the criteria you selected, this displays track, start timecode, end timecode and effect name.
	Skip Non-Renderable Effects	Select this option if you do not want any non-renderable effects, such as pan/volume effects, to appear in the report.
	Skip Relationship-Only Color Correction	Select this option if you do not want any color correction effects with only relationships to appear in the report.
	Show Nested Effects Only	Select this option if you want to only display the nested effects in your sequence. Effects that are nested inside of other effects show the parent effect track they are applied to with the track name in parentheses and indented to show the nesting relationship.
	Show Missing Effects Only	Select this option if you want to only display the plug-in effects missing from your sequence. Plug-in effects that are missing in your sequence display as "Unavailable Effect," but also lists the type of effect and other important information which help you identify the type of effect. This option is helpful when you move your sequence to a system that does not have the plug-in installed.
Create Clip Summary or Create Source Summary		Depending on the criteria you selected, a Clip Summary displays the number of clips found, type of clip, track, offline information, clip name, and clip Mob ID. A Source Summary displays the number of tape-based sources found, project name, tape name, tape ID, and tape Mob ID. It also displays a list of import paths for any imported clips, such as graphics.
	Offline Only	Select this option if you want to display offline clips and/or sources only.
	Skip Non-Selected Clips in Group Clips	Select this option if you do not want any non-selected clips inside of a group clip to appear in the report.
	Show Globally Unique Identifier (UID)	Select this option if you want to display the unique identifiers (Mob IDs) associated with the clips and sources in your sequence.

8 Viewing and Marking Footage

Before you begin editing, you can review your footage, add markers and comments to clips, mark IN to OUT points, and create subclips. By viewing and marking your material in advance, you can concentrate on editing and refining your sequence at a later time without having to pause and set marks each time you load a new clip. Techniques for playing back, viewing, and subcataloging clips are described in the following topics:

• Viewing Methods
• Customizing the Composer Window and Monitors
• Using the Info Window
• Using the Timecode Window
• Playing Video to a Full-Screen Monitor
• Using the Tool Palette
• Playing Selected Clips in a Loop
• Loading and Clearing Footage
• Controlling Playback
• Video Quality Options for Playback
• Setting the Video Quality for Playback
• Marking and Subcataloging Footage
• Using Markers
• Finding Frames, Clips, and Bins

Viewing Methods

You can work with clips and sequences in several ways, depending on your needs and preferences. Each method has its own uses and advantages, as described in the following table:

Viewing Method	Description
In bins	You see pictorial images of the clips in your bins by using Frame or Script view and can play the clips in the bin. For more information, see "Using Frame View" on page 68 and "Using Script View" on page 70.
In the Source monitor	You can load clips and sequences into the Source monitor to view and mark or subcatalog shots for use in a sequence that you build in the Timeline. For more information, see "Loading and Clearing Footage" on page 115.
In the Record monitor	You can load a sequence into the Record monitor to view, mark, or modify an existing sequence. You can load a series of clips into the Record monitor to create an instant sequence (rough cut). For more information, see "Loading and Clearing Footage" on page 115 and "Creating an Instant Rough Cut" on page 153.

Viewing Method	Description

Source monitor with clip loaded (left) and Record monitor with sequence loaded (right)

In pop-up monitors	You can load several clips into pop-up monitors to view and mark clips in smaller, movable windows. For more information, see "Loading and Clearing Footage" on page 115.
In the Timeline	Use the Timeline to view individual tracks for either a sequence or a source clip. Click the Toggle Source/Record in Timeline button to switch between displaying the sequence tracks and the source tracks.

Timeline Toggle Source/Record button.

Customizing the Composer Window and Monitors

The Composer window is central to the editing process, providing all the essential controls for viewing, tracking, marking, and editing source and record footage. The Composer window includes the Source and Record monitors.

Resizing the Composer Window and Monitors

You can resize the monitors that display your footage in a variety of ways. You can:

- Resize any monitor to provide more area for displaying the Timeline or other windows

- Hide the Source monitor and display an enlarged Record monitor for a more detailed view of the media in your sequence

  You can then use a keyboard shortcut to switch between the enlarged Record monitor and the standard size. This configuration is particularly useful during final finishing.

- Hide the video completely, leaving only the controls and information portions of the monitors visible. No video is displayed in the Composer window. Video is still displayed on the Client monitor.

- Hide the controls completely, leaving only the video visible.

To resize the Source and Record monitors:

▶ Drag the lower right or lower left corner (Windows) or lower right corner (Macintosh) of the Composer window to the size you want.

To resize a pop-up monitor:

▶ Click the lower right corner of the monitor and drag it to the size you want.

To resize to a single monitor:

1. Select Composer > Show Single/Dual Monitor or right-click in the Composer monitor and select Show Single/Dual Monitor to display a single monitor.

   The Source/Record monitor changes to a single Record monitor.

2. Drag the lower right corner of the monitor to the desired size.

3. (Optional) You can map the Show Single/Dual Monitor menu command to your keyboard to easily switch between dual and single monitors. See "Mapping Menu Commands" on page 61".

To switch back to the standard-size Source/Record monitors:

▶ Select Workspaces > Source/Record Editing.

To toggle between the single Record monitor and the Source/Record monitors:

▶ Press and hold the Alt key (Windows) or Option key (Macintosh) and then click the Source/Record Mode button.

To hide or display the video in a monitor:

▶ Right-click the monitor, and select Hide Video.

   The video disappears or reappears. When the video is hidden, the Hide Video command has a check mark beside it.

Displaying Tracking Information

Tracking information consists of various formats used to identify clips, audio and video tracks, individual frames, or footage durations while you work. Your Avid editing application displays this information above the monitors in the Composer window and in the Timeline window.

Tracking information is updated continuously to reflect your current position in the footage. You can select which information you want to track from the Tracking Information menu (see "Tracking Format Options" on page 109).

Tracking information in the Composer window.

To display tracking information:

1. Load a clip or sequence into the monitor.

2. Click in the information display area above the monitor to open the Tracking Information menu.

3. Select the type of tracking information you want to display.

Tracking Format Options

The Tracking Information menu contains options for information to be displayed above the monitors. The contents of the menu varies, depending on the monitor.

Panes in the Tracking Information Menu

The Tracking Information menu has three panes. You can select an option from pane 1, pane 2, or pane 3 to be displayed above a monitor. The following table describes the contents of the three panes:

Pane	Description
Pane 1	Lets you select a format for the tracking information. In the Record monitor, you set select a format for either the Sequence tracking information or the Source clip tracking information. In the Source monitor, you can select a format for the Source clip tracking information only.
	The **Sequence submenu** lets you select Timecode, Footage (feet and frames for 25p projects), or Frames (a sum total of frames for video).
	The **Source submenu** displays the information for the tracks existing in the currently loaded clip or sequence. For example, a clip with only one audio track does not show an option for A2. The item you select is displayed above the monitor.

Pane	Description(Continued)
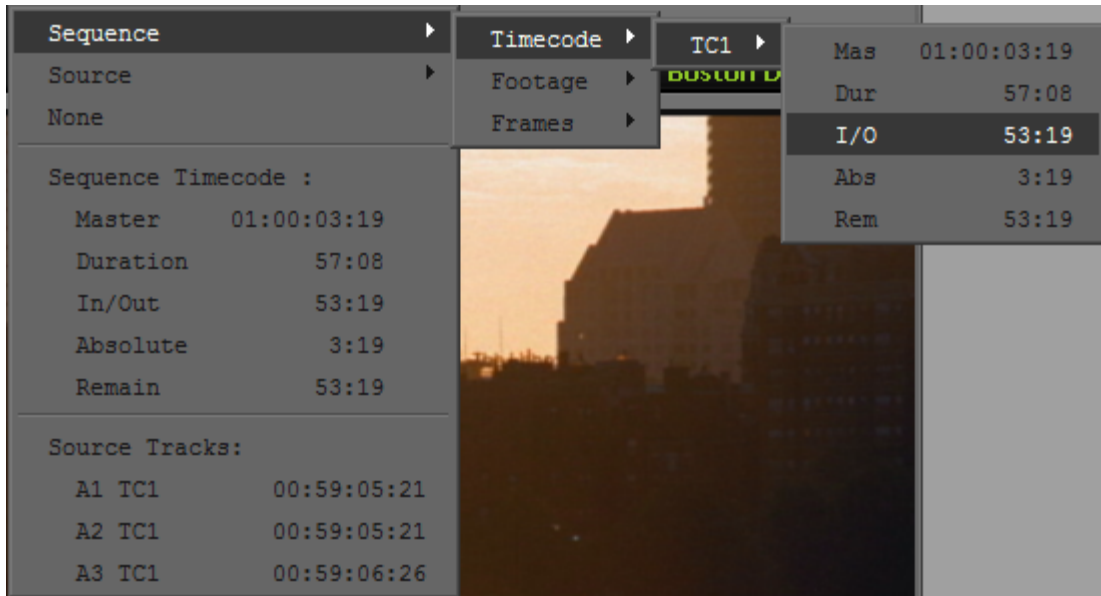
Pane 1 example when you select Sequence > Timecode > TC1
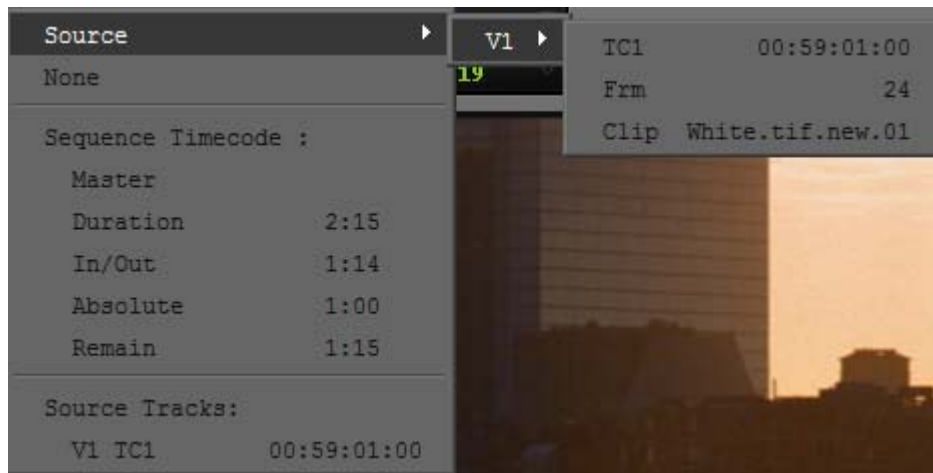
Pane 1 example when you select Source > V1

Pane 2   Lists Source or Sequence timecode options, such as master timecode (Master), duration of the entire clip (Duration), IN to OUT duration (In/Out), absolute timecode (Absolute), and time remaining (Remain). The format type that you select from pane 1 determines the tracking format that is displayed.

Pane	Description(Continued)
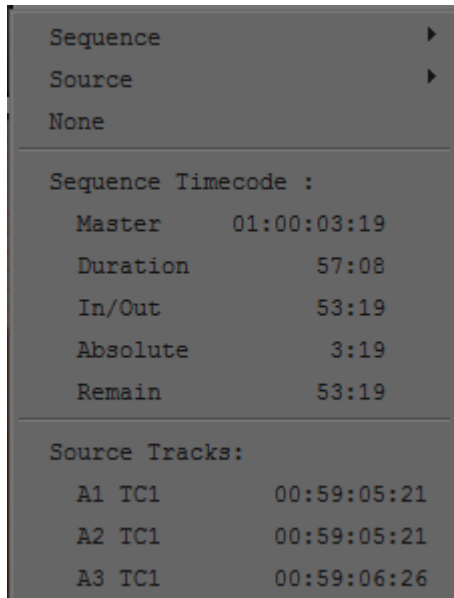
Example of Pane 2 in the Tracking Information menu

Pane 3   Displays the timecode for the source track of a specific track (V1, A1, A2, and so on). The information is continuously updated based on the location of the position indicator.

Tracking Format Options

The following table describes the tracking format options.

Option	Description
Master	Displays master timecode at present location.
Duration	Displays total duration of the sequence.
In/Out	Displays duration between IN and OUT points.
Absolute	Displays absolute time duration at present position.
Remain	Displays time remaining at present position.
V1 TC (or EC)	Displays the source track of the video on track 1, and the timecode (or edgecode).
A1 TC (or EC)	Displays the source track of the audio on track 1, and the timecode (or edgecode).
A2 TC (or EC)	Displays the source track of the audio on track 2, and the timecode (or edgecode).
TC1, 25, 25PD, 30D, 30ND	For 25p projects only. TC1: base timecode for the project;25: 25p project; 25PD: 25p with pulldown: 30D: 30 drop frame; 30ND: 30 non-drop frame
Clip Name	Displays the name of the clip.
Timecode	Displays tracking information as timecode
Footage	Displays tracking information as feet and frames.
Frames	Displays tracking information as total frames.

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, or a bin. 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.
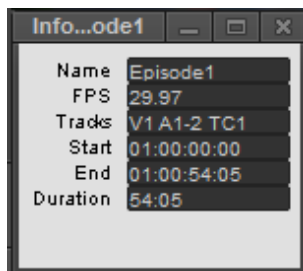
To display information from a bin:

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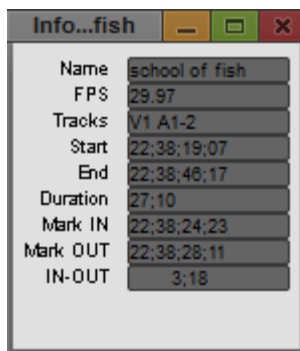
If you select more than 8 media objects, a dialog box asks if you want to open information windows for all selected items.

Using the Timecode Window

Each monitor has two lines available to display timecode as described in "Displaying Tracking Information" on page 108. In addition, the Timecode window lets you display up to 48 lines of timecode in a separate window.

When you are working with a 25p project, you can display additional timecode information in the Timecode window. The output format timecodes TC 25, TC 25P, and TC 30 are available from the Timecode menu, as are the source timecodes for clips and subclips.

To set a timecode display:

1. Select Tools > Timecode Window.

   The Timecode window opens.

2. Click the pulldown in the Timecode window, and select an option.
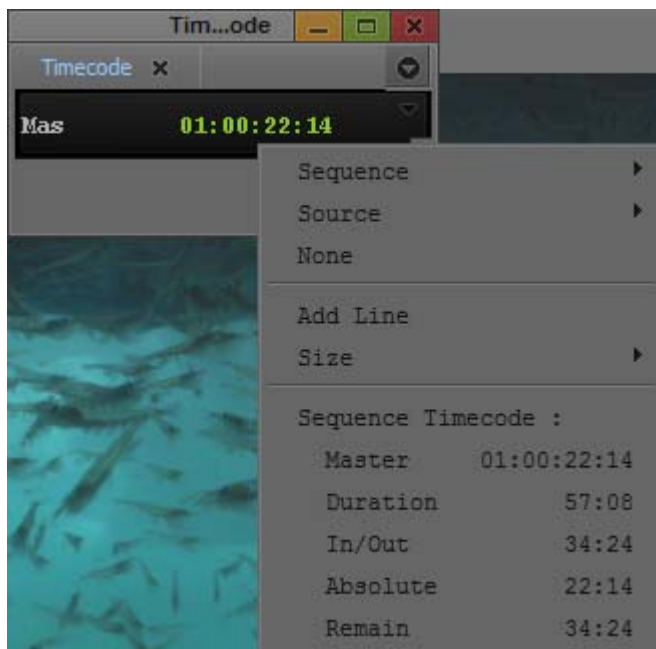
Example of a Timecode menu

3. To add an additional line of timecode, click Add Line, then click the new line and select an option.

4. To change the size of the font displayed in the Timecode window, select Size > *font size*.

5. Click the Close button to close the Timecode window.

Playing Video to a Full-Screen Monitor

The Full Screen Playback option lets you view your video on a full-screen monitor.

To enable full screen playback:

1. Make sure your system is properly set up for full-screen monitor play.

2. Check the Full Screen Playback Settings to ensure you have them set properly.

For more information, see "Full Screen Playback Settings" on page 394.

3. Select Composer > Full Screen Playback.

To disable full screen playback:

▶ Type Shift+Ctrl+F (Windows) or Shift+Command+F (Macintosh).

Using the Tool Palette

The Tool palette provides additional buttons for editing and navigating with your Avid editing application. The Tool palette buttons can appear with or without labels, and you can "tear off" the Tool palette to display it in another screen location.

You can also map other functions and buttons to the Tool palette for easy access. See "The Command Palette" on page 59.

To use the Tool palette:

1. Click the Fast Menu button in the Composer window and drag the Tool palette.
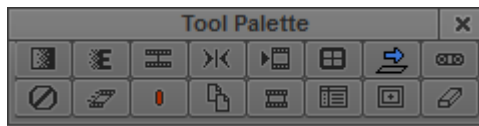
2. Click a button in the Tool palette.

Your Avid editing application performs the function associated with the button.

To view the names of the buttons in the Tool palette:

▶ Move the pointer over a button.

The name of the button appears in a ToolTip box.

To display labels on the Tool palette buttons:

1. In the Project window, double-click the Interface Setting.

The Interface Setting dialog box appears.

2. Select Show Labels in Tool Palette.

3. Click OK.

Labels appear on the buttons under the icons.

Playing Selected Clips in a Loop

You can view several clips one after another in a continuous loop by selecting Clip > Loop Selected Clips. This feature is useful if you want to view several versions of the same scene. While playing the loop, you can jump to the next clip by pressing the Tab key or jump to the previous clip by pressing Shift+Tab.

To play several clips in a continuous loop:

1. Select the clips in the bin that you want to play in a loop.

2. Select Clip > Loop Selected Clips.

The clips begin playing in the Source monitor from the IN point to the OUT point.

3. Press the space bar to stop the play loop.

If you want to play the clips from start to end, press the Alt key (Windows) or the Option key (Macintosh) while performing this procedure.

Loading and Clearing Footage

You can use several methods to load individual or multiple clips or sequences into monitors. You can also use the Clip Name menus to display or clear clips and sequences from the monitors.

Loading Clips or Sequences into Monitors

To load clips or sequences into a monitor:

1. Click the Source/Record Mode button to enter Source/Record mode.

2. Open a bin and do one of the following:

   ▶ Locate a single clip or sequence.

   ▶ Select multiple clips or sequences.

   For more information, see "Selecting Clips and Sequences" on page 72.

3. Do one of the following:

   ▶ Double-click the single clip or sequence, or any one of the selected set of clips or sequences.

   By default, the material opens in the Source or Record monitor. If you have the "Double-click loads clip in" option in the Bin Settings dialog box set to "New Pop-up Monitor," the material opens in a pop-up monitor. For more information, see "Bin Settings" on page 393.

   ▶ Alt+double-click (Windows) or Option+double-click (Macintosh) the single clip or sequence, or any one of the selected set of clips or sequences.

   By default, the material opens in a pop-up monitor. If you have the "Double-click loads clip in" option in the Bin Settings dialog box set to "New Pop-up Monitor," the material opens in the Source or Record monitor. For more information, see "Bin Settings" on page 393.

   ▶ Drag the single clip or sequence, or the selected set of clips or sequences, into the Source monitor or the Record monitor.

   ▶ Alt-drag (Windows) or Option-drag (Macintosh) a single clip into the Record monitor.

   The clip will appear at the position of the position indicator in the Record monitor.

📄 *You can also load a series of clips into the Record monitor to create an instant sequence (rough cut) by pressing and holding the Alt key (Windows) or Option key (Macintosh) while dragging the clips from the bin to the Record monitor. For more information, see "Creating an Instant Rough Cut" on page 153.*

Switching Between Loaded Clips

When you have loaded multiple clips or multiple sequences into the monitor, you will see only one clip displayed at a time. You can view an alphabetical list of the loaded clips and select an alternate clip for viewing in the Clip Name menu located above the monitor.

📄 *If you press and hold the Alt key (Windows) or Option key (Macintosh) while dragging multiple clips into the Record monitor, they appear as one sequence in the Clip Name menu. For more information, see "Creating an Instant Rough Cut" on page 153.*

To switch between clips:

1. Click the name of the current clip or sequence displayed above the monitor to reveal the Clip Name menu.

   The list in the lower portion of the menu contains a list of all the clips or sequences currently loaded in the monitor.
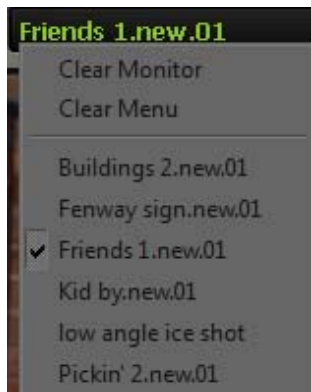
2. Select a different clip name from the menu.

   The selected clip replaces the current clip in the monitor display.

📄 *To see the list of clips or sequences sorted in the order in which they were loaded into the monitor, press the Alt key (Windows) or Option key (Macintosh) while opening the menu.*

Clearing Clips from Monitors

You can use the Clip Name menu located above each monitor to clear clips from a monitor. There are two options for clearing clips:

• Remove the displayed clip and leave the monitor black but keep the clip loaded.

• Remove all the clip names from the Clip Name menu, and leave only the displayed clip loaded.

To clear the monitor or the clip or sequence names from the menu:

1. Click the name of the clip or sequence currently displayed above the monitor to reveal the Clip Name menu.

2. Select one of the following commands:

Command	Description
Clear Monitor	Removes the displayed clip or sequence from the screen, leaving black. The clips or sequences are still loaded.
Clear Menu	Deletes the list of all loaded clip or sequence names and leaves only the clip currently displayed.

Controlling Playback

There are several ways to play, view, and cue clip and sequences:

• Instantly access frames or move through footage by using the *position indicator* within the position bar under the monitors.

• Play, step (jog), or shuttle through footage by using user-selectable buttons.

• Play, step, or shuttle by using keyboard equivalents.

• Step or shuttle by using the mouse.

You can use the methods to control clips or sequences loaded in monitors, or to play clips and sequences in the bin while in Frame view and Script view.

📄 *When viewing sequences in the Source monitor or the Record monitor, you can play only video and audio tracks that are currently monitored in the Track Selector panel.For more information, see "Understanding the Track Selector Panel" on page 207.*

📄 *If you try to play a sequence and the outline of the monitor flashes, another window is covering the monitor. Click the monitor to bring it forward, or move the window that is covering it.*

Using Position Bars and Position Indicators

You can quickly access frames or move within loaded footage by using the position indicators that appear in the position bars under the monitors (and in the Timeline when you are viewing a sequence). The position bars represent the length of the clip or sequence, and the position indicator marks your current position in the clip or sequence.
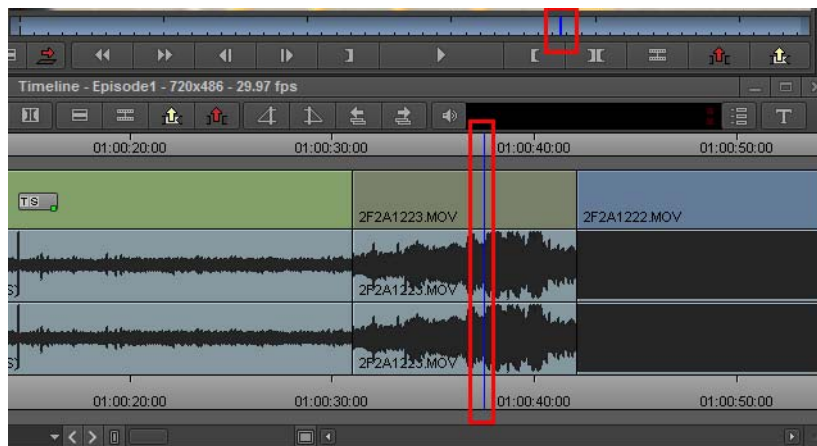
Blue position indicator in the monitor position bar (top) and in the Timeline (bottom), with the Timeline ruler above the Timeline.

To move the position indicator in the Timeline, do one of the following:

• Disable the segment tools (Lift/Overwrite and Extract/Splice-in) and click an area of the segment outside of the active trim region.

• Use the Timeline ruler.

By default, if you drag the position indicator (or scrub) through the Timeline, the media in the monitor updates quickly and smoothly. However, you do not see markers such as the start-of-clip and end-of-clip marks, sawtooth marks for In and Out points, and markers. To find a particular point of interest without viewing markers, use one of the approaches listed in the following procedure. For example, to snap to an In point in the Timeline, hold down the Ctrl key and drag the position indicator toward the In point until it stops. The position indicator will be aligned with the In point in the Timeline and the monitor displays the frame marked by the In point.

To access frames in or move through loaded footage, do one of the following:

1. If you want to use the position indicator in the Timeline to view footage, do one of the following:

   ▸ Deselect the segment tools on the Timeline palette, or click the Smart tool toggle bar to deselect all edit tools on the Timeline palette.

   ▸ Position the mouse pointer over the Timeline ruler or the Timecode (TC1) track to move through the sequence.

2. Depending on which frames in your sequence you want to access, do the following:

   ▸ To move the position indicator and access the frame at the new position, click anywhere in a monitor's position bar or in the Timeline, or drag the position indicator to the left or right in a monitor's position bar or in the Timeline.

   The speed with which you drag the position indicator determines the speed at which you move through the footage.

   ▸ To go directly to the beginning or end of a clip or sequence, click to the far left or far right of the position bar or the Timeline.

   ▸ To snap to the nearest transition, edit mark, marker, or audio keyframe, Ctrl-click (Windows) or Command-click (Macintosh) between the position indicator and that transition, mark, marker, or keyframe, or Ctrl-drag (Windows) or Command-drag (Mac) the position indicator toward that transition, mark, marker, or audio keyframe.

   If the Position Bar Snap option is enabled in the Timeline Settings, clicking in the Timeline snaps to the nearest transition. If this option enabled, you need to use a modifier key (Ctrl) Windows, Command (Mac) to scrub between transitions.

   ▸ To snap to the last frame before the nearest transition, edit mark, marker, or audio keyframe, Ctrl+Alt-click (Windows) or Command+Option-click (Macintosh) between the position indicator and that transition, mark, marker, or keyframe, or Ctrl+Alt-drag (Windows) or Command+Option-drag (Macintosh) the position indicator toward that transition, mark, marker, or audio keyframe.

   You can select the Use Fast Scrub setting to always display markers while scrubbing; however, with this option selected, the media in the monitor might update more slowly.

To display markers when scrubbing:

▸ In the Settings list, double-click Timeline and deselect Use Fast Scrub.

When the Fast Scrub option is selected in an HD project, some effects are not displayed. Deselect this option to view all effects.

📄 *You can create a Timeline setting that has this option deselected and then easily switch between the settings. For information on duplicating settings, see "Duplicating Settings" on page 391.*

Playback Control Buttons

You can use the buttons that appear below the Source and Record monitors and in the pop-up monitors to play and step through your footage.

You can also use additional buttons available in the Command palette to control playback. You can remap Command palette buttons onto some existing button locations (for example, in the Tool palette) or to the keyboard. For more information about mapping user-selectable buttons, see "Understanding Button Mapping" on page 60.

The following table describes the common playback control buttons:

	Button	Primary Default Location	Function
▶	Play	Monitors	Plays the footage at normal speed. Changes to the Stop button when playback is taking place.
❚❚	Stop	Play tab in Command palette	Stops playback. Changes to the Play button when you have stopped playback.
❚❚	Pause button	Play tab in Command palette	Pauses playback.
◀	Play Reverse button	Play tab in Command palette	Plays the footage backward at normal speed.
▶▶	Fast Forward button	Monitors	Cues the footage to the next transition in the sequence.
◀◀	Rewind button	Monitors	Cues the footage to the previous transition in the sequence.
╱	Play Standby button	Play tab in Command palette	Places play in standby mode to prepare for playback. This is especially useful for long sequences. **To play in standby mode:** 1. Click the Play Standby button. The button under the Source or Record monitor blinks yellow. 2. Click anywhere to play the sequence.
◀❙	Step Backward button	Monitors	Moves the footage one frame backward. • Press and hold the Alt key (Windows) or Option key (Macintosh) while clicking the button to move 10 frames (NTSC and PAL) or 8 frames (24p) backward.
❙▶	Step Forward button	Monitors	Moves the footage one frame forward. • Press and hold the Alt key (Windows) or Option key (Macintosh) while clicking the button to move 10 frames (NTSC and PAL) or 8 frames (24p) forward.

	Button	Primary Default Location	Function(Continued)
	Step Backward 10-frames or 8-frames button	Move tab in Command palette	Moves the footage 10 frames backward (NTSC or PAL) or 8 frames backward (progressive formats).
	Step Forward 10-frames or 8-frames button	Move tab in Command palette	Moves the footage 10 frames forward (NTSC or PAL) or 8 frames forward (progressive formats).

Playback Control Using the Keyboard

Many playback functions, including most of the playback controls covered in , are mapped to keys on your keyboard. You can customize the keyboard by mapping buttons or menu commands to it from the Command palette, for example to add other playback functions.

Default keyboard mappings vary, depending on the type of keyboard attached to your Avid system. The information in this topic describes default keyboard mappings for playback control for a keyboard used in the United States. If an Avid-supported international keyboard is attached to your Avid system, the default keyboard mappings match that keyboard.

For more information on keyboard settings and keyboard mapping, see the following topics:

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-
-

The following table describes the default keyboard mappings for basic playback control for a keyboard used in the United States:

	Keys	Function
	• Left quote or tilde key (above Tab key) • Tab key • 5 key • Space bar	Start and stop playback
	1, 2, 3, and 4 keys	• 1 key—moves the footage 10 frames backward (NTSC or PAL) or 8 frames backward (progressive formats) • 2 key—moves the footage 10 frames forward (NTSC or PAL) or 8 frames backward (progressive formats) • 3 key—moves the footage 1 frame backward • 4 key—moves the footage 1 frame forward

	Keys	Function
	Home, End, Left Arrow, and Right Arrow keys	• Home key—move to the beginning of a clip or sequence
		• End key—move to the end of a clip or sequence
		• Left Arrow key—moves the footage 1 frame backward
		• Right Arrow key—moves the footage 1 frame forward
	J, K, and L keys	Let you play, step, and shuttle through footage at varying speeds. For more information, see "Playing Footage with the J-K-L Keys (Three-Button Play)" on page 121

Playing Footage with the J-K-L Keys (Three-Button Play)

The J-K-L keys on the keyboard let you play, step, and shuttle through footage at varying speeds. This feature, also referred to as three-button or variable-speed play, lets you use three fingers to manipulate the speed of playback for greater control.

You can also use the J-K-L keys to perform smooth audio scrubbing of selected tracks. For more information, see "Performing Smooth Audio Scrub" on page 254.

To shuttle through the footage using the J-K-L keys on the keyboard:

1. Do one of the following:

   ▶ Load a clip or sequence into the Source or Record monitor.

   ▶ Open a pop-up monitor.

   ▶ Select a clip in a bin in Frame view.

2. Use the following keys to shuttle at varying speeds:

   ▶ Press the L key to move forward through the footage at normal speed.

   ▶ Press the L key multiple times to move forward through the footage at faster speeds, as described in the following table:

Press the L Key	To Play Footage at	NTSC Rate	PAL Rate	24p Rate
2 times	2x normal speed	60 fps	50 fps	48 fps
3 times	3x normal speed	90 fps	75 fps	72 fps
4 times	5x normal speed	150 fps	125 fps	120 fps
5 times	8x normal speed	240 fps	200 fps	192 fps

   ▶ Press the J key to move backward at the same shuttle speed increments.

   ▶ Press the K and L keys together for slow forward

   ▶ Press the K and J keys together for slow backward.

   ▶ Press and hold the K key and tap the L key or the J key to step through footage one frame at a time.

To slow or change play direction one speed at a time:

▶ Press Alt (Windows) or Option (Macintosh) while you tap the J or L key.

Play slows or changes direction one speed at a time from the speed at which you are currently playing.
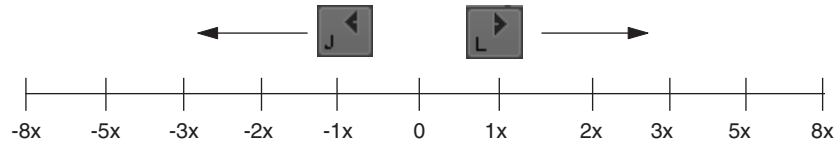
For example, you are shuttling backward with the J key at 2x normal speed. Press and hold Alt and tap the L key once. Play slows to backward at normal speed (1x speed). Hold Alt (Windows) or Option (Macintosh) and tap L once again. Play stops. Continue to hold Alt (Windows) or Option (Macintosh) and tap L once again. Play goes forward at normal speed. Continue to hold Alt (Windows) or Option (Macintosh) and tap L once again. Play goes forward at 2x normal speed. Continue to hold Alt (Windows) or Option (Macintosh) and tap L once again; play goes forward at 3x normal speed. Release the keys to continue playing forward at 3x normal speed.

To pause shuttling:

▶ Press the K key.

To stop shuttling:

▶ Press the space bar.

Using the Mouse for Playback

You can use the mouse for one-handed control of playback. You can either jog or shuttle by using the mouse.

To jog or shuttle by using the mouse:

1. Do one of the following:

   ▶ Load a clip or sequence into the Source or Record monitor.

   ▶ Open a pop-up monitor.

   ▶ Select a clip in a bin in Frame view.

2. Do one of the following:

   ▶ Press the N key to activate mouse control for jogging.

   ▶ Press the semicolon (;) key to activate mouse control for shuttling.

   ▶ Click the Mouse Jog button, which is available in the Play tab of the Command palette and can be mapped to any button under the Record monitor.

   ▶ Click the Mouse Shuttle button, which is available in the Play tab of the Command palette and can be mapped to an editing button under the Record monitor.

3. Move the mouse to the right to jog or play forward or to the left to jog or play backward.

To pause shuttling with the mouse:

▶ Click the mouse button.

To quit jogging or shuttling with the mouse:

▶ Double-click the mouse button or press the space bar.

Video Quality Options for Playback

Your Avid editing application provides a range of video quality options for playback. Depending on your system configuration and the complexity of your sequence, you might need to switch to a lower quality option to avoid missing frames or choppy video during real-time playback.

The options available vary depending on your attached hardware. Some third party hardware might not support Draft Quality and Best Performance options.

Your Avid editing application also provides an option that improves image quality during playback of mixed-format sequences where material requires resizing. You might need to deselect this option to avoid missing frames or choppy video during real-time playback.

The first of the following tables describes the video quality options. The second of the following tables lists the options available for each configuration.

Video Quality Name and Icon	Description
Full	Processes and plays the full image raster for the project. Uses a bit depth of 8 bits.
	This option provides the highest video playback quality by processing every image pixel. In interlaced projects, this option processes the full width of every line in both fields. In progressive projects, this option processes the full width of every scan line.
Draft	Processes and plays a subsample of the full image raster for the project that uses 1/4 of the image information. Uses a bit depth of 8 bits.
	This option subsamples 50% of the raster width. For interlaced projects, this option uses one field. For progressive projects, this option uses 50% of the scan lines.
Best	Processes and plays a subsample of the full image raster for the project that uses 1/16 of the image information. Uses a bit depth of 8 bits.
	This option subsamples 25% of the raster width. For interlaced projects, this option uses 50% of the lines in one field. For progressive projects, this option uses 25% of the scan lines.

Setting the Video Quality for Playback

To set the video quality for playback:

1. Do one of the following:

   ▶ Click the Video Quality Menu button to cycle through the video quality options available until the button icon indicates the video quality you want.

   ▶ Right-click the Video Quality Menu button, and select a video quality option.

   For detailed information on the video quality options, see "Video Quality Options for Playback" on page 123.

Marking and Subcataloging Footage

You can speed the editing process by marking clips with IN and OUT points, by subcataloging using markers, and by creating subclips. When subcataloging, you might want to create or open additional bins for storing and isolating specific subclips, marked clips, or sequences, as described in "Using the Bins Tab" on page 46.

Marking IN and OUT Points

You can mark IN and OUT points in your footage to indicate selected material, for example, the portion of a clip that you want to edit into a sequence. You can also easily clear or move these marks.

You can mark IN and OUT points for your clips while in the bin, which provides several advantages:

- You can quickly build a sequence by splicing the marked clips into place one after another.

- You can use the process of rough-cut or *storyboard* editing, which lets you instantly splice several prepared clips into a sequence, as described in "Creating an Instant Rough Cut" on page 153.

- You can play back and mark clips in the bin before loading a single clip, saving several steps. Use Frame view or Script view to play back and mark clips in a bin.

Even if your marks are not accurate now, your Avid editing application lets you trim the edit points and fine-tune the sequence later without reediting the material.

To mark IN and OUT points:

1. Load a clip or sequence from a bin into a monitor, or select a clip in the bin (Frame view or Script view).

2. Play, step, or shuttle through the material. Use the J-K-L keys when playing a clip in a bin (Frame view or Script view).

   For more information on the J-K-L keys, see "Playing Footage with the J-K-L Keys (Three-Button Play)" on page 121.

3. Mark an IN point by doing one of the following:

   ▶ Click the Mark IN button under the monitor to mark an IN point and stop playback.

   ▶ Press the Mark IN key when marking a clip in a bin. (The Mark IN key does not stop playback.)

      By default on United States keyboards, the Mark IN key is the I key.

   In the monitor, a Sawtooth icon appears on the left to indicate the mark IN frame.
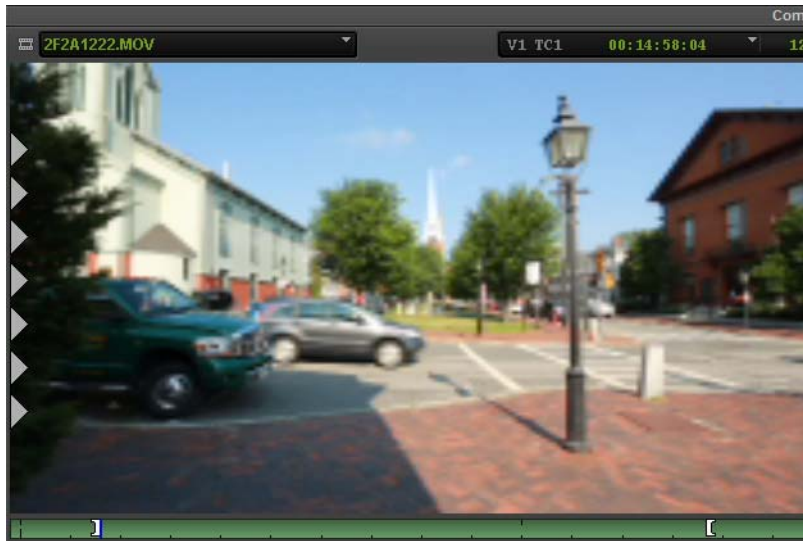
Sawtooth icon in the frame, and marked IN point, in the monitor

4. Continue moving through the material.

5. Mark an OUT point by doing one of the following:

▶ Click the Mark OUT button under the monitor to mark an OUT point and stop playback.

▶ Press the Mark OUT key when marking a clip in a bin.

By default on United States keyboards, the Mark OUT key is the O key.

In the monitor, a Sawtooth icon appears on the right to indicate the mark OUT frame.

To clear the IN point, do one of the following:

▶ Click the Clear IN Mark button.

▶ Press the Clear IN Mark key.

To clear the OUT point, do one of the following:

▶ Click the Clear OUT Mark button.

▶ Press the Clear OUT Mark key.

To clear both the IN and OUT points:

▶ Click the Clear Both Marks button.

▶ Press the Clear Both Marks key.

To set a new IN point:

▶ Click the Mark IN button or press the Mark IN key when you reach a different frame.

To set a new OUT point:

▶ Click the Mark OUT button or press the Mark OUT key when you reach a different frame.

To move a mark icon:

▶ Press the Alt key (Windows) or the Option key (Macintosh), drag the mark icon to a new location, and release the mouse button.

Marking an Entire Clip or Segment

Use the Mark Clip button to select an entire clip or an entire segment from a sequence. (A *segment* in a sequence consists of the material between any two edit points.) The Mark Clip button chooses a segment between the first set of edit lines that line up on all the selected tracks.

> *To ignore the current track selection and mark the material between the two nearest edit points at the current position in the sequence, press and hold the Alt key (Windows) or Option key (Macintosh) while you click the Mark Clip button.*

To mark an entire clip or segment:

1. Load a clip or sequence into a monitor.

2. In a sequence, move the position indicator to the segment that you want to mark.

3. In the Track Selector panel in the Timeline, select the tracks corresponding to the cuts you want to mark.

   For more information, see "Understanding the Track Selector Panel" on page 207.

4. Click the Mark Clip button.

Creating Subclips

When you mark footage with IN and OUT points, either you can save the entire clip along with the new marks, or you can create subclips based on the marks you set to break up longer master clips into smaller segments of selected footage. This procedure is similar to creating a pull reel of the selects or circle takes of your best footage before editing.

Subclips do not directly reference the original media. Subclips remain linked to the master clips from which they are created, and the master clips, in turn, reference the captured media files located on your media drives. As a result, none of the original footage is lost.

In most projects, subclips do not limit your access to the original, captured master clip material when trimming. Therefore, if you must trim beyond the marked IN to OUT boundaries of the subclip to make it longer or shorter, your Avid editing application accommodates the boundary adjustments during the trim.

New subclips appear in bins with a distinct subclip icon and with a numbered *.Sub* file name extension.
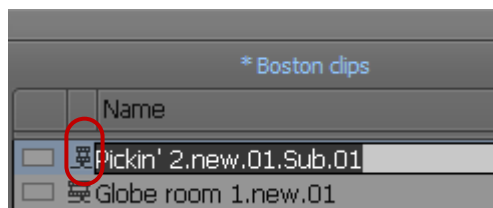
A subclip in Text view in the bin

To create subclips:

1. Load a clip into a monitor and mark the material from which you want to create the subclip.

   For more information, see "Marking IN and OUT Points" on page 124.

2. Do one of the following:

▶   Press and hold the Alt key (Windows) or Option key (Macintosh), and then drag the picture
    from the monitor to the bin in which you want to store the subclip.

▶   Click the Create Subclip icon, located above and to the side of the Source monitor, and drag
    it to the bin in which you want to store the subclip.
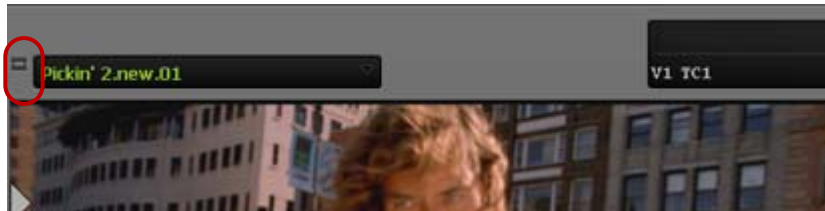
Create Subclip icon in the monitor

The Create Subclip icon changes to an icon of a hand pointing at a frame during the drag,
and then becomes a Subclip icon when you release the frame in the intended bin.

▶   Click the Make Subclip button in the Edit tab of the Command palette.

    Your Avid editing application creates the subclip and places it in the active bin.

▶   Press the Alt key (Windows) or the Option key (Macintosh) while you click the Make
    Subclip button.

    Your Avid editing application creates the subclip and opens a dialog box that lets you select
    the destination bin for the subclip.

Creating Subsequences

You can use IN and OUT marks to create a new, shorter sequence from an existing sequence. This
subsequence becomes an independent sequence and you can edit it in the same way you edit any
other sequence.

To create a subsequence:

▶   Click the Create Subsequence icon located above and to the side of the Record monitor, and drag
    it to the bin in which you want to store the subsequence.

    The new subsequence appears in the bin, with a numbered *.Sub* file name extension.

Marking Audio Clips

You can mark audio and video separately for an edit by using the Audio Mark buttons. This feature is
useful for creating an overlap edit for an audio clip.

You can map the Audio Mark buttons from the Edit tab of the Command palette. For information on
mapping buttons, see “Understanding Button Mapping” on page 60.

To mark IN and OUT points on audio tracks:

1. Load a clip or sequence into a monitor.

2. In the Track Selector panel in the Timeline, select the tracks corresponding to the cuts you want
    to mark.

    For more information, see “Understanding the Track Selector Panel” on page 207.

3. Move the position indicator to the location where you want to mark the audio clip.

4. Do one of the following:

▸ Click the Audio Mark IN button to mark an IN point.

▸ Click the Audio Mark OUT button to mark an OUT point.

The Audio Marks appear in the Timeline and in the position bar beneath the monitors.

To remove audio IN and OUT points:

▸ Shift+click the Clear IN Mark, Clear OUT Mark, or Clear Both Marks button.

Using Markers

Markers are a type of electronic bookmark. They let you find and identify specific frames during editing. Keywords that you enter in the comments attached to a marker let you use standard Find procedures to call up the clips quickly. You can display information about the markers using the Markers window. For more information about the Markers window, see "Using the Markers Window" on page 133.

There are eight Add Marker buttons in the More tab of the Command palette. Each Add Marker button is a different color, which lets you group markers by color. For example, you can use the red Add Marker button to identify color correction frames and use the blue Add Marker button to identify cutaway shots.

You can map Add Marker buttons, as described in "Understanding Button Mapping" on page 60.

Suggested Uses for Markers

The following table describes some possible uses for markers and the Markers window:

Use	Description
Color correction notations	Use markers to mark clips or specify frames that require color correction, noting the specific correction to perform if someone else does the job.
Visual track alignments	Use markers at matching points in synchronized audio and video tracks so that if the tracks lose sync, you can visually realign the markers in the Timeline to restore sync. For more information on sync, see "Working with Multiple Tracks" on page 207.
Music cues	Use markers to mark the IN and OUT points for music.
Audio information sent to Avid Pro Tools	Use markers to mark places in the sequence for advanced audio editing in Pro Tools or to indicate video data useful to your Pro Tools editor.
Trim markers	Use markers in the Timeline to return directly to an edit you have designated for further trimming at a later time.
Cutaway markers	Use markers to identify cutaway shots with comments so that when you return to cover jump-frame edits with cutaway footage, you can quickly call up the shots using basic Find procedures.
Replace markers	Use markers to mark filler segments with comments to identify the items that should replace the filler.
Semi-permanent IN or OUT points	Use markers with the Mark Markers button to put multiple sets of markers on a long clip, and so on.

Use	Description
Viewing reviewer comments	Use the Markers window to view reviewer comments and the specific frame. See "Using the Markers Window" on page 133.
Print a list of reviewer comments	Use the Markers window to print a list of changes or comments that you can distribute to other people in the production. See "Using the Markers Window" on page 133.

When you insert a marker, it appears as an oval in the Timeline, in the position bar, and at the bottom of the frame in the monitor. The color of the oval corresponds to the color of the marker button you used.
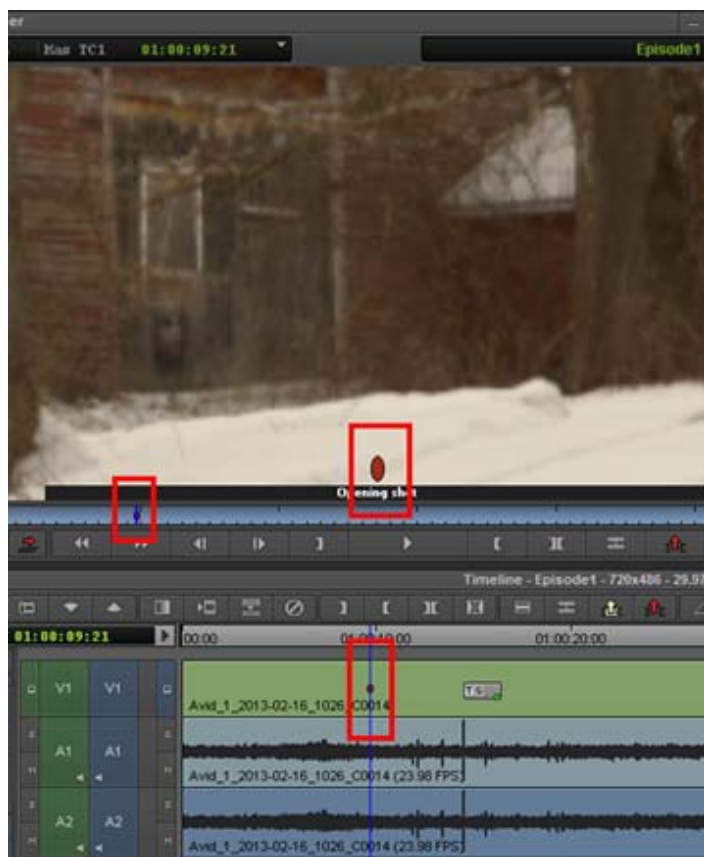
Example of a marker in the monitor, position bar and in the Timeline

You can add markers to your source material while you are in an editing session, as described in "Adding Markers While Editing" on page 129.

Adding Markers While Editing

To add markers and comments while in an editing session:

1. Load a clip or sequence.

2. (Option) Select a specific track by using the Track Selector panel.

   See "Understanding the Track Selector Panel" on page 207.

3. Cue to the frame, and click an Add Marker button.

The Add Marker buttons are in the More tab of the Command palette.

The Marker edit entry window opens. The marker name, color, frame, and track information appear. By default, the marker name is the user name logged onto your system.

The following illustration shows the Marker edit entry window.
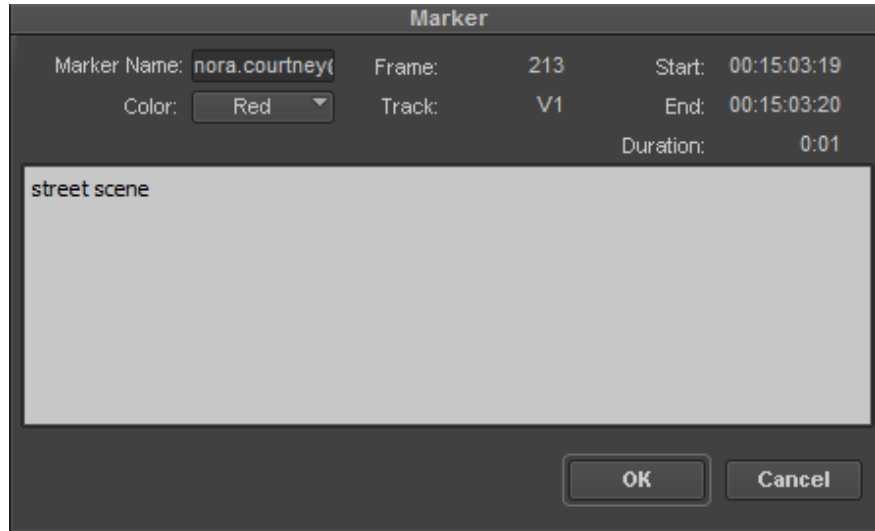
Marker edit entry window

4. (Option) Type a new name in the Name text box.

5. Type your comments in the comment area of the Marker edit entry window.

6. Change the color from the Color menu or change the marker name.

   The colors are listed in order of priority, with Red being the highest priority. If you choose to display the Marker column in the Bin Heading, the highest priority marker is displayed in the column.

7. To save your information, click OK, or press the Enter key.

   The information is stored with the marked frame. The marker oval appears in the Timeline, in the position bar, and at the bottom of the frame in the monitor.

Adding Markers On-the-Fly while Playing

To add markers on-the-fly while playing:

1. Load a sequence or clip.

   See "Loading and Clearing Footage" on page 115.

2. (Option) Select a specific track, using the Track Selector panel.

   See "Understanding the Track Selector Panel" on page 207.

3. Map the Add Marker button to a key by doing the following:

   a. Open the Command Palette, click the More tab, and select Button-to-Button Reassigment.

   b. In the Settings list of the Project window, double-click Keyboard.

   c. Drag an Add Marker button to a key on the Keyboard palette.

   For more information about mapping buttons to keys, see "Mapping User-Selectable Buttons" on page 61.

4. Click the Play button, and every time you want to add a marker, press the key to which you mapped the Add Marker button.

5. (Option) Map different Add Marker buttons to different keys to be able to add more than one color of marker.

To add comments to the markers:

1. Stop playing.

2. Do one of the following:

   ▶ Double-click the marker in the position bar under the monitor.

   ▶ Click the large oval on the frame in the monitor.

   A Marker edit pane opens. The marker name, color, frame, and track information appear. By default, the marker name is the user name logged onto your system.

3. (Option) Type a new name in the Name text box.

4. Type your comments in the comment area of the Marker edit pane.

5. (Option) Change the color from the Color menu or change the marker name.

6. To save your information, click OK, or press the Enter key.

   The information is stored with the marked frame. The marker oval appears in the Timeline, in the position bar, and at the bottom of the frame in the monitor.

To keep the Marker edit pane from opening:

1. Select Tools > Markers.

   The Markers window opens.

2. Select Disable Markers Popup from the Fast menu.

   The Marker edit pane now does not open even if you double-click a marker.

Finding Markers

To quickly go to a frame with a marker while editing:

▶ Search for a particular comment by selecting Edit > Find.

Finding Marker Comment Text

You can search for text within the Marker Comment field across all sequences and master clips within the project, including opened or closed bins.

To search for Text within Markers:

1. Press Ctrl+F (Windows) or Cmd+F (Macintosh), or select Edit > Find.

   The Find window opens.
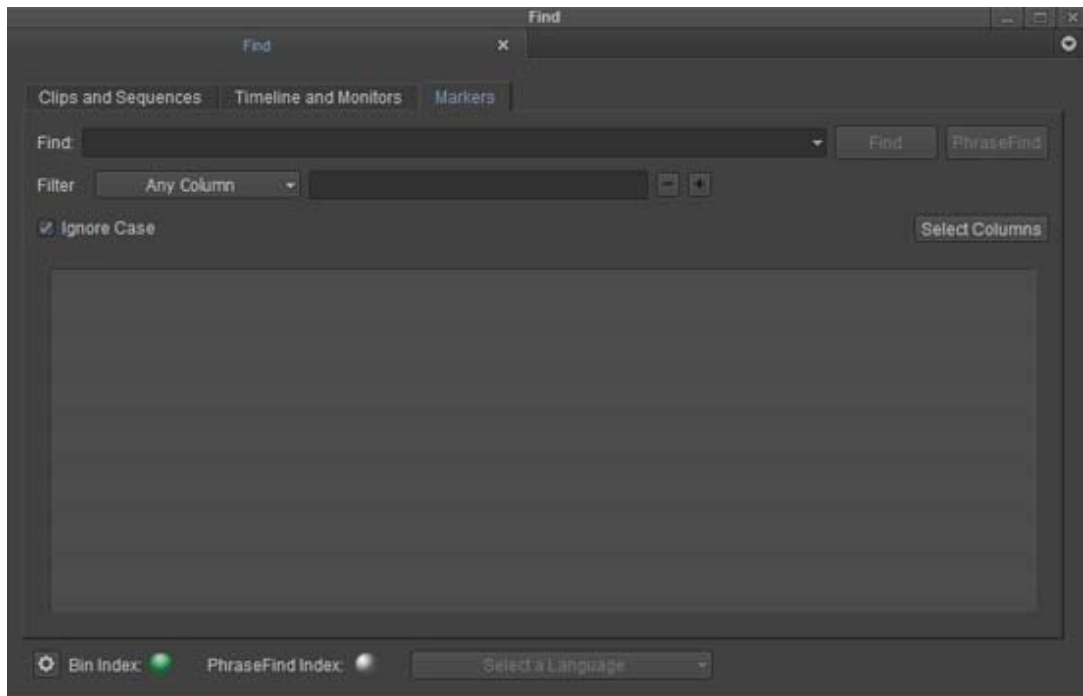
2. Click the Markers tab.

3. Type a word or phrase that you want to use as search criteria in the Find text box.

4. (Option) To refine the number of results, you can enter additional criteria in the filters. Select a specific column from the Filter menu that you would like to search in, then enter additional text relating to that column. The column you are searching on does not have to display in the bin.

5. (Option) Click the "+" button to add additional filters. Click the "-" button to remove filters.

6. (Option) Select Ignore Case if you want the system to search for the text regardless if it is upper or lower case characters.

7. Click Find or press Enter.

   The application searches the bins (open or closed) in the project. Any markers containing the word or phrase entered appear in the Results window.

To change the columns displayed in the Results window, click Select Columns and select the columns to display.

8. Double-click a Marker in the results window to load the respective master clip or sequence into the source monitor and position the blue bar at the selected Marker.

Editing Marker Information

You can open the Marker edit entry window directly from a monitor, from the position indicator bar, or from the Markers window. In the Marker edit entry window, you can change the color of a marker, the marker name, or the text of the comment associated with a marker.

To edit Marker information in the Marker edit entry window:

1. Do one of the following:

2. Click the oval Marker icon in the Source or Record monitor.

3. Double-click the marker in the position indicator bar.

4. In the Markers window, right-click a marker item, and then select Edit Marker.

   The Marker edit entry window opens.

5. Do one or more of the following:

   ▶ Select from the Color menu to change the color of the Marker icon.

   ▶ Type a new marker name.

   ▶ Enter new text or update the current text comment.

6. Click OK.

Marking an Area Using Markers

You can mark the area between two markers by using the Mark Marker button.

To mark the area between two markers:

1. Move the position indicator between two markers.

2. Click the Mark Markers button in the Edit tab of the Command palette.

   The area between the two markers is selected.

Moving to the Previous or Next Marker

You can move to a frame marked by a marker by using the Go to Previous Marker button or the Go to Next Marker button.

To move to the previous marker:

▶ Click the Go to Previous Marker button in the Move tab of the Command palette.

To move to the next marker:

▶ Click the Go to Next Marker button in the Move tab of the Command palette.

Deleting Markers

You can delete markers using the Delete key, or the Markers window.

To delete a single marker:

1. Select a marker in the Timeline or in the position bar.

2. Press the Delete key.

   The selected marker is removed.

To delete markers using the Markers window.

▶ See "Working in the Markers Window" on page 135.

Using the Markers Window

The Markers window lets you quickly add comments, go to marker marks, copy and paste markers, export and import markers, delete markers, and print a list of markers in the currently loaded clip or sequence. Many features of the Markers window are similar to those of the Bin window.

You can use the Markers window to:

- Go to the marker in the sequence or clip.
- Find frame, timecode, and footage information about each marker.
- Modify and sort the display.
- Display frames for easy visual reference.
- Change the color of the Marker icons.
- Move a marker from one track to another
- Delete a single marker or multiple markers.
- Export markers to send out as a review and approval file.
- Print the Markers window.

   This is especially useful for identifying and listing specific frames to be used in an effect, for example. You can also make a list of IN and OUT points for adding music.

- Copy and paste markers from one clip or sequence to another.

The following illustration shows a Markers window with three markers.
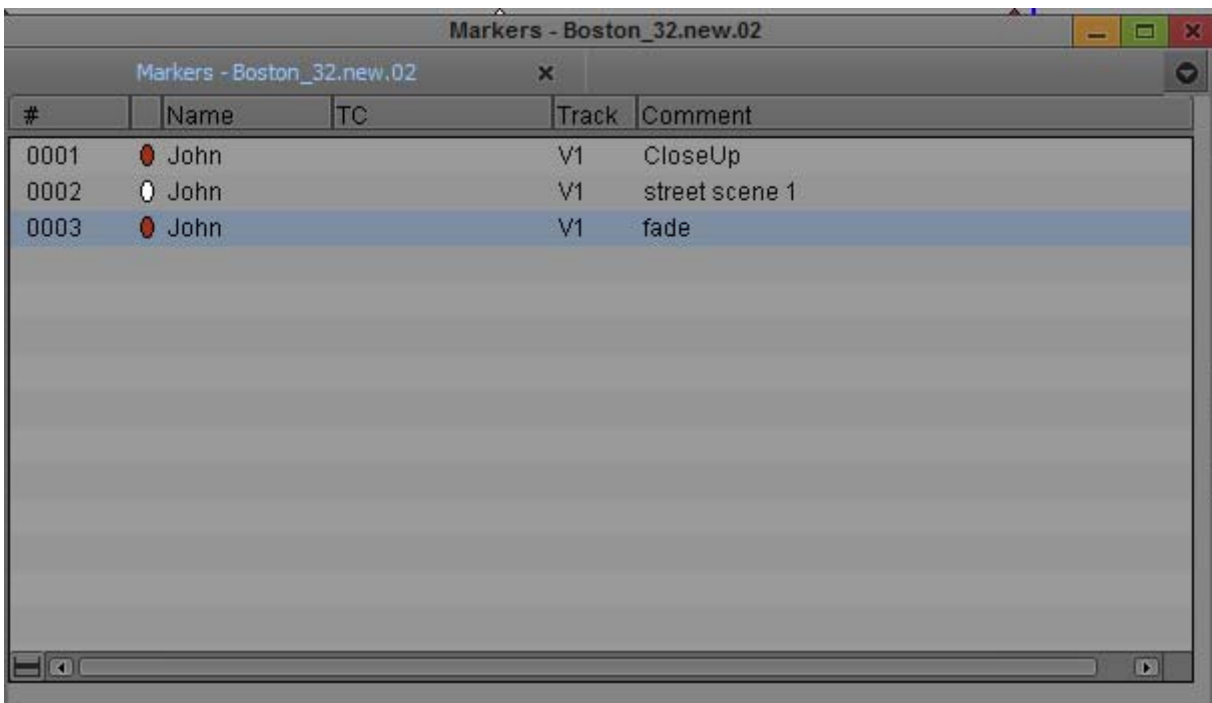
Viewing Markers in the Markers Window

The Markers window is monitor specific. If you have selected the Source monitor, the Markers window displays the markers for the clip in the Source monitor. If you have selected the Record monitor, the Markers window displays the markers for the sequence in the Record monitor.

To view markers in the Markers window:

1. Load the sequence containing the markers.
2. Do one of the following:

▶ Right-click the Source or Record monitor and select Markers.

▶ Select Tools > Markers.

Working in the Markers Window

You can perform a number of basic procedures in the Markers window. You can select markers, go to the frame marked by a marker, display marker frames or additional information, sort markers, change marker column widths, change marker colors, and delete markers.

You can also:

• Export and import markers

For more information, see "Exporting and Importing Markers" on page 136.

• Print the contents of the Markers window

For more information, see "Printing the Contents of the Markers Window" on page 137.

To select a marker item:

▶ Click anywhere in the marker item's row except in the Comment column.

To browse through the list of marker items:

▶ Press the Up Arrow and Down Arrow keys.

To go to the frame marked by a marker item:

▶ Double-click the marker in the Markers window.

▶ Right-click the marker, and select Jump to Marker.

To display the frame associated with a marker:

▶ Right-click, and select Show Images.

To display a timecode column, a footage column, or a frame number column in the Markers window:

▶ Right-click, and select Display > Frame Number, Timecode, or Footage.

To sort markers:

1. Click the heading of the column that you want to sort.

2. Right-click, and select Sort Column (to sort in ascending order) or Reverse Sort Column (to sort in descending order).

To change column widths:

1. Click the heading of the column that you want to resize.

2. Right-click, and select Enlarge Column or Reduce Column.

To change the color of a Marker icon:

▶ Right-click the marker icon, select Change Marker Color, and select a color.

To move a Marker from one track to another:

▶ Right-click the marker icon, select Change Track, and select a track.

To delete markers:

1. Click a marker item, or Ctrl+click (Windows) or Command+click (Macintosh) multiple marker items.

2. Press the Delete key.

Exporting and Importing Markers

You can export markers from a sequence or a clip. A text (.txt) or XML (.xml) file is created when you export the marker and a tab-delimited file or XML file displays all the information about the marker. You can then send the .txt or .xml file to those who need to review and give feedback about the sequence or clip. They can place additional comments in the text file or XML file and send it back for you to reimport the marker comments back into your sequence.

📝 *You can also import the text file into a spreadsheet program, such as Excel.*

You can also use the Markers window to import markers back into your sequence.

To export markers:

1. From the Markers window, right-click and select Export Markers and select Text or XML.

   A dialog box opens, asking if you want to export only the selected markers or export all markers.

2. Click All or Selected.

   The Choose location for Exported Markers dialog box opens.

3. Type a file name and click Save.

   The marker is saved as a either text file (.txt) or XML (.xml) file.

To import markers.

1. With a sequence loaded in the Record monitor, right-click and select Markers.

2. From the Markers window, right-click and select Import Markers.

   The Import dialog box opens.

3. From Files of type, select the tab-delimited file or Text/XML file containing the markers you want to import, and then click Open.

4. (Option) Another way to import a marker file is to select the tab-delimited marker file or the xml file and drag it into the Markers window.

Creating a Marker Text (.txt) File

You can create a Marker text file if you don't have access to an Avid system. This lets you make timecode-specific comments offline and give them to an editor to import into a sequence. The Marker text file is a tab-delimited file which must be created with certain parameters. This file can be edited in a text editor application or in a spreadsheet program. The Marker text file can be exported from or imported into the Markers window. See "Exporting and Importing Markers" on page 136.

The fields in the tab-delimited file are required and must be in the order shown in the following procedure. The following lines are examples:

```
John<tab>203<tab>V1<tab>red<tab>Correct tint

Mary<tab>354<tab>A1<tab>blue<tab>A voice-over
```

To add comments or information into the Marker text file:

1. Type each line of the file using the following syntax:
   `Name<tab>Frame<tab>Track<tab>Color<tab>Comment`

2. Enter the color names as follows: `red, green, blue, cyan, magenta, yellow, black, white`

3. Enter the track names as follows: `V1, V2, V3, etc, A1, A2, TC1`

Printing the Contents of the Markers Window

You can print the complete contents or the current view of the Markers window.

📄 *If you select Show Images to display the frame associated with each marker and you want to print the frames, you must use the procedure for printing the current view of the Markers window. Printing the complete contents does not print the frames.*

To print the current view of the Markers window:

1. Make sure your printer is correctly set up.

2. Expand the view of the Markers window to display the information you want to print.

3. Select File > Page Setup.

   The Page Setup dialog box opens, reflecting the specific options for your printer.

4. Select the Page Setup options.

5. Click OK.

6. Select File > Print.

   The Print dialog box opens, reflecting the specific options for your printer.

7. Select the Print options.

8. Click OK (Windows) or Print (Macintosh).

   The system prints the current view of marker information.

To print the complete contents of the Markers window:

1. Make sure your printer is correctly set up.

2. Click the Markers window to make it active.

3. Press Ctrl+Alt+P (Windows) or Command+Option+P (Macintosh) to place the marker information in the Console window.

4. Select Tools > Console.

   The Console window opens.

5. Select File > Page Setup.

   The Page Setup dialog box opens, reflecting the specific options for your printer.

6. Select the Page Setup options.

7. Click OK.

8. Select File > Print.

   The Print dialog box opens, reflecting the specific options for your printer.

9. Select the Print options.

10. Click OK (Windows) or Print (Macintosh).

    The system prints the marker information displayed the Console window.

Disabling the Marker Edit Window

If you want to add markers without including comments, you can modify the behavior of the Marker edit window so that it does not open each time you create a new marker. This lets you add markers quickly and then edit marker information later.

📄 *This option is selected by default if you upgraded your Avid editing application from a previous version where the "Disable Markers Popup" option was selected.*

You can also disable the Marker edit window so it only opens from the Markers window. For information on accessing the Marker edit window, see "Editing Marker Information" on page 132.

To keep the Marker edit window from opening each time you add a marker:

1. Select Tools > Markers.

   The Markers window opens.

2. Select Disable Marker Popup when Adding from the Fast menu.

   The Marker edit window now does not open when you add markers.

To keep the Marker edit window from opening:

1. Select Tools > Markers.

   The Markers window opens.

2. Select Disable Marker Popup Always from the Fast menu.

   The Marker edit window now does not open even if you double-click a marker.

Finding Frames, Clips, and Bins

Once you have captured, viewed, marked, and subcataloged numerous clips for a project, you might have difficulty relocating specific clips or frames among several bins. Your Avid editing application provides a number of features for quickly locating and cueing footage, including conventional timecode and frame-offset techniques, text searches, and Match Frame and Find Bin commands.

Using Timecode to Find a Frame

You can cue a loaded clip or sequence to a specific frame by typing timecode values with the numeric keypad on the right side of the keyboard. In addition, you can cue backward or forward from the current location in the clip or sequence by a specified number of minutes and seconds, or feet plus frames, by using positive or negative frame-offset values.

The system interprets the numbers you type with the numeric keypad according to the type of tracking format you have selected from the Tracking Information menu (timecode or frames). If you have two rows of information displayed above the monitor, the system looks at the top row. For more information on selecting the display of tracking information, see "Displaying Tracking Information" on page 108.

To use timecode to find a frame, the top row of information must include timecode, for example, V1.

To cue to a frame based on a known timecode:

1. Click the monitor that is displaying the clip or sequence you want to search.

2. Select a timecode tracking format from the Tracking Information menu that appears above the monitor.

   If two rows of information are displayed above the monitor, make sure the timecode format is in the top row.

3. (Option) If you are using a notebook computer or a keyboard that does not have a dedicated numeric keypad, press and release the left Control key twice quickly.

   This lets you enter timecode using standard keys on the keyboard, such as the number keys and the Enter key.

4. Enter the timecode for the frame by using the numeric keypad on the right side of the keyboard.

   If you have performed step 3 on a notebook computer or a keyboard that does not have a dedicated numeric keypad, use the standard keyboard number keys.
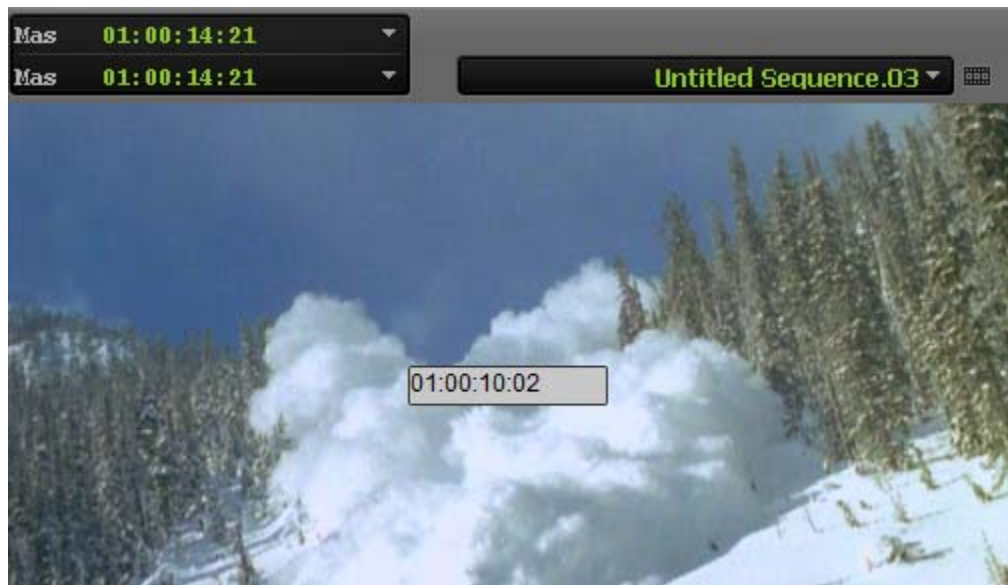
Example of timecode entry with the numeric keypad. The timecode appears in the monitor. In this example, the interface displays master timecode.

Use one of the following formats:

Format	Description
SMPTE timecode	Use two digits each for the hours, minutes, seconds, and frames. For example, type 01230200 to enter 01:23:02:00.
Current timecode	To find a timecode that starts at the same hour, minute, or second as the current timecode, type only the last digits. For example, if the current timecode is 1:05:12:13 and you type 425, the system finds the frame at 1:05:04:25.

5. Press Enter on the numeric keypad.

   If you have performed step 3 on a notebook computer or a keyboard that does not have a dedicated numeric keypad, press the Enter key.

To cue a frame using frame offset timecode:

1. Click the monitor that is displaying the clip or sequence that you want to search.

2. (Option) If you are using a notebook computer or a keyboard that does not have a dedicated numeric keypad, press and release the left Control key twice quickly.

   This lets you enter timecode using standard keys on the keyboard, such as the number keys and the Enter key.

3. Using the numeric keypad, type a plus sign (+) to move forward or a minus sign (–) to move backward from the current position.

   If you have performed step 2 on a notebook computer or a keyboard that does not have a dedicated numeric keypad, use the standard keyboard plus (+) and minus (-) keys.

4. Type a number for the frame offset, and then press Enter on the numeric keypad.

   If you have performed step 2 on a notebook computer or a keyboard that does not have a dedicated numeric keypad, use the standard keyboard number keys, and then press the Enter key.

   Use the following formats:

Format	Description
One or two digits	Type `1` through `99` to specify a number of frames forward or backward. For example, type `–42` to move backward 42 frames.
Three digits	Type `100` or greater to move forward or backward a specified number of seconds and frames. The results vary depending on the tracking format you have selected in the Tracking Information menu that displays information above the monitor. For example, if you type `+100` and the master timecode is displayed in the top row of the tracking information above the monitor, you move forward 1 second and zero frames. If you select frames to display above the monitor and type `+100`, you move forward 100 frames.
Frames only	To move by frames (regardless of the display in the Tracking Information menu) add an f to the end of the number you type. For example, if you have a timecode displayed in the Tracking Information menu and type `+100f`, the display changes to `3:10` (3 seconds and 10 frames) and you move forward 100 frames.

Searching for a Clip or Sequence with Text Find

Text find allows you to enter text and search bins and the Timeline for the information you enter. You can customize your search by selecting to only search the active bin or search all bins across a single project. Bins do not have to be open for the system to search in them, Find searches all bins within your project. The text find feature is included with your Avid editing application.

Things You Should Know About Text Find

- You can continue to work, while the system indexes your project.

- The system does not search and find referenced clips in a sequence.

- If you make a change to a bin (or add a new clip to the bin), you must save the bin first in order for the system to find the changes.

- The system searches through all available columns in your bins including metadata columns, even if they are not visible in your current bin.

- The use of quotes in search queries has no affect on your results.

- The following characters: @#$%^&*()=+[]\ are recognized by text find.

- To make sure all your open bins are indexed, click the Project window and select File > Save All. This will save all opened bins. When the Bin Index light turns solid green, perform your search. This will ensure that your results include the most up-to-date files.

- Before you filter to refine your results, you need to first perform a find, then the Filter columns are selectable.

To open a search window:

1. Press Ctrl+F (Windows) or Cmd+F (Macintosh), or select Edit > Find.

   The Find window opens.
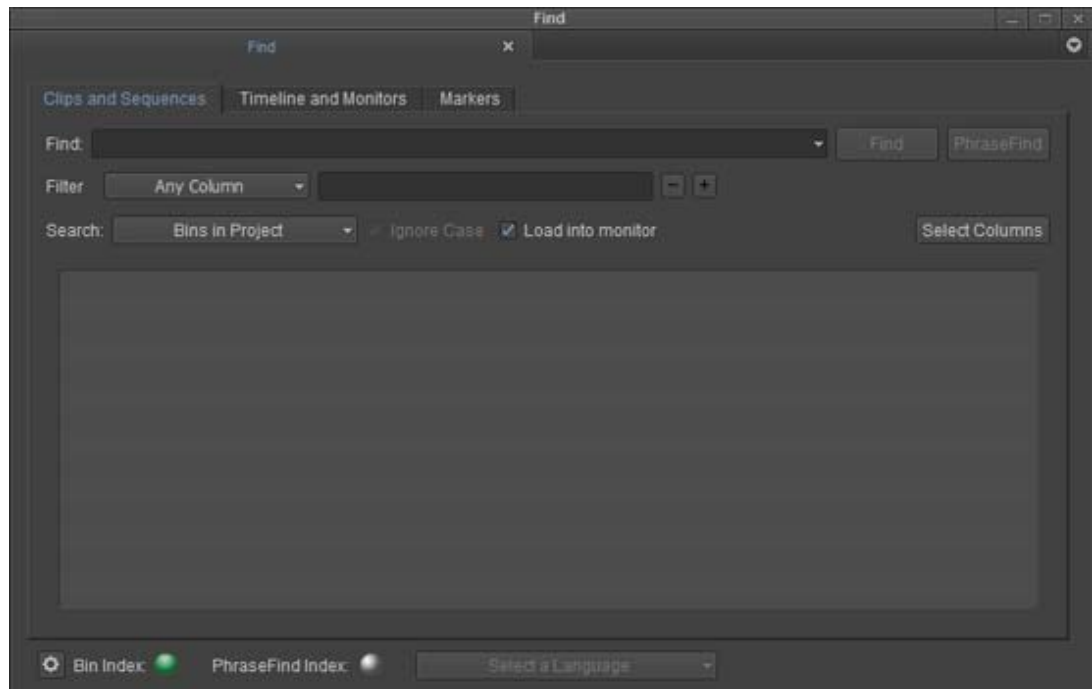
📖 *The Bin Index status at the bottom of the window indicates if the data files in your bins have been indexed. A full green display indicates that your files have been indexed and are ready to search. A partial green display indicates that the index is in process and if you perform a search, your results might not be complete. The PhraseFind Index is not applicable to Media Composer | First.*

If you want to stop the indexing process, click the Settings button at the bottom left of the Find window and click Stop Indexing. The indexing stops and the button changes to Start Indexing. The indexing remains off until you click Start Indexing.

2. Type a word or phrase that you are looking for in the text box.

3. Select to search in Clips and Sequences, Timeline and Monitors, or Markers.

4. If you select Clips and Sequences, then select from the menu:

Bins in Project	The system searches for the text criteria in all the bins within the project regardless if the bin/script is currently opened.
Current Bin	The system searches for the text criteria in the last active bin. The system then selects the first occurrence in the bin. Press Ctrl+G (Windows) or Cmd+G (Macintosh) to take you to the next occurrence

5. Select Ignore Case if you want the system to search for the text regardless if it is upper or lower case characters.

6. If you would like to open the clip(s) in a Source monitor when you double-click a clip in the Results window, then select Load into monitor.

7. If you select Timeline and Monitors, then select from the following:

Markers	The system searches for clips in the Timeline that contain the marker text. The blue position bar jumps to the marker position on the clip and displays the marker information in the Source/Record monitor.
Clip Names	The system searches for clips in the Timeline that contains the clip name. The blue position bar jumps to the head frame of the clip.
Timeline Text	The system searches for clips in the Timeline that contain Timeline text based on what is displayed in the Clip Text pulldown menu. The blue position bar jumps to the head frame of the clip.

8. If you select Markers, enter the marker text you are searching for.

9. With your text criteria entered, click Find or press Enter.

   A Cancel button appears and the system informs you that it is finding your text criteria.

   The results appear in the Results window. If you select Current Bin, the clips are selected in the bin and do not display in the Results window. The system displays the total number of items found after your search.

📑 *To select the next occurrence in your bin, press Ctrl+G (Windows) or Cmd+G (Macintosh).*

10. (Option) To refine the number of results, you can enter additional criteria in the filters. Select a specific column from the Filter menu that you would like to search in, then enter additional text relating to that column. The column you are searching on does not have to display in the bin.

📑 *Click the "+" button to add additional filters. Click the "-" button to remove filters. If the last filter appears, the "-" button removes the text, not the filter.*

   The filter menu populates after the initial search.

Using Match Frame

The Match Frame feature lets you locate the source clip for the frame currently displayed in either the Record monitor or the Source monitor. This feature is useful when you want to relocate and reedit source material, such as subclips and master clips.

Match framing loads the source clip into the Source monitor, cues to the matching frame in the source clip, and marks an IN point. Any original IN and OUT points are removed from the source clip.

You can also use the Match Frame feature to locate clips quickly, based on media relatives, when you have forgotten their location. For example, you can matchframe a cut in the sequence to its original subclip, matchframe the subclip to the original master clip, and then locate the bin in which the master clip is saved. Match framing stops when you reach the master clip.

You can also use the Match Frame feature to locate the source clip for a traditional motion effect.

You can also use Match Frame when editing a title or matte key into a sequence; the sequence will track the original clip used so that it can be matchframed.

You can also locate frames in a sequence that match a selected source frame; see "Performing a Reverse Match Frame" on page 144.

Match framing does not create a permanent sync relationship between clips but provides a convenient way of locating, marking, and editing matching material.

The Match Frame button appears in the Other tab of the Command palette. For information about mapping buttons, see "Mapping User-Selectable Buttons" on page 61.

To use Match Frame to locate the source clip for a selected frame or motion effect:

1. Load a sequence into the Record monitor or a subclip into the Source monitor.

2. Move the position indicator to the frame or motion effect that you want to match.

3. In the Track Selector panel, select the track for the frame that you want to match.

   For more information, see "Understanding the Track Selector Panel" on page 207 and "Selecting Tracks for Matching Frames" on page 144.

4. Do one of the following:

   ▶ Click the Match Frame button (in the Other tab of the Command palette).

   The source clip is loaded into the Source monitor, and any previous IN or OUT points are removed. A new IN point is marked at the matching frame.

   ▶ Alt+click (Windows) or Option+click (Macintosh) the Match Frame button.

   The source clip is loaded into the Source monitor, and any previous IN or OUT points are maintained.

   ▶ Press and hold Alt+Ctrl (Windows) or Option+Command (Macintosh), and click the Match Frame button.

   The source clip of the motion effect is loaded into the Source monitor.

To use Match Frame to locate the source clip for a Title or Matte Key:

1. Load a sequence into the Record monitor.

2. Move the position indicator to the Title or Matte Key that you want to match.

3. In the Track Selector panel, select the track for the frame that you want to match.

4. Do one of the following:

▸ Click the Match Frame button (in the Other tab of the Command palette).

The source clip is loaded into the Source monitor, and any previous IN or OUT points are removed. A new IN point is marked at the matching frame.

Performing a Reverse Match Frame

The Reverse Match Frame feature lets you locate frames in a sequence that match a selected source frame.

To perform a reverse match frame:

1. Load the source footage into the Source monitor.

2. Move the position indicator to the frame that you want to match.

3. Select the appropriate tracks in the Timeline.

For more information, see "Understanding the Track Selector Panel" on page 207 and "Selecting Tracks for Matching Frames" on page 144.

The system searches all selected tracks in the Record monitor for the frame on all selected tracks in the Source monitor.

4. Click the Reverse Match Frame button in the Other tab of the Command palette.

Your Avid editing application cues the sequence to the matching frame on the record side. If the frame exists in more than one place, the sequence cues to the first location of the match frame and continues through the sequence to subsequent locations each time you click the Reverse Match Frame button.

Selecting Tracks for Matching Frames

Track selection determines the match frame. If you select a video track, your Avid editing application m matches a frame from the video. If you enable several tracks, your Avid editing application matches the frame from the highest selected track level, in descending order: V1, A1, A2, and so on.

You can match frame a single track without having to turn off all other tracks. With audio, you can select the audio track that you want to match frame instead of having your Avid editing application match frame the top audio track.

To matchframe a selected frame on a single track:

▸ Right-click the track number that you want to match frame, and select Match Frame Track.

Finding a Bin

With a clip or sequence loaded into a monitor, you can quickly find the original bin in which it is stored by using the Find Bin button. Clicking this button finds the bin, opens it, and highlights the clip or sequence within the bin. This works for sequences, subclips or clips within sequences, or clips in the Source monitor.

To find the bin in which a specific clip is located:

1. Load a clip into the Source monitor.

2. Click the Source monitor to activate it.

3. Click the Find Bin button in the Other tab of the Command palette.

   Your Avid editing application highlights the clip in the bin.

To find the bin in which a specific sequence is located:

1. Load a sequence into the Record monitor.

2. Click the Record monitor to activate it.

3. Click the Find Bin button.

   Your Avid editing application highlights the sequence in the bin.

To find the bin in which a specific clip in a sequence is located:

1. Move the position indicator to the clip within the sequence.

2. Press and hold the Alt key (Windows) or the Option key (Macintosh), and click the Find Bin button.

   Your Avid editing application opens the bin and highlights the clip.

Locating a Master Clip from a Subclip in a Sequence

You can use the Match Frame and Find Bin buttons together to find the original clip in the bin for a subclip that was edited into a sequence.

For this operation, you must have the monitors in the two-monitor display and the Match Frame button must be mapped below both the Source and Record monitors.

To locate a master clip from a subclip:

1. Cue to the subclip in the sequence.

2. Click the Match Frame button in the Other tab of the Command Palette to load the subclip into the Source monitor.

3. Click the Match Frame button in the Other tab of the Command Palette to load the original master clip into the Source monitor.

4. Click the Find Bin button in the in the Other tab of the Command Palette to open the bin and highlight the master clip.

Sequence and Clip Information Summary

You can generate a report to display information about the contents of a sequence. For example, you can generate a list of the types of effects in your sequence or the location of a particular effect. You can also create a clip summary or a source summary. This allows you to display a list of clip names, tape names, offline clips, and path locations of imported clips contained in your selection.

You generate reports from the Sequence Report dialog box, which you can access from the Source monitor, the Record monitor, or directly from a sequence in a bin. The Sequence Report dialog box allows you to select your criteria and create a report that displays in a text editor. You can then search the summary for the exact information you want.

Example 1: Preparing for Online Editing

When you move your sequence from an offline system to an online system, you can run an effect summary and a source summary report. The Effect Summary displays a list of all effects, including a separate list of plug-ins used. The Source Summary lists all the tapes you need for recapture and all of the import paths for imported graphics.

Example 2: Finding Specific Effects

You use the Effect Summary and Effect Location List to find a particular effect. When you output the summary to a text editor, you can search the report to find all occurrences of the particular effect. In addition, you can type the start or end timecode value for each occurrence into the Source/Record monitor to go to the start of the effect in the Timeline. You might find this useful when you need to replace or modify a specific plug-in, for example.

Example 3: Plug-in Information

An Effect Summary displays a list of effects found in the selection, including how many times the sequence uses an effect. For plug-ins loaded on your system, a section displays a summary of the plug-ins used, displaying the name, the vendor, the version and the ID of the plug-in. This can help by providing a list of the plug-ins needed for online work.

If a plug-in is not loaded on your system when you generate the summary, if you select the option "Show Missing Effects Only" from the Sequence Report dialog box, the information displays "unavailable effect," in addition to the plug-in name, the plug-in ID (is this gone?), and other information associated with the effect. (Is the vendor and version number displayed). This is helpful when identifying the effect.

Creating a Summary of Effects and Source Information

Before you use the Sequence Report dialog box to create a summary of effects, source information, or clip information, you might want to do the following:

*   Determine if you want the report to cover specific tracks or a section of the sequence between In and Out points. Loading a sequence in the Source/Record monitor before you generate a report allows you to select which part of the sequence about which you want information.

*   Choose the summary options you want information on — types of effects, location of effects, source information, or clip information.

You can modify the sequence name and the starting timecode in the Sequence Report dialog box.

To generate a summary report:

1. Do one of the following:

    ▶ From a bin, right-click a sequence and select Sequence Report. You can select multiple sequences for generating reports.

    ▶ With a sequence loaded in a monitor, right-click the monitor and select Sequence Report.

    The Sequence Report dialog box opens.

2. (Option) Do the following:

   ▶ If you selected specific tracks, click Enabled Tracks Only.

   ▶ If you set In and Out points, click Use Marks.

   If you want to run a report on the entire sequence regardless of tracks or marks, do not select either of these options.

3. Select the Summary Info options you want to include in your report. For information on report options, see .

4. Click Generate Report.

   The Save Summary Output File As dialog box opens.

5. Use the default file name or rename the report and choose a folder to save the report to, click Save.

   If you select more than 8 sequences, a dialog box asks if you want to generate sequence reports for all selected items.

   The application writes the report to a text file and opens a text editor.

Summary Information Options

The following options allow you to select which information to include in the sequence report.

Summary Option	Suboption	Description
Create Effect Summary		This displays the types of effects and how many were found in your sequence, the breakdown by effect type, and an effect plug-in summary. If you have selected individual tracks or selected IN and OUT points, only those effects that fall within those parameters appear.
Create Effect Location List		This displays the location of an effect. Depending on the criteria you selected, this displays track, start timecode, end timecode and effect name.
	Skip Non-Renderable Effects	Select this option if you do not want any non-renderable effects, such as pan/volume effects, to appear in the report.
	Skip Relationship-Only Color Correction	Select this option if you do not want any color correction effects with only relationships to appear in the report.
	Show Nested Effects Only	Select this option if you want to only display the nested effects in your sequence. Effects that are nested inside of other effects show the parent effect track they are applied to with the track name in parentheses and indented to show the nesting relationship.
	Show Missing Effects Only	Select this option if you want to only display the plug-in effects missing from your sequence. Plug-in effects that are missing in your sequence display as "Unavailable Effect," but also lists the type of effect and other important information which help you identify the type of effect. This option is helpful when you move your sequence to a system that does not have the plug-in installed.
Create Clip Summary or Create Source Summary		Depending on the criteria you selected, a Clip Summary displays the number of clips found, type of clip, track, offline information, clip name, and clip Mob ID. A Source Summary displays the number of tape-based sources found, project name, tape name, tape ID, and tape Mob ID. It also displays a list of import paths for any imported clips, such as graphics.
	Offline Only	Select this option if you want to display offline clips and/or sources only.
	Skip Non-Selected Clips in Group Clips	Select this option if you do not want any non-selected clips inside of a group clip to appear in the report.
	Show Globally Unique Identifier (UID)	Select this option if you want to display the unique identifiers (Mob IDs) associated with the clips and sources in your sequence.

9 Creating and Editing Sequences

This chapter introduces you to procedures that you use to build a sequence, as described in the following topics:

- Creating a New Sequence
- Making a First Edit
- Creating an Instant Rough Cut
- Undoing or Redoing Edits
- Editing Additional Clips into the Sequence
- Lifting, Extracting, and Copying Material
- Adding Notes to Clips in the Timeline
- Playing Back a Sequence
- Understanding Sync Breaks
- Fixing Sync Breaks
- Understanding Sync Lock
- Ganging Footage in Monitors

Creating a New Sequence

A *sequence* is the arrangement of clips in the Timeline that include audio clips, video clips, and effects that you use to create your final movie.

You can create a new sequence in one of two ways:

- To set specific parameters for the sequence before you start editing, you can use the New Sequence command to create and name a sequence and determine the numbers and types of tracks (see "Track Display for New Sequences" on page 151) to use before you make the first edit.
- To begin editing right away and build the sequence as you go without setting parameters ahead of time, you can create the sequence automatically by making an initial edit, as described in "Making a First Edit" on page 152.

To create a sequence with the New Sequence command:

1. Do one of the following:

   ▶ Select Timeline > New > Sequence.

   ▶ Right-click in either the Timeline or the Source/Record monitor, and select New Sequence.

   One of the following occurs:

   - If just one bin is open or you activate a bin, the new sequence appears in that bin. It also appears in the Record monitor and in the Timeline, with the generic title "Untitled Sequence n." Each new sequence is numbered incrementally until you rename it.

- If a bin is not activated, the Select dialog box opens.

   Select the bin where you want to store the new sequence, or click New Bin to create and open a new bin, then click OK.

   An untitled sequence appears in the bin, in the Record monitor, and in the Timeline.

2. (Option) In the bin, click the Name field and rename the new sequence.

Track Display for New Sequences

When you create a new sequence with the New Sequence command and no material is loaded in the Source monitor, the Timeline displays a default set of tracks—the master timecode track (TC1), at least one video track (V1), and at least two audio tracks (A1 and A2).

You can change the initial set of tracks that display in the Timeline in the Edit tab of the Timeline Settings dialog box. For more information, see "Timeline Settings: Edit Tab" on page 403.

The following illustration shows the default Timeline for a new sequence, with no material loaded in the Source monitor.
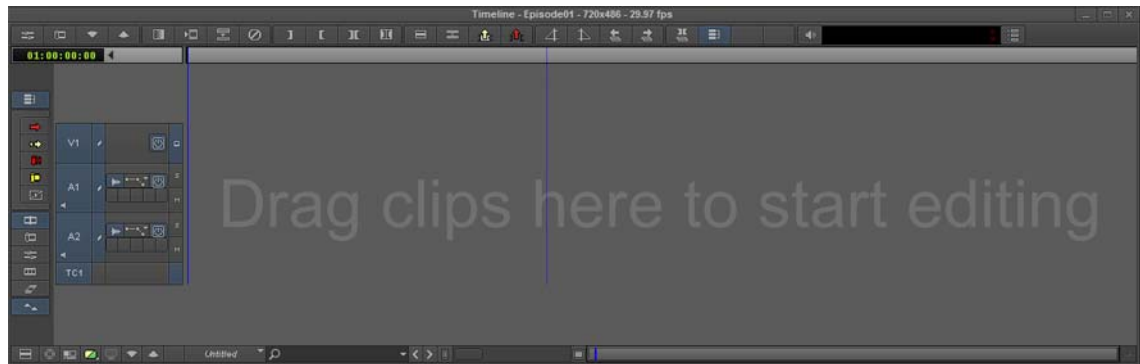
Adding Filler

You can add a small amount of black filler at the start of your sequence. A brief moment of black before the start of your sequence is sometimes useful during playback. You can also add filler to another part of the sequence at any time during editing.

You cannot add filler to the end of a sequence or to an empty sequence. You can create black title media and insert it at the end of a sequence.

To add filler at the start of a sequence, do one of the following:

▸   Select Timeline > Add Filler at Start.

▸   Right-click in the Timeline, and select Add Filler at Start.

   Filler appears at the beginning of the sequence in the Timeline. You can set a default duration for the filler in the Edit tab of the Timeline Settings dialog box. For more information, see "Timeline Settings: Edit Tab" on page 403.

To add filler anywhere in a sequence:

1. Move the blue position indicator in the Timeline to the point where you want to add the filler.

2. Select Timeline > Add Filler at Position.

Filler appears at the position indicated.

Making a First Edit

This topic describes a method for adding a first clip to a sequence.

To begin editing:

1. Load the first clip into a monitor.

   For more information, see "Loading and Clearing Footage" on page 115.

2. (Option) If you have not already marked In and Out points for the clip in advance or created a subclip, view and mark the clip.

   For more information, see "Marking and Subcataloging Footage" on page 124.

3. Click buttons in the Track Selector panel to select the tracks you want to include in the edit.

   The tracks included with the source tracks appear in green in the Timeline. For more information on using the Track Selector panel, see "Understanding the Track Selector Panel" on page 207.

   Left: Source tracks in the Track Selector panel, Right: Timeline tracks in the Track Selector Panel

   For example, with a talking head you might select tracks V1 (picture) and A2 (sound) if the voice was recorded on that track. You would deselect track A1, that might have unwanted wild sound picked up from a second microphone or no sound at all.

   As another example, if you lay down a music track first, you would select track A1 or A2 depending on where the music was recorded, and deselect V1.

4. Click the Splice-in button to add the edit to the sequence in the Record monitor.

   The Record monitor displays the end of the last frame of the new edit. (You can drag the position indicator in the Timeline or the position bar beneath the monitor to review the clip.) The edit also generates a graphical display of the cut in the Timeline.
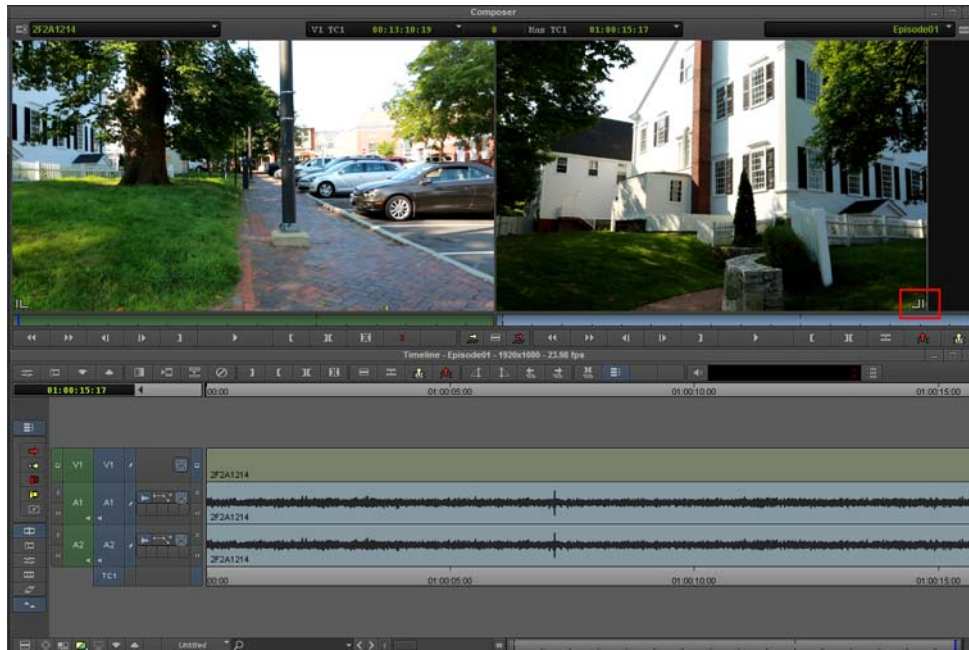
Screen display for the first edit in a sequence. Top: monitor window with the source clip on the left and the sequence on the right. The last frame for the edit is highlighted. Bottom: the new edit in the Timeline.

Creating an Instant Rough Cut

As an alternative to creating a new sequence by editing clips one at a time, you can create a rough cut by creating a storyboard in the bin, and then load these clips directly into the Timeline.

For additional information on editing directly from the bin into the Timeline, see .

To create a rough cut from a bin:

1. In the bin, sort the clips in the order in which you want them to appear in the sequence.

   For example, in Frame view, arrange the bin so that you can drag clips into the storyboard order you want.

2. Select the tracks for the edit.

3. Do one of the following:

   ▶ Ctrl+click (Windows) or Command+click (Macintosh) the clips.

   ▶ Lasso the clips by dragging left to right and down to select more than one clip.

     For more information, see .

   ▶ Select Edit > Select All if there are no other clips in the bin.

4. Do one of the following:

   ▶ Drag the selected clips to the Timeline to splice the clips into place.

   ▶ Shift-drag the selected clips to the Record monitor.

   ▶ Alt-drag (Windows) or Option-drag (Macintosh) the selected clips to the Record monitor.

   The clips splice together to form a new sequence based on the order in which they were listed in the bin.

Undoing or Redoing Edits

You can undo or redo up to 100 previous actions listed in the Edit menu. You can undo or redo a just completed command, or you can search through a submenu to undo or redo all commands leading back to a particular command.

To undo only the previous edit or function, do one of the following:

▶ Select Edit > Undo.

▶ Press Ctrl+Z.

To redo only the previous edit or function, do one of the following:

▶ Select Edit > Redo.

▶ Press Ctrl+R.

To undo or redo every edit and function back to a particular command:

▶ Select Edit > Undo/Redo List, and then select a command.

All the previous commands, including the command selected from the submenu, are undone or redone

Editing Additional Clips into the Sequence

There are three primary edit functions for adding material to your sequence:

• Insert (splice-in)

• Overwrite

• Replace edit

In most cases, you perform three-point edits in which you set three marks—two in the source material and one in the sequence, or the reverse. The fourth mark is determined automatically. The way you set marks depends on the type of edit you perform.

Performing an Insert or Splice-in Edit

An insert or splice-in edit inserts marked source material into the sequence without replacing material already in the sequence.

Existing material moves beyond the spliced material, lengthening the overall duration of the sequence.
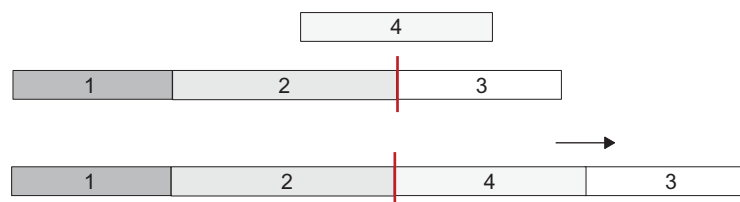
A splice-in edit. Clip 3 in the sequence moves down when you splice clip 4 in at the insertion point (red line).

To perform an insert edit:

1. Load a clip into the Source monitor.

2. Mark an In point and an Out point.

3. Mark an In point in the sequence as follows:

   a. Move the position indicator for the sequence to the point where you want to splice the clip into the sequence.

   b. Click the Mark In button, or press the Mark In key.

If you do not mark an In point, the system splices the new clip into the sequence at the current location of the position indicator.

4. Click the Splice-in button (yellow) to complete the edit.

Performing an Overwrite Edit

An overwrite edit replaces a section of the sequence with the selected source material.

An overwrite edit replaces existing material and does not lengthen the overall duration of the sequence unless the material used to overwrite goes beyond the end of the sequence.
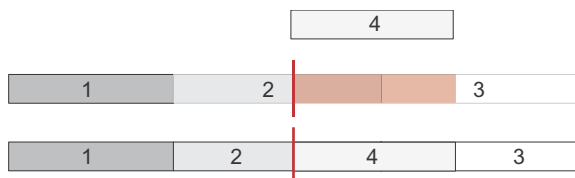
An overwrite edit. Clip 4 overwrites parts of clips 2 and 3 (shaded in red) when you edit it in at the insertion point (red line).

To perform an overwrite edit:

1. Load a clip into the Source monitor.

2. In the monitor, mark an In or Out point, but not both, to show the start or end of the clip you want to use.

3. In the Record monitor, mark both an In point and an Out point to select the material in the sequence you want to overwrite.

   You can also mark an Out point and move the position indicator to the In point.

4. Click the Overwrite button (red) to complete the edit.

Performing a Replace Edit

The Replace Edit button (blue) replaces a clip in the sequence (video, audio, or both) with new source material, while maintaining the original In and Out points of the previous edit.

		4	

1	2	3

1	2	4
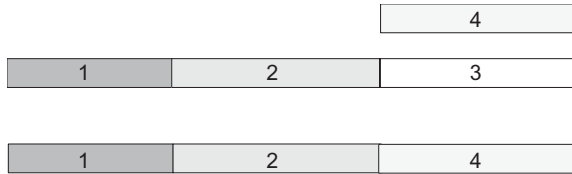
A replace edit. Clip 4 replaces clip 3 and maintains the IN and OUT points for the original edit.

By default, the Replace Edit button is located on the Edit tab of the Command Palette. You can use it from the Command Palette or map it to a monitor palette. For information about mapping buttons, see "Understanding Button Mapping" on page 60.

To perform a replace edit:

1. Move the position indicator to select a sync frame in the source clip.

   The frame displays in the monitor.

   The sync frame can be an In point, Out point, or any frame in between that you want to sync to a frame in the existing clip in the sequence.

2. Move the position indicator to select the sync frame in the sequence for the edited segment that you want to replace.

3. Click the Replace Edit button (blue).

   The system calculates In and Out points for the source material by using the sync frames and the existing In and Out points in the sequence for the previously edited clip that you want to replace.

When you select the tracks you want, check the durations before you perform the edit. If you replace a clip in an overlap edit and the position indicator falls within the overlap, you might end up replacing the wrong material unless you select the entire segment you want to replace. See "Selecting and Deselecting Segments" on page 195.

Lifting, Extracting, and Copying Material

Lifting, extracting, and copying let you remove or reposition material quickly in your sequence. For example, you can move a clip from the end of your sequence to the beginning; or you can remove the material from the sequence altogether. Your Avid editing application places the material you remove into the Clipboard. You can then paste the material elsewhere in the sequence or into another sequence.

You can also remove and reposition segments. For more information, see "Working with Segments" on page 193.

Lifting removes selected material from a track in the sequence and leaves black filler or silence to fill the gap. You can later move or fill this gap with other footage. When you lift material, the overall duration of the track (or sequence) remains the same.

Extracting removes selected material from a track in the sequence and closes the gap left by its removal. When you extract material, you shorten the duration of the track or sequence.
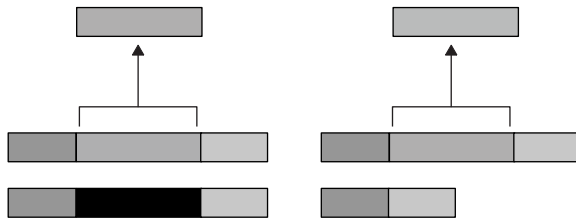
Comparison of Lift and Extract operations. Lifting material (left) leaves a gap that is replaced with black filler, and the length of the sequence remains the same. Extracting material (right) closes up the gap that the material previously occupied, and the sequence becomes shorter. In both cases, the material you remove is placed into the Clipboard.

The Copy to Clipboard function makes a duplicate of selected material in the sequence and leaves the material intact. When you copy material, the sequence remains unaffected. You can then insert the material elsewhere in the sequence or into another sequence.

To lift material:

1. Mark In and Out points at the start and end of the material in the sequence that you want to lift.

2. Select the tracks containing the material.

   The system performs the function on selected tracks only. For more information on track selection, see "Understanding the Track Selector Panel" on page 207.

3. Click the Lift button in the Timeline toolbar to complete the edit.

To extract material:

1. Mark In and Out points at the start and end of the material in the sequence that you want to extract.

2. Select the tracks containing the material.

   The system performs the function on selected tracks only. If sync locks are on, all material on all tracks is extracted. For more information, see "Understanding the Track Selector Panel" on page 207 and "Understanding Locking and Sync Locking" on page 214.

3. Click the Extract button in the Timeline toolbar to complete the edit.

To copy material to the Clipboard:

1. Mark In and Out points at the start and end of the material in the sequence that you want to copy.

2. Select the tracks containing the material.

   The system performs the function on selected tracks only. For more information on track selection, see "Understanding the Track Selector Panel" on page 207.

3. Click the Copy to Clipboard button in the Edit tab of the Command Palette.

   The system copies the selected material to the Clipboard, and leaves the sequence untouched.

Using the Avid Clipboard

The Avid Clipboard is a cut, copy, and paste tool adapted to the special needs of the editing environment.

The Copy to Clipboard function is useful for moving or repeating material in a sequence without moving multiple segments or for rebuilding the section at another location. For example, you can:

• Copy a portion of a sequence for pasting into another sequence.

• Isolate and copy a portion of an audio track for looping music or repeating a sound effect.

• Copy graphic elements for repeating at other locations in a format cut.

The Clipboard stores only one clip at a time. Each time you copy, lift, or extract additional material, you delete and replace the previous contents. However, you can preserve clipboard content for the duration of your working session when you add it as a clip to the Source monitor's Clip Name menu. All the clips added remain available in menu until you select Clear Menu or close the project.

The Clipboard lets you restore lifted or extracted segments quickly. This is useful if you have performed one or more edits since removing the material. In contrast, if you use the Undo function to restore the material, your Avid editing application also undoes all edits performed in the meantime.

Material in the Clipboard does not appear as a clip in the bin and is deleted when you close the project. To save a portion of a sequence for future use, mark the section and create a subclip.

To place a marked section of the sequence into the Clipboard at any time:

▶ Click the Lift, Extract, or Copy to Clipboard buttons.

Left to right: Lift, Extract, and Copy to Clipboard buttons

To keep the Clipboard contents throughout a session, do one of the following:

▶ Right click in the Source monitor and select Clipboard Contents.

The contents appear as a clip in the Source monitor, and the name "Clipboard Contents.n" appears above the monitor and in the Clip Name menu. The *n* is an incremental numbering of clips placed in the Clipboard during the session.

▶ Press Alt key (Windows) or Option key (Macintosh) when you copy, lift, or extract the material. The contents appear as a clip in the Source monitor, and the name "*Sequence name*.Sub" appears above the monitor and in the Clip Name menu.

To restore material from the Clipboard:

1. Load the Clipboard contents by doing one of the following:

   ▶ Right click in the Source monitor and select Clipboard Contents to place the Clipboard contents into the Source monitor and add the clip name to the Clip Name menu.

   ▶ Click the Clipboard Contents button in the Edit tab of the Command Palette.

   ▶ Open the Clipboard as a pop-up monitor by selecting Tools > Clipboard Monitor.

2. Click the Mark Clip button to mark the entire segment.

3. (Option) Click the Toggle Source/Record button in the Timeline toolbar to view, mark and select specific tracks.

4. Locate the In point in the sequence from which the segment was removed. Move the position indicator here, or mark an In point.

5. Splice or overwrite the material into the sequence.

Adding Notes to Clips in the Timeline

When you add clip notes to sequence clips, they appear in the Timeline. Notes can include any information you want to note about specific clips, such as instructions for color correction or for adjusting an effect.

📑 *You can choose to include clip notes (from the Timeline) in the TimeCode Burn-In effect. See "Timecode Burn-In Effect Parameters" in the Help. For example, you can apply the Timecode Burn-In effect, then add the Timeline Clip Note in your Timeline. In the Effect Editor, choose to display the Timeline Clip Text and the Track the clip note appears on.*

You can also open the Timeline Clip Notes window to see all the clip notes that have been added to the sequence.

To add notes to the clips in a sequence:

1. Click one of the Segment buttons (located in the Timeline palette), and highlight the clip to which you want to add a note in the Timeline.

   Segment Overwrite button (red) and the Segment Insert button (yellow)

2. Right click and select Add Timeline Clip Note.

   The Timeline Clip Note dialog box opens.
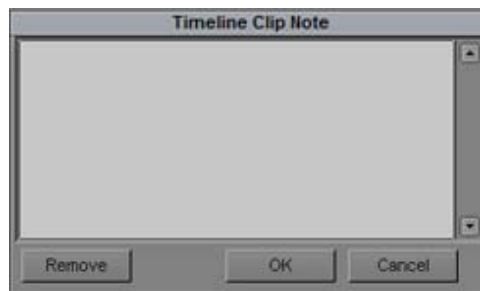
3. Type your notes in the text box, and click OK.

📑 *You must enable the Timeline Fast menu > Clip Text >Timeline Clip Notes to display the notes in the Timeline.*

To display the sequence notes in the Timeline Clip Notes window:

1. Select the sequence in the Timeline.
2. Select Tools > Timeline Clip Notes.
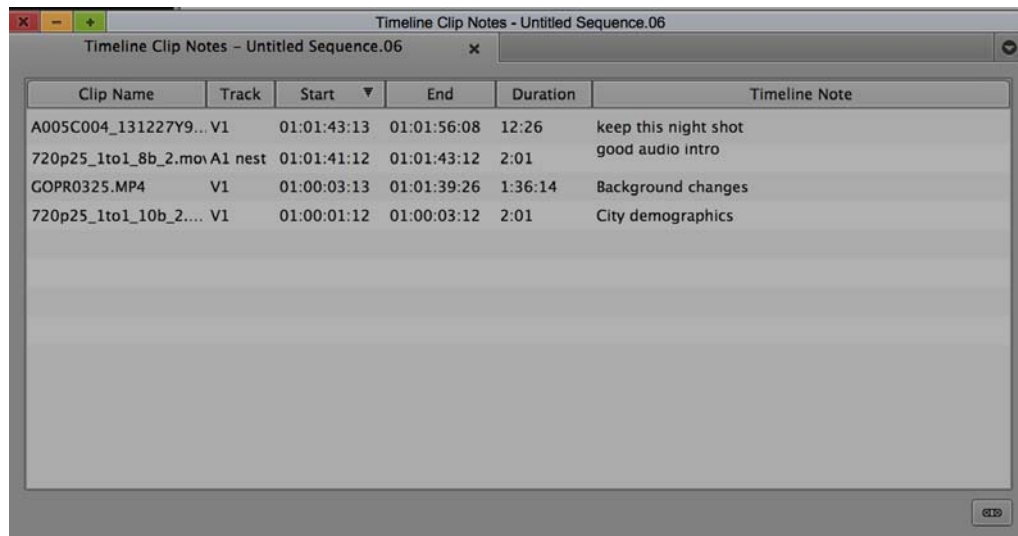
All the Timeline notes for the selected sequence appear in the window.

To edit comments in the Timeline Clip Notes window:

1. Select the sequence in the Timeline.

2. Select Tools > Timeline Clip Notes.

   All the Timeline notes for the selected sequence appear in the window.

3. Double-click the note you want to edit in the Timeline Clip Note column, type new text and press Enter.

   The clip note is updated in the Timeline Clip Notes window and in the sequence.

To delete comments in the Timeline Clip Notes window:

1. Select the sequence in the Timeline.

2. Select Tools > Timeline Clip Notes.

   All the Timeline notes for the selected sequence appear in the window.

3. Right-click the note and select Delete. Or, click to highlight the note and press Delete.

To choose the columns that appear in the Timeline Clip Notes window:

1. Select the sequence in the Timeline.

2. Select Tools > Timeline Clip Notes.

   All the Timeline notes for the selected sequence appear in the window.

3. Right-click in the Timeline Clip Notes Window and select Choose Columns.

4. Select the columns you want to appear in the Timeline Clip Notes window.

> *You can choose to display the Duration column information as either Timecode or Frames. Simply right-click in the Timeline Clip Notes window and select either Show as Frames or Show as Timecode.*

To sort columns in the Timeline Clip Notes window:

1. Select the sequence in the Timeline.

2. Select Tools > Timeline Clip Notes.

All the Timeline notes for the selected sequence appear in the window.

3. Click the column heading. To reverse the order, click the column heading again.

To rearrange columns in the Timeline Clip Notes window:

1. Select the sequence in the Timeline.

2. Select Tools > Timeline Clip Notes.

   All the Timeline notes for the selected sequence appear in the window.

3. Click the column heading and drag it to the desired location.

To use Gang Mode to move through the Timeline to find clip notes:

1. Select the sequence in the Timeline.

2. Select Tools > Timeline Clip Notes.

   All the Timeline notes for the selected sequence appear in the window.

3. Click the Gang button at the bottom right of the window. It will highlight green when in gang mode.

4. Select and multi-select items in the Timeline Clip Notes window that you want to locate in the Timeline.

   The corresponding clips are highlighted and selected in the Timeline if the clip note is not located in a nested effect. If one clip note is selected, the blue bar will move to the beginning of that clip.

To export the information in the Timeline Clip Notes window to a text file:

1. Select the sequence in the Timeline.

2. Select Tools > Timeline Clip Notes.

   All the Timeline notes for the selected sequence appear in the window.

3. Choose and rearrange the columns you wish to have in the exported file.

4. Right-click in the Timeline Clip Notes Window and select Export to Text.

5. Enter a name for the .txt file.

6. Select the location where you want the .txt file saved.

7. Click Save.

   The tab delimited .txt file is saved to the set location.

Playing Back a Sequence

You can play a sequence at any time to see the results of your editing. You can view the sequence in the Record monitor or a Client monitor.

You can also play back your sequence in a continuous loop by augmenting the Play In to Out command with the Alt key. You must set marks in the sequence to determine the range of the playback loop.

Use looping playback to isolate and continuously play back a small portion of a sequence during a difficult edit.

If you have several tracks of audio, you might need to mix them down and adjust levels before playback. For more information, see "Mixing Down Audio Tracks" on page 285.

To play a sequence:

1. Click the Video Track Monitor icon located on the uppermost video track to display all video tracks and effects during playback.

2. Click the Active/Inactive button to ensure proper playback of the audio tracks.

3. Go to the start of the sequence. Click the left side of the position bar to reposition the position indicator at the beginning or press the Home key on the keyboard.

4. Use the position indicator, buttons, mouse, or keyboard to play, step, or shuttle through footage. View the sequence in the Record monitor or the Client monitor.

To start a playback loop:

1. Mark In and Out points in the sequence. To play back the entire sequence, mark the In point at the beginning and the Out point at the end.

2. Press and hold the Alt key while you press the Play In to Out button in the Play tab of the Command palette.

   The playback loop begins and continues until you press the space bar or click anywhere with the mouse.

Playback Performance Tips

As you edit, you might find the playback performance of your Avid editing application diminishing as the sequence grows in length and layers. This happens when you use a great deal of system memory for playback of large and complex sequences. The following are a few tips for improving playback performance:

• Check the following:

   - Close bins that are not in use.

   - Unmount drives that are currently not in use.

• When displaying real-time effects, adjust the video quality (see "Setting the Video Quality for Playback" on page 123).

• Restart your computer once a day to refresh the system memory.

• Split the sequence into two or more segments, if possible.

Setting Video Memory and Video Frame Cache

A Video Memory tab in the Media Cache Settings allows you to set video memory and frame cache. Here you can allocate video memory for running the editing application. This might be useful for situations where you experience underruns.

Increasing the video memory could reduce the underruns.

In the Video Memory tab of the Media Cache settings, you can also turn on interactive video frame cache. Turning the cache on allows you to save generated frames of the current playing sequence into a memory storage cache. This saves the need to regenerate each frame every time it is needed during subsequent playback of the sequence. Enabling the cache will result in faster response times while editing.

Setting the Video Memory

To set the video memory:

1. In the Settings list in the Project window, select Media Cache.

2. Click the Video Memory tab.

   The Media Cache dialog box opens.
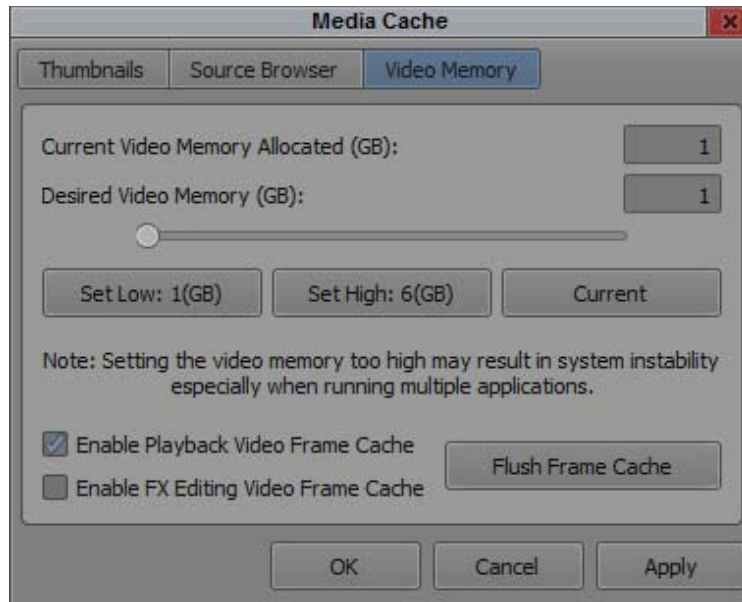
3. Do one of the following to have Media Composer reserve memory for the system whenever the editing application is running.

   ▶ Click the Set Low button to set the memory allocation to the lowest recommended amount based on your system configuration.

   ▶ Click the Set High button to set the memory allocation to highest recommended amount based on your system configuration

   ▶ Use the slider to select a desired memory allocation.

4. Click Apply.

5. Click OK.

Setting the Interactive Video Frame Cache

To specify the size of the cache perform the following.

To set the cache:

1. In the Settings list in the Project window, select Media Cache.

2. Click the Video Memory tab.

   The Media Cache dialog box opens.
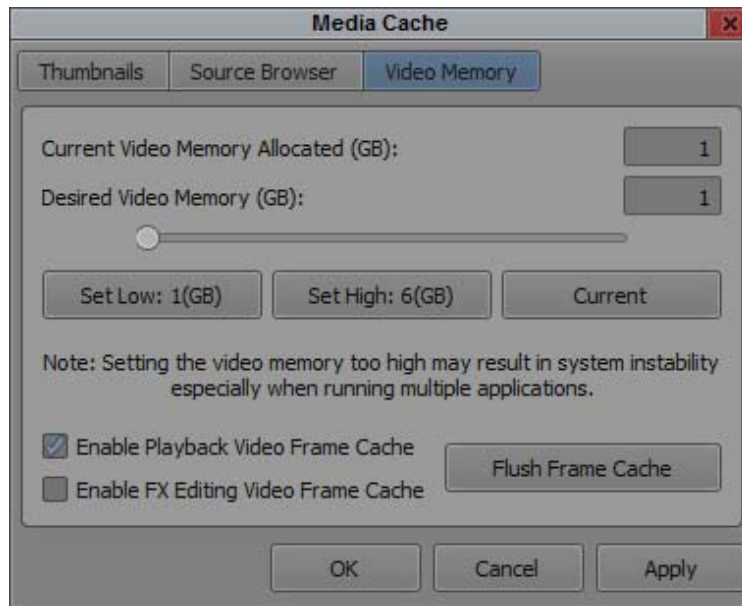
3. Select Enable Interactive Video Frame Cache.

Enabling the cache can improve performance by reusing recently played frames. Increasing the Video Memory increases the number of frames that are available for reuse.

4. Click Apply.

5. Click OK.

Enabling Frame Cache for Effect Editing Operations

Selecting the "Enable FX Editing Video Frame Cache" option improves performance during effects editing by reusing recently played frames. Increasing the video frame memory increases the number of frames that are available for reuse.

To enable Frame Cache for Effect editing:

1. Click the Settings tab in the Project Window.

2. Click Media Cache.

   The Media Cache dialog opens.

3. Click the Video Memory tab.

4. Select Enable FX Editing Video Frame Cache.
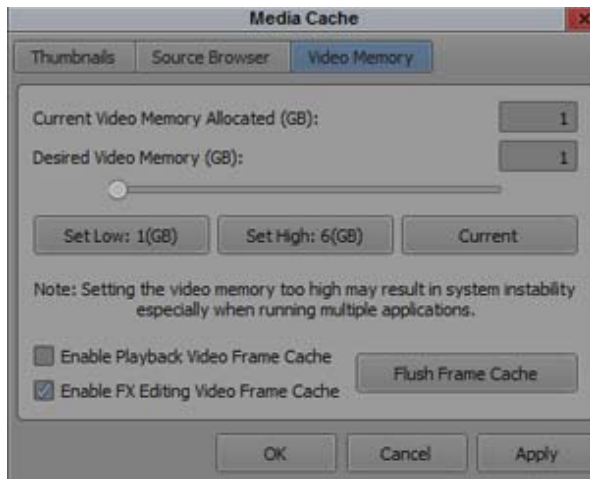
5. Click OK.

You will see a performance improvement when performing video effect editing.

Understanding Sync Breaks

Sync breaks occur when a frame-accurate relationship between two clips or between the audio and video tracks within a single clip is offset during editing. Your Avid editing application provides several features to avoid, track, and remove sync breaks.

In many cases, sync breaks are the unavoidable result of selecting only one track in a synced relationship (for example, audio only or video only), and performing edit functions that change the duration of that track when you extract, splice-in, or add or remove frames.

By default, the Timeline displays sync breaks whenever they occur while you edit. They appear at break points as white numbers indicating negative or positive offset values relative to zero. The Sync Breaks option also displays match-frame edits as an equal sign (=) on the edits. For more information on match frames, see "Working with Add Edits (Match Frames)" on page 221.

Match frames (left) and sync breaks (right) in the Timeline

You encounter sync breaks and match frames in different circumstances:

- You can encounter sync breaks in one or several video tracks and audio tracks. Sync-break offset numbers appear by default only in the affected tracks.

- You encounter match-frame cuts whenever you perform an add edit or whenever you move a segment next to footage from the same clip and the timecode is continuous across the edit.

You can customize the Timeline view to display sync breaks and match-frame edits in video tracks only, audio tracks only, or neither. For more information, see "Fixing Sync Breaks" on page 167.

The Sync Breaks feature applies only to master clips in which audio and video tracks were captured simultaneously, to autosynced subclips, or to any other subclip with video and audio tracks.

Tips for Avoiding Sync Breaks

One way to avoid breaking sync is to maintain the duration of the track when you add or remove material. The following table provides tips on how to do this in different circumstances:

Task	Tips
Add material to a track	Use the Overwrite or Replace functions instead of Splice-in.
	For more information on overwrite and replace editing, see "Performing an Overwrite Edit" on page 155 and "Performing a Replace Edit" on page 155.
Remove material from a track	Use Lift instead of Extract. (The Lift function leaves filler of the same duration when you remove footage.)
	For more information, see "Lifting, Extracting, and Copying Material" on page 156.
Perform Segment edits	Use the Lift/Overwrite function instead of Extract/Splice-in. (Lift/Overwrite leaves filler behind and overwrites material at the new destination, maintaining sync in both cases.)
	For more information, see "Working with Segments" on page 193.
Trimming	Sync lock tracks to avoid breaking sync or use the Alt (Windows) or Option (Macintosh) key function for adding black during trims.
	For more information, see "Maintaining Sync While Trimming" on page 238.
	You can also perform dual-roller trims, which maintain duration, instead of single-roller trims.

Tips for Fixing Sync Breaks

Working Mode	Tips
While trimming	• Sync lock any additional tracks that are synced to the track you are trimming. Otherwise, you might restore sync in one track and break it in the others. For more information, see "Understanding Locking and Sync Locking" on page 214.
	• Do not perform a dual-roller trim.
	• Do not perform the trim on the Out point (A-side transition) of the out-of-sync segment. Always perform the trim on the In point (B-side transition) of the segment.
Source/Record mode	• Do not use the Overwrite or Lift functions. You can, however, overwrite or lift the out-of-sync material entirely to eliminate the break.
	• Splice in or extract selected frames of filler when necessary.
	• Use the Add Edit function to isolate only a portion of a clip or filler segment in the sequence for extracting or replacing.

Working Mode	Tips
Segment mode	• Use the Lift/Overwrite function to leave filler behind and maintain any other sync relationships affected by the move.
	• Use the Lift/Overwrite function to delete the entire segment and leave filler to eliminate the break.
	• Use the Add Edit function to isolate a portion of the clip for moving or deleting.
	• Move the out-of-sync track, if possible, beyond the overlapping range with the synced material to eliminate the sync break.

Fixing Sync Breaks

You fix sync breaks by eliminating the overlapping portion of out-of-sync tracks. You can do this in one of several ways, depending on the type of break and your sequence. For more information, see "Tips for Fixing Sync Breaks" on page 166.

You can customize the sync breaks display in the Timeline, for example to limit the display to video tracks only. This can reduce clutter and help you focus on a particular set of fixes.

To restore frames to sync while Trimming:

▶ Perform one or more single-roller trims on the out-of-sync tracks.

Trim the exact number of sync-break frames displayed in the Timeline to reverse the break. For more information on performing trims, see "Working with Trim Edits" on page 226.

To fix sync in Source/Record mode:

▶ Add new material or extract material from the out-of-sync track.

Add or extract the exact number of offset frames displayed in the Timeline.

To fix sync when Segment editing:

▶ Select and move the entire out-of-sync segment.

You can move the segment forward or backward in the opposite direction of the break to reverse it. For more information on editing segments, see "Working with Segments" on page 193.

To customize the Sync Breaks display:

▶ Click the Timeline Fast Menu button, and select Sync Breaks > *option*.

Understanding Sync Lock

The Sync Lock feature lets you maintain sync among several tracks while you add, move, trim, or remove material in a sequence. For example, if you insert an edit into one track that is sync locked to a second track, the system automatically inserts filler in the second track to maintain sync between the two.
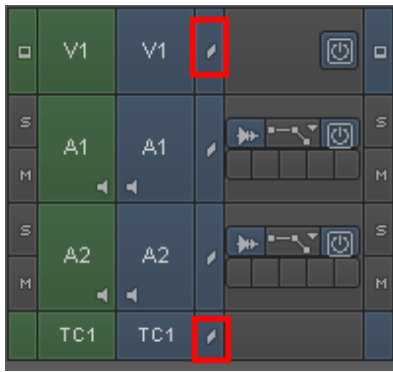
Sync Lock icon (top) and Sync Lock All button (bottom) in the Track Selector Panel

There are several unique aspects to sync locking:

- You control sync lock by the Segment Drag Sync Locks option in the Edit tab of the Timeline Settings dialog and the Sync Lock icons in the Timeline. For more information on sync locking tracks, see "Maintaining Sync with Segment Edits" on page 201.

- When trimming, sync lock applies only to single-roller trims because dual-roller trims do not break sync. For more information on sync locking tracks when trimming, see "Maintaining Sync While Trimming" on page 238.

- You can sync lock any number of tracks in any combination. The tracks do not require matching timecode or common sources and can include multiple video tracks as well as audio tracks.

- Sync lock affects entire tracks. This means that parallel segments in other sync-locked tracks are affected when you add, move, trim, or remove material anywhere in the sequence.

Syncing with Tail Leader

You can add tail leader to the audio or video material to provide a useful visual reference in the Timeline for tracking and fixing sync breaks across any number of tracks.

With tail leader added to synchronized tracks, you can go to the end of the sequence after you make a complicated edit and see if the leaders line up. If they are out of line, this indicates a sync break that you can eliminate.

To eliminate a sync break when the leaders do not line up:

1. Move the position indicator to the black segment that follows the out-of-sync leader.

2. Select the track, and then click the Mark Clip button. You can measure the break by checking the In to Out duration of the marked segment.

3. Find the point at which the sync was lost.

4. Use the appropriate edit function to add or remove frames, as described in "Fixing Sync Breaks" on page 167.

5. (Option) For a quick fix, click the Segment insert (yellow arrow) button. Drag the black segment at the end of the out-of-sync tail leader to the location where the sync was lost.

   This segment of black, created when the track went out of sync, is the exact length of the sync break.

Using Add Edit When Trimming

When you trim with several audio tracks in sync, you can create an edit in the silent or black areas of the synced tracks. They occur in line with the track you trim, and they trim all the tracks at once to maintain sync.

You can also add an edit to filler. For more information, see "Working with Add Edits (Match Frames)" on page 221.

To use the Add Edit button while trimming:

1. Move the position indicator to the edit that you want to trim.

2. Select only the additional tracks that are in sync, and click the Add Edit button.

   The system adds a transition at the location of your position indicator in the Timeline.

3. Select the transition and trim (be sure to select all the synced tracks).

   As you trim, the system adds or removes frames from the additional tracks.

4. When you finish trimming, select Timeline > Remove Match Frame Edits to remove the add edits from the sync tracks .

Ganging Footage in Monitors

The Gang function does not combine tracks into a synced relationship but locks monitors in sync so that you can move through footage in two or more monitors simultaneously. This function is convenient when you view and mark the sequence and source material simultaneously, based on syncing of the position indicators in each monitor.

You can gang the Source monitor and any number of pop-up monitors with the Record monitor. For instance, before you edit them into a sequence, you can gang a music track in a pop-up monitor, source footage in the Source monitor, and a sequence in the Record monitor. Then you can view the footage, adjust the sync points, and mark them before you complete the edit.

The Gang button appears in the Other menu in the Command Palette.

To gang footage in monitors:

1. Load a sequence into the Record monitor.

2. Load one or more clips into the Source monitor and pop-up monitors.

3. Click the Gang button for each monitor that you want to synchronize (the Record monitor is always ganged).

4. View the footage in any of the monitors.

   As you move through footage in one monitor, the footage in all other monitors freezes. The footage is updated when the play stops. Simultaneous full-motion playback is not possible, although the system maintains sync at all times.

Sync Point Editing

Sync Point editing lets you overwrite material onto your sequence so that a particular point in the source material is in sync with a particular point in the sequence. For example, you can sync an action in the source video with an audio event, such as a musical beat in the Record monitor, and then edit it so that the action occurs on the beat.

Like a replace edit, Sync Point editing uses the relative location of the position indicator in both the source and record material as the sync point. Sync Point editing, however, determines the duration of the new edit according to marks that you set, as opposed to a replace edit, which uses the head-to-tail frame duration already established in the Timeline. You can apply these marks across multiple tracks when you mark a sequence. This lets you add overlap cuts.

Sync Point editing requires two pieces of information:

•   Sync points: The points where the synchronized relationship between the source and record material is established.

•   Duration of the relationship: This is determined by the positions of the head and tail frames (and sometimes by the position indicator). Both marks are in one monitor, or one mark is in one monitor and the other mark is in the other monitor. The duration of the material being edited into the sequence is sufficient for the size of the edit.

To perform a sync point edit:

1. Load a clip or sequence into the Source monitor.

2. Load a sequence into the Record monitor.

3. Mark the material in one of the following ways:

   ▶   Mark the In and Out points in either the Source or Record monitor, leaving the opposite monitor clear of marks.

   ▶   Mark an In or Out point in the Source monitor, or an In or Out point in the Record monitor. For example, if you marked an In point in the Source monitor, mark the Out point in the Record monitor.

4. Move the source position indicator to the sync frame in the clip.

   This establishes the source sync point.

5. Move the record position indicator to the sync frame in the sequence.

6. Select Sync Point Overwrite from the Composer menu.

   The orange mark on the Overwrite button signals Sync Point editing is active.

7. Select the source and record tracks for this edit, then click the Overwrite button.

   The system completes the sync point edit.

Working with Phantom Marks

Phantom marks provide visual guidance when you edit according to the three-mark rules. For information on editing using three marks, see "Editing Additional Clips into the Sequence" on page 154.

To enable phantom marks:

1. With the Composer window active, select Composer > Show Phantom Marks.

   When you enable phantom marks, your Avid editing application displays blue mark In or Out icons in the position bars below both the Source and the Record monitors. These phantom marks indicate one, two, or sometimes three edit points calculated by your Avid editing application to complete an edit.

The following examples illustrate two typical scenarios.

Setting One Mark

In this example, you set only the mark In on the source side. By default, your Avid editing application uses the location of the position indicator as the mark In for the sequence and calculates both Out points based on the length of the source clip.

One mark IN set (left) and three phantom marks (right)

You can see your Avid editing application calculations instantly and can make the edit after you set just one mark.

Adding a Second Mark

If you decide that a mark Out is required — to shorten the source clip, for example — then your Avid editing application recalculates and displays new phantom marks.
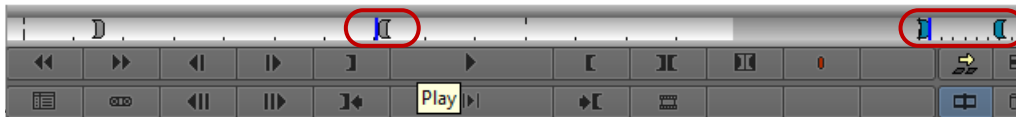
Phantom marks can help you see the results of marks you set before you complete the edit and are useful when you perform a Sync Point edit or other complicated replace edits in which two or more marks calculate automatically.

10 Using the Timeline

Your Avid editing application represents each edit and effect on a timeline to help you track and manipulate the elements of your sequence. The Timeline continuously updates as you work, displaying icons and information that you can customize in various ways. The Timeline also has its own set of editing tools for creating and revising edits and transitions across multiple tracks.

The audio and video tracks in the Timeline play in the Record monitor. You can continually edit your sequence and review your changes until you are pleased with the result.

Timeline features are described in the following topics:

- Customizing Timeline Views
- Navigating in the Timeline
- Working with Segments
- Working with Multiple Tracks
- In to Out Highlighting in the Timeline
- Editing in Heads or Heads Tails View
- Performing a Quick Edit Using the Top and Tail Commands
- Working with Add Edits (Match Frames)
- Dupe Detection
- Editing with the Film Track
- Finding Black Holes and Flash Frames
- Printing the Timeline
- Searching for Text in the Timeline

Customizing Timeline Views

You can customize your view of the Timeline to display a variety of information about your sequence as well as the clips and transitions it contains. You can do the following:

- Use options in the Timeline Fast menu to change the display in a variety of ways

  For more information, see "Using the Timeline Fast Menu" on page 173 and "Timeline Fast Menu Options" on page 173.

- Manipulate the height of tracks or move tracks as part of a view

  For more information, see "Enlarging and Reducing Timeline Tracks" on page 174 and "Moving Timeline Tracks" on page 175.

- Highlight clips in the Timeline for special purposes

  For more information, see "Displaying Clip Colors in the Timeline" on page 175.

- Hide or display audio waveforms or pan and gain automation.

For more information, see "Audio Displays in the Timeline" on page 255.

- Hide or display the Track Control panel. The Track Control panel defaults to hidden the first time you start your Avid editing application.

  For more information, see "Using the Track Control Panel" on page 186.

- Save different custom views that you can call up instantly in various circumstances.

  For more information, see "Managing Customized Timeline Views" on page 187 and "Using Timeline View Buttons" on page 188.

- Temporal (motion) adapters appear with a T, spatial (FrameFlex) adapters appear with an S, and Color adapters appear with a C. If there is a render dot on the clip it will appear on the effect icon. If there is no effect icon, the render dot will appear on the adapters.

- Use the Timeline Fast menu to choose which adapters (Temporal, spatial, Color) you want to appear in the Timeline. See "Showing Adapter Icons in the Timeline" on page 179.

- Change the background color of the Timeline. See "Changing the Background Color of a Project Window or Timeline" on page 180.

> *You can also change your view of the Timeline by using on-the-fly procedures — for example, the Zoom and Focus functions. You cannot save these as part of a Timeline view.*

Using the Timeline Fast Menu

You can customize the appearance of the Timeline by using various options from the Timeline Fast Menu.

To use the Timeline Fast menu:

▸ Click the Fast Menu button, and select or deselect an option from the menu.

For information on the options, see "Timeline Fast Menu Options" on page 173.

Timeline Fast Menu Options

The following table describes the options available in the Timeline Fast Menu.

Selected options have check marks next to them in the menu. You can select some options only from submenus.

Option	Description
Default Setup	Returns Timeline display settings to the system default settings; see "Managing Customized Timeline Views" on page 187.
View Type	Displays a submenu for selecting different segment display formats; see "Editing in Heads or Heads Tails View" on page 220.
Track Panel	Displays or hides the Track Selector panel.
Effect Icons	Switches the display of effect icons.
Render Ranges	Indicates unrendered or partially rendered effects.
Dissolve Icons	Switches the display of transition dissolve icons.
Clip Frames	Switches the display of start frames for each segment in the Timeline.

Option	Description(Continued)
Clip Text	Displays a submenu of clip text display options.
Sync Breaks	Displays a submenu of sync break display options; see "Fixing Sync Breaks" on page 167.
Dupe Detection	Enables color-coded dupe material display for V1 track; used in 24p projects and matchback projects. See "Dupe Detection" on page 222.
Color Correction	Displays indicator lines to show which segments have Source or Program color correction.
Audio Data	Displays a submenu for customizing audio tracks with waveforms or volume gain automation; see "Displaying Audio Waveforms" on page 256 and "Displaying Volume and Pan Values" on page 257.
Clip Color	Displays and controls the color coding assigned to clips. For more information, see "Displaying Clip Colors in the Timeline" on page 175.
	You can also color clips to provide information when you are working in a MultiRez environment.
Track Color	Displays a palette for changing the color of the tracks in the Timeline; see "Changing the Track Color" on page 177.
	▤ *A track must be selected in the Timeline for the Track Color command to appear.*
Show Markers	Displays a submenu for selecting the markers to be displayed in the Timeline; see "Showing Markers in the Timeline" on page 179.
Show Adapters	Allows you to choose which adapters (Temporal, spatial, Color) you want to appear in the Timeline.
Show Track	Displays a submenu for displaying tracks; see "Displaying Timecode Tracks in the Timeline" on page 179.
Track Control Panel	Displays or hides the Track Control panel; see "The Track Control Panel" on page 185.
Zoom	Allows you to set the zoom for the Timeline; see "Zooming and Focusing in the Timeline" on page 191.

Enlarging and Reducing Timeline Tracks

You can enlarge or reduce the height of one or more tracks to improve visibility and display more information within the tracks.

To enlarge or reduce the height of tracks:

1. Select the tracks in the Timeline that you want to resize.

   For more information, see "Selecting Tracks" on page 208.

2. Do one of the following:

   ▶ Select Edit > Enlarge Track or Edit > Reduce Track.

   ▶ Press Ctrl+L (Windows) or Command+L (Macintosh) to enlarge the track, or Ctrl+K (Windows) or Command+K (Macintosh) to reduce the track, which changes the height of all highlighted tracks in the Timeline.

Moving Timeline Tracks

You can move a track to reposition it vertically relative to the Timeline. Surrounding tracks are repositioned above or below the track.

Do not move a track when patching to another track is more appropriate.

To move a track:

▶   Press and hold the Ctrl key (Windows) or Option key (Macintosh), click the Track button for the track that you want to move, and drag the track to its new position.

Displaying Clip Colors in the Timeline

You can use colors to highlight the following types of clips in the Timeline:

•   Clips that have offline media.

When you work with nested layers, a clip that contains offline media appears colored even if the missing media is located in a nested layer.

•   Clips whose frame rate does not match the sequence frame rate (mixed-rate clips).

•   Clips that do not match the video resolution type of the project — for example, HD clips in an SD project, or SD clips in an HD project.

•   Clips to which you assign a local color in the Timeline.

•   Clips to which you assign a color in the bin.

When working in a MultiRez environment, you can also use colors to track available resolutions.

You can control which types of clip coloring to enable, and customize the colors themselves. Clip color options are saved when you save a customized Timeline View, so you can set up several coloring schemes and then switch between them. For more information, see "Managing Customized Timeline Views" on page 187.

Displaying clip colors overrides any track color you assign from the Timeline Fast menu.

For HD and SD projects, DVCPRO HD clips are colored light red. You cannot customize this color, which is an indicator that DVCPRO HD media plays by skipping frames. To avoid skipped frames, use the Transcode command and select a compatible resolution.

To display clip colors in the Timeline:

1.   Click the Timeline Fast Menu button, and select Clip Color.

The Clip Color dialog box opens.

2. Select one or more of the following:

Option	Description
Offline	Colors clips that have offline media. In a MultiRez environment, colors clips that do not match the working resolution, if you have selected Relink to Offline in the Dynamic Relink Settings dialog box.
Proxy	Colors proxy clips in the Timeline.
Linked Clips	Colors Linked clips in the Timeline.
Mixed Rates	Colors clips whose frame rates do not match the sequence frame rate. A different color is available for each frame rate.
SD/HD	Colors clips that do not match the video definition type of the project format — in an HD project this option colors the SD clips, while in an SD project this colors the HD clips. ⎘ *You can also display clip text that can help you to identify particular clips by selecting Clip Text > Clip Resolutions from the Timeline Fast menu.*
Timeline Local	Colors clips to which you have assigned a local color in the Timeline. For more information, see "Assigning Local Colors to Clips in the Timeline" on page 178.
Source	Colors clips to which you have assigned a color in the bin. (Colors assigned to sequences, groups, motion effects, and title clips do not appear as source colors in the Timeline.) For more information, see "Assigning Colors to Objects in a Bin" on page 75.

The order of the options in the Clip Color dialog box indicates the priority order in which your Avid editing application applies colors when you select more than one option. For example, if you have Offline and SD/HD selected, an offline SD clip in an HD project uses the higher-priority Offline color rather than the SD/HD color.

To change the display colors for the Resolution Tracking, Offline, Mixed Rates, or SD/HD options:

1. Click the Timeline Fast Menu button, and select Clip Color.

   The Clip Color dialog box opens.

2. Click the color swatch for the option you want to change.

   A color picker grid opens.
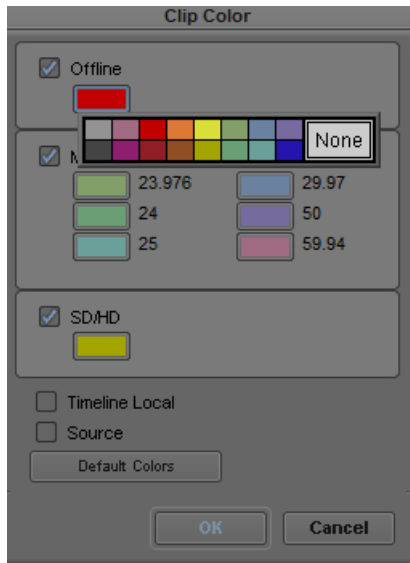
3. Click a color in the grid.

   The color you select becomes the display color for that option.

To reset the display colors for the Resolution Tracking, Offline, Mixed Rates, and SD/HD options:

1. Click the Timeline Fast Menu button, and select Clip Color.

   The Clip Color dialog box opens.

2. Click Default Colors.

   The Offline, Mixed Rates, and SD/HD color swatches reset to their default colors.

Changing the Track Color

To change the color of the selected tracks in the Timeline:

1. Click in the Timeline to activate it.

2. Select the tracks whose color you want to change.

3. Click the Timeline Fast Menu button, and select Track Color > *color*.

4. (Option) If you want to choose a custom color for the tracks, press the Alt key (Windows) or Option key (Macintosh) while performing this procedure.

   When you release the mouse button on the color palette, the Windows Color dialog box or the Macintosh Colors panel opens.

Assigning Local Colors to Clips in the Timeline

You can assign local colors to clips in the Timeline — for example, to indicate clips that you want to group together or to make clips stand out while you work in the Timeline.

For more information on clip colors in the Timeline, see "Displaying Clip Colors in the Timeline" on page 175.

To assign a local clip color:

1. Click the Timeline Fast Menu button, and select Clip Color.

   The Clip Color dialog box opens.

2. Select Timeline Local, and then click OK.

3. Select one of the segment tools in the Timeline palette, and select a clip you want to color.

4. Do one of the following:

   ▶ Select Edit > Set Local Clip Color > *color* to select a standard color.

   ▶ Select Edit > Set Local Clip Color > Pick to select a custom color from the Windows Color dialog box.

   The assigned local color appears in the clip in the Timeline.

To remove a local clip color and set it to the default:

1. Select one of the segment tools in the Timeline palette, and select the clip whose color you want to remove.

2. Select Edit > Set Local Clip Color > None.

   The assigned local color no longer appears in the clip in the Timeline.

Clip Color for Proxy Clips in Timeline

An additional option in the Clip Color window allow you to highlight h.264 proxy clips in the Timeline. Proxy clip color is enabled by default.

To select or deselect the proxy clip color in the Timeline:

1. Click the Timeline Fast Menu and select Clip Color.

   The Clip Color dialog opens.

2. Select Proxy.

3. Click OK.

   The h.264 proxy clips will appear highlighted yellow in the Timeline.

Displaying Timecode Tracks in the Timeline

When you are working with 25p projects (PAL with pulldown), you can display separate tracks for 25, 25P, and 30 timecodes in the Timeline. By default, the Timeline displays all the tracks. You can hide the timecode tracks by deselecting them in the Show Track submenu of the Timeline Fast menu.

The master timecode also displays in the Timeline ruler above the Timeline.

To customize the tracks to be displayed in the Timeline:

▶   Click the Timeline Fast Menu button, and select Show Track > *tracks*.

📄   *The TC1 track represents the timecode of the active project.*

Showing Markers in the Timeline

When you add markers to a sequence, the markers are displayed in the Timeline. You can modify which markers to display in the Timeline by selecting Show Markers from the Timeline Fast menu. When you select a color from the Show Markers submenu, only markers of that color appear in the Timeline. You can select All from the Show Markers submenu to display all the markers, or you can select None to prevent any markers from being displayed in the Timeline.

📄   *Show Markers affects only how the marker icons display in the Timeline and does not affect the markers.*

To change the display of markers in the Timeline:

1. Load a sequence that contains markers into the Record monitor.

2. Click the Timeline Fast Menu button, select Show Markers, and then select the colors of the markers you want to display in the Timeline.

   The Timeline displays only those markers with the colors you selected.

Showing Adapter Icons in the Timeline

You can modify which adapter icons to display in the Timeline by selecting Show Adapters from the Timeline Fast menu. Clips that have source-side color, spatial and motion adapters, have these effects indicated by separate icons.

To show adapter icons in the Timeline:

1. Load the sequence in the Record monitor.

2. Click the Timeline Fast Menu button, select Show Adapters, and then select the adapters you want to display in the Timeline.

   The Timeline displays adapter icons for those you selected.
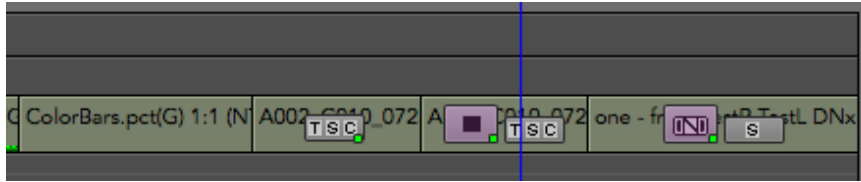
Temporal (motion) adapters appear with a T, spatial (FrameFlex) adapters appear with an S, and Color adapters appear with a C. If there is a render dot on the clip it will appear on the effect icon. If there is no effect icon, the render dot will appear on the adapters.
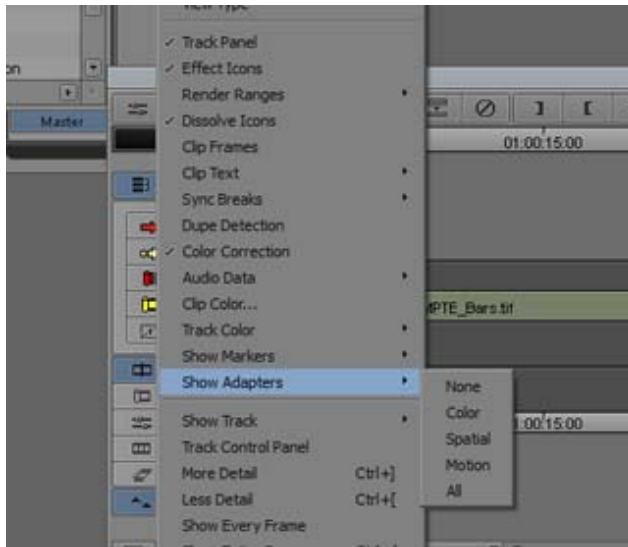
Changing the Background Color of a Project Window or Timeline

You can easily change the background color of the Project Window and the Timeline.

To change the background of the Project Window or the Timeline:

1. In the Settings tab of the Project Window, open the Interface Settings.

   The Interface Settings dialog opens.
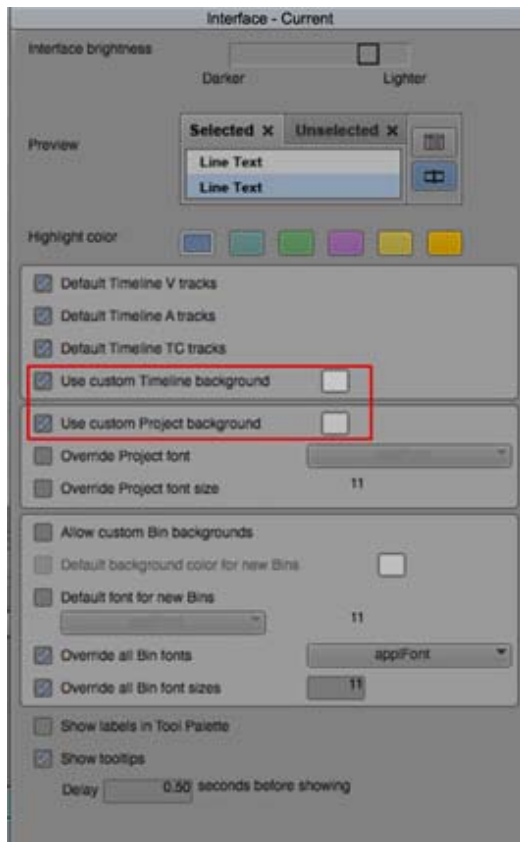
2. If you want to change the background of the Timeline, select Use custom Timeline background and choose a color from the color picker.

3. If you want to change the background of the Project window, select Use custom Project background and choose a color from the color picker.

4. Click Apply.

The colors selected appear in the background of the Timeline and Project window.

Setting the Playback Option for the Timeline

You can control how the Timeline displays during playback by setting a preference in the Timeline Settings dialog box:.

• The Timeline display can page to the next section of your sequence when the position indicator gets to the end of the visible section of the Timeline as you play.

• The Timeline display can scroll over the position indicator while you play a sequence

• The Timeline display can remain stationary as the sequence plays, even when the position bar moves beyond the right of the Timeline.

For the Timeline to page or scroll, you might need to display more detail in the Timeline to expand the sequence. Click the slider and drag it to the right to expand the Timeline. All effect icons are hidden as you scroll.

To set the playback option:

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

   The Timeline Settings dialog box opens, displaying a list of your current Timeline settings. For more information, see "Timeline Settings" on page 402.

2. Click the Display tab, and select one of the following:

   ▶   Page

   ▶   Scroll

   ▶   None

3. Click OK.

Disabling the Smart Tool in the Timeline

Using the Smart tool enables a dynamic, cursor-based editing method in the Timeline. This changes the standard behavior of the mouse pointer so that you cannot scrub through the Timeline as you do in normal edit mode. If you want to move or scrub through the Timeline without making segment edits, you can turn off the editing 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.

To disable the Smart tool using the Timecode ruler or the Timecode track:

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

   The Timeline Settings dialog box opens, displaying a list of your current Timeline settings. For more information, see "Timeline Settings" on page 402.

2. Click the Edit tab, and select Clicking the TC Track or Ruler Disables Smart Tools.

3. Click OK.

Using the Full-Screen Timeline

As an alternative to constantly scrolling through the Timeline window or resizing tracks to get a view of the material, you can resize the Timeline window to full-screen display. You can also enlarge the tracks to view complex audio or video layers in greater vertical detail.

A Timeline with reduced tracks wraps around to show more of the sequence. As you reduce tracks in a full-screen Timeline, the sequence wraps around, allowing you to examine a long sequence in greater horizontal detail.

📄   *If the Timeline or monitor window is hidden behind another window, select the window again from the Tools menu.*

To resize the Timeline window:

▶   Click the Resize box at the lower right corner of the window, and drag it.

▶   (Macintosh only) Click the Maximize button in the top right corner of the window.

   The Timeline expands to full-screen size.

To restore a resized Timeline window to its default position:

▶   Click the Timeline and select Windows > Send Current Home.

To center a resized Timeline window:

▶ Click the Timeline and select Windows > Center Current.

To enlarge tracks:

▶ Select the tracks, and press Ctrl+L (Windows) or Command+L (Macintosh).

To reduce tracks:

▶ Select the tracks, and press Ctrl+K (Windows) or Command+K (Macintosh).

You can also continue to work in Source/Record mode by resizing the Timeline window so that it overlaps the Composer window.

You can click either window to activate it and bring it forward at any time, or you can click the title bar of the Timeline window and drag it to the Bin monitor to place each window in its own monitor.

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

• Adjust transition effects in the Timeline
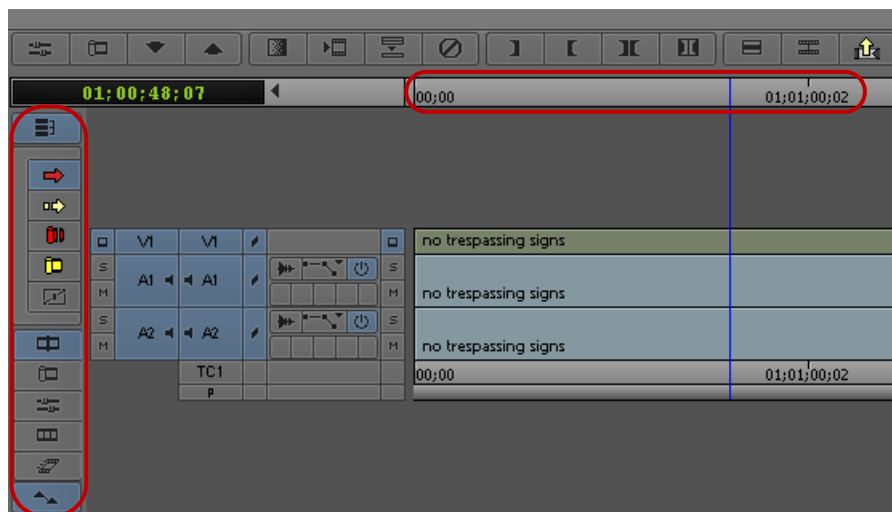
Timeline palette, located to the left of the Timeline, with the Timeline ruler at the top of the Timeline

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.
	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.
	Transition Manipulation	Allows you to modify transition effects without using the Quick Transition dialog box.
	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.
	Keyframe Selection	Lets you select and move audio keyframes in the Timeline.

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 (left)

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" on page 61.

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 193.

- 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 227.

- The Transition Manipulation tool lets you select and modify transition effects in the Timeline. You can adjust the duration and position of the transition effect by moving the effect handles or the effect icon.

- 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" on page 182).

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 pan displays on individual tracks (see "Displaying Audio Waveforms" on page 256 and "Displaying Volume and Pan Values" on page 257).

- Add, delete, move, and copy Audio Track Effects (see "Audio Track Effect Plug-Ins" on page 304).

- Mark tracks as inactive or solo or mute tracks so you can monitor the audio on a track.
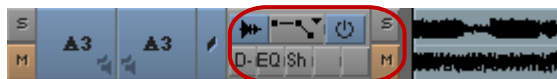
Track Control panel

Component	Description
Waveform	Turns on or off the waveform display for individual tracks.
Clip Gain/Pan	Turns on or off the clip gain, auto gain, and 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.

Component	Description
Solo	Allows you to monitor a single track of audio without deselecting other tracks.
Audio Track Effect plug-ins	Lists the Audio Track Effect plug-ins inserted on the track. Clicking the button for an existing insert opens the plug-in window so you can edit the plug-in parameters. Clicking a blank effect button opens the Audio Track Effect 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 "

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

Displaying Source Material in the Timeline

You can display source material in the Timeline. This feature is useful when you edit with a sequence or subclip created from a sequence. You can also use it to look at the contents of any source clip in a Timeline display.

Heads and Tails view is disabled when you are displaying material from the Source monitor.

To view multitrack source material quickly in the Timeline for selecting and marking specific tracks:

▶ Click the Toggle Source/Record in Timeline button.

By default, the Timeline displays only the available tracks for source material. Both the button and the position indicator turn green to indicate that you are viewing source material.
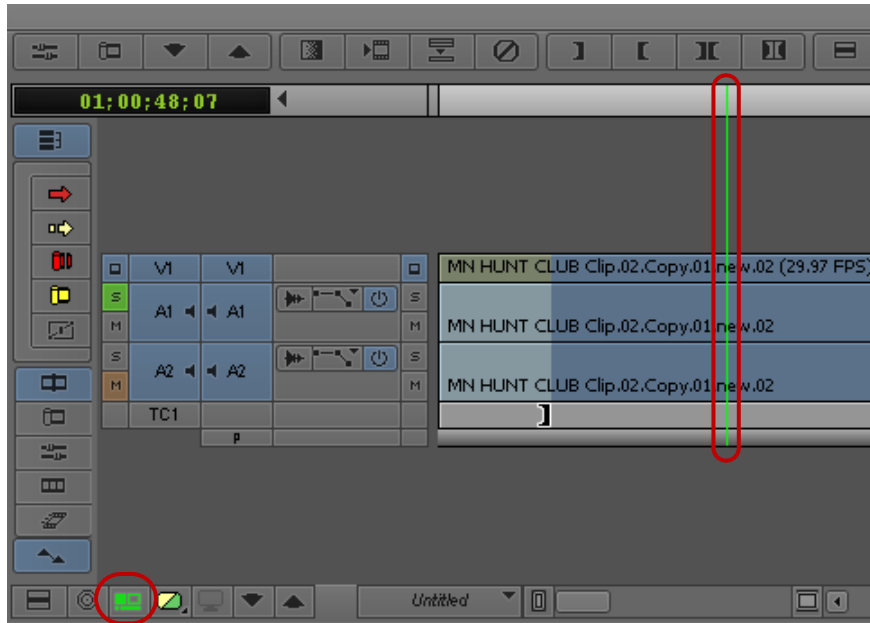
Displaying the Timeline Top Toolbar

You can display a top toolbar in the Timeline for easy access to editing buttons. You can also map additional buttons to the Timeline top toolbar. For information about mapping buttons, see "Mapping User-Selectable Buttons" on page 61.

To show the Timeline top toolbar:

1. In the Project window, double-click the Timeline Setting.

   The Timeline Settings dialog box opens.

2. Select Show Toolbar in the Display tab.

3. Click OK.

To hide the Timeline top toolbar:

▶ Deselect Show Toolbar, and then click OK.

Managing Customized Timeline Views

You can save a customized Timeline view. Timeline views appear in the Settings list in the Project window. You can save, rename, and copy multiple views.

Your Avid editing application saves the Timeline information from the Timeline Fast menu with each view.

You can select alternate views from the View menu located in the Timeline bottom toolbar. The Timeline view is labeled Untitled until you name and save a customized Timeline view.

You can replace a Timeline view with a different view, while keeping the same name. You can also restore the default Timeline setup at any time.

You can also change the name of a Timeline view or delete a view from the Settings list in the Project window. For more information, see "Naming Settings" on page 391 and "Deleting Settings" on page 392.

To name a Timeline view or to change a view's name:

1. Click the View Menu button, and select Save As.
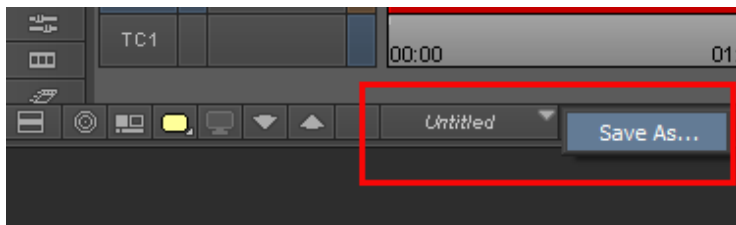
   The View Name dialog box opens.

2. Type a name for the view, and click OK.

3. Press and hold the Alt key (Windows) or Option key (Macintosh) while you click the View Menu button to display the list of saved view names, each appended with the Replace command.

4. (Option) If you want to replace a Timeline view, select a view name from the list that you want to replace.

   Your Avid editing application applies the current Timeline view to the selected name and displays that name in the Settings list in the Project window.

To restore the default view in the Timeline:

▶ Click the Timeline Fast Menu button, and select Default Setup.

Using Timeline View Buttons

The More tab of the Command Palette contains eight Timeline View buttons that you can use to switch between Timeline views. You can map these buttons to any mappable button location or to the keyboard, or you can use them directly in the Command Palette.

You must create at least one Timeline view to use the Timeline View buttons. For more information, see "Managing Customized Timeline Views" on page 187.

The Timeline View buttons are assigned to your Timeline views in the order that they appear on the View menu in the Timeline bottom toolbar and in the Settings list. For example, the T1 button is assigned to the first Timeline view that appears in the menu and the Settings list, the T2 button is assigned to the second view, and so on.

Your Avid editing application sorts the Timeline views alphabetically, and the button assignments might change if you add Timeline views. To keep a designated order, name your Timeline views with a number preceding the first letter (for example, you might have views named 1default, 2headframes, 3waveforms, and so on).

To map a Timeline view button:

1. Select Tools > Command Palette.

2. Click the More tab.
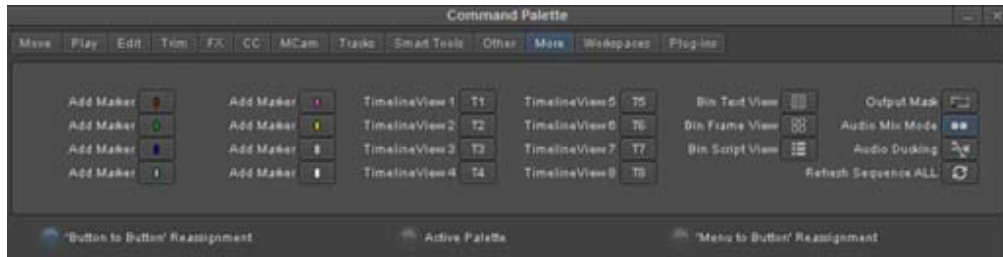
Timeline View buttons in the More tab of the Command Palette

3. Select Button to Button Reassignment.

4. Click a Timeline view button (T1 – T8), and drag the button to a location on another palette (for example, the Tool palette) or the Keyboard settings window.

   For more information, see .

   The Timeline view button appears in the new location.

To use a Timeline View button or key, do one of the following:

▶ Click the Timeline view button in the location to which you have mapped it.

▶ Press the key on the keyboard that you have associated with the Timeline View button.

▶ In the More tab of the Command Palette, select Active Palette, and then click the Timeline View button.

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" in the Help.

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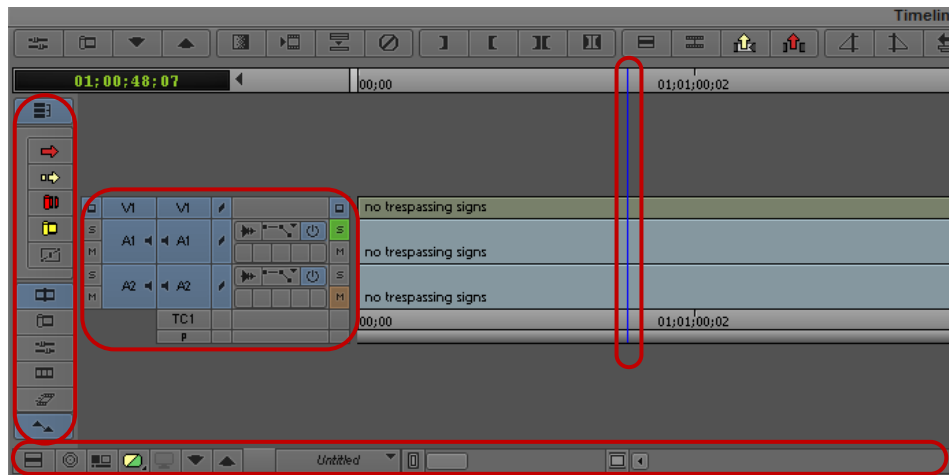
Timeline window: (left to right) Timeline palette, Track Control panel, Position indicator, with the Timeline bottom toolbar under the Timeline (left to right: Timeline Fast Menu, Focus, Toggle Source/Record in Timeline, Video Quality, DNxHD Native, Step In, Step Out, Scale bar Timeline scroll bar)

Understanding the Timeline Position Indicator and Scroll Bar

The position indicator in the Timeline marks your place in the sequence. It also determines how your Avid editing application interprets some of your commands. For example, when you perform an edit, the system takes the location of the position indicator as the In point in the absence of established marks.

When you move the position indicator in the Timeline, the smaller position indicator within the Record monitor's position bar also moves.

By default, the Timeline scroll bar appears on the right side of the Timeline bottom toolbar. You can drag the scroll slider to reposition yourself within the Timeline, or click the arrows to scroll left or right.
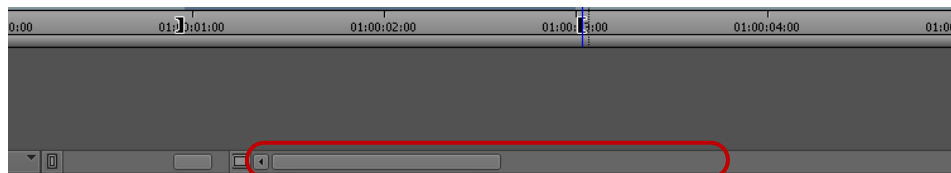
Timeline scroll bar with scroll slider at the bottom of the Timeline

You can change the Timeline scroll bar to a position bar that acts like the position bar in the Record monitor, except that you can manipulate it without deactivating the Timeline window. For more information, see .

An advantage of the position bar is that when you focus on only a portion of the sequence, both the Timeline and Record monitor's position bars show a highlighted region around the position indicator. This represents the range of material displayed in the window.
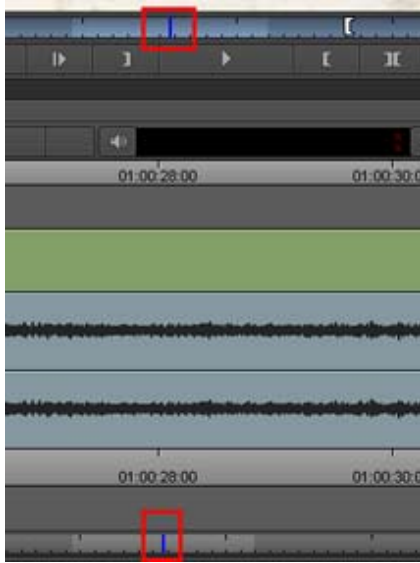
Position indicators with highlighted regions in the monitor and in the Timeline

Switching to the Timeline Position Bar

To switch to the Timeline position bar:

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

   The Timeline Settings dialog box opens.

2. Select the Show Position Bar option in the Display tab.

   A check mark appears in the box. To deselect an option, click it again.

3. Click OK.

   The scroll bar changes to a position bar.

For information on all Timeline settings, see "Timeline Settings" on page 402.

Zooming and Focusing in the Timeline

You can change your view of the Timeline to focus in on particular information in the following ways:

- You can use the scale bar to stretch and contract the Timeline area centered around the position indicator.

  This lets you either zoom in to focus on a specific area of your sequence or zoom out to display your whole sequence. This feature is especially useful when you have a lengthy sequence with many edits.

- You can use the Zoom In command in the Timeline Fast menu to select a portion of the Timeline of any size to instantly expand to fill the window, and the Zoom Back command to instantly restore the Timeline to its former size.

  The Zoom In and Zoom Back commands do not depend on the placement of the position indicator. You can select any portion of the Timeline to expand and contract.

- You can use the Focus button to quickly change your view of the Timeline so that you focus on a few seconds of material on either side of the position indicator.

The Focus button centers the position indicator and scales the Timeline so each second of time in the sequence fills 90 pixels in the display. The Focus button is located in the Timeline bottom toolbar next to the Timeline Fast Menu button.

Left to right: Timeline Fast Menu button, Focus button, and scale bar in the Timeline bottom toolbar

To zoom in the Timeline using the scale bar:

1. Click the scale slider, and drag it to the right.

   The Timeline expands horizontally and shows more detail. The position indicator splits into a solid blue line and a dotted blue line (or "shadow"), marking the beginning and end of the current frame. You can click either the line or the shadow to move exactly one frame forward or back.

2. To shrink the Timeline to its original size, drag the scale slider back to the left.

To zoom in the Timeline using the Zoom In and Zoom Back commands:

1. Click the Timeline Fast Menu button, and select Zoom In.

   The pointer arrow changes to a selection bar.

2. Position the pointer at either the start or end of the place you want to zoom in on, and drag to select the section.

   When you release the mouse button, the material inside the Zoom In box expands to fill the Timeline window.

3. To return to the previous Timeline display, click the Timeline Fast Menu button, and select Zoom Back.

To focus the Timeline using the Focus button:

1. Make sure none of the edit tools in the Smart tool is active.

2. Move the position indicator to the frame or transition you want to expand.

3. Click the Focus button.

   Your Avid editing application centers and enlarges the region of the Timeline immediately surrounding the position indicator.

4. To return the Timeline to its previous view, click the Focus button again.

Vertical Scrolling in the Timeline

The editing application allows you to automatically scroll vertically in the Timeline. This is useful if you have many tracks in the Timeline and want to scroll below the visible area of the Timeline.

To scroll vertically in the Timeline perform one of the following:

▶ Select the blue bar in the ruler and drag vertically to scroll down the Timeline.

▶ In Segment mode, select a segment and drag vertically to scroll down the Timeline.

▶ Lasso an area above the tracks and drag vertically to scroll down the Timeline.

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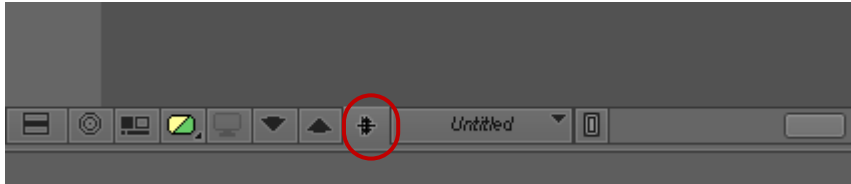
Motion Mode Icon	Description
	Snaps the position indicator to head frame.
	Snaps the position indicator to tail frame.
	Snaps the position indicator to the edit point in a track above or below the current track.

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.
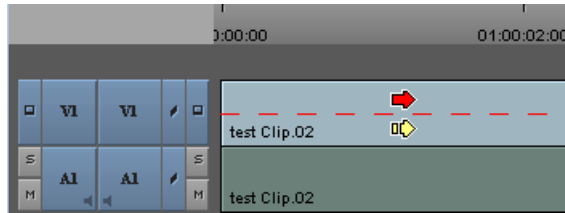

Timeline showing the active segment selection zones

•   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 206.

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" on page 253.

•   You can select segments linked by common source media and timecode by enabling link selection. For more information, see "Linked Clips" on page 197.

•   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 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 197.

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 194.

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.
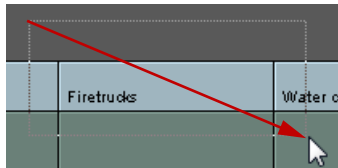
📖 *When you draw a lasso, if neither segment tool in the Timeline palette is selected, it defaults to the Default Segment Tool that is set in the Timeline Settings Edit tab.*

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.

Live Dragging in the Timeline

You can clearly see the segments as you drag them in either trim or segment mode. When you click and drag a clip you can see the clip as it moves in the Timeline. As you drag a clip, the movement is transparent allowing you to see the clips you are dragging over in the Timeline. If Waveforms are turned on, the waveform stays with the clip as you drag, making it much easier to line up clips as you are editing.
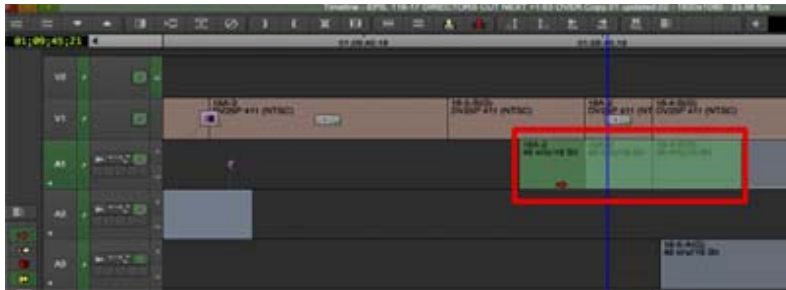
You can also see the rippling effect of single roller trim while trimming.

Dragging a segment in lift/overwrite (red) mode will show the dragged segment and its contents, such as waveform and marker.

Dragging a segment in extract/splice-in (yellow) mode will show the effect of inserting the segment into the track.

If you prefer the old behavior where you did not see the clip moving in the Timeline, go to the Timeline Settings and enable Wireframe Dragging.

Creating a Sequence Based on Selection

It might be helpful to create a duplicate sequence based on the current Timeline selection. For example, you could choose to select all the Clips with Same Source Clip Color in the current sequence and then create a sequence with just those same source clip color clips.

To duplicate the current sequence in the Timeline based on selection:

1. Load the sequence in the Timeline.

2. Select clips in the Timeline using a combination of lassoing, shift+clicking or by selecting an option from the Select menu. (Access the Select menu by right clicking in the Timeline.)

The options in the Select Menu:

Timeline Context Menu Option	Description
Select > To the Left	Selects all the clips to the left of the current position indicator in the Timeline
Select > To the Right	Selects all the clips to the right of the current position indicator in the Timeline.

Timeline Context Menu Option	Description
Select > Clips with Same Source Clip Color	When you select this option, the editing application looks at all the selected clips, collects the source (bin) clip colors that are used by these clips and selects any other clips that use these colors.
Select > Clips With No Source Clip Color	When you select this option, all clips with no source clip color are selected.
Select > Offline Clips	Selects all offline clips in the Timeline.
Select > Clips With Same Local Clip Color	Selects all clips with the same local clip color in the Timeline.
Select > Reverse	Reverses the current selection on all tracks. ⧉ *Filler is not selected.*

3. Right-click and choose Create Sequence Based on Selection.

   A Select a bin dialog box opens (if you have more than one bin open).

4. Choose the bin where you want to place the duplicate sequence.

5. Click OK.

   A new sequence is placed in the selected bin, highlighted and ready to be renamed. Track attributes such as custom names, mute/solo states, and waveforms are maintained in the new sequence.

⧉ *Tracks that did not have something selected in the original sequence are not included in the duplicate sequence.*

⧉ *If there was filler at the end of the original sequence, it is removed in the duplicate.*

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.

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.

Excluding Filler when Selecting Multiple Segments

You can use a modifier key to exclude filler when selecting multiple segments.

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.

Holding the Alt key (Windows) or Option key (Macintosh) while selecting the Select Left, Select Right, or Select In/Out button will exclude filler from the selection.

Selecting Filler with Segment Tools

A Timeline Settings option allows you to choose whether or not you want filler to be selected when using the Segment Tools. The Select Filler with Segment Tools option appears in the Timeline Settings Edit tab.
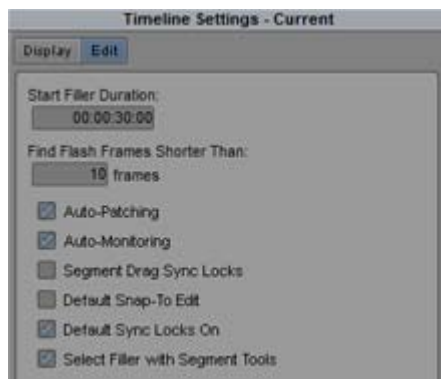
To select filler when using the Segment Tools:

1. In the Project Window, click Timeline in the Settings list.

2. Click the Edit tab.

3. Enable the Select Filler with Segment Tools option.

   When using the Segment tools, filler will be selected.

   If you do not want filler selected when using the Segment Tools, make sure the Select Filler with Segment Tools option is deselected.

Using the Alt key (Windows) or Option key (Macintosh) while selecting the Select Left, Select Right, or Select In/Out button will exclude filler from the selection if the Select Filler with Segment Tools option is selected and will include filler from the selection if the Select Filler with Segments Tools is deselected.

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 (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.

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 197).

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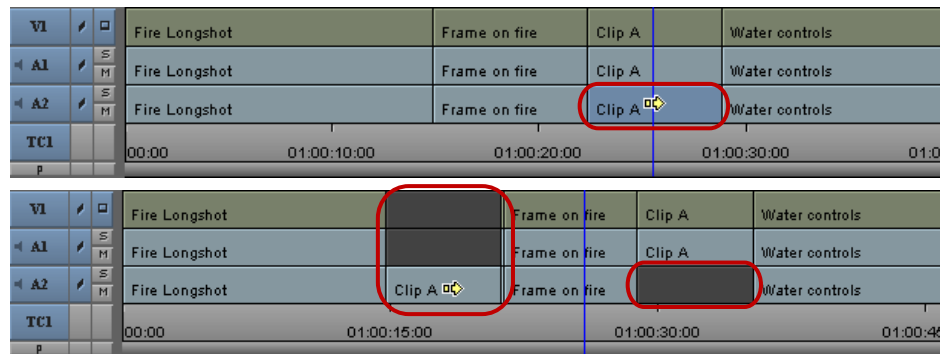
Top: before segment drag sync lock, showing the segment that will move. Bottom: after segment drag sync lock, showing the moved segment and filler added after the move (left), and the filler left in the original location (right).

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 198).

   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 193).

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.

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.

Copying and Dragging Segments

Simply use Option (Mac) or Alt (Windows) while dragging a segment to copy the segment.

To copy and drag a segment:

1. Using a segment tool, click and hold the segment you want to copy and drag.

2. Press Option (Mac) or Alt (Windows) and drag the segment.

   A plus sign (+) should appear in the segment if you have selected it properly for a copy drag.
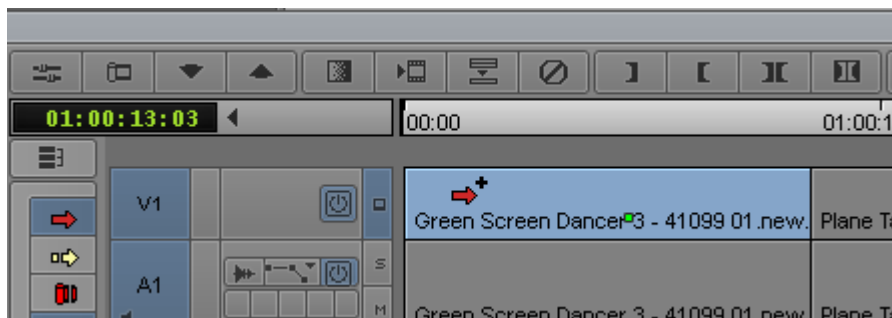
3. Drop the copied segment in the new position in the Timeline.

Dragging Nonadjacent Segments

You can drag nonadjacent segments in the Timeline. You must be in Overwrite mode to drag the segments.

To drag nonadjacent segments:

1. Make sure you are in Lift/Overwrite mode by selecting the Lift/Overwrite button in the Smart Tool.

2. Select the nonadjacent segments that you want to move.
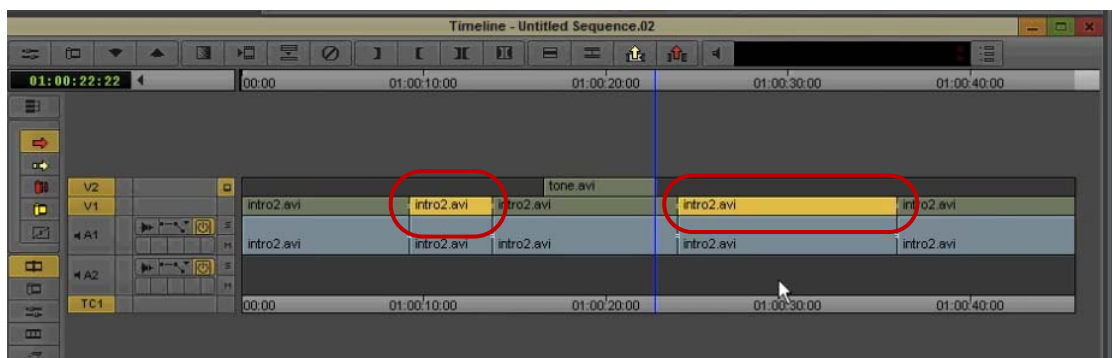
3. Move the segments to the desired location.

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 205.

To delete segments quickly:

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

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

   - 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 you select both segment tools in the Timeline palette, and then perform a delete, the delete will be performed according to the Default Segment Tool setting selected in the Timeline Settings Edit tab.

If the segment contains transition effects, and you delete the segment, the transition effect remains.

Marking Clips and Sequences

As an alternative to marking sections of the Timeline in Source/Record mode for deleting, copying, subclipping, or rendering, 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).

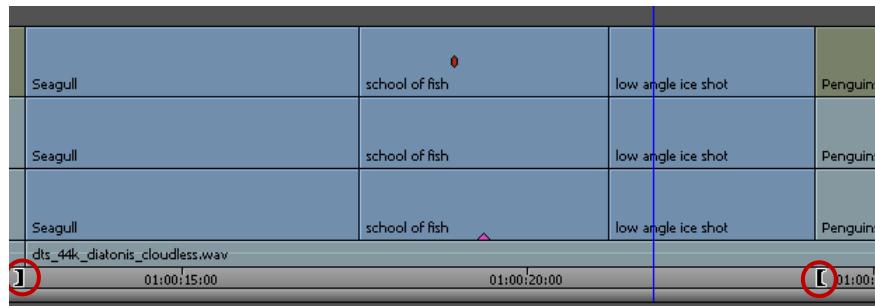   ▶ Select one of the segment tools on the Timeline palette.

   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.

   If you selected both segment tools in the Timeline palette, the paste operation uses the default segment tool specified in the Timeline Settings dialog box.

Setting the Default Segment Edit Tool

When you perform a segment edit without first selecting a segment edit tool, the Avid editing application uses the default segment tool for the edit. You can use the Timeline Settings dialog box to define which tool to use by default. Selecting a specific segment edit tool in the Timeline palette overrides the default tool.

To set the default tool used for segment editing:

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

   The Timeline Settings dialog box opens, displaying a list of your current Timeline settings. For more information, see .

2. Click the Edit tab, and select one of the following:

   ▶ Segment Insert for Extract/Splice-In edits

▶   Segment Overwrite for Lift/Overwrite edits

3. Click OK.

Enabling Only One Segment Edit Tool at a Time

You can use the Timeline Settings dialog box to specify the behavior of the segment tools in the Timeline palette to allow only one segment tool to be enabled at a time. This overrides the default behavior, which allows both segment tools to be enabled at once, and is useful in some workflows.

For more information on Timeline settings, see "Timeline Settings" on page 402.

To specify that the segment tools in the Timeline palette be enabled one at a time:

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

   The Timeline Settings dialog box opens.

2. Click the Edit tab, and select Only One Segment Tool Can Be Enabled At A Time.

3. Click OK

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" on page 153.

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" on page 205.

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.

Working with Multiple Tracks

Your Avid editing application lets you edit up to 4 tracks of video and 8 tracks of audio, including multichannel audio tracks. 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.

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.
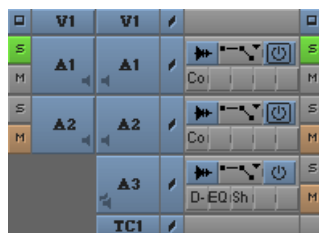
Track Selector and Track Control panels, with Source tracks (left) and Record tracks (right). See the following table for a list of Track Selector buttons.

Icon	Button
	Video Track Monitor button
	Video Track, Source and Record

Icon	Button
	Sync Lock button
	Audio Mono Track Monitor button
	Audio Stereo Track Monitor button
A1	Audio Track, Source and Record
TC1	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" on page 61 and "Activating Commands from the Command Palette" on page 62.
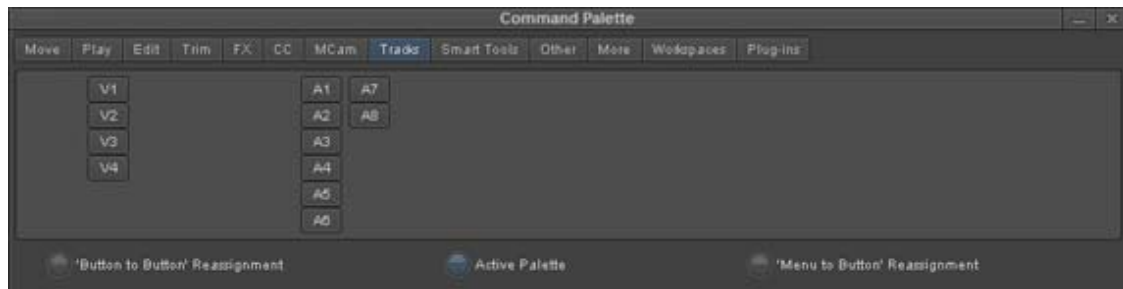
Track buttons in the Tracks tab of the Command Palette

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 and audio 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 210.

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.

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.
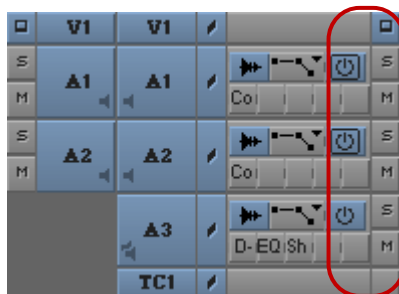
For more information on monitoring video and audio tracks, and on the benefits of solo monitoring, see .

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" on page 402.

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.

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.
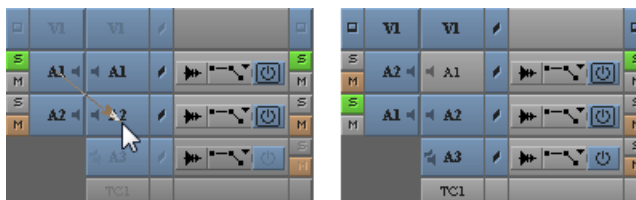
Audio patch from a source track to an audio record track (left) and the new source track order identifying the patch (right).

📄 *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 Timeline > 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.

Performing an Alternate Edit

Using Alternate Edit mode allows you to overwrite a selected clip in a sequence with several clips located in a special bin called Alternate Edits. To do this, you place the position indicator on a clip in the Timeline and click the Alternate Edit button. Each Alternate Edit replaces the clip where the position indicator is located with a clip from the Alternate Edits bin.

The order in which the clips appear in the Alternate Edits bin is the same order used for the overwrites in the sequence. If the clip you want to replace in the sequence is also in the Alternate Edits bin, then the selection defaults to the next clip in the bin.

📄 *Check the duration of the clip in the sequence. The clips or subclips in the Alternate Edits bin must be as long or longer than the clip in the sequence you want to replace.*

To perform an alternate edit:

1. Load a sequence in the Timeline.

2. Create a bin called Alternate Edits.

3. Place clips or subclips in the Alternate Edits bin you want for your sequence.
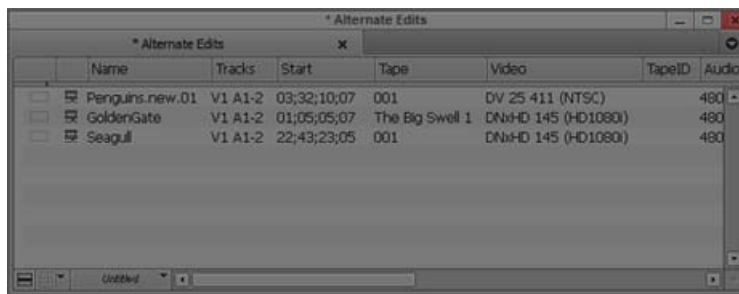
The clips swapped into the sequence start at the beginning of the clip or subclip unless you mark an In or an Out point. When Out points are used, the sequence backfills the duration on the clip being replaced, starting from the Out point.

4. Move the position indicator in the Timeline to the clip you want to replace.

5. Select Tools > Command Palette.

6. Click the Play tab.

7. Click the Alternate Edit button.

The system replaces the clip and performs an Edit Review command. (For information on Edit Review, see "Reviewing Trim Edits" on page 234.)

The replacement clip prerolls in the sequence, using the preroll time specified in the Trim Settings dialog box.

Each time you click the Alternate Edit button, a clip from the Alternate Edits bin overwrites the selected clip.

8. (Option) Perform successive alternate edits as follows:

   a. Stop playing the sequence when the position indicator is on the clip being replaced, or move the position indicator to the clip being replaced.

   b. Click the Alternate Edit button.

Repeat this process to cycle through all the clips in the Alternate Edits bin.

Muting Individual Clips in the Timeline

The editing application allows you to mute individual video and audio clips in the Timeline. You can mute an audio or video clip in the Timeline by either right clicking on the clip and choosing Mute clips or selecting Mute clips from the Timeline menu.

To mute an individual clip in the Timeline:

1. Locate the audio or video clip the sequence in the Timeline that you want to mute.

2. Right click the clip and select Mute clip. (You must be in Segment mode to mute a clip.)

The clip is then grayed out and the clip text appears in italics.

The clip plays back as filler. Muted clips can be edited like non muted clips. You can select, move, trim, etc. The clip keeps its timing and position in the sequence.

To unmute a muted clip in the Timeline:

1. Locate the muted audio or video clip the sequence in the Timeline.
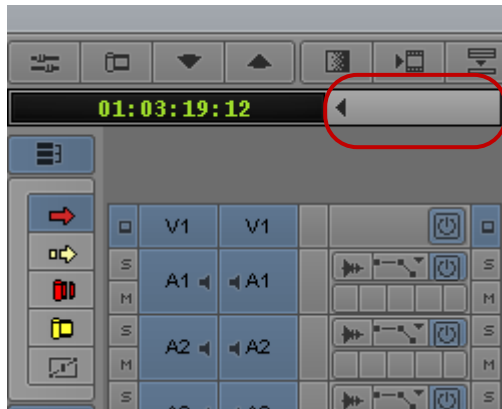
2. Right click the clip and select Unmute clips.

The clip is no longer muted.

Disabling a Video Track

The editing application allows you to disable a video track in the Timeline. When a video track is disabled, the entire input for that track is disabled.

To disable a video track in the Timeline:

1. Click the triangle opener to access the Track Control Panel.

2. Click the Disable Track button on the Video track you want to disable.
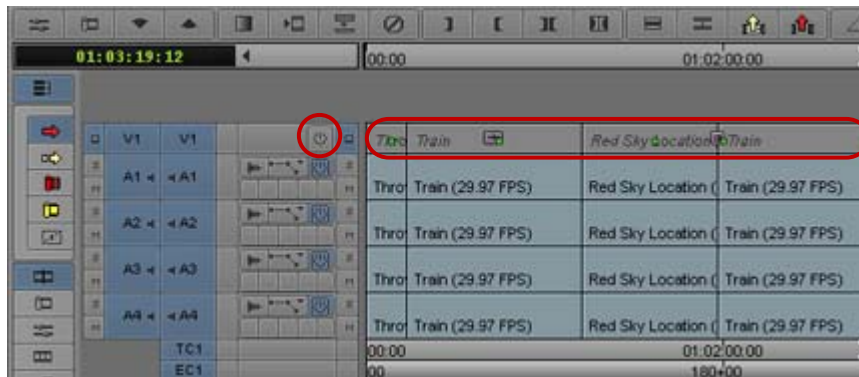
The entire track is disabled and appears grayed out (or a slightly darker highlight if the track had a highlight color) in the Timeline.

📄 *When a track is disabled, you cannot render any effects on that track. For example, if you disable a track and then try to render an effect on the disabled track, you will receive a "No effects to render" message.*

Understanding Locking and Sync Locking

Your Avid editing application provides two ways of 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" on page 167.*

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 215.

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 214.
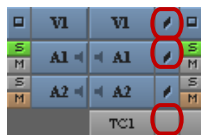
Top to bottom: Lock icon, Sync Lock icon, and Sync Lock All button in the Track Selector panel

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 4 video and 8 audio tracks in the Timeline when building a sequence.

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" on page 172.

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 Timeline > New > Video Track.

- Select Timeline > New > Audio Track > Mono.

- Select Timeline > New > Audio Track > Stereo.

▸ Right-click in the Timeline, and select one of the following:

- New Video Track.

- New Audio Track Mono.

- New Audio Track Stereo.

The new track appears in the Timeline.

To add a track in the Timeline by dragging a clip:

1. Click to select an existing clip in the Timeline.

2. Drag the clip vertically up or down the Timeline.

3. Once you let go of the clip, a new track is added to the Timeline.

You can only create as many tracks as you are dragging.

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 Timeline > New Video > Track.

▸ Select Timeline > New > Audio Track Mono.

▸ Select Timeline > New > Audio Track Stereo.

The Add Track dialog box opens.
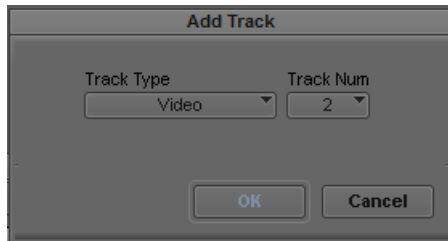
2. (Option) Select the type of track you want to add (for example, a video or an audio stereo track) by clicking the Track Type menu, and selecting that option.

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.

📄 *When you rename an audio track, the corresponding name along with the track number appears in the Audio Mixer tool.*

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. 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.

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 Audio Track 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 sequence 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.

In to Out Highlighting in the Timeline

When you mark a sequence with In to Out points, the system indicates the selection by highlighting the marked region on selected tracks in the Timeline.

Marked region highlighting in the Timeline

This visual guide helps you monitor track and segment selection more carefully when mixing or applying effects across multiple tracks and segments.

To turn the highlighting feature on and off:

▶ Select the Show Marked Region option in the Display tab of the Timeline Settings dialog box.

Editing in Heads or Heads Tails View

While in the early stages of editing a project, you can rearrange clips in the sequence visually by using Heads view or Heads Tails view. These display formats are useful for rearranging simple straight-cut edits.

⚠ **If you rearrange a split edit (in which the audio extends beyond the video, or the reverse), the system cuts all tracks to the same edit point. To rearrange split edits or edits on multiple video tracks, or to move audio and video separately, use the Segment editing techniques described in "Working with Segments" on page 193.**

To edit in Heads view or Heads Tails view:

1. Click the Track buttons to select the tracks to be edited.

2. Click the Timeline Fast Menu button, and select View Type > Heads or Heads Tails.

   The Timeline changes to one of the following displays.

Heads view (top) and Heads Tails view (bottom) in the Timeline. Heads view shows the Head frame for each clip. Heads Tails view shows both the head and tail frames for each clip.

3. Press and hold the Alt key (Windows) or Option key (Macintosh), click the frames representing the clip you want to move, and drag the clip to its new position.

   The sequence is rearranged to match the changes you made.

Performing a Quick Edit Using the Top and Tail Commands

The Top and Tail commands let you perform quick edits to segments in the Timeline.

Use the Top button in the Edit tab of the Command palette to extract footage from the start of the clip or segment to the position indicator. This action is equivalent to the T-R-X keyboard command sequence: Mark Clip, Mark Out, Extract.

Use the Tail button in the Edit tab of the Command palette to extract footage from the position indicator to the end of the clip or segment. This action is equivalent to the T-E-X keyboard command sequence: Mark Clip, Mark In, Extract.

For information about how the Mark Clip button works, see "Marking an Entire Clip or Segment" on page 126.

To edit using the Top and Tail commands:

1. Load a sequence into a monitor.

2. Select the track or tracks you want to edit, and deselect all other tracks.

3. Move the position indicator to the location where you want to perform an edit.

4. Do one of the following:

   ▶ Click the Top button to extract footage from the start of the clip or segment to the position indicator.

   ▶ Click the Tail button to extract footage from the position indicator to the end of the clip or segment.

Working with Add Edits (Match Frames)

The Add Edit function places an artificial edit point between frames of a clip. The edit appears in the Timeline as a transition between two clips, but when you play the clip, the footage appears unchanged because the frames are continuous. This form of edit is also known as a match frame.

You use add edits primarily to isolate a portion of a clip or sequence, which lets you modify that portion without affecting the rest of the footage. You can also add edits to filler segments to maintain sync while trimming. Once you make the adjustment, playback of the clip is no longer seamless because the two portions of the clip are different.

You can add an edit to a single audio or video track, or you can place the Add Edit across several tracks at once. You can add an edit to all tracks with filler, regardless of the track selection.

The Add Edit button appears in the Edit tab of the Command palette. Depending on the model of your Avid editing application and your button mappings, it might appear in other locations such as the Tool palette or the Timeline top toolbar. You can also map the Add Edit button to a custom location. For more information, see "Mapping User-Selectable Buttons" on page 61.

If you make a mistake when adding an edit, or if you have finished performing edit functions with multiple Add Edits and want to remove them, you can remove all Add Edits in the entire sequence or within a selected portion of the sequence.

You can also remove individual match frames by using the Undo command, or by selecting them in Trim mode and pressing the Delete key. For more information, see "Undoing or Redoing Edits" on page 154 and "Working with Trim Edits" on page 226.

⚠ **You cannot remove match-frame edits between segments in which segment effects and audio pan or volume adjustments have been applied.**

To add a match-frame edit:

1. Move the position indicator to the selected frame.

2. Select the tracks where you want to add the edit.

3. Click the Add Edit button.

   The edit appears in the sequence with an equal sign to indicate a match frame.
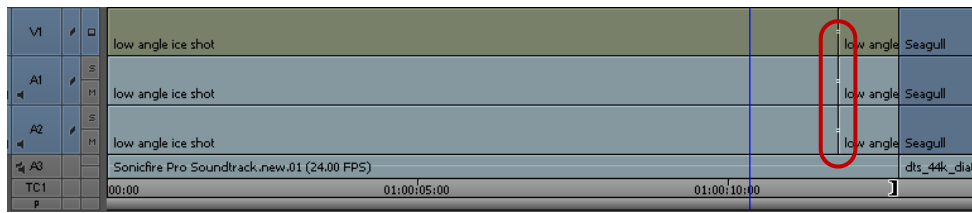
> By default, the match-frame indicator is white. If a change in level occurs, the match-frame indicator changes to red.

To add an edit to filler clips at the position indicator:

1. Move the position indicator to the selected frame.

2. Alt+click (Windows) or Option+click (Macintosh) the Add Edit button.

   The edit appears on all tracks with filler in the sequence at the position indicator.

To remove match-frame edits:

1. Select the entire sequence or a portion of it as follows:

   ▶ Select the entire sequence by removing any In and Out points.

   ▶ Select a portion of the sequence by marking an In point and an Out point surrounding the match-frame edits (Add Edits) you want to remove.

2. Select the tracks from which you want to remove the edits.

3. Select Timeline > Remove Match Frame Edits.

   Your Avid editing application removes the edits.

Dupe Detection

The Dupe Detection feature lets you visually track duplicate frames of footage while editing.

You can choose to activate Dupe Detection for video and audio tracks.

When you activate Dupe Detection, each set of duplicate frames is tagged with a different color. (Up to 10 color sets can be distinguished during a single detection process.) Matching frames have matching colors. You can use any of the Trim Mode options to remove the duplicate frames, if necessary.

The colored bars that distinguish duplicate frames in the sequence appear automatically above the frames in the Timeline.
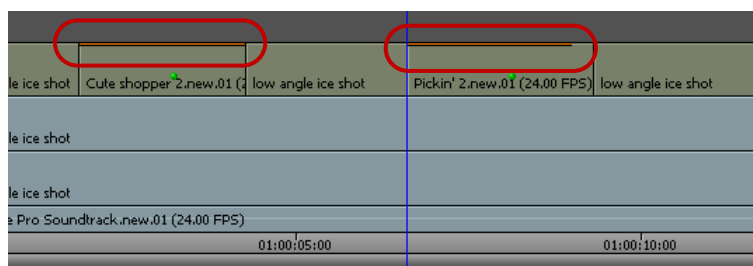
Two duplicate frames marked above the clip in the Timeline by the automatic Dupe Detection feature

Orange bars mark the first set of duplicate frames, green bars mark the second set, and so on. You can use Dupe Detection while you edit to locate duplicate frames, and remove them as the sequence evolves.

Activating Dupe Detection

⚠️ **Your Avid editing application might mark a special effect optical (such as a blowup) as a duplicate frame. Double-check your sequence for this possibility before deleting frames.**

To activate Dupe Detection:

▶ Click the Timeline Fast Menu button, and select Dupe Detection. (You can choose to turn on Dupe Detection for Video and Audio.)

Dupe Detection occurs instantaneously and retroactively; if duplicate frames already exist in your sequence, the colored bars appear immediately. As you edit, your Avid editing application dynamically displays the duplicate frames.

Editing with the Film Track

You can use the film track to examine each frame of the sequence in a linear display, much as you would when looking at a strand of film on a flatbed or workbench. Unlike your view of the footage in the monitors, that display one frame at a time, the film track within the Timeline lets you compare individual frames side by side within a range of frames.

To display the film track:

▶ Click the Timeline Fast Menu button, and select Show Track > Film.

A row of film frames appears at the top of the Timeline. The film track displays as many representative frames as possible within the window.

Film track in the Timeline

To adjust your view of the Timeline quickly for frame-by-frame viewing and editing:

▶ Click the Timeline Fast Menu button, and select Show Every Frame.

The film track displays frames for the topmost video track only. You cannot display more than one film track at a time.

To quickly view more frames as you scroll:

▶ Drag the resize box in the lower right corner of the Timeline for a full-screen view.

You can reduce the size of Timeline tracks to wrap the sequence around several times.

As you continue to scroll, each strand of the Timeline wraparound is updated.

Finding Black Holes and Flash Frames

You can use the Find Black Holes and Find Flash Frames commands to help you quickly find parts of your sequence that you might want to delete from the final sequence:

Black holes are segments of the sequence consisting of one or more frames of filler. Flash frames are clips with an extremely short duration — for example, fewer than 10 frames.

To find black holes:

1. Click the Timeline to activate it.

2. Select the tracks you want to search.

3. Move the position indicator to the beginning of the sequence or before the part of the sequence you want to search.

4. Select Timeline > Find Black Holes.

   The position indicator moves to the first segment that contains filler. You can then edit or delete the filler, if necessary.

To find the next segment that contains filler:

▶ Select Timeline > Find Black Holes again.

To find flash frames:

1. Set the maximum frame length that you want to detect:

   a. In the Project window, double-click the Timeline Setting.

      The Timeline Settings dialog box opens.

   b. Click the Edit tab.

   c. In the option Find Flash Frames Shorter Than, type the maximum number of frames you want to detect. The default is 10, which indicates the system will detect clips with 9 or fewer frames.

   d. Click OK.

2. Click the Timeline to activate it.

3. Select the tracks you want to search.

4. Move the position indicator to the beginning of the sequence or before the part of the sequence you want to search.

5. Select Timeline > Find Flash Frames.

   The position indicator moves to the first flash frame.

To find the next flash frame:

▶ Select Timeline > Find Flash Frames again.

Printing the Timeline

To print the Timeline:

1. Click the Timeline to activate it.

2. Select File > Print Timeline.

The Print dialog box opens. The name of the printer and details of the dialog box vary, depending on your facility.

3. Select the Print options.

4. Click OK (Windows) or Print (Macintosh).

Your Avid editing application prints the current view of the Timeline. You can also use the Print Timeline command to print the Timeline in Heads view or in Heads Tails view.

Searching for Text in the Timeline

The Timeline Quick Find field allows you to enter text that you can search for in the sequence in the Timeline.

To search for text in the Timeline:

1. Load the sequence in the Timeline.

2. Click the Timeline Quick Find field.
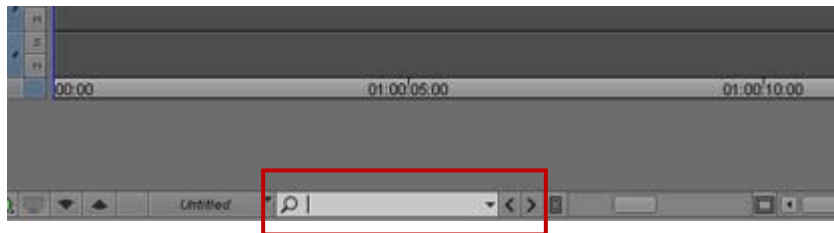
Timeline Quick Find field, Find to the left button, Find to the right button

3. Enter the text you want to search for in the text field.

4. To customize the search, use the text field drop down menu and select which text options you want to search. You can search for Visible Timeline Text, Resolution, Clip Name, Comments, Markers, All, or any combination of these search options.
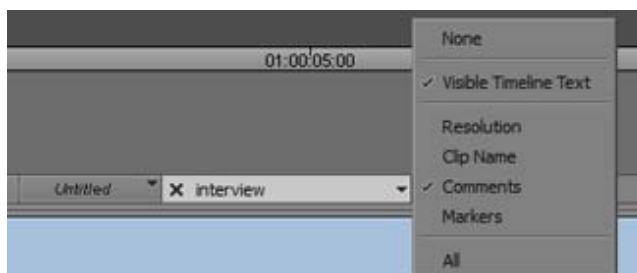
5. Click the Find to the right or Find to the left button.

The Timeline blue bar moves to the start of the next Timeline segment whose metadata contains a match for the search string, based on the search menu's filter options.

6. If necessary, click the Find left or right buttons to continue searching for the text in the Timeline sequence.

11 Working with Trim Edits

Basic editing of a sequence initially produces a rough cut, which is loosely defined as a series of straight-cut edits with many rough edges and few effects. After creating a rough cut, you can use trim edits to fine-tune the transitions between each clip or between whole segments. You can also trim edits as you build a sequence rather than create a rough cut first. The following sections describe trim editing procedures:

- Trimming with the Timeline Palette
- Timeline Trim States
- Selecting Trim Sides
- Overwrite Trimming
- Ripple Trimming
- Dual-Roller Trimming
- Refining Trims
- Reviewing Trim Edits
- Trimming On-the-Fly
- Trimming On-the-Fly
- Trimming During a Playback Loop
- Creating Overlap Edits
- Extending an Edit
- Maintaining Sync While Trimming
- Slipping or Sliding Segments

Trimming with the Timeline Palette

You can perform trim edits by using the trim tools on the Timeline palette. This lets you create trims quickly in your sequence which you can later fine-tune by using the advanced functionality of trimming.

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

- Overwrite trim — single-roller trims which either add black or overwrite frames 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 overwrite trim 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" on page 238.

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 they reach the duration of the shortest clip in the group.

- You cannot perform an overwrite trim beyond the duration of the selected clip.

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 Overwrite Trim and Ripple Trim tools and then hover the pointer over the upper half of your clip, you can perform an overwrite trim 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 tools on the Timeline palette, you can perform only that type of trim on your sequence.

The trim edit 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" on page 61.

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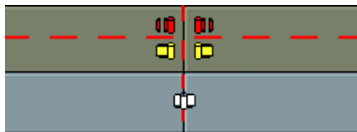
Trim icons for the outgoing frames of the A-side clip (left) and the incoming frames of the B-side clip (right)

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

Icon	Trim Type	Trim Zone
	Overwrite trim (outgoing)	Upper right corner of the outgoing clip
	Overwrite trim (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

Icon	Trim Type	Trim Zone
	Dual-roller trim	Transition between outgoing and incoming clips

Selecting Trim Sides

You can trim a transition on either the outgoing side (A-side or tail), the incoming side (B-side or head), or both sides (dual-roller).

Once you select a trim side, the following happens:

- The selected parts of the transition are highlighted

- The corresponding rollers appear in the Timeline, colored to represent the type of trim: red for overwrite trim, yellow for ripple trim, and pink for dual-roller trim. This provides visual feedback so you always know what type of trim you can perform.
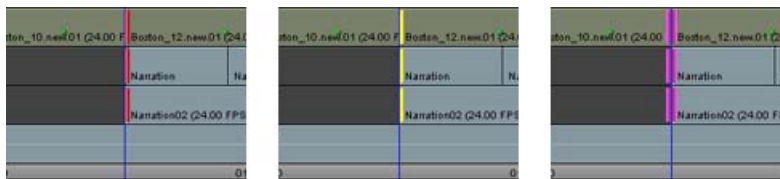
Single trim rollers: Overwrite trim selected (left), Ripple trim selected (center), Dual-roller trim selected (right)

- Your Avid editing application highlights one or both of the frame counter indicators below the monitors to reflect the active trim sides: A-side, B-side, or both. The number indicates the frames added to or subtracted from the transition.

When you clear your trim selections, the trim tools remain active. You can turn off the trim tools by clicking the trim tool buttons in the Timeline palette or by clicking the Smart tool toggle bar.

You can use different methods to select a transition for trimming. The optimal selection method depends on your workflow.

To select the sides of a transition to trim, do one of the following:

▸ Select one or both of the trim tools on the Timeline palette, and then click the outgoing (A-side) or incoming (B-side) monitor to define which side of the transition to trim.

The pointer changes to an overwrite trim or an ripple trim icon over either the A-side or the B-side of the transition, depending on the position of the pointer.

▸ Use the Trim buttons in the Trim tab in the Command palette or the Trim keys on the keyboard to select side A, side B, or both.

You can map these buttons to other locations, as described in "Mapping User-Selectable Buttons" on page 61.

▸ Use the Cycle Trim Sides button to cycle between selection for a single transition of the A-side, B-side, or both.

▸ Lasso a transition to select both sides of a transition for trimming.

If you lasso multiple transitions from left to right, you select the segment and not the transitions. If you lasso multiple segments from right to left, you select transitions for slip trim.

▸ Use one of the keyboard shortcut keys to select both sides of a transition relative to the position indicator:

Shortcut Key	Selection
U	Nearest transition
A	Previous transition
S	Next transition

▸ Use the Trim Counter frame indicators located below the monitors. Click the A-side or B-side of a frame indicator to select single-roller trimming, or Shift+click both frame indicators to select dual-roller trimming.

The Trim Counter frame indicators: A-side (left) and B-side (right). The counter is purple when the side is active.

To clear trim selections, do one of the following:

▸ Click the Smart tool toggle bar to turn off the Timeline palette Smart tools.

▸ Click the Trim mode button.

▸ Click the Source/Record Mode or the Effect Mode button.

Source/Record Mode button (left) and Effect Mode button (right)

▸ Click a frame step, or press the Right Arrow key or Left Arrow key.

▸ Click a location in the Timecode (TC1) track at the bottom of the Timeline or the Timeline ruler at the top of the Timeline.

The position indicator moves to that location.

Click in the TC1 track to clear trim rollers and relocate the position indicator

Selecting Video Tracks for Trimming

When you click the outgoing (A-side) or incoming (B-side) monitor with a transition selected for trimming, or the A-side or B-side of a transition in the Timeline, all trim rollers are set to the selected side. You can modify this behavior to select only the video tracks for trimming.

To change only the trim rollers on the video tracks:

▸ Alt+click (Windows) or Option+click (Macintosh) either the outgoing monitor or incoming monitor, or either the A-side or the B-side.

The trim rollers change only on the video tracks.

To return to the last position of the trim rollers:

▶ Press the Alt key when you click the Trim Mode button.

Selecting Additional Transitions

You can select additional transitions for trimming in different contexts.

To quickly select additional transitions on contiguous tracks for trimming on the same side:

▶ Click the corresponding Record track buttons in the Track Selector panel.

For more information, see "Selecting Tracks" on page 208.

For example, if you select a single transition in track V1 for single-roller A-side trimming and want to add tracks A1 and A2 at the same transition, click the corresponding track selectors.

You can also deselect tracks in the Track Selector panel to remove transitions on those tracks from the trim procedure.

To select additional transitions for single-roller trimming in varying locations on different tracks:

▶ Shift+click the transitions in the Timeline.

This method is useful when you work with staggered transitions across multiple tracks, This also lets you select both A-side and B-side transitions for simultaneous trimming in opposite directions (asymmetrical trim). You cannot do this with dual-roller trims.
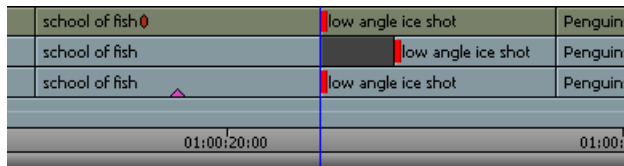
Example of two A-sides and one B-side selected for asymmetrical trimming

To quickly add multiple transitions to the currently selected transitions:

▶ Press and hold the Shift key, and lasso the additional transitions.

You can select and trim two heads or tails simultaneously, in any combination, for each track in the sequence. All selected transitions are trimmed the same number of frames. This lets you save time and, in some cases, maintain sync by performing a single-trim procedure across multiple tracks and transitions.
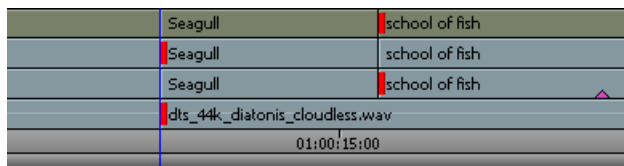
Tail frames on two clips selected for simultaneous trimming across an overlap edit

To select transitions on clips linked by common source and timecode:

1. Click the Link Selection button.

2. Click a selection with linked clips.

The application selects all transitions on linked segments.

For more information on link selection, see "Linked Clips" on page 197.

Soloing Audio while Trimming

Soloing audio lets you listen to a single audio track while trimming multiple tracks.

To solo an audio track while trimming, do the following:

▶ 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.

Overwrite Trimming

If you want to trim one side of a transition but still maintain synchronization between video and audio, you can create an overwrite 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. This procedure either adds a black segment or overwrites frames to fill the duration of trimmed frames. For more information on preserving sync by adding black filler, see "Maintaining Sync While Trimming" on page 238.

You can lasso transitions in the Timeline to select more than one transition for trimming. This method is useful when you need to select multiple transitions staggered across parallel tracks (overlap cuts) for simultaneous trimming.

If you enable link selection, clicking a transition also selects transitions on linked segments (see "Linked Clips" on page 197).

To perform and overwrite trim:

1. Do one of the following:

   ▶ Select the Overwrite Trim tool on the Timeline palette, and then click a transition to select it for trimming. Shift+click to select multiple clips aligned at the same transition.

   ▶ Select the Overwrite Trim tool on the Timeline palette, and then lasso the transitions in the Timeline.

   Draw the lasso by clicking at a point above the top track in the Timeline and dragging to surround the transitions. You can drag from right to left or left to right to lasso one transition across several contiguous tracks. Avoid lassoing more than one transition on a single track because lassoing left to right selects the segment and activates segment editing tools, and lassoing right to left activates slip trim.

📄 *To select transitions located below several track layers, you can draw a lasso within the Timeline by pressing and holding the Alt key (Windows) or Option key (Macintosh) while you drag.*

   ▶ If you selected both the Overwrite Trim tool and the Ripple Trim tool 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 and click the transition to select it for trimming. Shift+click to select multiple clips aligned at the same transition.

   The cursor changes to a red single-roller trim icon, and the transition displays red trim rollers.

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

   The new incoming frame displays in the Record monitor as you trim, and one of the following occurs:

- If you trim from an A-side trim handle toward the outgoing segment or from a B-side trim handle to the incoming segment, black filler is added.

- If you trim from an A-side trim handle toward the incoming segment or from a B-side trim handle to the outgoing segment, frames are added to the segment with the trim handle and removed from the other segment.

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" on page 155.

Ripple Trimming

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. Ripple trims "ripple" the effects of your trim along the sequence. However, ripple trims 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" on page 238.

You can lasso transitions in the Timeline to select more than one transition for trimming. This method is useful when you need to select multiple transitions staggered across parallel tracks (overlap cuts) for simultaneous trimming.

If you enable link selection, clicking a transition also selects transitions on linked segments (see "Selecting Linked Clips" on page 198).

To perform a ripple trim:

1. Select the Ripple Trim tool on the Timeline palette, and then click a transition to select it for trimming. Shift+click to select multiple clips aligned at the same transition.

   If you selected both the Ripple Trim tool and the Overwrite Trim tool on the Timeline palette, position the mouse pointer over the lower corner of either the outgoing or incoming clip next to the transition you want to trim and click the transition to select it for trimming. Shift+click to select multiple clips aligned at the same transition.

   The cursor changes to a yellow single-roller trim icon, and the transition displays yellow trim rollers.

2. 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.

Dual-Roller Trimming

Using a dual-roller trim allows you to move the transition point between segments without changing the duration of the sequence. This adds frames to one side of the transition and subtracts them from the other side.

There are several ways to select a transition for dual-roller trimming. Which method you use depends on your editing workflow.

If you enable link selection, clicking a transition also selects transitions on linked segments (see "Selecting Linked Clips" on page 198).

To select a transition for dual-roller trimming, do one of the following:

▶ Position the mouse pointer over the transition you want to trim so the pointer changes to a dual-roller icon, and click the transition.

▶ Click the Trim Mode button.

Your Avid editing application selects the transition nearest the position indicator for dual-roller trimming. The dual-roller icon appears on all highlighted tracks. This method is useful for selecting straight-cut transitions on one track or across video and audio tracks.
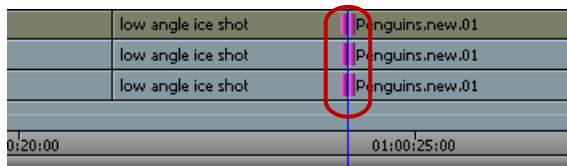
Default trim selection for a straight cut (showing dual-roller icons).

If the transitions are not straight cuts (overlap cuts or L-edits), the dual-roller icon appears only on the transition nearest the position indicator of the topmost track, and all other tracks are deselected.

▶ Alt+click (Windows) or Option+click (Macintosh) the Trim Mode button to select the previous trim roller configurations.

By default, when you click the Trim Mode button, the trim rollers are set for dual-roller trimming. For more information about selecting trim sides, see "Selecting Trim Sides" on page 228.

▶ Click the Go to Previous Edit or Go to Next Edit button.

By default, the system selects the nearest transition in either direction of the selected track for dual-roller trimming.

If the transitions are a straight cut, the system selects all selected tracks. If the nearest transition is an overlap edit with staggered transition points, the system selects the next transition where all selected tracks have transitions at the same point.

▶ Click the Play Loop button on a palette twice, or press the Play Loop key on the keyboard twice.

When you click the Play Loop button once, the system plays the transition in a playback loop. Clicking the Play Loop button a second time stops the playback.

This method is useful if you want to trim quickly as you edit, going back and forth between trimming and other edit modes. The action takes you to the last trimmed transition. For more information on this method, see "Trimming During a Playback Loop" on page 236.

The Play Loop button does not appear in Source/Record mode by default. You must map it to the keyboard or a palette in advance. For information on button mapping, see "Understanding Button Mapping" on page 60.

Refining Trims

After you select your transitions and trim sides, you can make your trim more accurate by using the advanced features of trim editing.

To refine a trim, do one of the following:

▶ Use the Trim buttons to trim forward or backward by 1-frame or 10-frame increments.

Left to right: Trim Backward 10 Frames (or 8 Frames) button, Trim Backward 1 Frame button, Trim Forward 1 Frame button, Trim Forward 10 Frames button

▸ Use the J-K-L keys to trim forward or backward in the sequence.

▸ Use the numeric keypad at the right side of the keyboard, as follows:

 - To move the transition a specific number of frames, type a plus sign (+) or minus sign (–) and the number of frames (from 1 to 99), and then press Enter.

   If the number of frames exceeds 99, type an f after the number to indicate frame count. For example, to enter 200 frames, type 200f and press Enter.

 - To move the transition to an exact point in the timecode, type a timecode number larger than 99, including frames. For example, type 102 to enter 1 second and 2 frames (1:02).

For greater control while performing a trim, do one of the following:

▸ Press Ctrl+Alt (Windows) or press the Command+Option key (Macintosh) as you drag one frame at a time.

▸ Press the Ctrl key (Windows) or Command key (Macintosh) to snap to other transition points.

As you trim, all selected transitions in the Timeline move in unison. The Trim counter displays the frame count backward or forward for one or both trim sides, and the monitors display the new incoming or outgoing frames.

Reviewing Trim Edits

You can review an edit by using the Play Loop button or the Edit Review button.

The Edit Review button (in the Play tab of the Command Palette) lets you review an edit or other change that you made to a transition.

Using the Edit Review command causes your Avid editing application to deselect trim rollers on all transitions.

To review the most recent trim edit or to play the currently selected transition:

1. (Option) To see the Timeline in a closer view while you review the trim, click the Focus button. (To return to your original view of the Timeline, click the Focus button again.)

2. Click the Play Loop button.

   The system enters a playback loop. This loop begins at a preroll point before the transition and ends at a postroll point.

3. Modify the length of the preroll, postroll, and transition effect duration by clicking the appropriate timing text box and typing a new value.
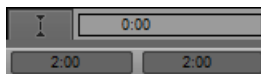
Preroll length text box (top left), postroll length text box (top right), and transition effect duration text box (bottom)

4. To stop the playback loop, click the Play Loop button again.

5. To deselect trim points, click the Source/Record Mode button.

To review footage starting from the previous transition:

1. Move the position indicator to the transition you want to review.

2. Click the Edit Review button.

   The position indicator moves before the previous transition and begins to play.

   In a sequence with multiple selected tracks, the Edit Review command moves the position indicator before the first set of edits that line up on all the selected tracks.

3. To stop play, press the space bar.

Trimming On-the-Fly

You can use the J-K-L keys on the keyboard to play outgoing or incoming material and mark trim points. This is similar to the procedure for marking footage on-the-fly, as described in "Marking and Subcataloging Footage" on page 124.

For convenience, this method isolates the trim controls to just three keys.

To trim on-the-fly:

1. Click either the outgoing (A-side) or incoming (B-side) monitor to play in real time during the trim.

2. Select one or more transitions for overwrite trimming, ripple trimming, or dual-roller trimming.

   For more information, see "Selecting Trim Sides" on page 228.

3. Use the J-K-L keys to step (jog), play, or shuttle through the footage at varying speeds:

   ▶ Press and hold the K key while pressing the J or L key to step slowly backward or forward through the footage. When you find the frame where you want to relocate the transition, release the K key to complete the trim.

   ▶ Press the J or L key once to play at normal speed, or more than once to shuttle at higher speeds. When you see the frame where you want to relocate the transition, press the space bar or the K key to complete the trim.

   The monitors and the Timeline update to reflect the trim.

End of Trim Indicators

The extent to which you can trim many edits at once is constrained by the amount of footage available to trim. When you trim to either the beginning or ending of the footage, the trim stops without any indication of which track ran out of footage to trim. On tracks that run out of room to trim, the editing application adds white brackets to the trim indicators so you can clearly identify the track or tracks that caused the trim to stop. All tracks that cause the trim to stop display these indicators.
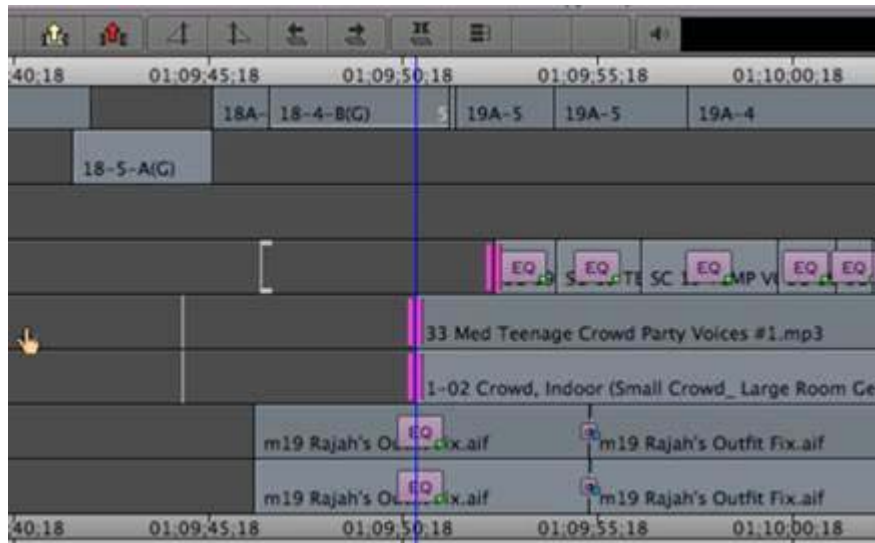
Trimming During a Playback Loop

An alternative method for trimming is to view the transition continuously in a playback loop and use the keyboard to adjust the transition in 1-frame or 10-frame increments until you achieve the trim you want. You can perform this procedure using single-roller or dual-roller trims.

To trim during a playback loop:

1. Select a transition for trimming.

   For more information, see "Selecting Trim Sides" on page 228.

2. Click the Play Loop button to repeatedly play the selected transitions.

   To make adjustments to the playback loop for preroll, postroll, or intermission intervals, see "Reviewing Trim Edits" on page 234.

3. Press a keyboard equivalent to perform a Trim function.

   If you are having difficulty determining which side of the transition to trim (for example, during a difficult audio edit), use the Go to In and Go to Out keys to review only one side.

   Your Avid editing application performs the trim before the next playback loop. You can then view the trimmed transition during playback and make further changes until you are satisfied with the result.

4. When you finish, exit the playback loop by doing one of the following:

   ▶ Press the space bar.

   ▶ Click the Play Loop button.

Creating Overlap Edits

You can use an overlap edit (or L-edit) to smooth a transition by giving the viewer the illusion that the audio or video is shared between two adjacent clips.
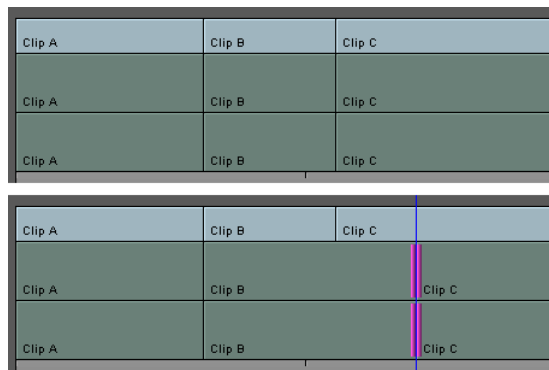
Example of an audio overlap edit. After the trim, the audio for Clip B is extended so that it overlaps the beginning of the video for Clip C.

To create an overlap edit:

1. Perform a straight-cut edit between two clips, including audio and video tracks:

   ▸ If the timing of the video edit is crucial, mark edit points according to video.

   ▸ If the timing of the audio transition is crucial, mark edit points according to audio.

2. Perform a dual-roller trim on either the video track or the audio track, but not on both:

   ▸ If the video transition occurs at the correct place but you want an audio transition either before or after the video cut, trim the audio tracks accordingly.

   ▸ If the audio transition occurs at the correct place but you want a video transition either before or after the audio cut, trim the video track accordingly.

3. (Option) You can also create an overlap edit for an audio track by using the Audio Mark buttons (see "Marking Audio Clips" on page 127).

Extending an Edit

Use an extend edit to perform dual-sided (A-side and B-side) trims on selected tracks. An extend edit lets you quickly create a split edit without selecting trim sides at a transition. It also lets you establish the exact frame that you want to trim to by using the position indicator.

You can extend edits backward or forward in the Timeline. In either case, like a dual-roller trim, extend edits always maintain sync relationships.

To perform an extend edit:

1. Select the tracks you want to extend.

   To extend multiple tracks, all tracks do not have to have the same edit point. The edit point closest to the mark in the direction determined by the mark will be extended

2. Find the point in the sequence to which you want to trim. If the trim point is before the edit, mark an In point. If the trim point is after the edit, mark an Out point.

3. (Option) If you are extending the edit to an Out point, remove any In points on the track. Otherwise, the extend edit goes in the wrong direction.
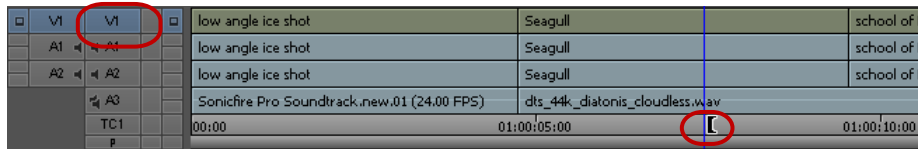
Example of an extend edit. The video track is selected for extending backward (left), and the Mark In point (right) indicates where you want the edit to extend to.

4. Click the Extend button.

The Extend button appears in the Trim tab of the Command palette. You can map the Extend button to a custom location. For information on the Command palette and button mapping, see "Understanding Button Mapping" on page 60.

The adjustment appears in the Timeline.
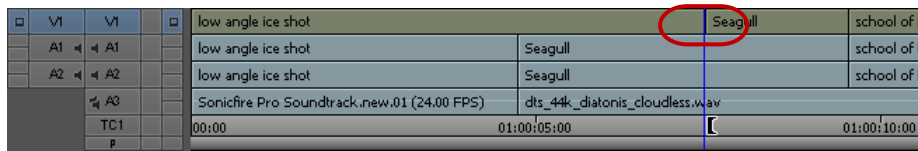
After the Extend edit. The edit point on the video track moves backward to the location of the Mark In point.

Maintaining Sync While Trimming

Because single-roller trims (A-side or B-side) can change the duration of the track being trimmed, any relationships that exist with other tracks downstream of the trim lose sync. Trim editing uses two features that prevent unintentional sync breaks between two or more video and audio tracks when performing trims:

• You can use an overwrite trim to add black filler on either the A-side or the B-side of a transition while maintaining the overall duration of the track and the sync relationships.

For more information, see "Overwrite Trimming" on page 231.

• You can sync lock tracks that maintain a synchronized relationship.

If you perform an overwrite trim moving across the edit point and away from the selected side of the transition, your Avid editing application performs a dual roller trim on sync-locked tracks.

Because dual-roller trims do not cause sync breaks, you can add black only while performing single-roller trims, and sync-locked tracks only aid single-roller trim functions.

To trim with sync-locked tracks:

1. Do one of the following:

  ▶ Click the Sync Lock button in the Track Selector panel for the track you want to keep in sync.

  The Sync Lock icon appears.

  ▶ Click the Sync Lock All button to switch sync lock on and off for all tracks.
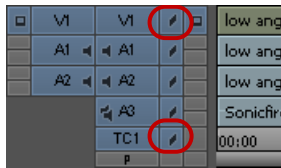
Sync Lock icon (top) and Sync Lock All button (bottom) in the Track Selector panel

2. Perform single-roller trims as necessary, with the following results:

- When you trim the A-side of a transition forward, all other segments locked in sync move forward with the trim. If the transitions are staggered, this action might split one or more of the segments at the sync point established by the position indicator, leaving filler.

    If you trim the B-side of the transition in the same direction, the additional sync-locked segments slide back in the sequence to maintain sync until they encounter another segment in the same track. At this point, you can trim no further and the system emits a warning sound.

- When you trim back the A-side of a transition, additional segments locked in sync move back as well. If the segments are staggered and one of the additional sync-locked segments encounters another segment on the same track, you can trim no further and the system emits a warning sound.

    If you trim the B-side of the transition in the same direction, all other segments locked in sync move forward to stay in sync. If the transitions are staggered, this action might split one or more of the sync-locked segments at the sync point established by the position indicator. The trim adds Filler where the split occurs.

3. (Option) Select all synced tracks for simultaneous slipping or sliding to avoid sync breaks.

    Slip and slide trims are not protected for sync.

Slipping or Sliding Segments

Slip and slide procedures constitute two unique trim techniques that let you make frame-accurate adjustments to a selected segment. They do not affect the overall duration of the sequence or the sync relationships between multiple tracks.

Slip or Slide trimming lets you do the following:

• Slip or slide the video and audio segments together.

• Slip or slide a single segment of video or audio independently from the rest of the segment.

• Slip segments in Source/Record mode by using the Slip Left or Slip Right buttons.

The type of trim you perform (slip or slide) determines which frames update:

- In slip trimming, the two inner monitors for the head and tail frames of the clip change because this adjusts only the contents of the clip. It does not affect the frames that precede and follow the clip.
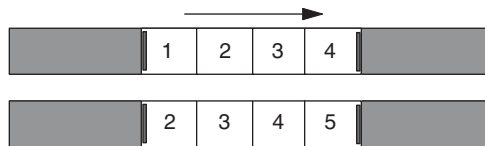
Example of a one-frame slip to the right. The head and tail frames of the segment change by one frame. The material before and after the segment remains fixed.

- In slide trimming, the two outer monitors for the outgoing (A-side) and incoming (B-side) frames change because the clip remains fixed while the footage before and after it is trimmed.
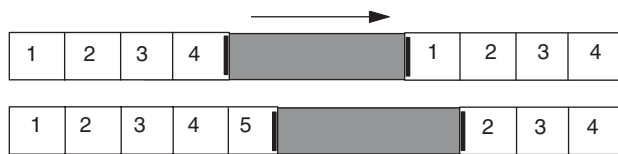
Example of a one-frame slide to the right. The segment does not change, but the material before the segment is trimmed out by one frame and the material after the segment is trimmed back by one frame.

Once you select the clips for slipping or sliding, the trim display changes to a four-frame display.
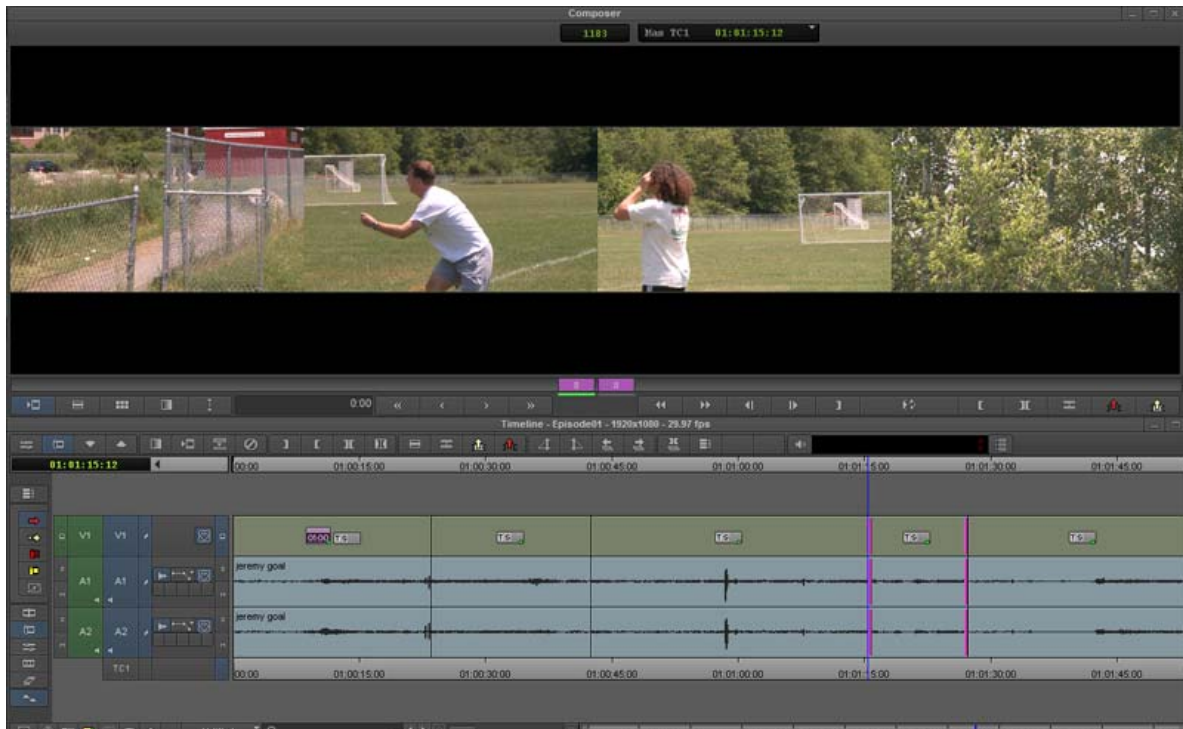
Four-frame display for slip and slide trimming. Left to right: outgoing video at position indicator, head and tail frames of the selected clip, incoming video at position indicator.

Selecting Segments for Slip or Slide Trimming

To select segments for slip or slide trimming by dragging a lasso:

1. In Source/Record mode, select a segment for slipping or sliding.

2. Drag a lasso from right to left around a segment (two or more transitions).

   Your Avid editing application enters slip trim by default.

3. To switch to slide trim, press and hold the Shift+Alt keys (Windows) or Shift + Option key (Macintosh) while dragging the lasso from right to left.

To select segments on a lower track:

1. Press and hold the Alt key (Windows) or Option key (Macintosh) while dragging a lasso around the segment.

2. To switch to slide trim, press the Alt key (Windows) or Option key (Macintosh) and double-click the segment.

   You can also select two or more contiguous segments within a track for slipping or sliding by dragging the lasso around four or more transitions.

⚠ **Be sure to drag the lasso from right to left. If you drag from left to right, you select the segment, not the transition.**

To select segments for slip or slide trimming:

1. Position the mouse pointer over one of the transitions for the segment you want to trim so the pointer changes to a trim icon, and double-click the transition to select the segment for slip trimming.

2. To select a segment for slide trimming, double-click the transition.

To select two or more segments on different tracks for simultaneous slip or slide trimming, do one of the following:

▶ Press Shift and select the head and tail of a segment for slipping.

▶ Press Shift and select the outgoing tail frame of the preceding segment and the incoming head frame of the following segment in a sequence for sliding.

Performing a Slip or Slide Trim

To slip or slide a shot:

1. After selecting the segments, as described in "Selecting Segments for Slip or Slide Trimming" on page 241, do one of the following:

   ▶ Click any roller in the Timeline, drag the selected material to the left or right, and release the mouse button.

   ▶ Use the numeric keypad to enter specific frame-count or timecode values, and press Enter.

   ▶ Use the trim keys or buttons to shift the selection by 1-frame or 10-frame increments.

   ▶ Use the J-K-L keys.

2. Monitor the progress of the trim by using the monitors, the Trim counters, and the Timeline.

When you reach the end of available material while slipping a shot, the trim stops. Similarly, when you reach the next transition while sliding a shot along a track, the trim stops. A red bracket at the transition indicates the limit. After completing the initial slide, you can perform another slide in the same direction.

3. When you finish, exit Slip mode or Slide mode by doing one of the following:

   ▶ Click another transition for trimming.

   ▶ Click either the Source/Record Mode or the Effect Mode button.

   ▶ Click the Trim Mode button on the Tool palette.

   ▶ Press the Escape key.

To slip a shot in Source/Record mode:

1. Select the tracks for the clips to be slipped.

2. Move the position indicator within the shot that you want to slip.

3. Slip the shot by doing one of the following:

   ▶ Click the Slip Left button to slip the shot one frame left (revealing later material from the source clip).

   ▶ Click the Slip Right button to slip the shot one frame right (revealing earlier material from the source clip).

   ▶ Alt+click (Windows) or Option+click (Macintosh) the Slip Left or Slip Right button to trim 10 frames at a time.

The Slip Left and Slip Right buttons do not appear on the interface by default. You must map them from the Trim tab in the Command palette to use this procedure.

Trimming in Two Directions

You can select non-contiguous transitions in the Timeline and perform a trim simultaneously on all selected transitions. This allows you to trim segments without altering the duration of the sequence in cases where you cannot perform a simple dual-roller trim. For example, if you need to trim the outgoing frames of one segment, but you do not want to trim the incoming frames of the segment at the same transition, you can select another edit point to use in the trim.
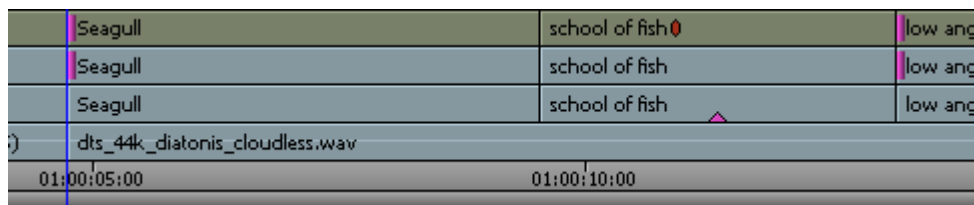
You can also trim in two directions by trimming frames from one segment while adding frames to a second segment. This can help to keep video and audio aligned when you do not have the alternative of using a dual-roller trim or sync locked tracks.
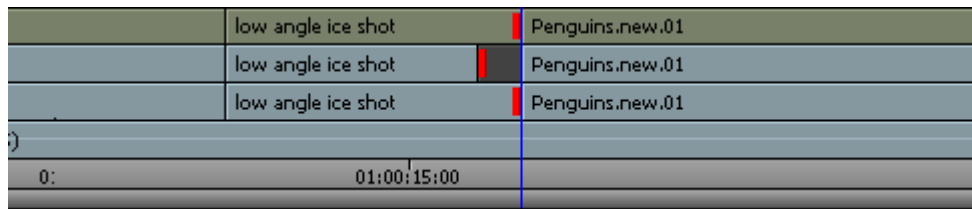
To trim in two directions:

1. Select one or both of the trim tools on the Timeline palette, and then click the outgoing (A-side) or incoming (B-side) monitor to define which side of the transition to trim.

   The pointer changes to an overwrite trim or a ripple trim icon over either the A-side or the B-side of the transition, depending on the position of the pointer.

2. Shift+click the other transitions in the Timeline you want to trim.

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

12 Working with Audio

You edit audio by using many of the same techniques and tools you use to edit video. Your Avid editing application also provides several unique features that facilitate audio editing, such as audio scrub, waveform displays, and tools for adjusting and mixing audio levels and pan between speakers as well as the frequency ranges of segments.

Basic audio editing is described in the following topics:

- Overview of Audio Tools
- Audio Ducking
- Fading and Dipping Audio
- Working with Multichannel Audio Tracks
- The Track Control Panel
- Using Audio Scrub
- Audio Displays in the Timeline
- Displaying Audio Formats in Bins
- Using the Audio Mixer Tool
- Rendering and Unrendering Order for Audio Effects
- Audio Volume Staging and an Audio Editing Workflow
- Using Clip Volume and Pan Mode
- Using Volume and Pan Automation
- Copying, Pasting and Moving Audio Keyframes
- Using Live Mix Mode
- Adjusting Audio Clip Gain in the Timeline
- Mixing Down Audio Tracks
- Using the Audio EQ Tool
- Recording Voice-Over Narration

Overview of Audio Tools

The following table describes the general purpose of each audio tool in your Avid editing application:

Audio tool	Description
Audio Mixer tool	This tool adjusts pan and volume levels on clips or whole tracks within a sequence. For more information, see "Using the Audio Mixer Tool" on page 260.

Audio tool	Description
Audio EQ tool	This tool adjusts the sound characteristics of audio clips in the sequence based on three-band control over high, low, and midrange frequencies. For more information, see "Using the Audio EQ Tool" on page 286.
Avid AudioSuite Plug-In tool	This tool accesses third-party audio plug-ins. For more information, see "Avid AudioSuite Plug-Ins" on page 310.
Audio Track Effect tool	This tool inserts Audio track effects on selected tracks. For more information, see "Audio Track Effect Plug-Ins" on page 304.
Audio tool	For more information, see "Understanding the Audio Tool" on page 34.
Audio Punch-In tool	This tool records up to two or four channels of audio (depending on the model of your Avid editing application) directly into the Timeline for voice-over narration. For more information, see "Recording Voice-Over Narration Using Audio Punch-in" on page 299.

Creating Tone Media

You can create your own tone media as a master clip for editing directly into sequences.

To create tone media:

1. Open a bin.

2. Select Tools > Audio tool.

3. Click the PH (Peak Hold) menu in the Audio tool, and select Create Tone Media.

   The Create Tone Media dialog box opens.

4. Set the appropriate calibration tone parameters for the project. You can also use the default output tone of –20 dB (digital scale) with a 1000-Hz signal.

   A value of 0 generates random noise. A value of –777 generates a tone sweep.

5. Select the number of tracks of tone you want to create.

6. Click the menus, and select a target bin for the tone master clip and a target drive for the tone media file.

7. Click OK.

   After a few seconds, your Avid editing application creates the media file and a master clip appears in the target bin. The default name reflects the options you selected. You can rename the clip by typing a new name.

Audio Ducking

Audio Ducking is a feature that allows you to reduce the audio level of one or more audio tracks when you want to hear the level of another audio track(s). For example, this is useful when you want to lower the music on one track in order to hear the dialog on another audio track.

To set Audio Ducking:

1. Load the sequence that contains audio tracks to which you want to apply Audio Ducking.

2. Select Tools > Command Palette.

3. Click the More tab.
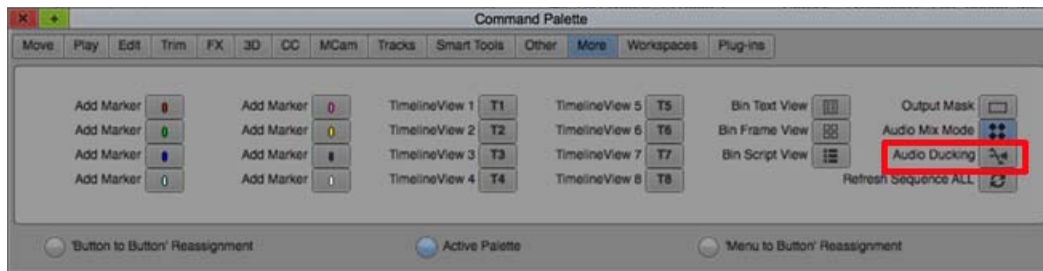
4. Click the Audio Ducking button. (Or you can right click in the Timeline and select Audio Ducking.)
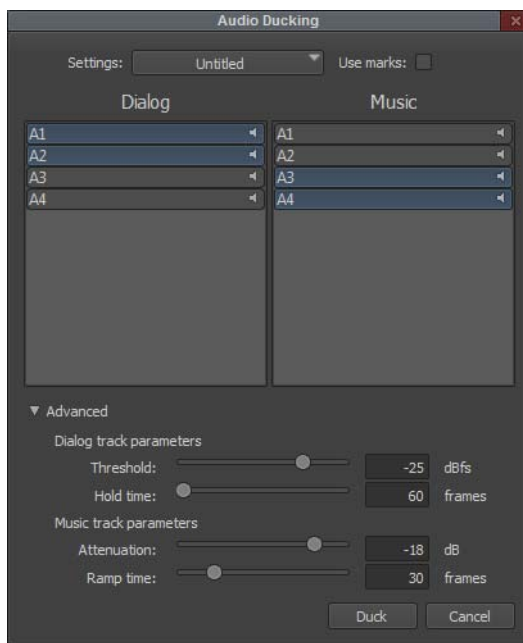
The Audio Ducking dialog opens.

5. Select the Dialog and Music track(s) that you want to adjust.

6. (Optional) Select Use Marks if you want to set IN and OUT points to determine the starting and ending frames for applying audio ducking.

7. Click Duck.

Keyframes are applied to the respective target tracks and you will visually see the ducking in the track(s).
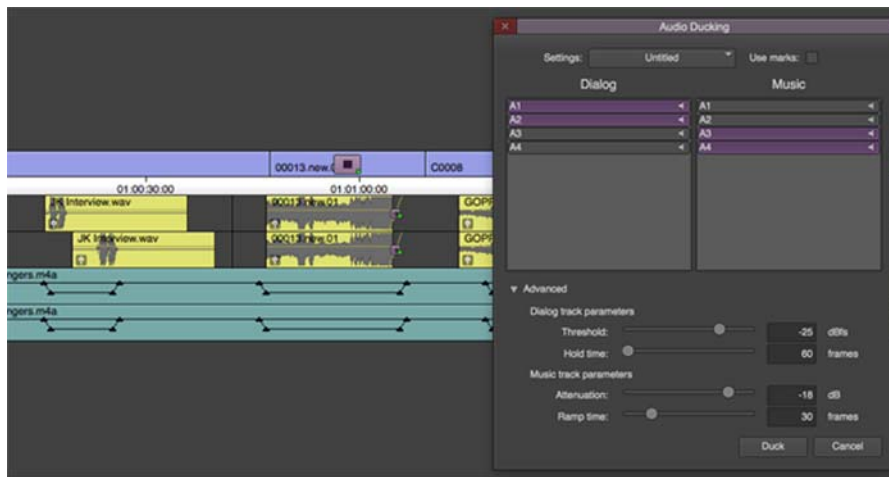
8. Play the sequence. The audio will playback with Audio Ducking applied.

9. (Optional) If you want to make adjustments to the Audio Ducking, make adjustments by choosing from the following options:

Option	Meaning
Dialog track parameters	Threshold: Enter a value to set how aggressive key frames will be applied when analyzing the Dialog tracks.
	Hold time: Enter a value in frames to set how long a track will remain ducked after the last known peak above the threshold value in the Dialog tracks.
Music track parameters	Attenuation: Sets how much the volume will be reduced in the Music track(s).
	Ramp time: Sets how many frames it takes to ramp the Music track(s) down from or back to full volume.

Fading and Dipping Audio

You can change volume levels to smooth audio transitions between elements in an edited sequence by adding effects to do the following:

• Fading audio up or down.

• Crossfading between audio elements on two separate channels.

• Dipping audio to a lower level.

These effects are more accurately termed "audio dissolves" because they occur instantly when you apply the same dissolve effect that you use for video tracks.

To apply a fade or crossfade:

1. In the Timeline, move the position indicator to a transition.

2. Click the Quick Transition button (which appears by default in the Timeline top toolbar).

   The Quick Transition dialog box opens.
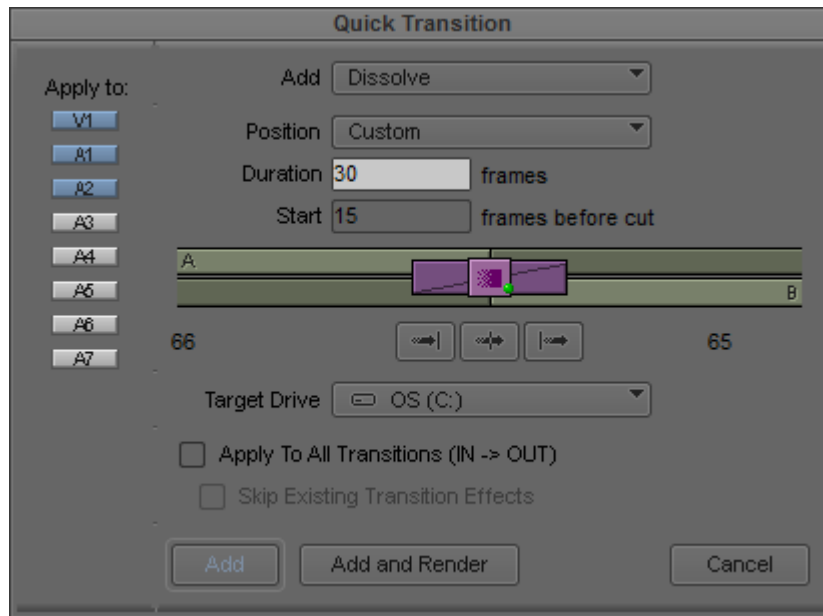
3. Click the Add menu, and Select Dissolve.

   Only dissolves work with audio tracks.

4. Click the Position menu, and select the location for the dissolve.

5. Select a duration for the dissolve by doing one of the following:

   ▶ Type a duration, measured in frames (30 frames equals 1 second of NTSC footage; 25 frames equals 1 second of PAL footage), in the Duration text box.

   ▶ Click either the left or right edge of the Dissolve Effect icon, and drag it to change the duration.

   The graphic display changes—the size of the effect icon gets smaller or larger, and the numbers in the Duration and Start text boxes change—to reflect the new duration.

📑 *The number of frames available for a dissolve depends on how much of the clip has been edited into the sequence.*

6. If you selected Custom Start, type the number of frames before the transition to begin the effect in the "Start *n* frames before cut" text box. Otherwise, leave the default value in the text box.

7. (Option) Click the Target Drive menu, and select a media drive other than the default.

8. (Option) If you have In and Out points marked in your sequence, the Quick Transition dialog box contains the following two options:

   - Apply to All Transitions (In -> Out)

   - Skip Existing Transition Effects

📑 *The Skip Existing Transition Effects option is useful when you want to add a number of dissolves to a sequence that already has transition effects.*

   Do one of the following:

   ▶ Select Apply to All Transitions (In -> Out) to overwrite all existing transition effects between the In and Out points.

> ▶ Select both options to avoid overwriting any existing transition effects.

9. Click Add to move the effect to the transition point without rendering. Click Add and Render to do both at once.

📄 *In most cases, you can select Add and Render for immediate real-time playback of the audio effect (rendering of audio dissolves is usually instantaneous).*

The effect is completed.

To apply a dip in audio:

1. Play back the section of the sequence where you want to dip the audio to determine the start point for the dip, and apply an add edit to the audio track.

   For information on add edit, see "Working with Add Edits (Match Frames)" on page 221.

2. Repeat the action in step 1 for the end point where the audio dips back up.

3. Move the position indicator to the new segment of audio, and open the Audio Mixer tool.

4. Adjust the track to the volume level you want, as described in the section "Using Clip Volume and Pan Mode" on page 266.

5. Apply a dissolve to both Add Edit points, using the techniques described in "Fading and Dipping Audio" on page 247.

   Be sure to click the Position menu, and select Centered on Cut or Custom Start.

   After rendering, the audio dips smoothly from the higher levels of the adjacent segments of the track to the lower level applied to the middle segment.

Working with Multichannel Audio Tracks

Video and audio information in your project can be represented as tracks and channels. The following defines these terms as used in this documentation:

- Tracks
  - A region of a clip or sequence on which audio or video is placed.
  - A playback channel represented in a sequence as either a video track or an audio track. You edit tracks in the Timeline.
- Channels
  - The separate audio signals that compose an audio track. Stereo tracks have two audio channels.

You can edit multichannel audio tracks in the same way you edit mono audio tracks. Your Avid editing application supports the following audio track formats:

- Mono
- Stereo

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.

Modifying Track Formats in Bins

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.

If you duplicate a clip in a bin and modify the track format in the copy, you can create a sequence that contains both a multichannel and a mono instance of the same master clip. This does not cause a problem with editing, playback, or any other operation.

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. Do one of the following:

   ▶ Select Clip > Modify.

   ▶ Right-click a clip and select Modify.

   The Modify dialog box opens.

4. Click the Modify Options menu, and select Set Multichannel Audio.
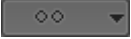
   The Modify dialog box displays the audio tracks for all selected clips with format buttons beneath paired tracks. If an audio track is not used by the selected clips, it does not appear.
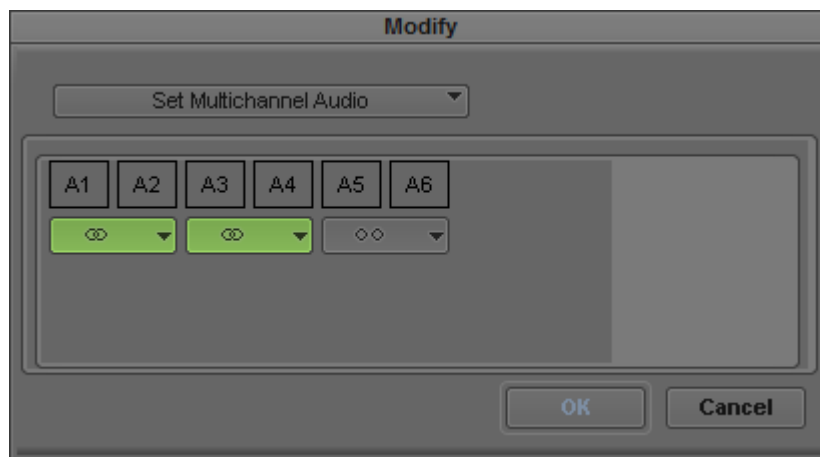
📄 *Track formats for sequences, group clips, or subclips cannot be modified.*

5. Do one of the following:

   ▶ Click the Format buttons to cycle through the available options until you find the appropriate format.

▶ Click the Format menu on a Format button and select the appropriate multichannel 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 multichannel tracks.
Mono tracks	Sets the paired audio tracks to two mono tracks.
Stereo tracks	Sets the paired audio tracks to one stereo track.

6. Click OK.

The bin information updates to reflect the audio format modifications.

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 when editing either a sequence or source material displayed in the Timeline:

- Show or hide waveforms, volume, and pan displays on individual tracks or on all tracks (see "Displaying Audio Waveforms" on page 256 and "Displaying Volume and Pan Values" on page 257).

- Add, delete, move, and copy Audio Track effects.

- 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.
Clip Volume/Pan	Turns on or off the clip volume and pan display for audio tracks.
Inactive	Disables a track so you can play back your sequence without processing the plug-in effects or automation for the inactive track.
Solo	Allows you to monitor a single track of audio without deselecting other tracks.
Audio Track Effect plug-ins	Lists the Audio Track Effect plug-ins inserted on the track. Clicking the button for an existing Audio Track Effect insert opens the plug-in window so you can edit the plug-in parameters. Clicking a blank effect button opens the Audio Track Effect 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" on page 174."

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" on page 253.

You can also use the Track Solo buttons in the Audio Mixer tool. See "Using the Track Solo and Track Mute Buttons" on page 264.

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.
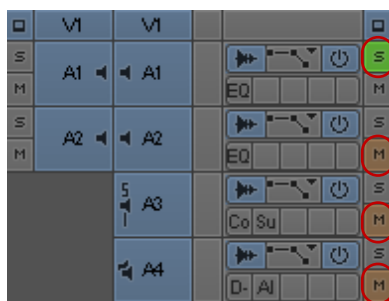
Solo button (green) and Mute buttons (orange) in the Track Control panel

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 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.

The Active/Inactive button displays the monitoring status of the track:

Icon State	Description
	Primary active track — Audio information in these tracks is not dropped when the play speed increases during scrubbing.
	Active track — Audio information in these tracks might be dropped when the play speed increases during scrubbing, depending on your settings and track effects.
	Inactive track — Voices and audio plug-ins are not processed for these tracks during playback.

To make an audio track inactive, do the following:

▶ Deselect the Active/Inactive button in the Track Control panel.

You can click the Active/Inactive button again to restore audio monitoring to the track.

Using Audio Scrub

You have two options for scrubbing audio in either the sequence or the source material:

• Smooth audio scrub — Mimics the variable pitch playback of traditional analog tape

• Digital audio scrub — Takes advantage of the digital environment by sampling incoming frames, outgoing frames, or both at a normal pitch and playback rate

Digital audio scrub enables you to sample selected frames of incoming or outgoing audio as you move through the footage, without a change in pitch or speed. Digital scrub has the following unique characteristics:

• The frames of audio you hear are always at your point of destination. For example, if you step forward 10 frames (8 frames for 24p), you hear a selected number of audio frames from a point behind the position indicator (outgoing frames) to a point in front of the position indicator (incoming frames) as it reaches the new destination point.

• Digital scrub samples audio in a forward playback direction. Whether you step backward or forward through the material, you hear the same audio sampling at each destination frame.

Each type of scrub has its advantages:

• Smooth scrub makes it easier to examine sound at varying speeds.

• Digital scrub lets you focus quickly on individual bits of incoming or outgoing audio for frame-accurate edits and adjustments.

Selecting Tracks for Audio Scrubbing

By default, all monitored audio tracks are selected for scrubbing. However, as the play speed increases during audio scrubbing, some monitored audio tracks are dropped. You can select up to two tracks to ensure they play during scrubbing, even if the system has to drop some tracks.

The following table shows how many tracks you can scrub at the varying speeds of play.

When you play footage forward or backward at:	You can scrub:
Normal speed	8 tracks
Two times normal speed	8 tracks
Three times normal speed	2 tracks
Greater than three times normal speed	0 tracks

To ensure an audio track is monitored during scrubbing:

▶ Enable the Active/Inactive button in the Track Control panel for the selected track.

Active/Inactive buttons, displaying a black border to indicate tracks that can play without dropping audio information

The Active/Inactive button displays a black border to indicate which tracks can be played if the system has to drop tracks during audio scrubbing. By default, the two top Active/Inactive buttons display black border.

You can isolate specific audio tracks for scrubbing without having to deselect monitoring of all other audio tracks by soloing the audio tracks. See "Soloing Audio Tracks" on page 252.

To make a track the primary active track:

▶ Alt+click the Audio Track Monitor button for the selected track.

Performing Smooth Audio Scrub

You can use three-button play with the J-K-L keys to perform smooth audio scrubbing of selected tracks of audio at variable speeds but not digital audio scrub. You can monitor while stepping (jogging) or while shuttling at fixed rates up to three times normal speed. The audio cuts out at greater than three times the normal speed and comes back in after the speed drops below three times.

To monitor audio with three-button play:

1. Select the correct track, and adjust the playback volume as necessary.

2. Play the audio by using the three-button variable speed playback procedures described in "Playing Footage with the J-K-L Keys (Three-Button Play)" on page 121.

Performing Digital Audio Scrub

To locate an audio edit point by using digital scrub:

1. Solo an audio track for scrubbing and adjust the output volume, if necessary.

2. Press the Caps Lock key to activate digital audio scrub.

   You can also activate digital audio scrub by pressing and holding the Shift key while you drag the position indicator or click the Step buttons as described in step 3.

3. Move through the material in one of the following ways to hear the scrub:

   ▶ Drag the position indicator.

   ▶ Click the Step buttons to step through in fixed increments: 1 frame backward, 1 frame forward, 10 frames backward, or 10 frames forward.

Step Buttons. Left to right, top to bottom: 1 frame backward, 1 frame forward, 10 frames (8 frames for 24p) backward, or 10 frames (8 frames for 24p) forward

4. When you find the correct frame, mark the location, trim the transition, or perform any other function you choose.

   When you sample incoming frames (with the default scrub parameters, for example), the system places the position indicator at the head of the last sampled audio point. When you sample outgoing frames, the system places the position indicator at the tail of the last sampled audio point.

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. Waveforms for multichannel tracks in the Timeline display waveforms for all channels within a single track, separated by a horizontal divider. For more information, see "Displaying Audio Waveforms" on page 256.

You can also view a graph for pan and volume information in the Timeline. For more information, see "Displaying Volume and Pan Values" on page 257.

The following notes apply to audio displays:

• When you click a Waveform or Clip Volume/Pan button in the Track Control panel, or when you Alt+click (Windows) or Option+click (Macintosh) a Waveform or Clip Volume/Pan button to display all waveforms or pan displays, the Avid editing application maintains the display setting with the sequence. You cannot save specific per track settings in a custom Timeline view.

• You can map the Allow Per Track Settings menu command on the Timeline fast menu to the keyboard. This provides you a quick method of turning selected track waveform displays off and on as you edit. For example, if you display waveforms for audio tracks A1 and A2 but not A3 and A4, and then disable per track settings, no waveforms display in the Timeline. When you enable per track settings, only A1 and A2 display waveforms. You can save the menu command state in a custom Timeline view.

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.

The editing application saves cached waveforms for projects. This allows the waveform to draw faster the next time you open the project. You will see a WaveformCache folder in the Avid Projects directory. The WaveformCache folder also appears in the Shared Avid Projects directory.

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" on page 172.

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 Data > 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.
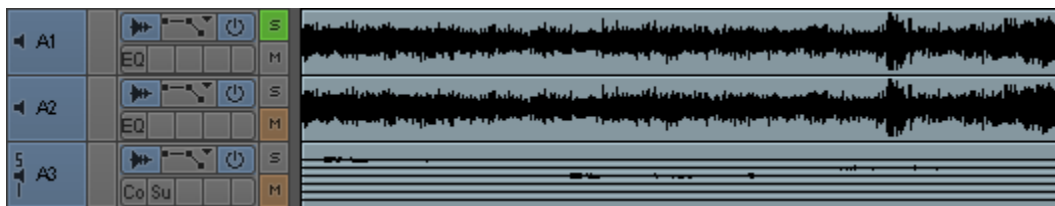
3. (Option) Maximize the visibility of your waveform display using one of the following procedures:

   ▶ 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 Data > 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" on page 172.

Displaying Volume and Pan Values

You can view the volume and pan automation values in the Timeline. If you choose to view volume and pan on individual tracks rather than on the entire sequence, you can view volume values on one track and pan values on another.

For information on displaying audio waveform information and using per track settings, see "Displaying Audio Waveforms" on page 256.

To turn on the display of clip volume values and volume automation values for all tracks, do the following:

▶ Alt+click (Windows) or Option+click (Macintosh) the Clip Volume/Pan button in the Track Control panel for any track, and select Clip Volume or Volume.

To turn on the display of clip volume values and volume automation values for selected tracks, do the following:

▶ Click the Clip Volume/Pan button in the Track Control panel for the tracks you want to display clip or volume automation information, and select Clip Volume or Volume.

The volume values appear in the selected tracks.

▶ (Option) If you want to view both clip volume and volume values, repeat the previous step and select an additional volume value to display.

To turn on the display of pan values in the Timeline:

1. If you want to view pan values for all tracks, Alt+click (Windows) or Option+click (Macintosh) the Clip Volume/Pan button in the Track Control panel and select one of the pan value options (pan value options depend on the sequence format and track format in your project):

   ▶   Pan

   ▶   Pan L > *[speaker layout]*

   ▶   Pan R > *[speaker layout]*

2. If you want to view pan values for individual tracks, click the Clip Volume/Pan button in the Track Control panel for the tracks you want to display pan information, and select the appropriate pan option:

   ▶   Pan

   ▶   Pan L > *[speaker layout]*

   ▶   Pan R > *[speaker layout]*

   The pan values appear in the selected tracks.

Using Audio Meters in the Timeline

The Audio meters in the Timeline let you view and adjust audio levels without opening the Audio tool.

The Meter menu options are the same options as those available in the Audio tool. For more information, see "Understanding the Audio Tool" on page 34.

To display the Audio meters in the Timeline:

▶   Click the Meter Menu button, and select Show Audio Meters.

The Audio meters display in the Timeline.

Audio meters display in the Timeline. Left to right: Master Volume button, Tracks indicators, In/Out Toggle buttons, Meter menu button

When you load a sequence in the Timeline and press the Play button, the Audio meter displays the audio levels of the audio tracks in your sequence.

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" on page 264.

• Using the Mute button in the Track Control panel.

For more information, see "Soloing Audio Tracks" on page 252.

(Windows) 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 Windows Mixer appears.

2. On the Windows Mixer, drag the volume control to the audio level you prefer.

(Macintosh) 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 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 Formats in Bins

You can select a bin heading to display the audio formats in the bin. The applicable audio format, AIFF-C, WAVE, PCM, or SDII (Macintosh), appears in the Audio Format column for master clips.

To add the Audio Format column to a bin:

1. With a bin in Text view, select Bin > Choose Columns.

   The Bin Column Selection dialog box opens.

2. Click Audio Format in the list to select it.

3. Click OK.

   The Audio Format column appears in the bin.

Using the Audio Mixer Tool

The Audio Mixer tool has three modes that let you perform the following tasks:

Mode	Task Description
Clip Volume and Pan	Lets you adjust the overall volume and pan values for a clip, in a bin or in the Timeline.
	For more information, see "Using Clip Volume and Pan Mode" on page 266.
Volume automation and Pan	Lets you adjust and record volume and pan changes within a clip in the Timeline.
	For more information, see "Using Volume and Pan Automation" on page 272.
Live Mix	Lets you temporarily override any existing volume and pan automation settings. You can use the controls on the Audio Mixer tool to change volume and pan settings without modifying the existing volume and pan automation settings.
	For more information, see "Using Live Mix Mode" on page 280.

Accessing the Audio Mixer and Audio Mixer Modes

To open the Audio Mixer tool, do one of the following:

▶ If one of the Audio tools is already open, click the Effect Mode Selector menu, and select Audio Mixer.

▶ Select Tools > Audio Mixer.

The Audio Mixer tool opens.

To select the Audio Mixer mode, do one of the following:

▶ Click and hold the Audio Mixer mode button, and select the mode from the menu.

▶ Click the Audio Mixer mode button and cycle through the Audio Mixer mode settings to the mode you want to select.

Audio Mixer Tool Controls

The following illustrations and tables identify the controls of the Audio Mixer tool in Clip Volume and Pan mode, including controls common to all three modes. The elements described in the following tables appear in all Audio Mixer modes unless otherwise noted. For specific information on Volume and Pan Automation mode, see "Using Volume and Pan Automation" on page 272. For specific information on Live Mix mode, see "Using Live Mix Mode" on page 280.

Top part of Audio Mixer tool

	Element	Description
1	Audio Loop Play button	Lets you adjust audio effects while looping over a portion of audio. This button is also available in the Play tab of the Command palette. For more information, see "Adjusting Volume While Playing a Clip Volume Effect" on page 270.
2	Render Effect button	Lets you render audio effects. For example, if you change the level of a clip that contains a rendered audio dissolve, the effect becomes unrendered. You can use the Render Effect button to rerender the audio dissolve directly from the Audio Mixer tool. Then you can play back the clip immediately to hear the effect of the level change with the dissolve in place.
3	Fast Menu button	Lets you select from a list of functions that vary according to the Audio Mixer mode. For more information, see the following topics: • "Audio Mixer Fast Menu: Clip Volume and Pan Mode" on page 268 • "Audio Mixer Tool Fast Menu: Volume and Pan Automation Mode" on page 276 • "Audio Mixer Tool Fast Menu: Live Mix Mode" on page 282
4	Show Track Sidebar	Lets you choose how many tracks to display in the Audio Mixer tool. Use the track selector sidebar to select the tracks you want displayed in the Audio Mixer tool. This helps optimize horizontal space when working with higher audio track-counts.
5	Bypass button	Lets you temporarily turn off any Clip Volume or volume automation effects. (This control does not appear in Live Mix mode.)

Element	Description(Continued)
6 Audio Mixer mode button	Lets you select the mode for the Audio Mixer tool: • Auto (volume and pan automation) • Clip (Clip Volume and Pan) • Live (Live Mix)
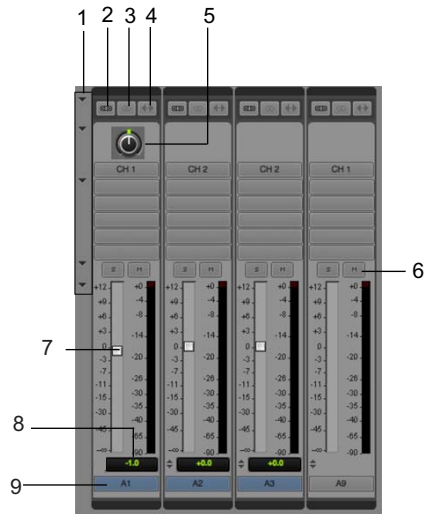
Bottom part of Audio Mixer tool

Element	Description
1 Hide/Show Controls	Allows you to choose what to display in the Audio Mixer Tool. Use the triangular openers to hide or show (from top to bottom) the Group/Mirror/Link button, Pan controls, Effect buttons, Mute, Solo buttons, and Faders/Meters.
2 Group buttons	Lets you group adjustments across tracks and have two or more sliders move at the same time.
3 Stereo Link	For stereo sequences, links the two pan controls so that when you move one Pan Location cursor, the other moves in a parallel direction.
4 Stereo Mirror	For stereo sequences, links the two pan controls so that when you move one Pan Location cursor, the other moves in a mirrored direction — for example, if you drag the Pan Location cursor to the left, the corresponding cursor in the second X/Y grid moves to the right.
5 Pan value and knobs	Displays the pan value and lets you adjust it.
6 Track Solo and Track Mute buttons	Lets you solo or mute selected tracks. The values persist when you switch to another group, switch to another Audio Mixer mode, and when you close the Audio Mixer tool. For more information, see "Using the Track Solo and Track Mute Buttons" on page 264.
7 Volume Level sliders	Lets you adjust the volume level of the clip.

	Element	Description(Continued)
8	Volume Level Displays	Displays the volume level of the track. You can click and type in a new value. In Clip Volume mode, if the track has an volume and pan automation value associated with it, the word Auto appears. In Volume and Pan Automation mode, if the track has a system clip volume value associated with it, the word Clip appears.
9	Track Selection Menu buttons	Lets you enable tracks for mixing audio. When you select an item from this menu, the system selects or deselects the corresponding track in the Timeline.

Resizing the Audio Mixer Tool

The Audio Mixer Tool includes triangular openers that allow you to control what parameters are displayed in the Audio Mixer Tool. This helps to easily optimize the vertical space of the Audio Mixer window.

Triangular openers from top to bottom: Show Track Sidebar, Show Group/link/mirror buttons, Show Pan controls, Show effect buttons, Show mute/solo buttons, Show faders/meters

Opening the top triangular opener opens the track selector sidebar. Use the track selector sidebar to select the tracks you want displayed in the Audio Mixer tool. This helps optimize horizontal space when working with higher audio track-counts.

You can sort the columns in the track sidebar. Click the first column heading to sort the tracks according to which are enabled. Click the next column to sort by track numbers. Click the Track column to sort by track label (if applicable).

You can easily switch between the selected tracks and the non-selected tracks. Right click in the tracks pane and select Invert Track Selection. The non-selected audio tracks become selected and the selected tracks are deselected.

Track Selection in the Audio Mixer Tool and in the Timeline

When you select a track in the Audio Mixer tool, your Avid editing application selects the corresponding track in the Timeline. Similarly, when you select an audio track in the Timeline, your Avid editing application selects the corresponding track in the Audio Mixer tool.

You can use the audio track buttons in the Tracks tab of the Command Palette to select tracks in the Audio Mixer tool. You can map these buttons to any mappable button location or to the keyboard. For more information, see "Mapping User-Selectable Buttons" on page 61.

A track needs to be monitored in the Timeline before you can work with it in the Audio Mixer tool.

Using the Track Solo and Track Mute Buttons

The Track Solo and Track Mute buttons let you mute and solo individual audio tracks in all three modes. The settings persist between modes and stay in effect when you close the Audio Mixer dialog box. When you solo or mute tracks in the Audio Mixer tool, the system solos or mutes the corresponding tracks in the Timeline.

Rendering and Unrendering Order for Audio Effects

Your Avid editing application processes audio effects in the following order (you can also think of this as the audio volume staging):

1. Clip Volume and Pan (Audio Mixer tool in Clip Volume mode — real-time).
2. AudioSuite plug-ins (AudioSuite tool — non-real-time).
3. EQ (Audio EQ tool — real-time, can be rendered).
4. Audio Fade or Dissolve (Quick Dissolve button — real-time, can be rendered).
5. Volume and pan automation (Audio Mixer tool in Volume and Pan Automation mode — real-time).

Changing an audio effect unrenders any audio effect that follows it in the render order but does not affect audio effects that precede it in the render order. For example, if you have a clip that contains clip volume, an AudioSuite plug-in effect, and volume automation, and you change the volume automation, the system does not unrender the AudioSuite plug-in effect. This preserves the workflow because you use volume automation for finishing the audio levels. You need to hear how changes in the volume automation affect the rendered effects. You could add, render, and modify EQ and audio dissolves on the same clip and you still would not unrender the AudioSuite plug-in effect.

However, if you change the clip volume on the same clip, the system unrenders the AudioSuite plug-in. This preserves the workflow because when you reset the level of the clip, you need to reprocess any effects applied to the clip.

If you have an AudioSuite plug-in and an Audio EQ effect applied to the same effect, only the Audio EQ effect icon displays. The AudioSuite plug-in still applies even though the icon is not visible.

Audio Volume Staging and an Audio Editing Workflow

You can adjust the volume of an audio clip at several points during an editing session. For example, you can adjust volume using the Audio Mixer tool in Clip Volume mode and Volume and Pan Automation mode. Also, the EQ tool and many of the AudioSuite and Audio Track Effect plug-in effects let you modify the volume of the clip. When you can adjust the volume in a signal chain at several points, the process is referred to as audio volume staging. This section describes the audio volume staging model used by Avid editing applications. It also describes a basic workflow for taking advantage of the volume staging.

You can set audio volume levels with the Audio Mixer tool. When you use the Audio Mixer tool in Clip Volume mode, values set by the volume level sliders are referred to as system clip volume values. When you use the Audio Mixer tool in Volume and Pan Automation mode, values set by the Audio Mixer tool are additive to the system clip volume values. This lets you adjust the values separately. You typically adjust clip volume values first, as in the following workflow:

1. Adjust overall volume (Clip Volume).
2. Apply effects (Audio Effect Processing).
3. Fine-tune volume (volume automation).

This workflow lets you apply effects to an audio clip in a way similar to the signal flow in a mixing console.

In this workflow, clip volume is like a trim level, where you can lower (attenuate) or increase (amplify) the levels of a clip before applying any other effects. For example, when importing a sound file from an audio CD, you notice when the level of the clip is very high and close to clipping (distortion). If you add an EQ effect to raise the level of the bass, the audio starts to distort. To solve this problem, you can use clip volume to lower the signal level. Then you can adjust the bass in the EQ tool without distorting the audio.

The following workflow illustrates this procedure:

1. Use the Audio Mixer tool in Clip Volume mode to lower the overall volume.
2. Apply an EQ effect and any other audio effects.
3. Use the Audio Mixer tool in Volume and Pan Automation mode to fine-tune the volume of different sections of the audio in the sequence.

This workflow also applies to using AudioSuite and Audio Track Effect plug-ins because some plug-ins affect the level of the audio. Often, if you use clip volume to raise or lower the level before you apply an audio effect, you can achieve higher quality results.

In this workflow, the Audio Mixer tool in Volume and Pan Automation mode acts like the level faders on a console for final mixing of the audio material.

For more information, see .

Using Clip Volume and Pan Mode

The Audio Mixer tool in Clip Volume and Pan mode lets you do the following:

- Adjust volume and pan for an individual clip, a whole track, several tracks at once, or a whole sequence.

- Adjust the volume, pan, or both for one track at a time.

- Adjust the volume, pan, or both for multiple tracks simultaneously by grouping them together.

When the Audio Mixer tool is in Clip Volume and Pan mode, you can adjust the volume and pan values for entire clips only. You can use Volume and Pan Automation mode and Live Mix mode to adjust volume and pan levels within a clip in the Timeline. For more information, see "Using Volume and Pan Automation" on page 272 and "Using Live Mix Mode" on page 280.

You can work with pan values:

- Create or modify an audio pan effect. This method creates an effect that is stored with the sequence, as described in "Adjusting Clip Volume and Pan for Audio Tracks" on page 266 and "Using the Center Pan Command" on page 271.

Adjusting Clip Volume and Pan for Audio Tracks

To adjust clip volume and pan for audio tracks:

1. Load a clip or sequence, and activate the appropriate monitor:

   ▶ To adjust a track in a source clip, click the Source monitor to make it active.

   To view a source clip's tracks in the Timeline, click the Toggle Source/Record in Timeline button.

   ▶ To adjust a track in a sequence, click the Record monitor to make it active.

2. Select the track or portion of a track you want to adjust:

   ▶ To adjust the track in a single edited clip in a sequence, place the position indicator in the clip.

   ▶ To adjust an isolated section of audio on a track, mark In and Out points.

   ▶ To adjust levels from an In point through the end of the track, mark an In point only. One mark also adjusts the entire track from the beginning of the clip that includes the mark.

   ▶ To adjust levels globally throughout the track, make no marks.

3. Select Tools > Audio Mixer.

   The Audio Mixer tool opens.

4. Select Clip Volume and Pan mode by doing one of the following:

   ▶ Click and hold the Audio Mixer mode button, and select Clip Mode from the menu.

   ▶ Click the Audio Mixer mode button and cycle through the Audio Mixer mode settings to Clip.

5. In the Audio Mixer tool, select the audio track to be adjusted by doing one of the following:

   ▶ Click the Track Selection Menu button for the appropriate audio track.

   ▶ Alt+click (Windows) or Option+click (Macintosh) the Track Selection Menu button, and then select a track.

  To select more than one track, click the Group button for each track you want to group.

 The Track Selection buttons in the Audio Mixer tool match the track selection buttons in the sequence or source clip. When you select a track in the Audio Mixer tool, the system selects the corresponding track in the Timeline or source clip. Selecting a track in the Timeline selects the corresponding track in the Audio Mixer tool.

To verify or change the output channels, use the Audio tool (select Tools > Audio Tool).

6. With the Audio Mixer tool active, use any playback method (such as the J-K-L keys on the keyboard) to play, shuttle, or step through the audio to check for necessary volume or pan adjustments.

    The keyboard can control either the Source or Record monitor, depending on which monitor was active when you opened the Audio Mixer tool. Switch your selection by clicking the appropriate monitor.

7. Decide whether to raise or lower the volume.To change an audio level value in a mix pane, do one of the following:

    ▶   Click a number along the vertical edge of the Level slider.

    ▶   Click the Level slider, type a value, and press Enter.

    Values are cumulative until you press Enter. For example, if you want to enter the value 12, type it. However, if you enter 1 and then want to change the value to 2, press Enter before typing the 2.

    -   Click the Volume Level display, type a value, and press Enter.

    -   Click the Level slider, and then drag the slider to a new position.

    -   Alt+click (Windows) or Option+click (Macintosh) the Level slider to reset the value to 0 dB.
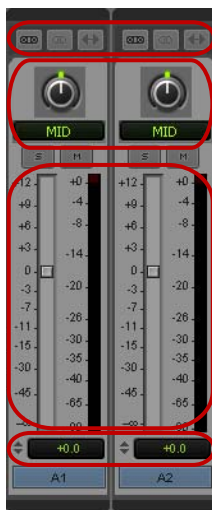
Top to bottom: Group, Stereo Link, and Stereo Mirror buttons; Pan controls and pan display; Audio Level sliders and meters; and Volume Level display in the Audio Mixer tool

8. Decide if you want to adjust pan values. To adjust the pan values in a mix pane, do one of the following:

    ▶   Click the Pan control, and then drag the control to a new position. Drag left or up to pan to the left, or drag right or down to pan to the right.

▶ Alt+click (Windows) or Option+click (Macintosh) the Pan Value display for MID.

▶ If you are working with a stereo sequence, two Pan controls appear in the Audio Mix tool for each track. Click the Pan control, and then drag the control to a new position. Drag left or up to pan to the left, or drag right or down to pan to the right.

▶ (Option) If you are working with a stereo sequence, click the Stereo Link button if you want to link the two Pan controls so that when you move one control the other moves correspondingly. You can also click the Stereo Mirror button so that the two Pan controls mirror each other as you adjust them.

If the sequence is playing, play stops when you make an adjustment.

You can adjust volume while playing the clip. For more information, see "Adjusting Volume While Playing a Clip Volume Effect" on page 270.

9. Apply the adjustments to a chosen region of the track by using the Fast Menu button located in the top bar of the tool. See "Audio Mixer Fast Menu: Clip Volume and Pan Mode" on page 268.

10. Play through the audio again, using the J-K-L keys.

11. Repeat steps 7 through 10 until you are satisfied with the pan and volume levels.

Your Avid editing application stores the new settings and uses them whenever you play back the sequence.

Audio Mixer Fast Menu: Clip Volume and Pan Mode

The commands in the Audio Mixer tool Fast menu operate differently, depending on the types of points you set within the clip or sequence, as described in the following table:

Points Set	Description
Both In and Out points	Commands apply adjustments to selected tracks between the points.
In point only	Commands apply adjustments to full clips from the In point to the end of selected tracks.
Out point only	Commands apply adjustments to full clips from the beginning of selected tracks to the Out point.
None	Commands apply globally (across entire tracks).

The following table describes the Audio Mixer tool Fast menu commands for Clip Volume and Pan mode:

Command	Description
Set Level on Track, Set Pan on Track	Applies the same pan or volume levels currently set in the Audio Mixer tool to all segments in the marked regions of the tracks.

Command	Description
Adjust Pan/Vols on Track	Opens a dialog box for making incremental adjustments to all current settings across segments in the marked regions of selected tracks.
	For example, when you type –1 in the Volume Adjustment text box, the various audio level settings across all segments of the marked region of selected tracks are lowered by exactly 1 dB when you click OK.
Remove Default Clip Pan on Track, Commit Default Clip Pan on Track	allow you to commit and remove pan effects whose values are the same as the default for their respective tracks.
	For example, if your Audio Settings has the Default Pan set to Centered, and you select Commit Default Clip Pan on Track in the Audio Mixer Tool, the clips containing pan in your sequence will stay centered, even if the default is subsequently changed in the Audio Settings window. The Remove Default Clip Pan on Track option removes the pan effect from any clip whose pan value is the same as the current default. If you remove the pan effects from these clips, changing the default will cause the pan on the clips to change.
Remove Clip Gain on Track, Remove Pan on Track	Removes clip gain or pan values from the marked regions of selected tracks.
Remove Pan/Vols on Track	Deletes all audio mix adjustments that have been applied to segments in the marked regions of selected tracks. Each audio clip is restored to its default pan and volume settings.
Disable Track Monitoring	Makes an audio track inactive so that it does not process any audio information.
Set Display Options	Opens a dialog that allows you to add or remove items such as the faders, legends, effect buttons, and the solo and mute buttons in order to save space in the Audio Mixer Tool.

Note the following:

- The commands in the Fast menu appear dimmed until you select a track.
- Levels set in master clips carry across to the sequence after you edit the clips.
- Clip volume values are the values for the entire segment; for example, you cannot set volume for a portion of a segment without affecting the entire segment. To set volume for a portion of a segment, use Volume and Pan Automation mode. For more information, see "Using Volume and Pan Automation" on page 272.

Bypassing Existing Volume Settings

You can instruct your Avid editing application to ignore the volume settings established with the Audio Mixer tool when playing back or recording a sequence.

To turn off current volume adjustments:

▶ Click the Bypass button in the Audio Mixer tool.

The volume controls disappear.

To restore the previous settings:

▶ Click the Bypass button or the Clip Volume/Pan button again.

Adjusting Volume While Playing a Clip Volume Effect

You can use the Audio Loop Play button to change the volume on an existing Clip Volume effect while you play the clip. The Audio Loop Play button appears in several of the audio effect tools and is also a mappable button in the Play tab of the Command palette. For more information on mapping buttons, see "Mapping User-Selectable Buttons" on page 61.

While your Avid editing application plays the loop, you can do the following:

- Adjust audio effects.
- Use the Peak Hold menu in the Audio tool to change between Peak Hold and Infinite Hold.
- Use the Reset Peak button in the Audio tool.

For more information on the Audio tool, see "Understanding the Audio Tool" on page 34. For information on improving response time, see "Improving Response Time When Adjusting Volume" on page 270.

📄 *For additional ways to change the volume while playing audio, see "Understanding Volume or Pan Automation Recording" on page 275.*

To adjust volume while playing a Clip Volume effect:

1. Do one of the following:

   ▶ Select an existing Clip Volume effect.

   ▶ Identify an area of the clip with In and Out points.

   ▶ Place the position indicator over an audio clip.

2. Click the Audio Loop Play button in the Audio Mixer tool.

   Your Avid editing application repeatedly loops through the selected area as follows:

   - If you have In and Out points on your sequence, the command loops over the selected area.
   - If there are no In or Out points, the command loops over the shortest segment on the selected audio track at the position indicator.
   - If you have only an In point or only an Out point, the system uses the location of the position indicator as the second point. For example, if there is an In point and no Out point, the system loops from the In point to the end of the (smallest selected) audio segment under the position indicator.

3. Adjust the volume as necessary.

4. Click the Audio Loop Play button to stop.

   Your Avid editing application automatically saves your changes as part of a Clip Volume effect.

Improving Response Time When Adjusting Volume

If there is no Clip Volume effect on the clip before you start, you do not hear any changes until you click the Audio Loop Play button to stop and replay the effect.

As you adjust the volume values on an existing Clip Volume effect, you might not hear the results immediately. It takes a few seconds for your Avid editing application to apply the changes to the clip. The response time for this feature is considerably longer than it is when changing EQ parameters while using Audio Loop Play. You might need to click the Audio Loop Play button to complete the edit and then play the effect to hear the result.

You can also do any of the following:

- Monitor as few audio tracks as possible.
- Deselect the video track, if practical.
- Use In and Out points to select a narrow interval to adjust.

Using the Center Pan Command

You can use the Center Pan command on source material in bins. Use it prior to editing or at any time during the editing process.

Instead of adjusting pan on individual clips by using the Audio Mixer tool, Center Pan lets you create a standard distribution of audio between left and right speakers. You can adjust the pan on selected clips or all clips with a single command. Panning all the audio to center eliminates the distraction of having to listen to left and right speakers, in turn. It also smooths the playback of the edited sequence because all shots are panned to center.

To adjust the pan on clips:

1. In a bin, select the clips you want to pan to the center.

2. Select Clip > Audio > Center Pan.

   A dialog box opens and asks you to confirm the pan.

3. Click OK.

   The system pans all the selected clips to the center.

Isolating Clip Portions for Audio Adjustment

When making audio level and pan adjustments, your Avid editing application looks at either an individual clip in the Source monitor, a segment in the sequence, or entire tracks. To change level or pan settings in an area not defined by a discrete clip or group of clips, use the Add Edit function to define your own custom area.

To isolate clip portions for adjustment:

1. Find the start of the area where you want to change the pan or level, leaving your position indicator on that frame as a marker.

2. Select the appropriate track in the Track Selector panel.

3. Click the Add Edit button.

   This places an edit where the position indicator is parked.

4. Find the end of the area where you want to change the pan or level, leaving your position indicator on that frame as a marker.

5. Select the appropriate track.

6. Click the Add Edit button.

7. Use the process described in "Using the Audio Mixer Tool" on page 260 to change the level or pan within this new segment.

Using Volume and Pan Automation

Volume and pan automation lets you change the volume or pan values of a segment by adding and manipulating volume or pan automation keyframes in the Timeline. The following illustration shows an expanded audio track containing volume keyframe information.
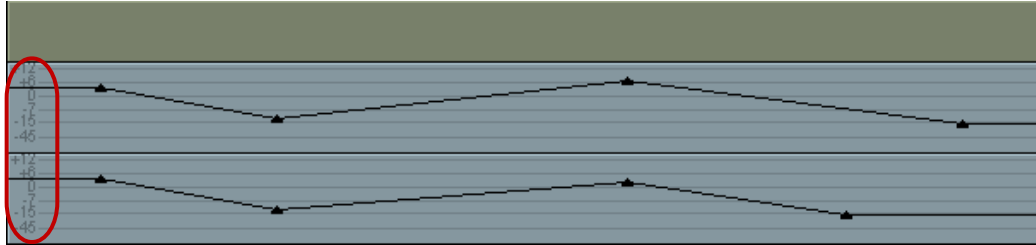
Example of the graphic representation of keyframes and volume ramps in the Timeline. Volume values in decibels are highlighted on the left.

Your Avid editing application uses a linear ramp to change the volume or pan from one keyframe to the next.

When you adjust pan parameters, you can select which parameter displays in the Timeline. The pan parameters available depend on your sequence format and the audio track format. The following table lists the volume and pan displays available in the Timeline:

Sequence Format	Audio Track Format	Volume and Pan Parameters
Stereo	Mono	None, Clip Volume, Volume, Pan
	Stereo	None, Clip Volume, Volume, Pan l, Pan R

You adjust volume and pan automation directly in the Timeline or by using the Audio Mixer tool.

Using Volume and Pan Automation in the Timeline

To use volume and pan automation to adjust volume or pan in the Timeline:

1. Select an audio track for adjusting volume or pan.

2. Click the Clip Volume/Pan button in the Track Control panel, and select the Volume or Pan option you want to adjust. Alt+Click the Clip Volume/Pan button to select all tracks. For more information on volume and pan options, see "Using Volume and Pan Automation" on page 272

If a clip contains volume automation or pan data and you do not select Volume or Pan from the Clip Volume/Pan menu, the system displays a pink triangle on the clip to indicate that automation data is present but not displayed.

You can enable Clip Volume, Volume, and Pan in the Clip Volume/Pan menu to display audio information superimposed over waveform plots in the Timeline. However, you cannot display Volume and Pan at the same time.

3. (Option) Expand the audio track by doing one of the following:

▶ Press and hold Ctrl+L (Windows) or Command+L (Macintosh).

272

▶ Press and hold the Ctrl key (Windows) or the Option key (Macintosh) while dragging in the Track Selector panel. When the pointer changes to a cross, drag the cross to expand or shrink the track.

If you expand the audio tracks enough, you can display volume data. The following illustration shows the expanded audio track with volume data.

4. Click the Add Keyframe key on the keyboard (") or the Add Keyframe button on the Tool palette to add keyframes along the Timeline.

Your Avid editing application adds a keyframe to each enabled track. If you add a keyframe for pan, the keyframe applies only to the automation value displayed in the Timeline. For example, if you are working with pan left automation, the keyframe is added to the pan left automation values.

A straight line appears in the selected audio track. The line shows the current volume level for that track in the Audio Mixer tool.

After you add the first keyframe to a segment, you can adjust the volume for the entire clip. After you add a second keyframe, you can adjust the volume between keyframes.
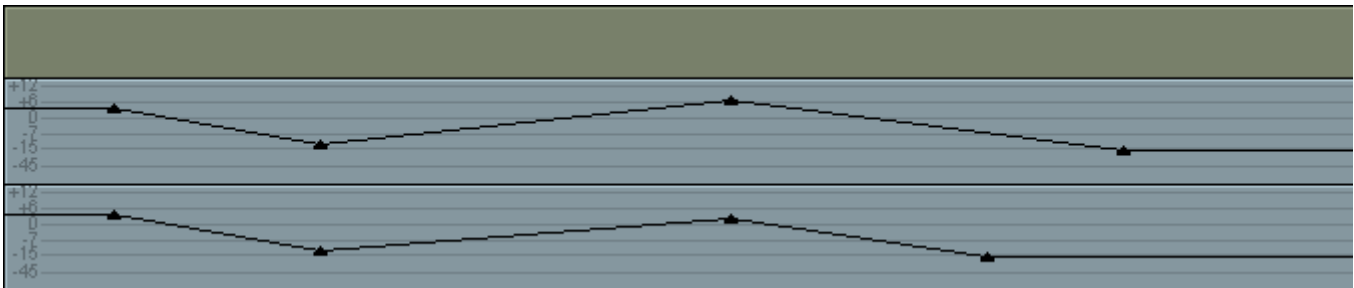
5. Adjust the volume automation or pan keyframes by doing one of the following:

▶ Click a keyframe and drag it up or down to increase or decrease the volume or pan at that point. If there is a point at the same position on another enabled track, it moves also. When you move the keyframe up or down, the corresponding Volume Level slider or Pan Value slider in the Audio Mixer tool also moves.

▶ Click a keyframe and use the sliders, Pan controls, Position controls, or other controls in the Audio Mixer tool to adjust the volume or pan.

▶ To snap to the decibel lines, press and hold the Ctrl key (Windows) or the Command key (Macintosh) while you drag the point.

▶ Move a keyframe horizontally to move the start or end of a ramp. Place the pointer over a keyframe. When the pointer changes to the hand pointer, press and hold the Alt key (Windows) or the Option key (Macintosh), click the keyframe, and drag it.

▶ Move several keyframes vertically on a track at the same time by placing In and Out points to select the area you want. When you move one keyframe up or down within the marked area, all keyframes within the marked area move in relation to each other. This works for all enabled audio tracks.

This procedure is similar to grouping sliders on an audio mixing board or in the Audio Mixer tool.

To delete a single volume automation or pan keyframe:

1. Move the pointer over the keyframe.

2. When the pointer changes to the hand pointer, press the Delete key.

📄 *Don't press the mouse button. If you press the mouse button, you might change the volume.*

If there are identical keyframes in other active tracks, your Avid editing application deletes them also.

To delete groups of volume automation or pan keyframes:

1. Mark an In point and an Out point or mark the entire segment.

2. Delete any keyframes in the marked area.

Volume and Pan Automation Mode

This topic describes controls in the Audio Mixer tool that are active only in Volume and Pan Automation mode.

In Volume and Pan Automation mode, record controls are available, as shown in the following illustration and described in the table. These controls are similar to those in the Audio Punch-In tool:

Left to right: Record button, Cancel button, and preroll and postroll text boxes in the Audio Mixer tool when in Volume and Pan Automation mode

Feature	Description
Record button	Starts and stops the recording.
Cancel button	Stops a recording without saving the recorded data.
Preroll text box	Lets you provide a visual cue before the recording begins. Your Avid editing application backs up the blue position indicator for the prescribed number of seconds.
Postroll text box	Lets you provide the same kind of visual cue at the end of the recording

The volume slider areas appear blue in Volume and Pan Automation mode.

For descriptions of other controls in the Audio Mixer tool, see "Audio Mixer Tool Controls" on page 261.

Understanding Volume or Pan Automation Recording

You can instruct your Avid editing application to record your actions while playing the clip as you move sliders to adjust volume or turn pan knobs to adjust pan values. Your Avid editing application creates the corresponding keyframes and saves them as part of a pan/volume audio effect. After you finish the recording, you can move, add, and delete keyframes to achieve the results you want.

You can do the following:

• Use sliders in the Audio Mixer tool to adjust volume values while you play the clip, as described in "Using the Audio Mixer Tool for Volume and Pan Automation" on page 275.

> For additional information, see "Audio Mixer Tool Fast Menu: Volume and Pan Automation Mode" on page 276 and "Using Keyboard Shortcuts with Audio Keyframes" on page 277.

Using the Audio Mixer Tool for Volume and Pan Automation

You can use commands in the Audio Mixer tool Fast menu in Volume and Pan Automation mode for tasks such as removing or incrementally adjusting volume automation or pan on a marked region. For more information, see "Audio Mixer Tool Fast Menu: Volume and Pan Automation Mode" on page 276.

To record volume automation or pan information by using the Audio Mixer tool sliders:

1. Select Tools > Audio Mixer.

2. Do one of the following:

   ▶ Click and hold the Audio Mixer Mode button and select Auto Mode from the menu.

   ▶ Click the Audio Mixer Mode button and cycle through the Audio Mix mode settings to the Auto mode setting.

3. Select an audio track for adjusting volume or pan.

4. Click the Clip Volume/Pan button in the Track Control panel and select the Volume or Pan option you want to adjust. Alt+Click the Clip Volume/Pan button to select all tracks.

📄 *If a clip contains volume automation or pan data and you do not select Volume or Pan from the Clip Volume/Pan menu, the system displays a pink triangle on the clip to indicate that automation data is present but not displayed.*

5. (Option) Expand the audio track by pressing Ctrl+L (Windows) or Command+L (Macintosh).

6. Move the blue position indicator to the section of audio that you want to adjust and mark In to Out points.

7. Click the Record button or press the B key to start recording your actions.

8. Listen to the audio and do one of the following:

   ▶ Adjust the Audio Level sliders in the Audio Mixer tool as necessary.

   ▶ Click the Pan Location cursor in the Pan grid in the Audio Mixer tool and adjust the position.

   ▶ Click the Advanced Panner button in the Audio Mixer tool to open the Advanced Panner and adjust the pan controls.

9. Click the Record button again to stop recording.

Your Avid editing application adds volume automation or pan keyframes to the audio in the Timeline. Because it records every movement of the sliders, there are usually more keyframes than you need.

10. Decrease the number of keyframes:

    a. Click the Track Selection Menu button for the track to enable the Fast menu.

    b. Click the Audio Mixer Tool Fast Menu button, and select Filter volume automation on Track or Filter Pan on Track.

11. Repeat step 10 until you have decreased the number of keyframes to an acceptable level.

You should remove as many excess keyframes as possible while still maintaining the volume changes.

You can move, add, and delete keyframes individually or as groups to further adjust the volume or pan. For details on how to adjust the keyframes, see “Using Volume and Pan Automation in the Timeline” on page 272.

Audio Mixer Tool Fast Menu: Volume and Pan Automation Mode

The commands in the Audio Mixer tool Fast menu operate differently, depending on the types of points you set within the clip or sequence, as described in the following table:

Points Set	Description
Both In and Out points	Commands apply adjustments to selected tracks between the points.
In point only	Commands apply adjustments to full clips from the In point to the end of selected tracks.
Out point only	Commands apply adjustments to full clips from the beginning of selected tracks to the Out point.
None	Commands apply globally (across entire tracks).

The commands in the Fast menu appear inactive until you select a track.

The following table describes the Audio Mixer tool Fast menu commands for Volume and Pan Automation mode:

Command	Description
Filter volume automation on Track	Removes approximately 50 percent of the volume automation keyframes in the marked region. If you press and hold the Alt key (Windows) or the Option key (Macintosh) while selecting the menu item, the system removes all keyframes in the selected area, except for the minimum and maximum peaks. Your Avid editing application tries to save major gestures while removing redundant points and points on a linear ramp. This is useful for deleting extra keyframes after a recording.
Filter Pan on Track	Removes approximately 50 percent of the pan keyframes in the marked region.

Command	Description(Continued)
Adjust Volume/Pan on Track	Opens a dialog box for making incremental adjustments to all current settings across segments in the marked regions of selected tracks. For example, if you type –1 in the Volume Adjustment text box, the various audio level settings across all segments of the marked region of selected tracks are lowered by exactly 1 dB when you click OK.
Remove volume automation on Track	Removes all of the volume automation keyframes within the marked region.
Remove Pan on Track	Removes all of the pan keyframes within the marked region.
Remove Volume/Pan on Track	Deletes all volume and pan automation adjustments applied to segments in the marked regions of selected tracks and restores each audio clip to its previous pan and volume settings.
Remove Hidden Volume Automation on Track - Global	Select this option to remove all the volume automation keyframes.
Remove Hidden Pan on Track - Global	Select this option to remove all the Pan keyframes.
Remove Hidden Pan/ Volume on Track - Global	Select this option remove all the Pan and Volume keyframes.
Calibrate Hardware Sliders	Takes the place of the HW (hardware) button. When you enable the Calibrate Hardware Sliders option, the external faders control the sliders in the Audio Mixer tool. This is a test mode. Select the Fast menu option again to disable the test mode.
Set Display Options	Opens a dialog that allows you to add or remove items such as the faders, legends, effect buttons, and the solo and mute buttons in order to save space in the Audio Mixer Tool.

Using Keyboard Shortcuts with Audio Keyframes

You can map the Fast Forward and Rewind buttons on your keyboard to speed your editing of audio keyframes. For more information, see .

The Audio Mixer tool must be active when you use the Fast Forward or Rewind keys.

To use the Fast Forward and Rewind keys when editing volume automation or pan keyframes:

1. Click the Audio Mixer tool to make it active.

2. Do one of the following:

    ▶ Click and hold the Audio Mixer Mode button and select Auto Mode from the menu.

    ▶ Click the Audio Mixer Mode button and cycle through the Audio Mix mode settings to the Auto mode setting.

3. Select the appropriate track or tracks.

4. Press the Fast Forward key or the Rewind key.

    The position indicator moves to the next or previous audio keyframe.

Copying, Pasting and Moving Audio Keyframes

Enhancements have been made that affect how you select, cut, copy, paste and move audio keyframes. You can select audio keyframes in the Timeline and copy them to a different area of the same clip or to different clips. You can also choose to copy either just Automation Pan or Automation Gain keyframes.

Creating a New Keyframe

A new keyframe can be created with a keyboard shortcut and clicking in the Timeline.

To create a new keyframe:

1. Click the Clip Volume/Pan button in the Track Control panel, and select the Volume or Pan.

2. Enable the Keyframe Selection button.

3. Click in the Timeline in the area where you want to create a keyframe or click on an already existing keyframe curve/line in the Timeline.

4. Press Ctrl+Shift (Windows) or Command+Shift (Macintosh) and click on the track.

   A keyframe is created.

Copy and Paste Individual Keyframes

To copy and paste individual keyframes:

1. Click on the keyframe to select it.

   The keyframe highlights pink.

2. Shift+click to select multiple keyframes.

3. Press Ctrl+C (Windows) or Command+C (Macintosh) to copy the audio keyframes to the clipboard.

4. Either Mark IN or Mark OUT or move the blue bar to the area in the audio track where you want to paste the audio keyframes. You can also select another audio track where you want to paste the keyframes.

5. Press Ctrl+V (Windows) or Command+V (Macintosh) to paste the individual keyframes.

Pressing Shift+click on an already selected keyframe, deselects the keyframe. Clicking anywhere else in the Timeline deselects the keyframe(s) if the Smart Tool is enabled. Clicking the Timecode ruler in the Timeline does not affect selection unless "Clicking the TC Track or Ruler Disables Smart Tools" is checked in the Timeline Settings.

Copy and Paste by Lassoing an Area of Audio Keyframes

To copy and paste by lassoing an area of audio keyframes:

1. Lasso the area that contains the keyframes you want to copy.

If a keyframe is already selected, Shift + lasso only selects more keyframes even if a whole segment or transition is within the lasso.

Shift+lasso deselects any currently selected keyframes.

2. Press Ctrl+C (Windows) or Command+C (Macintosh) to copy the audio keyframes to the clipboard.

3. Either Mark IN or Mark OUT or move the blue bar to the area in the audio track where you want to paste the audio keyframes. You can also select another audio track where you want to paste the keyframes.

4. Press Ctrl+V (Windows) or Command+V (Macintosh) to paste the keyframes.

The keyframes are pasted in the Timeline.

Copy and Paste a Whole Region or Marked Region of Audio Keyframes

To copy and paste audio keyframes:

1. Do one of the following:

   ‣ Select an entire audio segment.

   ‣ Select the audio region with Mark IN and Mark Out

2. Press Ctrl+C (Windows) or Command+C (Macintosh) to copy the audio keyframes to the clipboard.

3. Either Mark IN or Mark OUT or move the blue bar to the area in the audio track where you want to paste the audio keyframes. You can also select another audio track where you want to paste the keyframes.

4. From the Edit Menu select Paste Audio Keyframes or use the shortcut Shift+Ctrl+V (Windows) or Shift+Command+V (Macintosh).

   A dialog opens asking you to choose the type of keyframes to paste.

5. Select either Automation Gain or Automation Pan. Or choose both.

6. Click OK.

   The keyframes are pasted in the Timeline.

Moving Keyframes in the Timeline

A number of enhancements have been made that make it easier to move audio keyframes. You can now move a range of audio keyframes up and down in volume. You can nudge individual keyframes and you can horizontally drag individual keyframes or a group of keyframes.

To nudge individual keyframes:

1. Select the keyframe you want to move.

2. Press Shift+Command (Macintosh) or Ctrl+Shift (Windows) + up or down arrow keys to move the keyframe in 1dB increments.

3. Press Shift+Command (Macintosh) or Ctrl+Shift (Windows) + left or right arrow keys to move the keyframe left or right in one frame increments.

To move a range of keyframes up and down in volume:

1. Either lasso the range of keyframes or Shift+click the range of keyframes you want to move.

2. Click on any single keyframe in the range and move up and down. The entire range moves.

To move a range of keyframes in time:

1. Lasso the range of keyframes or Shift+click the range of keyframes you want to move.

2. Press Option+drag (Macintosh) or Alt+drag (Windows) to move the entire group of keyframes horizontally in the Timeline.

Removing Hidden Keyframes

When you edit or trim an audio track that contains keyframes, there may be keyframes that are hidden to the left or right of the remaining part of the clip.You can easily remove hidden keyframes.

To remove hidden keyframes:

1. Mark the area that contains the keyframes you want to remove. (If you do not select a marked area, all hidden keyframes will be removed.)

2. Open the Audio Mixer Tool. Ensure you are in Auto Mode.

3. Select the Audio Mixer Tool Fast menu (hamburger menu).

4. Select one of the following:

   ▸ Remove Hidden Volume Automation On Track to remove all the volume automation keyframes

   ▸ Remove Hidden Pan On Track to remove all the Pan keyframes

   ▸ Remove Hidden Pan/Volume on Track to remove all the Pan and Volume keyframes

   You can also right+click at the transition and choose Delete Hidden Left, or Delete Hidden Right to remove the hidden keyframes to the left or the right of the transition.

Using Live Mix Mode

Live Mix mode lets you temporarily override existing volume and pan automation settings currently applied to a sequence. For example, you want to loop through a portion of audio and want to lower the dialog on one track while you concentrate on the other tracks. You could mute the track that contains the dialog, but it might be more useful to simply lower the volume of the track without changing any existing volume automation or pan settings.

The volume slider areas appear red in Live Mix mode.

The following illustration shows the Audio Mixer tool in Live Mix mode.

Entering Live Mix Mode

To enter Live Mix mode:

1. Select Tools > Audio Mixer.

2. Do one of the following:

   ▶ Click and hold the Audio Mixer Mode button and select Live Mix Mode from the menu.

   ▶ Click the Audio Mixer Mode button and cycle through the Audio Mix mode settings to the Live mode setting.

   The Audio Mixer tool changes to Live Mix mode.

Using Live Mix Mode

To use Live Mix Mode.

To use the controls in the Audio Mixer tool:

▶ Move the volume sliders or change the pan settings, and then play the audio.

   When you play the audio, the system uses your new settings without saving any volume automation information.

Switching Between Live Mix Mode and Other Audio Mixer Modes

When you switch between Live Mix mode, Clip Volume mode, and Volume and Pan Automation mode, your Avid editing application displays your previous view of the values for that mode. Your Avid editing application saves Clip Volume mode and volume and pan automation settings between editing sessions, but it does not save Live Mix mode settings between editing sessions.

The Live Mix mode settings are not tied to the sequence. If you load a different sequence into the Timeline, the Live Mix mode settings in the Audio Mixer tool do not change.

Audio Mixer Tool Fast Menu: Live Mix Mode

The commands in the Audio Mixer tool Fast menu operate differently depending on the types of points you set within the sequence, as described in the following table:

Points Set	Description
Both In and Out points	Commands apply adjustments to selected tracks between the points.
In point only	Commands apply adjustments to full clips from the In point to the end of selected tracks.
Out point only	Commands apply adjustments to full clips from the beginning of selected tracks to the Out point.
None	Commands apply globally (across entire tracks).

The following table describes the Audio Mixer tool Fast menu options in Live Mix mode:

Command	Description
Set Live Mix to Default	Sets the active tracks to 0 dB and does not modify any existing volume automation keyframes.
Set Live Mix to Automation	Sets the Live Mix mode settings to match the volume and pan settings where each track crosses the Position bar in the Timeline.
	When you use this option, the system permanently removes the existing automatic volume or pan key frames between the In and Out points.
Set Live Mix as Automation	Removes the existing volume automation or pan keyframes and replaces them with the current Live Mix mode settings. You usually use this option with In and Out points. The system applies the Live Mix mode levels to the portions of the selected tracks between the points.

Live Mix Mode Example

The following illustration shows the Live Mix mode settings on two tracks in the Timeline. Track A1 is at 0 dB, and the volume of track A2 is set to -45. The Live Mix mode settings are not represented in the Timeline, but you can hear the difference when you play the audio.

Live Mix level settings at 0 dB and -45 dB

The following illustration shows a sequence in the Timeline with volume automation applied.
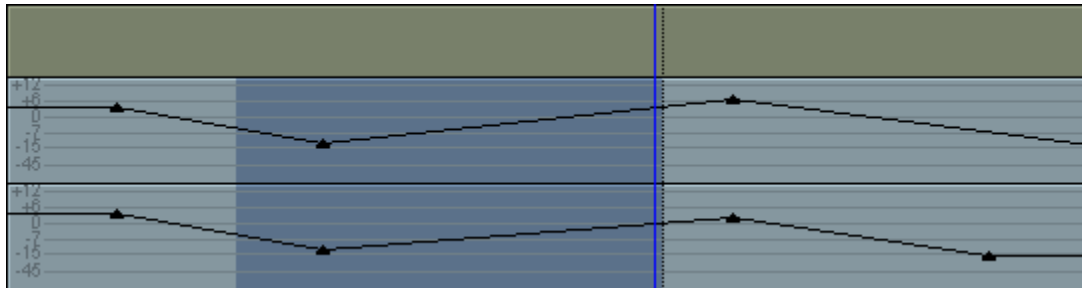
The following illustration shows the result after choosing Set Live Mix to Automation In/Out from the Audio Mixer Fast menu. The portion of the Timeline between the In and Out on Track A1 is changed to 0 dB and the same portion of Track A2 is changed by -45 dB to match the Live Mix settings. The system adds volume automation keyframes at the In and Out points and creates ramps from the In and Out points to the new value.
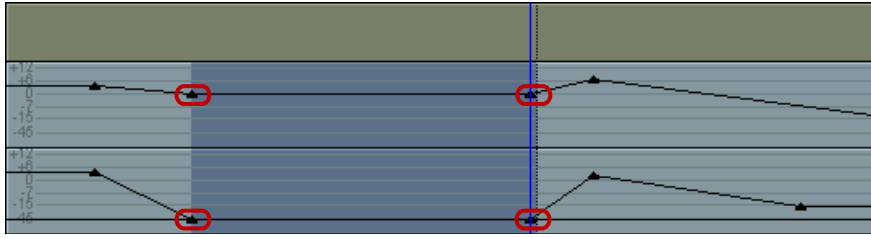
After changing the levels in this way, you might enter Volume and Pan Automation mode and further adjust the volume between the In and Out points.

Adjusting Audio Clip Gain in the Timeline

Modifying audio clip gain can be performed directly in the Timeline.

To adjust audio clip gain in the Timeline:

1. Load your sequence in the Timeline.

2. Do one of the following:

   ▸ Select Clip Gain for the enabled track. Select Alt + Clip Gain (Windows) or Option + Clip Gain (Macintosh) to enable all tracks.
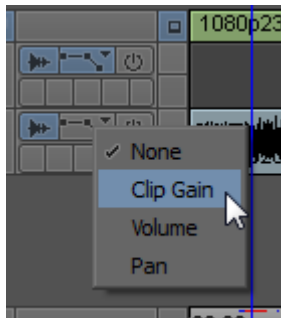
   ▸ Select Audio Data > Clip Gain from the Timeline Fast Menu.

   A fader icon appears for each audio clip. Clip gain values appear in the Timeline for each clip that has clip gain set.

   Fader icon and Clip Gain value in the Timeline

3. Click the fader icon.

   A mini fader opens.
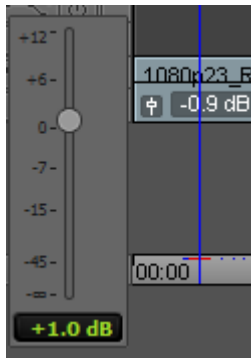
4. Slide the fader to adjust the value of the clip gain or enter a value in the fader text box.

   Option + Click the fader (Macintosh) or Alt + Click the fader (Windows) to reset the value to zero.

📄 *You can also move the position bar to the clip you want to adjust, select Alt + Shift and the Up and Down arrows to adjust the clip in one decibel increments.*

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 Timeline > Mixdown > Audio.

   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, 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. 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.

Using the Audio EQ Tool

The Audio Equalization (EQ) tool supports real-time, segment-based frequency equalization on individual clips, which lets you adjust the high, low, and midrange frequency ranges of an audio clip. You can also save a variety of audio EQ effects and apply them in different circumstances.

To access the Audio EQ tool, do one of the following:

▶ Select Tools > Audio EQ.

▶ If one of the Audio tools is already open, click the Effect Mode Selector menu, and select EQ.

The Audio EQ tool opens.

Audio EQ Tool Features

This topic describes the basic buttons and menus on the Audio EQ tool as well as the EQ-specific items on the tool.
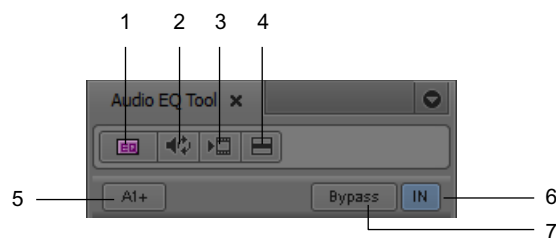
Top part of the Audio EQ tool

	Button	Description
1	Effect icon	Lets you create an EQ template. Drag the icon to an open bin to create the template.
2	Audio Loop Play	Lets you make adjustments to an EQ effect while you play the effect. This button is also a mappable button on the Command palette. For more information about using this button, see "Adjusting Volume While Playing a Clip Volume Effect" on page 270.
3	Render Effect	Lets you render an effect without leaving the Audio EQ tool.
4	Fast Menu	Lets you perform the following tasks: • Set EQ for enabled tracks. • Remove EQ for one or more tracks. • Apply an effect template. See "Using Audio EQ Templates" on page 293.
5	Track Selection Menu button	Lets you enable tracks for the EQ effect. When you select an item from this menu, the system selects or deselects the corresponding track in the Timeline. 📄 *If you enable more than one track in the Timeline, the tracks are designated by plus signs (+) indicating the effect is applied to more than one track.*
6	Enable/Disable EQ Effect	Lets you enable or disable the current EQ effect. When the button is yellow, the effect is enabled. (The button text "In" stands for "Inline.")

Button		Description
7	Bypass RT EQ	Lets you instruct the system to ignore all the EQ effects.

EQ-Specific Features
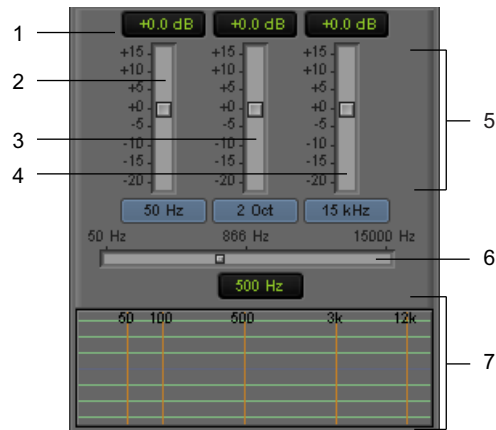
Bottom part of the Audio EQ tool

1	EQ Parameter display	5	3-band controls
2	Low shelf	6	EQ Range slider
3	Parametric midrange	7	EQ Parameter graph
4	High shelf		

The Audio EQ tool provides three bands of control:

• The first band, the low shelf, has four turnover points (50 Hz, 80 Hz, 120 Hz, and 240 Hz). A turnover point is the point at which the curve starts to return to 0.

A shelf affects all frequency values within the range of the shelf. The low shelf affects all frequencies from 20 Hz to the low shelf turnover point. For more information, see "Audio EQ Examples" on page 291.

• The second band is the parametric midrange. This band has two bandwidth values, 1/4 octave and 2 octaves. These values control the width of the curve. For more information, see "Audio EQ Examples" on page 291.

• The third band, the high shelf, has four turnover points (6 kHz, 8 kHz, 12 kHz, and 15 kHz). The high shelf affects all frequencies from the high shelf turnover point to 20 kHz.

The horizontal center line of the graph is 0 (zero). As you move the curve below the zero line, the corresponding frequencies are de-emphasized. Above the zero line, the corresponding frequencies are emphasized. The parametric midrange allows a smooth transition from de-emphasized frequencies to emphasized frequencies.

The In button lets you turn off an individual EQ effect (the currently selected effect). The button is yellow when the EQ effect is on (inline) and gray when the EQ effect is off.

The Ignore EQ option turns off all EQ effects for the sequence. Rendered EQ effects still play correctly.

When you apply Audio EQ effects, consider the following:

• Apply Audio EQ to entire segments only. You cannot isolate portions of a segment for an Audio EQ effect by using In to Out points. You must use add edits (match frames) to mark off a smaller segment.

• Use In to Out points to select a range of complete segments for applying an Audio EQ effect. Segments that fall within the marks, either in part or whole, have the effect applied to them.

The following illustration shows the Audio EQ tool with the frequency response curve displayed and identifies the related areas of the tool.

Example of shelf, parametric midrange, and turnover point information in the Audio EQ tool. The current value for all EQ parameters is 0 dB. Top: buttons that display turnover points (for the low shelf and high shelf curve) and bandwidth (in this case, 2 octaves) around the center point of the parametric curve. Bottom: EQ Range slider showing the center point of the parametric midrange curve.

The Audio EQ tool lets you emphasize or de-emphasize audio frequencies. The height of the curve in the bottom pane shows the amount of emphasis or de-emphasis (also called boost or cut) that is being applied. The range is from +15 dB to –20 dB.

Applying Audio EQ Effects

To adjust audio EQ for a track:

1. Load the sequence or clip containing the audio track:

    ▶ To adjust a track in a source clip, click the Source monitor to make it active.

      To view a source clip's tracks in the Timeline, click the Toggle Source/Record in Timeline button.

    ▶ To adjust a track in a sequence, click the Record monitor to make it active.

2. (Option) Isolate a portion of an audio segment by placing add edits.

3. (Option) Mark a range of audio segments by adding In to Out points in the track.

4. Select Tools > Audio EQ.

5. Click and hold the Track Selection Menu button in the Audio EQ tool, and select a track to be adjusted.
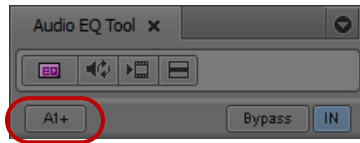
Track Selection Menu button in the Audio EQ tool

The Track Selector panel in the Timeline updates to reflect your selection. If you enable multiple tracks in the Timeline, plus signs (+) appear next to the enabled tracks in the Audio EQ tool.

6. Click the Audio Loop Play button to play the currently selected audio clip within the current In to Out range. To stop playing the loop, click the button again or click anywhere in the Timeline.

7. Use one of the following methods to change a value in the Audio EQ tool:

   ▸ Click a number along the vertical edge of the Low Shelf, Parametric Midrange, or High Shelf sliders.

   ▸ Click the Low Shelf, Parametric Midrange, or High Shelf slider, and type a value.

   Values are cumulative until you press Enter. For example, if you want to enter the value 12, simply type it. However, if you enter 1 and then want to change the value to 2, press Enter before typing the 2.

   ▸ Click a slider, and then drag the slider to a new position.

   ▸ Click the EQ Parameter display, and type a value on the numeric keypad.

   ▸ Set a value of 0 dB by clicking the slider and entering 0, or by clicking 0 along the vertical edge of the Low Shelf, Parametric Midrange, or High Shelf sliders.

8. Click the Audio EQ Tool Fast Menu button, and select Set EQ to apply the adjustments to the track.

   The command works as follows on the selected tracks:

   - In and Out points — Applies the EQ effect to selected tracks between the points.

   - An In point (no Out point) — Applies the EQ effect to full clips from the In point to the end of selected tracks.

   - No points — Applies the EQ effect globally (across entire tracks).

9. Play through the audio again, using the Audio Loop Play button.

10. Repeat steps 6 to 9 until you are satisfied with the EQ adjustments.

Saving Audio EQ Effects

Your Avid editing application treats an EQ setting as an effect. You can save EQ settings in a bin just as you save any other effect template. This makes it easy to save EQ settings and apply them whenever you need them. The following illustration shows an EQ Effect icon in a bin and in the Timeline.
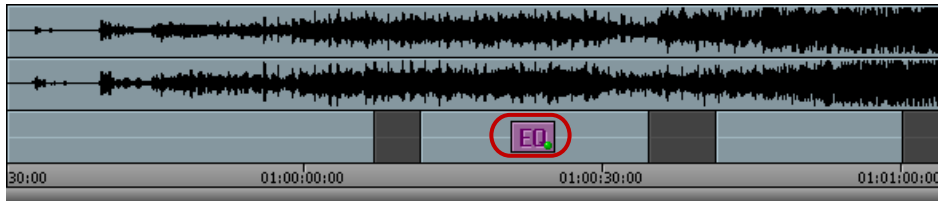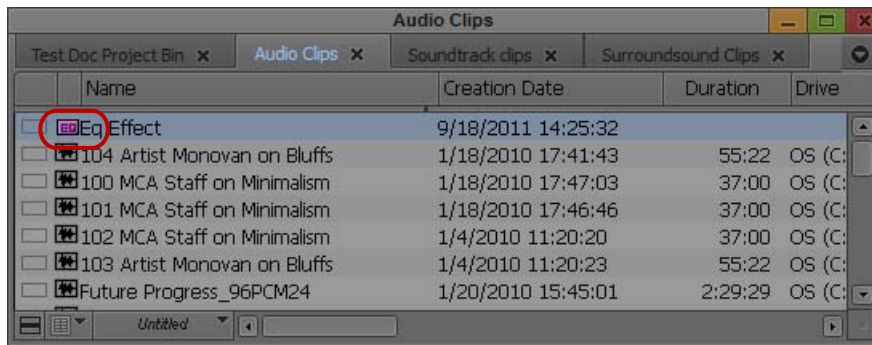
Examples of an EQ effect icon in the bin and in the Timeline

To save EQ settings in a bin:

▶ Drag the effect icon in the Audio EQ tool to a bin.

To copy the settings to another audio clip:

▶ Drag the effect icon in the Audio EQ tool to another audio clip in the Timeline.

Removing Audio EQ Effects with the Fast Menu

You can remove audio EQ effects with the Audio EQ Tool Fast menu or with the Remove Effect button.

The Audio EQ Tool Fast menu lets you remove EQ effects from one track or all enabled tracks and provides access to a number of predefined EQ templates. For a description of predefined audio templates, see "Using Audio EQ Templates" on page 293.

For example, the following illustration shows a segment with one EQ effect applied to the second audio clip on the first audio track. If you select Set EQ In/Out, the current EQ effect is also applied to the first and third audio clips on the first audio track.
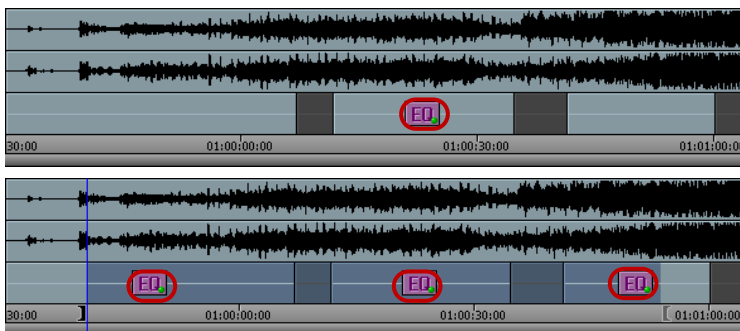
If there is no EQ setting on the currently selected clip, selecting Set EQ In/Out deletes the EQ settings on all clips within the In to Out range. For example, because there is no EQ setting on the third audio clip in the following example, Set EQ In/Out deletes the EQ effect from the first and second audio clips.
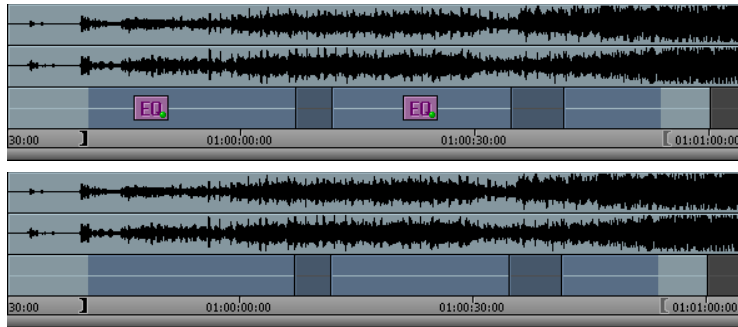
Set EQ In/Out applies only to the audio track currently selected by the Audio EQ tool. You can change your selected region by eliminating or adding marks in the Timeline, or by selecting a different track.

Removing Audio EQ Effects with the Remove Effect Button

To remove an Audio EQ effect:

1. Move the position indicator to the effect in an active track.

2. Do one of the following:

   ▶ In Source/Record mode, click the Remove Effect button.

   ▶ In Effect mode, press the Delete key.

Audio EQ Examples

The following procedures are examples of two different ways to use the Audio EQ tool to remove excess bass from an audio track. Assume that a bass drum in the sound track is very pronounced. You want to use the Audio EQ tool to de-emphasize it, but there are voices on the same track as the music. The human voice covers a wide range of frequencies, and the challenge is to preserve the bass frequencies of the voices while de emphasizing the bass drum sound.

Consider that the goal of the adjustments is the final sound. You should use small adjustments to preserve as much of the original sound track as possible. Do not be overly concerned about specific parameter values.

The first procedure adjusts the low shelf to de-emphasize the bass. By dropping the low shelf to –20 dB, you can de-emphasize it. However, there are voices on this track, and simply dropping the low shelf also removes some bass from the voices.

The remaining procedures use the parametric midrange to isolate the particular frequency to de-emphasize.

To compensate for the loss of bass by adjusting the low shelf:

1. Use the 2-octave midrange setting to create a wide midrange.

2. Move the midpoint of the parametric curve to 88 Hz (Windows) or 90 Hz (Macintosh).

3. Boost the midrange of the parametric curve to +7.7 dB.
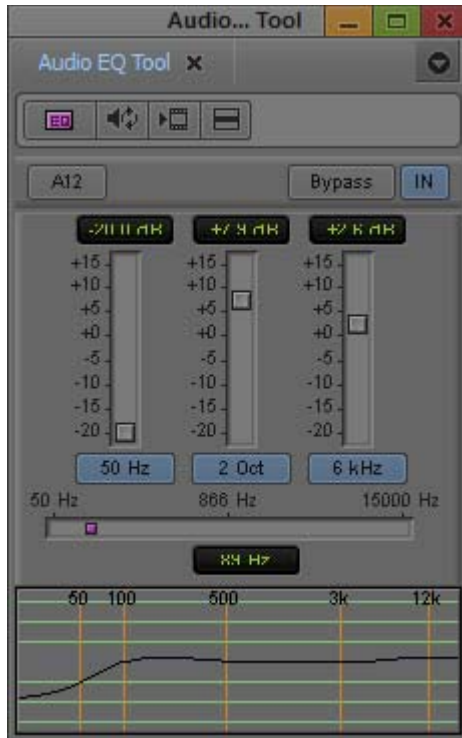
To isolate the frequency:

1. Use the ¼-octave influence range.

2. Set the midrange EQ parameter to –15 dB.

3. Use the EQ Range slider to move the midpoint of the parametric curve until it isolates the bass frequency.

   In this case, the bass frequency to de-emphasize is approximately 80 Hz.
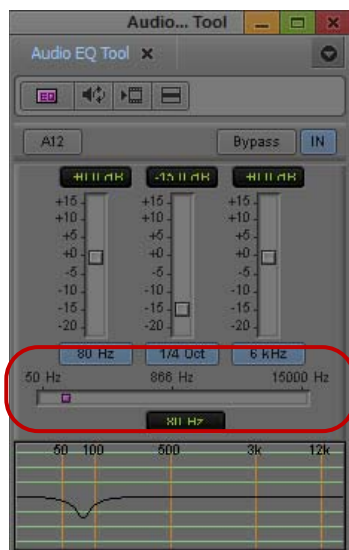
Once you locate the frequency you want, you can adjust it as needed.

To locate a specific frequency and either emphasize or de-emphasize it:

▶   Use the ¼-octave influence range and a large negative decibel value.

▶   Keep both the high shelf and low shelf set to zero.

▶   Use the EQ Range slider to move the center point of the parametric curve along the frequency range while you play the audio track.

Using Audio EQ Templates

Your Avid editing application provides a set of predefined audio EQ templates. The EQ templates are designed to fix problems that you often encounter with audio clips. For example, Tape Hiss Filter rolls off frequencies above 4 kHz. NTSC Hum Buster cuts the bass on frequencies that often cause hum on NTSC systems. The templates are accessible from the Fast menu in the Audio EQ tool. You can also add your own custom EQ templates to the Fast menu.
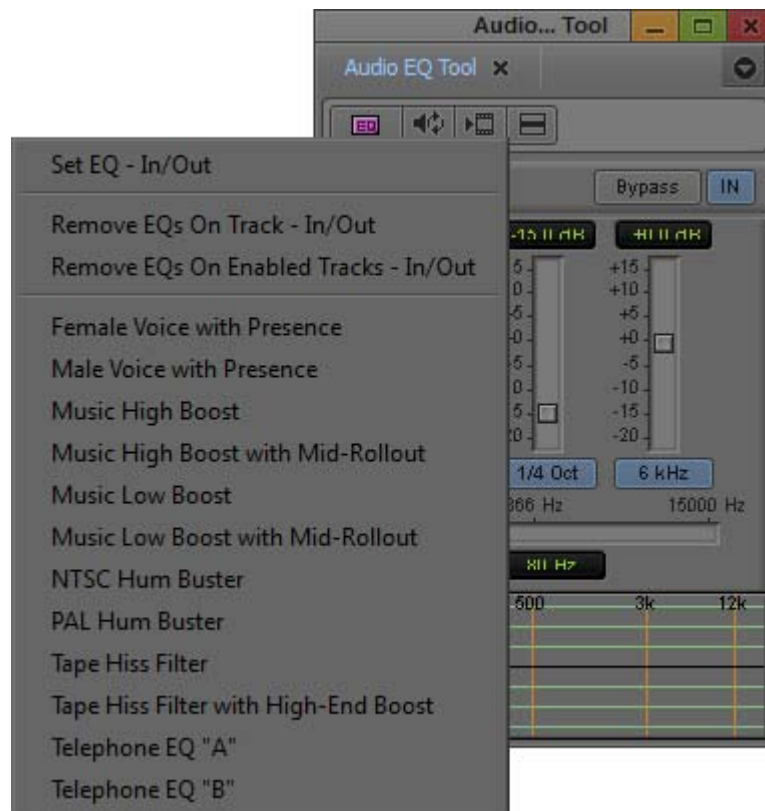
Predefined EQ templates in the Audio EQ tool Fast menu

The following illustration shows the contents of the Audio EQ tool when you select the Female Voice with Presence template in the Timeline. As explained in the tool, you cannot change the parameters of a predefined EQ template.
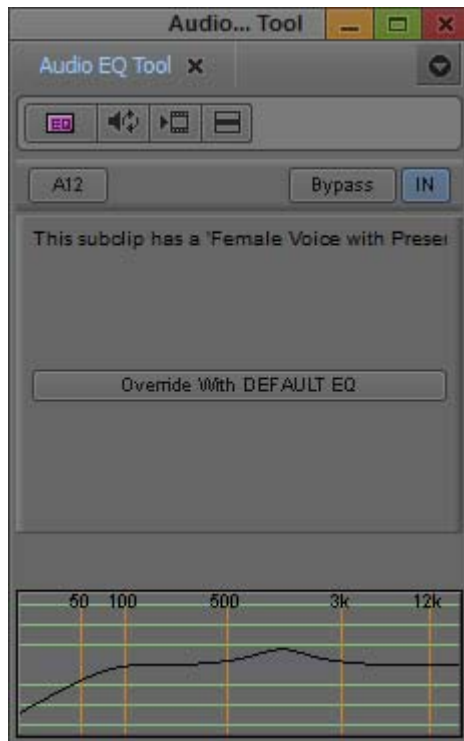
> *To see the parameter values of one of the EQ templates that cannot be edited, view the Console window after you apply the effect. For more information, see "Using The Console Window" on page 63.*

If you create an EQ effect, you can use it again as a template in another sequence or on another track.

Your Avid editing application stores predefined EQ templates in a special bin named Site_EQs_Bin.avb. You can add your own EQ templates to the Audio EQ Tool Fast menu by storing your EQ templates in the same bin as the predefined templates.

To apply an EQ template from the Audio EQ Tool Fast menu:

1. Move the position indicator to the audio clip in the Timeline.

2. Click the Audio EQ Tool Fast Menu button, and select the template.

   Your Avid editing application places the EQ effect on the audio clip.

To create your own EQ effect template:

1. Drag the effect icon from the Audio EQ tool to a bin.

   Your Avid editing application creates an EQ effect in the bin.

2. Rename the template by clicking the text and typing a new name.

To add an EQ template to Site_EQs_Bin:

1. Open the bin containing your EQ templates.

2. Select File > Open Bin.

   A dialog box opens.

3. Navigate to the bin named Site_EQs_Bin.avb in one of the following locations:

(Windows) *drive*:\Program Files\Avid*Avid editing application*\ SupportingFiles\Site_Effects

(Macintosh) Macintosh HD/Applications/*Avid editing application*/
SupportingFiles/Site_Effects

4. Double-click the Site_EQs_Bin.avb file.

   The Site_EQs_Bin window opens.

5. Drag one of your EQ templates into the Site_EQs_Bin window.

6. Name the template by clicking the text and typing a name.

7. Close the bin.

   Your Avid editing application does not save the effect to the bin until you close the bin.

8. Click the Audio EQ Tool Fast Menu button, and look for your new template.

Adjusting EQ While Playing an Audio Effect

You can use the Audio Loop Play button to create or change an EQ effect while a clip is playing.

Use the same procedure as described in "Adjusting Volume While Playing a Clip Volume Effect" on page 270.

If the clip has no existing EQ effect before you start, you do not hear any changes until you click the Audio Loop Play button to stop and replay the effect.

As you adjust the EQ values on an existing EQ effect, you might not hear the results immediately. It takes a few seconds for the changes to be applied to the clip.

You can improve the response time by doing any of the following:

• Monitor as few audio tracks as possible.

• Deselect the video track, if practical.

• Use In and Out points to choose a narrow interval to adjust.

Understanding the Audio Tool

You use the Audio tool primarily for mixing and monitoring audio.

The Audio tool, along with your hardware's audio parameters, lets you do the following in preparation for input:

• Check and manage your audio hardware setup.

• Set audio levels before recording.

• Calibrate, set levels, and generate customized calibration tones for output to the speakers or a record device.

The following table describes the components in the Audio tool.

Component	Description
Reset Peak button	Resets the current maximum peak measurements and stops the playback of the internal calibration tone.

Component	Description
In/Out toggle buttons	Switch the meter displays for each channel between input levels from a source device and output levels to the speakers and record devices. I indicates Input, and O indicates Output.
Peak Hold Menu button	Lets you select options for customizing the meter displays and for setting and playing back the internal calibration tone.
Digital scale to the left of the meters	Displays a fixed range of values from 0 to –90 decibels (dB), according to common digital peak meter standards.
Volume unit (VU) scale (analog) to the right of the meters	Displays a range of values that you can conform to the headroom parameters of your source audio.
Meters	Dynamically track audio levels for each channel as follows: • Meters show green below the target reference level (default reference level is –20 dB on the digital scale). • Meters show yellow for the normal headroom range, above the reference level to approximately –3 dB. • Meters show red for peaks approaching overload, between –3 dB and 0 (zero) dB. • Thin green lines at the bottom indicate signals below the display range.

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.

Hardware Connections for Voice-Over Recording

Before you can record voice-over narration, you need to connect a microphone or other input device to your system. The following are typical examples:

• Connect a microphone to a mixer, and connect the mixer to the audio interface I/O device on your Avid system.

• Connect a microphone to an external audio device — for example, one of the Mbox family devices — and connect the device to your Avid editing system.

• Connect a microphone to a microphone preamplifier, and connect the preamplifier to the audio interface I/O device on your Avid system.

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.
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.

	Audio Punch-In Tool Feature	Description
8	Punch-In Monitoring button	Allows you to set the Audio Punch-In monitoring • Automatic - Monitoring is not disabled if latency <100ms. If the editing application detects a latency >100ms, monitoring is turned off. • On - Audio will monitor IN to OUT during punch-in. • Off - Audio will not monitor IN to OUT during punch-in.
9	Preroll and postroll 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.
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.

Audio Punch-in Tool Scenarios

You can punch-in audio in several ways:

• Scenario 1 — Set only an Out point. The position indicator is used as the In point. Set a preroll time. Click the Play In/Out button to loop continuously through the sequence. Click the Record button when you find what you want to punch-in, and then click the Record button again to end recording.

• Scenario 2 — Set an In point and an Out point around the material you want to record. Set a preroll time. Click the Record button to start the preroll. When the system arrives at the Out point, recording ends. The last region including the Out point is recorded. Repeat recording over the same region until you are satisfied with the results.

• Scenario 3 — With no In point or Out point set, click the Record button continuously throughout your sequence. Click the Record button to start recording, and then click the Record button again to end recording. Continue this process to record multiple punch-ins.

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" on page 298.

📄 *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 296.

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.

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.
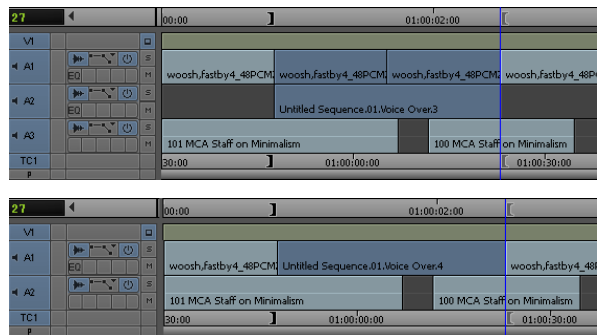
Examples of adding a voice-over in the Timeline. Top: voice-over adding a new track. Bottom: voice-over replacing a portion of a track.

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.

Extended Audio Punch-In

You can extend Audio Punch-In beyond the end of the sequence or the Mark Out.

To extend Audio Punch-In:

1. Load the sequence into the Timeline.

2. Select Tools > Audio Punch-In.
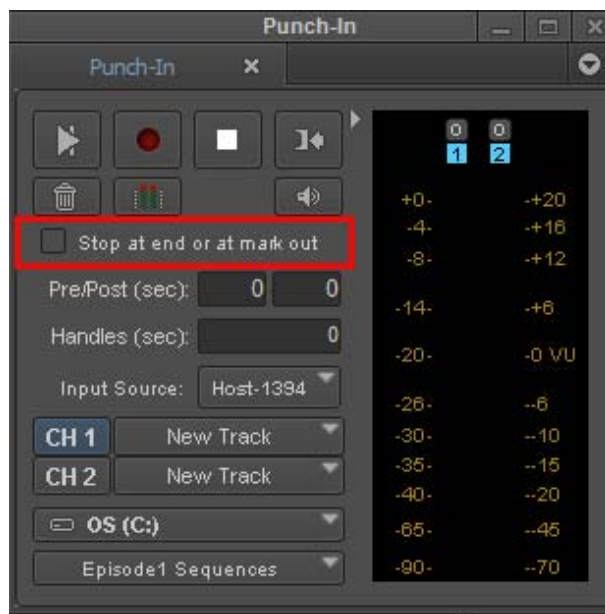
3. Deselect "Stop at end or at mark out."

4. Click the Record button to perform the punch-in.

   The Record button blinks bright red while recording,

5. Continue to click the Record button to record additional voice-overs. The record light will continue to blink and audio recording will continue, ignoring both the mark out point and the end of the sequence. You can use the record button to punch in and punch out of recording as many times as desired until playback is stopped with the stop button or space bar. Each recorded segment will be edited into the Timeline at the appropriate point.

6. 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.

Monitoring Previously Recorded Tracks While Recording Voice-Over Narration

You can monitor previously recorded audio tracks while you record a voice-over narration.

To monitor other audio tracks:

1. Select Tools > Audio Tool.

   The Audio tool opens.

2. Click the Output Options menu, and select Mono.

3. Record your voice-over as described in "Recording Voice-Over Narration Using Audio Punch-in" on page 299.

4. As you record, monitor the previously recorded audio tracks along with your current recording from the meters in the Audio tool and from the sound on the speakers.

Audio Punch-In Support for Open I/O Devices

If your Open I/O device allows you to record and play simultaneously, you can perform an Audio Punch-In. Check with your 3rd party vendor to see if they support simultaneous record and play.

By clicking on the Punch-In monitoring button in the Audio Punch In tool, you can choose the following monitoring options:

* On - allows for IN to OUT audio monitoring during audio punch-in.

* Off - turns off IN to OUT audio monitoring during audio punch-in. When monitoring is off, the icon in the Punch-In tool changes to indicate punch in monitoring is off. For example, this mode is useful when you want to use another device such as the Mbox to provide local passthrough.

* Automatic - Allows the editing application to detect if monitoring should be On or Off due to detected latency. Monitoring is **not** disabled if latency <100ms. If the editing application detects latency >100ms, monitoring is turned off. Note: You can choose to override this by setting the monitoring to On.

In some hardware configurations, audio monitoring during Punch-In will not be allowed at all because the hardware does not support it. In this case, the Punch-In tool indicates the monitoring is Off and you cannot override it.

Using Peak Hold While Recording Voice-Over Narration

Peak Hold lets you customize the meter displays, and sets and plays back the internal calibration tone. You can use Peak Hold while recording a punch-in as follows:

* Use the Peak Hold menu in the Audio tool to change between Peak Hold and Infinite Hold.

* Use the Reset Peak button in the Audio tool.

For more information about Peak Hold, see "Understanding the Audio Tool" on page 34.

13 Using Audio Plug-Ins

This chapter describes how to access and use the audio plug-ins, including the Audio Track Effects and AudioSuite plug-ins that come with your Avid editing application.

- Audio Track Effect Plug-Ins
- Avid AudioSuite Plug-Ins
- Core Avid Audio Plug-Ins

Audio Effects Plug-Ins Installation

The installer for your Avid editing application automatically creates a Plug-Ins folder that stores Audio Track Effect and AudioSuite plugins in the following location:

(Windows) *drive*:\Program Files\Common Files\Avid\Audio\Plug_Ins

(Macintosh) Macintosh HD/Library/Application Support/Avid/Audio/Plug-Ins

Your Avid editing application automatically installs a set of core plug-ins. When you purchase additional plug-ins, the third-party vendor provides instructions on how to load the plug-ins.

📄 *AudioSuite Plug-ins supported by Avid appear in the Plug-In Selection menu in the AudioSuite window. Audio Track Effects appear in the Audio tab of the Effect Palette, as well as in the menus of the Audio Track inserts in the Audio Mixer Window and the Timeline Track Control Panel.*

Audio Track Effect Plug-Ins

Your Avid editing application supports up to five Audio Track Effect plug-in inserts on each audio track. Audio Track Effect 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 plug-ins to mono audio tracks and stereo plug-ins to stereo audio tracks.

Avid qualifies a number of Audio Track Effect plug-ins manufactured by Avid for use with the current version of your Avid editing application. For a description of available Audio Track Effect plug-ins, see "Core Avid Audio Plug-Ins" on page 320.

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.

If you move your sequence from one Avid editing application to another system and the Audio Track Effect plug-in is not installed on that system, information about the effects display. In addition to the "Unavailable Effect" text, the effect name and other information displays which allows you to identify the effect. The information is displayed in the Audio Track Effect Tool.

Inserting an Audio Track Effect Plug-In on a Track in the Timeline

You can insert up to five 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 a plug-in track effect by dragging an Audio Track Effect template from a bin to your sequence. For more information, see "Using Audio Track Effect Templates" on page 309.

To insert an Audio Track Effect 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 Audio Track Effects *[track number]* > Insert *[a-e]* > *[insert]*.

The plug-in effect is inserted in the track.

To insert an Audio Track Effect plug-in using the insert button, do the following:

1. Click an Audio Effect insert button in the Track Control panel for the track where you want to apply the insert.

The Audio Track Effect tool opens.
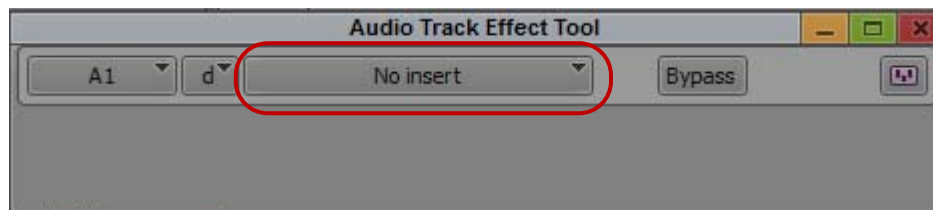
2. Click the Select Effect button, and select an Audio Track Effect plug-in effect:

The plug-in effect is inserted in the track.

To insert an plug-in using the Effect Palette:

1. In the Project window, click the Effects tab.

The Effect Palette appears.

2. Click the Audio tab.

3. Click an effect category, select the effect you want, and drag it to the segment or to the Audio Track Effect 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.

4. 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 Audio Track Effect Plug-In on a Track in the Timeline

After you insert an Audio Track Effect plug-in on an audio track, you can access the plug-in controls by using the Track Control panel or the Audio Track Effect tool. When you select an insert button in the Track Control panel or an effect in the Audio Track Effect tool, the controls for the plug-in appear in the Audio Track Effect tool window.

Audio Track Effect plug-in inserts in the Track Control panel

Audio Track Effect 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 Audio Track Effect tool as you play your sequence.

To edit an Audio Track 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 Audio Track Effect insert button for the 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 Audio Track Effect tool opens a window associated with the plug-in.

The Compressor/Limiter Dyn 3 plug-in window displayed in the Audio Track Effect tool dialog box.

You can also open the tool by selecting Tools > Audio Track Effect Tool or right-clicking the Record Track button for the track where you want to edit an insert and selecting Audio Track Effect tool. You can use the buttons in the 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 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.

    If you click Ctrl+Bypass (Windows) or Cmd+Bypass (Macintosh), you can disable Audio Track effects on all tracks in the Timeline.

    The Bypass button and the insert buttons on the selected track change to blue.

7. To save your changes, do one of the following:

    ▸   Click the Save Effect icon in the Audio Track Effect tool.

    ▸   Close the Audio Track Effect tool.

Moving and Copying Audio Track Effect Inserts

You can move and copy Audio Track Effect inserts from one track to another. However, you can only move mono inserts to mono tracks and stereo inserts to stereo tracks.

Audio Track Effect plug-in effects on inserts a, b, and c in the Track Control panel

To move an Audio Track Effect insert from one position to another, do the following:

▸   Click an Audio Track Effect insert button and drag it to an insert button on a new track or to a new insert button on the same track. If the destination Audio Track Effect button already has an insert on it, the new insert replaces the existing one.

To copy an Audio Track Effect 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 Audio Track Effect Inserts on a Track

When you combine Audio Track Effect 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 Audio Track 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 Audio Track Effect inserts on a track, do the following:

▶ Click an insert button and drag it to an empty insert button in the Track Control panel.

Removing Audio Track Effect Inserts on a Track

Removing an insert deletes the effect from the track.

To remove an Audio Track Effect insert:

1. Do one of the following:

   ▶ Select Tools > Audio Track Effect.

   ▶ Right-click the Record Track button for the track where you want to edit an insert and select Audio Track Effect tool.

   ▶ Click the insert button for the Audio Track effect.

   The Audio Track Effect 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 Audio Track Effect tool to save your changes.

Using Audio Track Effect Templates

If you apply an Audio 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 Audio Track 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 Audio Track effect template with all its parameters directly to an Audio Track Effect insert button in the Track Selection panel or to clips in the Timeline.

To save an Audio Track Effect as a template, do one of the following:

▶ Click the Save Effect button in the Audio Track Effect tool and drag it to a bin.

▶ Click an Audio Track Effect button and drag it to a bin.

A new track effect template appears in the bin, containing the parameter setting information for the effect. The new 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 Audio Track Effect template to an audio track, do one of the following:

▶ Drag the Audio Track Effect template from the bin to an insert button in the Track Selection panel.

▶ Drag the Audio Track 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 effect is applied to the track.

Avid AudioSuite Plug-Ins

Your Avid editing application supports AudioSuite, the Avid host-based, file-based plug-in specification. Users have access to mono and stereo audio-processing plug-ins developed by Avid and by Avid third-party developers. These plug-ins perform pitch modifications, artifact removal, audio reversal, and many other processes.

Avid qualifies a broad range of the AudioSuite plug-ins manufactured by Avid for use with the current version of your Avid editing application. This includes all AudioSuite plug-ins in the DigiRack and Bomb Factory plug-ins series.

Avid supports other AudioSuite plug-ins that do not install with your Avid editing application. You can use these plug-ins on a trial basis and then purchase them through Avid. 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.

For information on plug-ins that are not supported by your Avid editing application, see "AudioSuite Plug-in Limitations" on page 319.

Using Avid AudioSuite Plug-Ins

You can use AudioSuite plug-ins in two ways.

- You can apply a plug-in to a clip in the Timeline and then create a rendered effect. For more information, see "Applying an AudioSuite Plug-in to a Clip in the Timeline" on page 310.
- You can use the controls in the AudioSuite window to create a new master clip. This method lets you process more than one channel at a time and to create new media with a duration longer or shorter than the source media. For more information, see "Creating New Master Clips with AudioSuite Plug-Ins" on page 314.

By default, the AudioSuite window displays the controls for applying a plug-in to a clip in the Timeline. When you drag a master clip into the window, the window expands to display additional parameters for working with master clips.

The AudioSuite tool automatically applies stereo plug-ins to stereo tracks and mono plug-ins to mono tracks.

Applying an AudioSuite Plug-in to a Clip in the Timeline

The following illustration shows the default layout of the AudioSuite window.
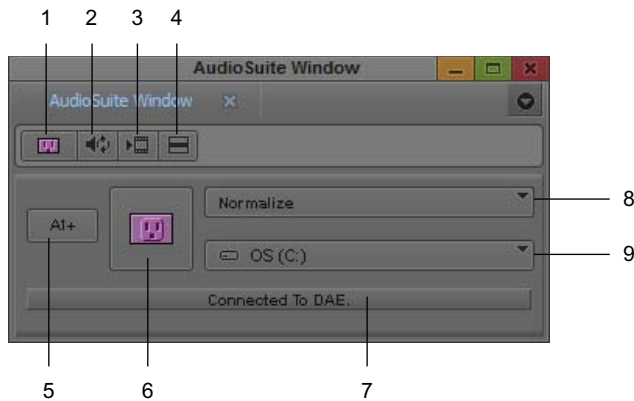
1	Effect icon	6	Activate Current Plug-In button
2	Audio Loop Play button	7	Status display
3	Render Effect button	8	Plug-In Selection menu
4	Fast Menu button	9	Target Drive menu
5	Track Selection Menu button		

If you want to use plug-ins that operate on stereo pairs or that change the length of the audio clip, use the methods described in "Creating New Master Clips with AudioSuite Plug-Ins" on page 314.

To apply an AudioSuite plug-in to a clip in the Timeline:

1. Open the AudioSuite window by doing one of the following:

   ▶ Select Tools > AudioSuite.

   ▶ If an audio tool is already open, click the Effect Mode Selector menu, and select AudioSuite.

2. Use the Track Selection Menu button to select the tracks that you want to modify.

   When you select an item from this menu, the system selects or deselects the corresponding track in the Timeline.

3. (Option) To select multiple tracks, press the Shift key while you select additional tracks from the Track Selection menu.

   Plus signs (+) mark the additional tracks and indicate that the effect is applied to more than one track.

4. Click the Plug-In Selection menu, and select a plug-in.

   Your Avid editing application automatically applies the plug-in effect to the track or tracks in the Timeline. It applies stereo effects to stereo tracks and mono effects to mono tracks.

5. Click the Activate Current Plug-In button.

   A dialog box associated with the plug-in opens.

6. Make any necessary adjustments, and click the Preview button to preview the effect.

   For more information, see "Common Buttons in the AudioSuite Plug-In Dialog Box" on page 312.

7. To save the effect, click OK.

To close the dialog box without saving the effect, click Cancel.

8. (Option) To save the effect as a template, drag the effect icon to a bin.

Common Buttons in the AudioSuite Plug-In Dialog Box

The contents of the plug-in dialog boxes vary, but the top six buttons are always visible. Buttons unavailable for a plug-in appear dimmed. The following illustration shows the Gain plug-in.
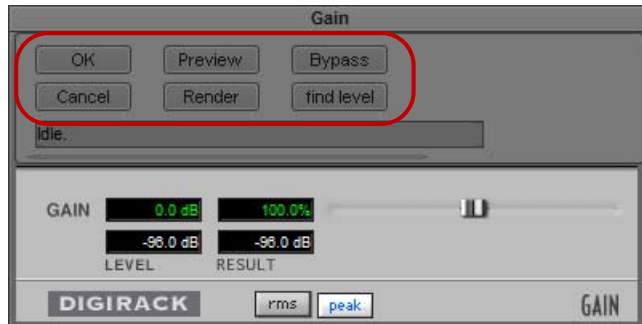
Common buttons in the AudioSuite Plug-In dialog box

The following table describes common buttons:

Button	Description
OK	Saves the effect and closes the dialog box.
Cancel	Closes the dialog box and does not save the effect.
Preview	Plays back a portion or all of the currently selected audio clip with processing.
	Some plug-ins can preview in real time and some cannot. If a plug-in cannot preview in real time, your Avid editing application plays back the processed audio in 2-second intervals: it processes 2 seconds of audio, plays it, and repeats the operation.
Render	Renders the effect and creates a new audio media file.
Bypass	Plays the selected audio without processing. This is useful for comparing the audio with and without processing applied.
Find level	Performs an analysis pass on the audio. Depending on the plug-in, the text and function of this button might change.
	Some plug-ins require an analysis pass on the audio data before they can process the information. If so, they perform the first pass automatically. Other plug-ins do not require a first pass but can achieve more accurate results if you allow them to perform a first pass. The Find Level button is available only if the plug-in supports the optional pass.
Multi-input mode	In Multi-input mode, all tracks are analyzed and the result of that analysis is applied to all the channels in the track. For example, if you have an effect such as the Normalize effect, when you select Multi-input mode, all channels are adjusted proportionally to the one with the highest signal.
Mono mode	In Mono mode, each channel in the track is analyzed and processed separately. For example, if you have an effect such as the Normalize effect, when you select Mono mode, each channel is normalized without regard to the levels of the other channels.

AudioSuite Fast Menu

The AudioSuite Fast menu lets you do the following:

- Apply an existing AudioSuite template. See "Using AudioSuite Effect Templates" on page 318.

- Set, render, or remove AudioSuite plug-ins. The menu text differs, depending on whether you have In to Out points in the sequence.

The following commands appear in the menu:

Command	Description
Global	The segment has no In points. The command affects all the plug-ins on the enabled tracks.
IN/OUT	The segment has In to Out points. The command affects the plug-ins on the enabled tracks within the marked region.
From IN	The segment has an In point but no corresponding Out point. The command affects all plug-ins on enabled tracks, starting with the In point.

Real-time EQ and AudioSuite Effects

You can choose real-time EQ effects within the AudioSuite tool. When you select EQ from the Plug-in Selection menu, the effect is added to the selected audio track. When you click the Activate Current Plug-in icon it will open the Audio EQ tool where you can make any EQ adjustments.
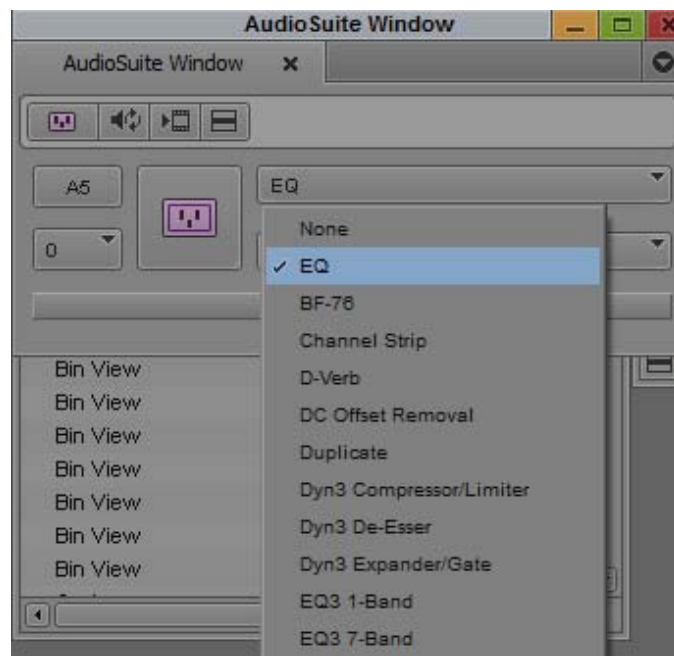
To add another effect, select the Nested level selection menu and choose to add another effect to the track. The real-time EQ effect is only allowed on the first nested level (level 0).
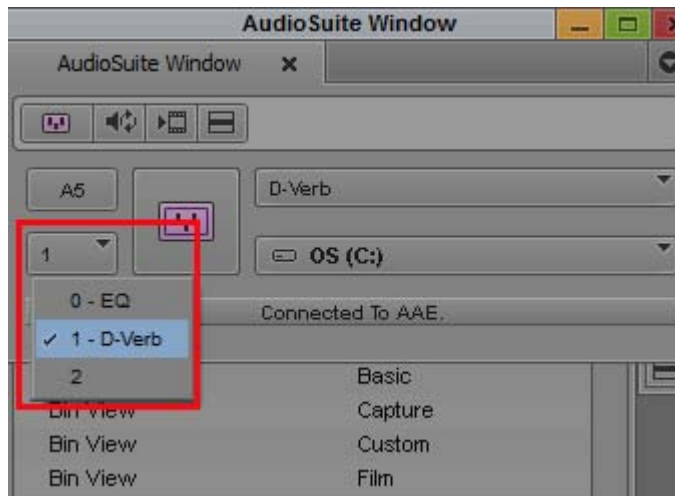
Nested level selection

Rendering AudioSuite Plug-in Effects

You need to render all AudioSuite plug-ins before you can play back the effect. If you do not render the effect manually, your Avid editing application automatically renders the effect before it creates an audio mixdown or audio dissolve containing the effect.

📄 *When you render an audio effect on a linked clip, all audio media files are written as PCM (MXF), regardless of what you set for the audio file format.*

For more information, see "Troubleshooting AudioSuite Plug-Ins" on page 319.

Creating New Master Clips with AudioSuite Plug-Ins

You can use AudioSuite plug-ins to create new master clips. This lets you use multiple input and output channels and to change the length of the media. You can perform the following operations on the media you create:

• Apply AudioSuite plug-ins to more than one track at the same time. For example, a plug-in might let you process two separate tracks as a stereo pair. This enables you to use plug-ins that perform linked compression, reverb, and other effects that allow multichannel input.

• Create new media with a longer or shorter duration than the source media. This lets you use effects that perform time compression and expansion. For example, you can use a Time Compression Expansion plug-in to change the length of the audio file, or you can lengthen the file in order to add a reverb trail.

• Apply one mono AudioSuite effect to multiple inputs of a master clip in a multiple-mono fashion.

AudioSuite Controls for Creating New Master Clips

When you drag a master clip onto the AudioSuite window, the window automatically expands to display additional controls. You can also click the Display/Hide Master Clip Controls button to display or hide the additional parameters.

The following illustration identifies the controls in the expanded AudioSuite window. For information on the controls in the top part of the window, see "Applying an AudioSuite Plug-in to a Clip in the Timeline" on page 310.
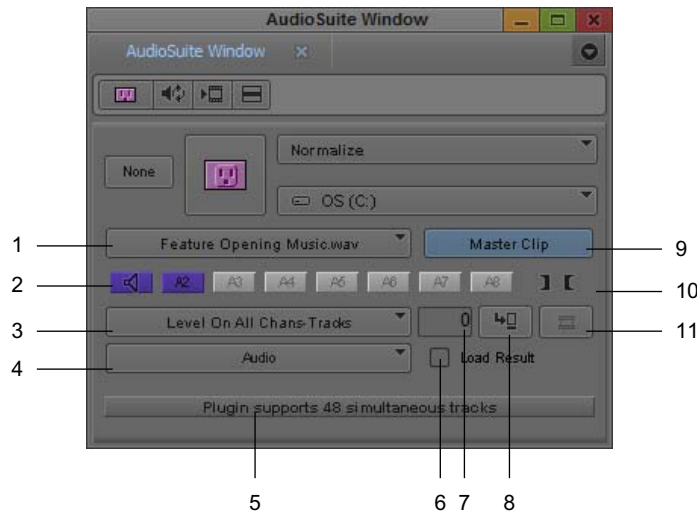
The following table describes the controls in the AudioSuite window.

	Control	Description
1	Clip Selection menu	Lets you choose the active clip. It lists the current active clip and other clips you dragged into the AudioSuite window. The window controls change to reflect the active clip.
2	Input Source Track selectors	Let you choose the input source tracks for the effect.
		The system automatically chooses a preview track and displays a blue Speaker icon on the track. To change the preview track, Alt+click (Windows) or Option+click (Macintosh) the appropriate source track. If the source track used as the current preview track is deselected, the system chooses the lowest available track.
		The track selection buttons do not reflect multichannel track grouping on master clips, so the selection buttons might differ from those in the Source monitor.
3	Processing Mode Selection menu	Displays the current processing mode of the AudioSuite effect on a given clip. For more information, see "Mono, Stereo, and Multichannel Processing in AudioSuite Plug-Ins" on page 317.
4	Target Bin for New Master Clip menu	Lets you choose the target bin. The system places the new media and a corresponding AudioSuite effect template in the bin. The template lets you modify the effect at a later time.

	Control	Description
5	Status display	Provides information about the current state of the AAE (Avid Audio Engine - the software that manages the AudioSuite plug-ins) and the currently applied effect. For stereo and multichannel processing plug-ins, the Status display identifies the maximum number of tracks that the plug-in can process. If you initially select more than the maximum, the system automatically disables tracks until it reaches the plug-in's maximum number.
		On the Macintosh, you can Command+click the status display to close the AAE. This might reclaim a small amount of system memory, especially if you have a large number of AudioSuite plug-ins installed. However, when you close the AAE in this way, the Status display changes to "Must relaunch application to reconnect to AAE" and you cannot start the AAE again without quitting and reopening your Avid editing application.
6	Load Result check box	When enabled, instructs the system to automatically load the resulting master clip into the Source monitor.
7	Handle Length for End of Master Clip (seconds) text box	Lets you add filler at the end of a master clip. The value represents the number of seconds to add. For example, use this feature to add filler at the end of a master clip when you use a reverb effect to add a reverb trail to the end of the clip. Select the value before you run the plug-in.
8	Load In Source Monitor button	Loads the current source master clip into the Source monitor. You can use when you want to add or change In to Out points on the clip.
9	Toggle Master Clip Mode button	Activates the master clip processing mode. The button displays as yellow when master clip processing mode is active.
10	Mark IN to OUT indicators	These lights change to green when a mark In or mark Out exists on the current master clip.
11	Find Source From Effect button	Lets you find the master clip associated with an AudioSuite template. When you drop an AudioSuite effect template into the AudioSuite window, the system activates this button. Click the button to load the master clip into the AudioSuite window as the active master clip.
		A template in the AudioSuite window must reference an existing master clip.

Mono, Stereo, and Multichannel Processing in AudioSuite Plug-Ins

AudioSuite plug-ins let you select the following types of processing:

- Mono processing only — This option is available for plug-ins that operate on only one mono audio track at a time. The other option (Stereo) appears dimmed. The plug-in applies the effect to each source track individually, in a serial manner.

- Mono and stereo processing — These options are available for plug-ins that can operate on stereo tracks or that can treat two tracks as a stereo pair. This allows the system to apply the audio effect simultaneously to each track. For example, the Time Compression Expansion plug-in typically operates on a stereo pair. You can choose mono if you want the plug-in to operate on each track individually, in a serial manner.

- Mono and multichannel processing — These options are available for plug-ins that can process multiple channels or tracks simultaneously. For example, the Normalize plug-in lets you adjust the volume separately for each channel or track or to adjust the volume for all channels or tracks at the same time. In the latter case, the system examines all enabled channels and tracks for the loudest volume and then adjusts them relative to that value.

For mono processing and for stereo processing of stereo clips, the system creates a new master clip with the same number of tracks that you selected in the AudioSuite window.

For stereo and multichannel processing of mono audio clips, the plug-in creates a master clip with the number of tracks equal to the number of output tracks from the plug-in. For example, a plug-in that operates on stereo pairs creates a two-track master clip. A plug-in that operates on multiple tracks creates a master clip with the same number of tracks that were selected in the AudioSuite window.

The Status display at the bottom of the AudioSuite Plug-in window indicates how many tracks the plug-in can process. If you enable more tracks than it can be process, the plug-in automatically selects the correct number of tracks. You can change the track selection based on your needs.

Most AudioSuite plug-ins automatically select the appropriate processing mode and label the values in the Processing Mode Selection menu. For example, the Normalize plug-in offers two choices: Level On Each Chan-Track and Levels On All Chans-Tracks (default).

You select the processing mode from a menu in the AudioSuite window as described in the next section.

Using AudioSuite Plug-ins to Create New Master Clips

To create new master clips using the AudioSuite plug-ins:

1. Drag one or more master clips or subclips into the AudioSuite window.

   Your Avid editing application automatically enters Master Clip Processing mode and expands the AudioSuite window, if necessary.

2. If you dropped more than one master clip in the AudioSuite window, select a clip to work on from the Clip Selection menu.

3. Select the input sources from the Input Source Track selectors.

4. (Option) Alt+click (Windows) or Option+click (Macintosh) the Input Source Track selector to change the preview source track.

5. (Option) Type a value in the Handle Length text box to lengthen the clip by a specific amount.

   For example, type **2** if you plan to add a 2-second reverb trail.

If you are using Time Compression/Expansion plug-ins, the plug-ins automatically lengthen or shorten the clip.

6. Click the Plug-In Selection menu, and select a plug-in.

7. Click the Activate Current Plug-In button to open the plug-in's dialog box.

   For more information, see "Common Buttons in the AudioSuite Plug-In Dialog Box" on page 312.

8. Make any changes, and click the Preview button to preview the effect.

9. Either render the plug-in from the Plug-In dialog box, or return to the AudioSuite window.

   For more information on rendering, see "Rendering AudioSuite Plug-in Effects" on page 314.

   When you click the Render Effect button, your Avid editing application creates a new master clip in the target bin. Your Avid editing application names the new master clip by combining the original clip name with the effect name, for example, Test Audio clip_Normalize (Windows) or QuietClip.Normalize (Macintosh).

   Your Avid editing application also creates an AudioSuite effect template in the bin as described in "Using AudioSuite Effect Templates" on page 318.

Using AudioSuite Effect Templates

When you create a new master clip, your Avid editing application also creates an AudioSuite effect template in the bin. This effect template contains a reference to the original master clip to which you applied the effect.

Template names take the following format:

• (Windows) Your Avid editing application combines the original clip name with the effect name — for example, Test Audio clip - AudioSuite Plug-In Effect: Normalize.

• (Macintosh) Your Avid editing application adds an effect file name extension to the effect name — for example, QuietClip.NormalizeQuietClip.Normalize.effect.

You can use the template if you want to modify an effect on a clip.

To use a template to modify a master clip:

1. Drag an AudioSuite plug-in template into the AudioSuite window.

   The Find Source From Effect button becomes active.

2. Click the Find Source From Effect button to load the master clip into the AudioSuite window.

   If a corresponding master clip exists, the system loads the master clip with its associated plug-in values.

3. Modify the effect as described in "AudioSuite Controls for Creating New Master Clips" on page 314.

To add a template to the AudioSuite Fast menu:

1. Open the bin containing your AudioSuite templates.

2. Select File > Open Bin.

   A dialog box opens.

3. Navigate to the AudioSuite Site bin file in the following location:

(Windows) *drive*:\Program Files\Avid*Avid editing application*\
SupportingFiles\Site_Effects\Site_AudioSuite_Bin.avb

(Macintosh) Macintosh HD/Applications/*Avid editing application*/
SupportingFiles/Site_Effects/Site_AudioSuite_Bin

4. Double-click the Site_AudioSuite_Bin file.

   The Site_AudioSuite_Bin window opens.

5. Drag one of your AudioSuite templates to the Site_AudioSuite_Bin window.

6. If you have not already done so, name the template by clicking the text and typing a name.

7. Close the bin.

   Your Avid editing application does not save the effect to the bin until you close the bin.

8. Click the AudioSuite Fast Menu button to locate your new template.

Using AudioSuite Plug-Ins in Stereo

You can use some AudioSuite plug-ins on either mono or stereo tracks.

To use AudioSuite plug-ins in stereo, be aware of the following:

• To process a mono track and obtain a stereo result, select the desired track or mark an In point and Out point, then either select an empty track or add an new one. When you process the audio, the result will be two tracks or regions that represent the right and left channels of the processed audio. You should then pan these tracks hard right and hard left in your mix.

• If you work with mono tracks and set a plug-in to Stereo mode, then select an odd number of tracks for processing, the plug-in processes the selected tracks in pairs to create the stereo effect. However, the last odd, unpaired track will be processed as mono, using the left channel settings of the stereo plug-in. If you want the last track to be processed in stereo, you must select an additional track to pair it with — an empty one, if necessary.

AudioSuite Plug-in Limitations

The following limitations apply to the AudioSuite plug-ins:

• Avid does not support some plug-ins that perform analysis passes on the audio data. This includes plug-ins that use playlist information to cache analysis data.

• If you want to use plug-ins that change the length of an audio clip or that operate on multiple inputs at the same time, use the method described in "Creating New Master Clips with AudioSuite Plug-Ins" on page 314. Applying an effect to a clip in the Timeline does not work for these operations.

Troubleshooting AudioSuite Plug-Ins

You might need to respond to an error message or cancel a render operation when rendering AudioSuite plug-ins. If the AAE is not running when you start to render an AudioSuite plug-in effect, the system displays an error message stating that the AAE connection does not exist.

To respond to error messages:

1. Do one of the following:

   ▶ Select Cancel to stop the rendering process. This lets you open the AudioSuite tool and then start rendering again.

▶ Select Bypass to continue the rendering process. The plug-in effect does not render.

In most cases, you should click Cancel and open the AudioSuite window.

If you have not installed the plug-in when you go to render a plug-in effect, your Avid editing application displays an error message informing you which plug-in you must install. At that time, you can cancel or bypass the rendering process.

2. To cancel a render operation, press Ctrl+period (Windows) or Command+period (Macintosh).

Be careful not to press these keys multiple times. If you press Ctrl+period (Windows) or Command+period (Macintosh) after the render operation stops from a previous Ctrl+period (Windows) or Command+period (Macintosh), your Avid editing application closes the window after it cancels the render operation.

Core Avid Audio Plug-Ins

A set of core audio plug-ins installs with your Avid editing application. Audio Track Effect and AudioSuite Plug-ins supported by Avid, such as the core set, appear in the Audio Track Effect tool and the AudioSuite Plug-in Selection menu with their plug-in name.

📖 *Other audio plug-ins might get installed on your system for use with Pro Tools, or you might download plug-ins. Avid does not recommend using unsupported plug-ins with Avid editing applications.*

Avid supports other Audio Track Effect and AudioSuite plug-ins that do not install with your Avid editing application. You can use these plug-ins on a trial basis and then purchase them through Avid. 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.

The following table provides a brief description of each of the core plug-ins, with cross-references to more detailed information in the remaining topics in this section.

You can use track effect plug-ins on both mono and stereo tracks. You can use some AudioSuite plug-ins in either mono or stereo clips. For more information, see "Using AudioSuite Plug-Ins in Stereo" on page 319.

Audio Plug-ins

Plug-In	Description
AIR Chorus	Gives depth and space to the audio signal.by applying a short modulated delay. For more information, see "AIR Chorus (Audio Track Effect)" on page 323.
AIR Distortion	Modifies the audio signal with various types of distortion. For more information, see "AIR Distortion (Audio Track Effect)" on page 323.
AIR Dynamic Delay	Creates a delay line that can synchronize to the tempo of your audio sequence. For more information, see "AIR Dynamic Delay (Audio Track Effect)" on page 324.
AIR Enhancer	Enhances the low and high broadband frequencies of the audio signal. For more information, see "AIR Enhancer (Audio Track Effect)" on page 326.
AIR Ensemble	Creates fluid, shimmering modulation effects. For more information, see "AIR Ensemble (Audio Track Effect)" on page 326.

Audio Plug-ins

Plug-In	Description
AIR Filter Gate	Breaks the audio signal into staccato rhythmic patterns with variable filtering, amplitude, and panning. For more information, see "AIR Filter Gate (Audio Track Effect)" on page 327.
AIR Flanger	Applies a short modulating delay. For more information, see "AIR Flanger (Audio Track Effect)" on page 328.
AIR Frequency Shifter	Shifts the audio signal's individual frequencies inharmonically. For more information, see "AIR Frequency Shifter (Audio Track Effect)" on page 330.
AIR Fuzz-Wah	Modifies the audio signal with different types and varying amounts of transistor-like distortion. For more information, see "AIR Fuzz-Wah (Audio Track Effect)" on page 330.
AIR Kill EQ	Removes the Low, Mid, or High broadband frequency range from an audio signal. For more information, see "AIR Kill EQ (Audio Track Effect)" on page 331.
AIR Lo Fi	Lets you bit-crush, down-sample, clip, rectify, and mangle the input signal. For more information, see "AIR Lo Fi (Audio Track Effect)" on page 332.
AIR Multi-Chorus	Applies a thick, complex chorus effect to the audio signal. For more information, see "AIR Multi-Chorus (Audio Track Effect)" on page 334.
AIR Multi-Delay	Applies up to six delay lines to the audio signal. For more information, see "AIR Multi-Delay (Audio Track Effect)" on page 334.
AIR Non-Linear Reverb	Creates special gated or reversed reverb effects. For more information, see "AIR Non-Linear Reverb (Audio Track Effect)" on page 335.
AIR Phaser	Creates a unique sweeping sound by applying a phaser effect. For more information, see "AIR Phaser (Audio Track Effect)" on page 336.
AIR Reverb	Creates a sense of room or space by applying a reverb to the audio signal. For more information, see "AIR Reverb (Audio Track Effect)" on page 338.
AIR Spring Reverb	Creates a classic analog, spring reverb sound. For more information, see "AIR Spring Reverb (Audio Track Effect)" on page 340.
AIR Stereo Width	Lets you enhance the stereo presence for mono audio signals. For more information, see "AIR Stereo Width (Audio Track Effect)" on page 341.
AIR Vintage Filter	Applies a modulating, resonant filter to the audio signal. For more information, see "AIR Vintage Filter (Audio Track Effect)" on page 343.
Bomb Factory BF76	Provides compression modeled after the 1176 studio compressor. For more information, see "Bomb Factory BF76 (Audio Track Effect and AudioSuite)" on page 344.
Compressor/Limiter III	Applies either compression or limiting to audio material, depending on the ratio of compression used. For more information, see "Compressor/Limiter III — Dynamics III (Audio Track Effect and AudioSuite)" on page 350.
D-Verb™	Provides a studio-quality reverberation or ambience processing to single or multiple tracks. For more information, see "D-Verb (Audio Track Effect and AudioSuite)" on page 353.

Audio Plug-ins

Plug-In	Description
DC Offset Removal	Removes an audio artifact that is common in digital audio files. A DC offset is caused by poorly calibrated analog-to-digital converters (A/Ds), and can produce clicks and pops on clip edit transitions if not removed. For more information, see "DC Offset Removal (AudioSuite)" on page 354.
De-Esser III	Reduces sibilants and other high frequency noises that can occur in vocals, voiceovers, and wind instruments such as flutes. For more information, see "DeEsser III — Dynamics III (Audio Track Effect and AudioSuite)" on page 355.
Duplicate	Creates a new master clip from a selected audio clip. The plug-in uses the In and Out points on the selected clip to define the boundaries of the new clip. For more information, see "Duplicate (AudioSuite)" on page 358.
EQ	Lets you adjust frequency equalization on individual audio clips. Four EQ plug-ins are available: 1-Band EQ II, 4_Band EQ II, 1-Band EQ III, and 7-Band EQ III. For more information, see "EQ (AudioSuite)" on page 360.
Expander/Gate III	Applies expansion or gating to audio material, depending on the ratio setting. For more information, see "Expander/Gate III — Dynamics III (Audio Track Effect and AudioSuite)" on page 361.
Funk Logic Mastererizer	Provides low-fidelity sound design capabilities for the creative degradation of audio. For more information, see "Funk Logic Mastererizer (AudioSuite)" on page 363.
Gain	Same as Normalize, but allows positive or negative gain adjustment. For more information, see "Gain (AudioSuite)" on page 363.
Invert	Inverts the polarity (phase) of the audio file. For more information, see "Invert (AudioSuite)" on page 364.
Lo-Fi	Processes audio by reducing its sample rate and bit resolution. For more information, see "Lo-Fi Plug-In (Audio Track Effect and AudioSuite)" on page 364.
Normalize	Finds the peak value in the source audio file and scales the entire file proportionally to that maximum value. For more information, see "Normalize (AudioSuite)" on page 369.
Pitch Shift	Changes pitch with or without changing length. For more information, see "Pitch Shift (AudioSuite)" on page 369.
Recti-Fi	Provides additive synthesis effects through waveform rectification, multiplying the harmonic content of an audio track and adding subharmonic or superharmonic tones. For more information, see "Recti-Fi (Audio Track Effect and AudioSuite)" on page 371.
Reverse	Rewrites the selected audio in reverse. For more information, see "Reverse (AudioSuite)" on page 372.
Sci-Fi	Adds effects such as ring modulation, resonation, and sample & hold, that are typically found on older, modular analog synthesizers. For more information, see "Sci-Fi (Audio Track Effect and AudioSuite)" on page 373.
Signal Generator	Produces audio test tones in a variety of frequencies, waveforms, and amplitudes. For more information, see "Signal Generator (Audio Track Effect and AudioSuite)" on page 375.

Audio Plug-ins

Plug-In	Description
Time Shift	Adjusts both the duration and the pitch of a selected clip. For more information, see "Time Shift (AudioSuite)" on page 377.
Trim	Attenuates an audio signal from -[Infinity] dB to +6 dB or [Infinity] dB to +12 dB. For more information, see "Trim (Audio Track Effect)" on page 380.

AIR Chorus (Audio Track Effect)

You can use the AIR Chorus plug-in to apply a short modulated delay to give depth and space to the audio signal.

The following table lists the AIR Chorus plug-in parameters:

Parameter	Description
Rate	Lets you adjust the rate of the low frequency oscillator (LFO) applied to the delayed signal as modulation. The higher the setting, the more rapid the modulation. You can select either a sine wave or a triangle wave as a modulation source, using the LFO Waveform selector.
Depth	Lets you adjust the depth of the low frequency oscillator (LFO) applied to the delayed signal as modulation.
Chorus	• Feedback — Controls the amount of feedback applied from the output of the delayed signal back into its input. Negative settings provide a more intense effect. • Pre Delay — Sets the delay time between the source chorus signal and the processed signal in milliseconds. The higher the setting, the longer the delay and the wider the chorusing effect.
LFO	• Waveform — Selects a triangle or a sine wave for the LFO. This affects the character of the modulation. The sine wave has a gentler ramp and peak than the triangle wave. • L/R Phase — Sets the relative phase of the LFO's modulation in the left and right channels.
Mix	Lets you adjust the balance between the Dry (source) signal and the Wet (processed) signal, giving you control over the depth of the effect. 0% is all dry, and 100% is all wet, while 50% is an equal mix of both.

AIR Distortion (Audio Track Effect)

You can use the AIR Distortion plug-in to color the audio signal with various types and varying amounts of distortion.

The following table lists the AIR Distortion plug-in parameters:

Parameter	Description
Drive	Lets you increase the drive (input volume) of the signal from 0 dB (no distortion) to 60 dB (extreme distortion). An increase or decrease of 1– 2 decibels can make a big difference on the amount and quality of distortion.

Parameter	Description
Output	Lets you lower the Output level of the distorted signal from 0–100%. At 0%, no distorted signal passes through the output. At 100%, the distorted signal passes through the output at full volume.
Tone	Lets you shape the timbral quality of the distortion.
	• Pre Shape — Lets you increase or decrease a broad gain boost (or attenuation) of treble frequencies in the processed signal. Pre-Shape is essentially a pre-distortion tone control that makes the distortion bite at different frequencies. Set to 0%, the Pre-Shape control doesn't affect the tone at all. Higher settings provide a boost in the high end of the distorted signal (more treble distortion), while lower setting suppress the high end, with some mid-range boost, for a darker less distorted tone.
	• High Cut — Lets you adjust the frequency for the High Cut filter. To attenuate the high-end of the processed signal, lower the frequency.
Clipping	• DC Bias — Lets you change clipping from being symmetrical to being asymmetrical, which makes it sound richer and more extreme at high settings. The difference is most noticeable at lower Drive settings.
	• Threshold — Lets you adjust the headroom for the dynamic range of the distorted signal between –20.0 dBFS and 0.0 dBFS. Rather than using the Drive to adjust the signal level relative to a fixed clipping level, use the Threshold control to adjust the clipping level without changing the signal level.
Stereo	When you enable Stereo, the control processes the left and right channels of the incoming stereo signal separately. When you disable Stereo, the control sums and processes the incoming stereo signal as mono.
Mix	Lets you balance the amount of dry signal with the amount of wet (distorted) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.
	You can use the Mix control in conjunction with the Output control to find just the right balance of the distorted signal with the input (dry) signal. For example, with Mix set to 50%, equal amounts of the dry and wet signal pass to the output. You can then lower the Output control to decrease the amount of distorted signal passed to the output until you get exactly the right mix between the two signals and the right overall level.

AIR Dynamic Delay (Audio Track Effect)

You can use the Dynamic Delay Plug-In for a delay line that can synchronize to the tempo of your audio sequence, and you can modulate the delay using an envelope follower.

The following table lists the AIR Dynamic Delay plug-in parameters:

Parameter	Description
Sync	When you enable Sync, the delay time synchronizes to the tempo of your audio sequence. When you disable Sync, you can set the delay time in milliseconds independently of the tempo. The Sync button is lit when it is enabled.

Parameter	Description
Delay	When you enable Sync, the Delay control lets you select a rhythmic subdivision or multiple of the beat for the delay time (based on the tempo). Select from the following rhythmic values: • 16 (sixteenth note) • 8T (eighth-note triplet) • 16D (dotted sixteenth-note) • 8 (eighth note) • 4T (quarter-note triplet) • 8D (dotted eighth-note) • 4 (quarter note) • 2T (half-note triplet) • 4D (dotted quarter-note) • 2 (half note) • 1T (whole-note triplet) • 3/4 (dotted half note) • 4/4 (whole note) • 5/4 (five tied quarter notes) • 6/4 (dotted whole note) • 7/4 (seven tied quarter notes) • 8/4 (double whole note) When you disable Sync, the Delay control lets you set the delay time in milliseconds and seconds (1 ms to 4.00 seconds).
Feedback	Lets you adjust the amount of delay feedback. At 0% the delayed signal repeats only once. As you increase the feedback, the number of times the delay repeats increases. At 100%, the delay repeats for an extended period of time. Each Delay mode produces a different feedback pattern, especially when you do not center the L/R Ratio.
Delay Section	• L/R Ratio — Lets you set the ratio of left to right delay times. If you move the control all the way to the left (50:100), the left channel delay time equals half the right channel delay time. If you move the control all the way to the right (100:50), the right channel delay time equals half the left channel delay time. • Stereo Width — Lets you adjust the width of the delay effect in the stereo field.
EQ	• Low Cut — Lets you adjust the frequency for the Low Cut filter. For less bass, raise the frequency. • High Cut — Lets you adjust the frequency for the High Cut filter. For less treble, lower the frequency.

Parameter	Description
Env Mod	The Dynamic Delay plug-in provides Envelope Modulation (an envelope follower) to control various parameters in real time. • Rate — Determines how quickly the Feedback and Mix parameters respond to input from the envelope follower. • FBK — Determines how much the envelope follower affects the Feedback (FBK) amount. • Mix — Determines how much the envelope follower affects the wet/dry mix. At 0%, the envelope follower has no effect on the given parameter. At +/– 100%, the parameter's value increases or decreases in direct proportion to the incoming signal's amplitude envelope.
Feedback Mode	Select one of the following options for the Feedback Mode: • Mono — Sums the incoming stereo signal to mono, then offers separate left and right delay output taps from that signal. • Stereo — Processes the left and right channels of the incoming stereo signal independently and outputs the processed signal on the corresponding left and right channels. • Cross — Processes the left and right channels of the incoming stereo signal independently, and feeds the each side's delayed signal back to the opposite channel.
Mix	Lets you balance the amount of dry signal with the amount of wet (delayed) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Enhancer (Audio Track Effect)

You can use the Enhancer plug-in to enhance the low and high broadband frequencies of the audio signal.

The following table lists the AIR Enhancer plug-in parameters:

Parameter	Description
High Gain	Adjusts the frequency to boost the high end.
Low Gain	Adjusts the frequency to boost the low end.
Tune	Lets you set the center frequency for low and high-end enhancement. • Low — Sets the center frequency for the bass boost. • High — Sets the center frequency for the treble boost.
Harmonic Generation	Lets you generate additional high-frequency harmonics, which can brighten up dull signals. • Depth — Generates additional high frequency harmonics in the signal (0.0–12.0 dB). • Phase — Toggles the polarity of the generated harmonics, changing their phase relationship with the dry signal.
Output	Lets you lower the Output level from 0.0 dB to –INF dB.

AIR Ensemble (Audio Track Effect)

You can use the Ensemble plug-in to apply fluid, shimmering modulation effects to the audio signal.

The following table lists the AIR Ensemble plug-in parameters:

Parameter	Description
Rate	Changes the frequency of the modulating LFO (0.01–10.0 Hz).
Depth	Adjusts the amount of modulation applied to the Delay time.
Modulation	Lets you adjust and randomize the delay time. • Delay — Adjusts the Delay time. • Shimmer — Lets you randomize the Delay time, adding texture to the effect.
Stereo Width	Lets you widen or narrow the effect's stereo field.
Mix	Lets you balance the amount of dry signal with the amount of wet (processed) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Filter Gate (Audio Track Effect)

You can use the Filter Gate effect to chop up the audio signal into staccato rhythmic patterns with variable filtering, amplitude, and panning.

The following table lists the AIR Filter Gate plug-in parameters:

Parameter	Description
Pattern	Lets you select from a number of preset rhythmic patterns that the gate will follow.
Gate	• Attack — Lets you adjust the duration of the attack as a percentage of the step duration. • Hold — Lets you adjust the duration of the hold (or sustain) as a percentage of the step duration. • Release — Lets you adjust the duration of the release as a percentage of the step duration.

Filter	Provides controls for the selected filter type:
	 • Mode — Lets you select the type of Filter:
	   - Off (no filtering)
	   - LP (Low Pass filter)
	   - BP (Band Pass filter)
	   - HP (High Pass filter)
	   - Phaser (Phaser)
	 • Cutoff — Lets you adjust the Filter Cutoff frequency.
	 • Res — Lets you adjust the Resonance at the Cutoff frequency.

Modulation	• Env — Lets you adjust how much an envelope follower affects the Cutoff frequency. Note that the Cutoff is fixed for the duration of each step, so it will not respond to a peak in the envelope until the start of the next step. • LFO — Lets you adjust the amount of LFO modulation of the Cutoff frequency. • LFO Steps — Sets the duration of one cycle of the LFO to the selected number of steps. Changes to the Step Rate consequently affect the durations of cycles of the LFO. When set to Random mode, the level of the LFO changes randomly every step, for a "sample and hold" waveform.

Parameter	Description
Rate	Lets you select the duration, or frequency of the Low Frequency Oscillator (LFO). The duration of one cycle of the LFO is measured in Steps.
Mix	Lets you balance the amount of dry signal with the amount of wet (filtered) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Flanger (Audio Track Effect)

You can use the Flanger plug-in to apply a short modulating delay to the audio signal.

The following table lists the AIR Flanger plug-in parameters:

Parameter	Description
Sync	Synchronizes the modulation rate to the audio sequence tempo. When you enable Sync, you can select a rhythmic subdivision or multiple of the beat for the Flanger modulation rate. When you disable Sync, you can set the delay time in milliseconds independently of the sequence tempo.

Select from the following rhythmic values:

- 16 (sixteenth note)
- 8T (eighth-note triplet)
- 16D (dotted sixteenth-note)
- 8 (eighth note)
- 4T (quarter-note triplet)
- 8D (dotted eighth-note)
- 4 (quarter note)
- 2T (half-note triplet)
- 4D (dotted quarter-note)
- 2 (half note)
- 1T (whole-note triplet)
- 3/4 (dotted half note)
- 4/4 (whole note)
- 5/4 (five tied quarter notes)
- 6/4 (dotted whole note)
- 8/4 (double whole note)

- Depth — Lets you adjust the amount of modulation applied to the Delay time.

Parameter	Description
Rate	Lets you select from the following rhythmic values:
	• 16 (sixteenth note)
	• 8T (eighth-note triplet)
	• 16D (dotted sixteenth-note)
	• 8 (eighth note)
	• 4T (quarter-note triplet)
	• 8D (dotted eighth-note)
	• 4 (quarter note)
	• 2T (half-note triplet)
	• 4D (dotted quarter-note)
	• 2 (half note)
	• 1T (whole-note triplet)
	• 3/4 (dotted half note)
	• 4/4 (whole note)
	• 5/4 (five tied quarter notes)
	• 6/4 (dotted whole note)
	• 8/4 (double whole note)
Depth	Lets you adjust the amount of modulation applied to the Delay time.
Pre-Delay	Sets the minimum delay time in milliseconds.
LFO	Provides controls for the Low Frequency Oscillator (LFO) used to modulate the Delay time.
	• Retrigger — Resets the LFO phase. This lets you manually start the filter sweep from that specific point in time (or using automation, at a specific point in your arrangement). Clicking the Retrigger button also forces the Mix control up if it is too low while the button is held. This ensures that the sweep is audible.
	• Wave — lets you interpolate between a triangle wave and a sine wave for the modulating LFO.
	• L/R Offset — Lets you adjust the phase offset for the LFO waveform applied to the left and right channels.
EQ	Provides controls for cutting lows from the Flanger signal, and inverting phase.
	• Phase Invert — When enabled, Phase Invert flips the wet signal's polarity, which changes the harmonic structure of the effect.
	• Low Cut — Lets you adjust the Low Cut frequency for the Flanger, to limit the Flanger effects to higher frequencies.
Feedback	Lets you adjust the amount of delay feedback for the Flanger. At 0%, the delay repeats only once. At +/–100%, the Flanger feeds back on itself.
Mix	Lets you balance the amount of dry signal with the amount of wet (flanged) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.
	You can use the Mix control to create an "infinite phaser" effect between the dry and shifted signals, which always rises or always falls (depending on the direction of shift).

AIR Frequency Shifter (Audio Track Effect)

You can use the Frequency Shifter plug-in to shift the audio signal's individual frequencies inharmonically, creating a unique effect.

The following table lists the AIR Frequency Shifter plug-in parameters:

Parameter	Description
Frequency	Sets the amount of frequency shifting.

Shifter	Provides control over the direction of frequency shift, and feedback of the signal through the algorithm.
	• Mode — Sets the direction of the frequency shifting effect:
	  - Up — Shifts frequencies up.
	  - Down — Shifts frequencies down.
	  - Up & Down — Shifts frequencies equally up and down, and the two shifted signals are heard simultaneously.
	  - Stereo — Shifts the right channel frequencies up, and the left channel down.
	• Feedback — Lets you run the signal through the pitch shifting algorithm multiple times, creating a cascading, layered effect.

Mix	Lets you balance the amount of dry signal with the amount of wet (delayed) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Fuzz-Wah (Audio Track Effect)

You can use the Fuzz-Wah plug-in to color the audio signal with different types and varying amounts of transistor-like distortion.

The following table lists the AIR Fuzz-Wah plug-in parameters:

Parameter	Description
Fuzz	Turns the distortion effect on and off.
Drive	Sets the level of gain in the Fuzz algorithm.
Mix (Fuzz)	Lets you balance the amount of dry signal with the amount of wet (distorted) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.
Post Wah	Lets you reverse the Fuzz section and the Wah section, placing one before the other.
Fuzz section	Provides tonal and volume control over the plug-in. • Tone — Lets you change the brightness of the Fuzz algorithm. • Output — Sets the overall output volume of the Fuzz section.
Pedal Min	• Freq — Sets the low (Pedal Min) limit of the wah filter's frequency sweep. • Res — Sets the low (Pedal Min) limit of the wah filter's resonance.

Parameter	Description
Pedal Max	• Freq — Sets the high (Pedal Max) limit of the wah filter's frequency sweep.
	• Res — Sets the high (Pedal Max) limit of the wah filter's resonance.
Modulation	Provides controls for the Low Frequency Oscillator (LFO) and Envelope Follower (ENV) that can be used to modulate the wah filter's sweep.
	• Rate — Sets either the LFO frequency, or the response time of the envelope follower, depending on the setting of the Mode control.
	• Type — Lets you select either the LFO or the Envelope follower as the modulation source for the wah filter.
	• Depth — Sets the amount of modulation sent by the LFO or envelope follower.
Wah	Lets you turn the wah filter on and off.
Pedal	Sweeps the wah center frequency up and down.
Filter	Switches the wah filter between LP (lowpass), BP (bandpass), and HP (highpass) modes.
Mix (Wah)	Lets you balance the amount of dry signal with the amount of wet (wah-processed) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.
Mix (overall)	Lets you balance the amount of fuzz-processed signal with the amount of wah-processed signal. At 50%, there are equal amounts of fuzz and wah signal. At 0%, the output is all fuzz, and at 100% it is all wah.

AIR Kill EQ (Audio Track Effect)

You can use the Kill EQ plug-in to remove the Low, Mid, or High broadband frequency range from an audio signal. This is a popular effect with DJs and is commonly used in electronic music production (especially in dance music).

The following table lists the AIR Kill EQ plug-in parameters:

Parameter	Description
High	Switches the high frequency band on and off.
Mid	Switches the middle frequency band on and off.
Low	Switches the low frequency band on and off.
Gain	• Low — Controls the volume of the low frequency band.
	• Mid — Controls the volume of the middle frequency band.
	• High — Controls the volume of the high frequency band.
Freq	• Low — Sets the crossover frequency of the low pass filter.
	• Sweep — Changes both the low and high-band cutoff frequencies simultaneously. When you kill the high and low bands, manipulating this control creates a swept bandpass filter effect.
	• High — Sets the crossover frequency of the high pass filter.
Output	Sets the final output volume.

AIR Lo Fi (Audio Track Effect)

You can use the Lo Fi effect to bit-crush, down-sample, clip, rectify, and mangle the input signal.

The following table lists the AIR Lo Fi plug-in parameters:

Parameter	Description
Sample Rate	Lets you resample the audio signal at another sample rate.
Anti-Alias	Provides control over anti-aliasing filters that you can use before and after downsampling to reduce aliasing in the resampled audio signal. • On — Lets you enable or disable the Anti-Alias filter. Disabling the filter creates a much grittier sound. • Pre — Lets you adjust the anti-aliasing filter cutoff applied to the audio signal before resampling. The filter is applied as a multiplier of the sample frequency (Fs) between 0.12 Fs and 2.00 Fs. • Post — Lets you adjust the range of anti-aliasing filter cutoff applied to the audio signal after resampling. The filter is applied as a multiplier of the sample frequency (Fs) between 0.12 Fs and 2.00 Fs.

Parameter	Description
LFO	Lets you apply a Low Frequency Oscillator to modulate the Sample Rate.

- Sync — Synchronizes the LFO Rate to the audio sequence tempo. When you enable Sync, you can select a rhythmic subdivision or multiple of the beat for the LFO Rate. When you disable Sync, you can change the modulation rate independently of the sequence tempo.

- Rate — Select from the following rhythmic values:
  - 16 (sixteenth note)
  - 8T (eighth-note triplet)
  - 16D (dotted sixteenth-note)
  - 8 (eighth note)
  - 4T (quarter-note triplet)
  - 8D (dotted eighth-note)
  - 4 (quarter note)
  - 2T (half-note triplet)
  - 4D (dotted quarter-note)
  - 2 (half note)
  - 1T (whole-note triplet)
  - 3/4 (dotted half note)
  - 4/4 (whole note)
  - 5/4 (five tied quarter notes)
  - 6/4 (dotted whole note)
  - 8/4 (double whole note)

- Wave — Select from the following waveforms for the LFO:
  - Sine (sine wave)
  - Tri (triangle wave)
  - Saw (saw-tooth wave)
  - Square (square wave)
  - Morse (Morse code-like rhythmic effect)
  - S&H (Sample and Hold modulation)
  - Random (random modulation)

- Depth — Lets you adjust the amount of modulation applied to the Sample Rate.

Parameter	Description
Env Mod	Provides Envelope Modulator control over an envelope follower that can affect the sample rate. You can use this for accentuating and enhancing signal peaks (such as in drum loops) with artificially generated high-frequency aliasing.

- Attack — Sets the time it takes to respond to increases in the audio signal level.

- Release — Sets the time it takes to recover after the signal level falls.

- Depth — Determines how much the envelope follower affects the sample rate.
  - At 0%, the envelope follower has no affect on the sample rate.
  - At +100%, the attack ramps up to the sample rate setting; and the release starts from the sample rate setting and ramps down.
  - At –100%, the attack starts from the sample rate setting and ramps down; and the release ramps up to the sample rate setting.

Parameter	Description
Distortion	Provides controls for adding dirt and grunge to the signal.
	• Clip — Adds transistor-like distortion to the signal
	• Noise — Adds a noisy, buzz-like edge to the signal.
	• Rectify — Acts as a waveshaper, adding aggressive, harsh distortion to the signal.
Bit Depth	Lets you truncate the bit depth of the incoming signal from 16 bits all the way down to 1 bit.
Mix	Lets you balance the amount of dry signal with the amount of wet (processed) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Multi-Chorus (Audio Track Effect)

You can use the AIR Multi-Chorus plug-in to apply a thick, complex chorus effect to the audio signal.

The following table lists the AIR Multi-Chorus plug-in parameters:

Parameter	Description
Rate	Sets the rate for the oscillation of the LFO in Hertz.
Depth	Sets the depth of LFO modulation of the audio signal in milliseconds.
Chorus	Provides control over the low-frequency content and stereo width of the Multi-Chorus effect.
	• Low Cut — Lets you adjust the Low Cut frequency for the chorus, to limit the Multi-Chorus effects to higher frequencies.
	• Width — Lets you widen or narrow the effect's stereo field.
Mod	• Pre Delay — Sets the Pre-Delay in milliseconds.
	• Waveform — Selects a triangle or a sine wave for the LFO. This affects the character of the modulation. The sine wave has a gentler ramp and peak than the triangle wave.
Voices	Sets the number of layered chorus effects that are applied to the audio signal. The more voices you use, the thicker the effect.
Mix	Lets you adjust the balance between the dry signal and the wet (processed) signal, giving you control over the depth of the effect. 0% is all dry, and 100% is all wet, while 50% is an equal mix of both.

AIR Multi-Delay (Audio Track Effect)

You can use the Multi-Delay Plug-In to apply up to six delay lines to the audio signal.

The following table lists the AIR Multi-Delay plug-in parameters:

Parameter	Description
Sync	When you enable Sync, the delay time synchronizes to the tempo of your audio sequence. When you disable Sync, you can set the delay time in milliseconds independently of the tempo. The Sync button is lit when it is enabled.

Parameter	Description
Delay	When you enable Sync, the Delay control lets you set the main delay length in 16th-note lengths (based on the tempo).
	When you disable Sync, the Delay control lets you set the delay time in milliseconds and seconds.
Feedback	Lets you adjust the amount of delay feedback. At 0% the delayed signal repeats only once. As you increase the feedback, the number of times the delay repeats increases. At 100%, the delay repeats for an extended period of time.
	The From and To controls let you feed signal from one delay tap to another, or back to the main input, to create complex delay/feedback effects. If the delay time of the To tap is greater than the delay time of the From tap, then the result is "feed-forward" rather than feedback, so you can hear only one delay repeat. • From — Sets the tap from which signal is cross-routed. • To — Sets the tap (or the main input) to which the cross-routed signal is routed.
Delay Taps	Provides five Taps (delay lines). Each tap provides the same set of controls. You can edit the controls for each tap independently of the other taps. • On — Turns the selected tap's signal on or off. • Delay — Sets the length of delay for the tap, relative to the main Delay setting. • Level — Changes the output level of the tap. • Pan — Pans the audio signal from the tap left or right in the stereo field.
High Cut	Lets you adjust the frequency for the High Cut filter. For less treble, lower the frequency.
Low Cut	Lets you adjust the frequency for the Low Cut filter. For less bass, raise the frequency.
Mix	Lets you balance the amount of dry signal with the amount of wet (delayed) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Non-Linear Reverb (Audio Track Effect)

You can use the Non-Linear Reverb effect to apply special gated or reversed reverb effects to the audio signal, creating a synthetic, processed ambience.

The following table lists the AIR Non-Linear Reverb plug-in parameters:

Parameter	Description
Reverse	Turns Reverse mode on and off. In Reverse mode, the tail of the reverb signal fades up to full volume, then disappears, rather than fading out. • Pre-Delay — Determines the amount of time that elapses between the original audio event and the onset of reverberation. • Dry Delay — Applies a specified amount of delay to the dry portion of the signal, which can create a "reverse reverb" effect, where the reverb tail is heard before the dry signal.

Parameter	Description
Reverb	Provides control over the reverb's diffusion and stereo width. • Diffusion — Changes the rate at which the sound density of the reverb tail increases over time. Higher Diffusion settings create a smoother reverberated sound. Lower settings result in more fluttery echo. • Width — Lets you widen or narrow the effect's stereo field.
EQ	Provides tonal control over the reverb signal. • Low Cut — Adjusts the frequency for the Low Cut filter. For less bass, raise the frequency. • High Cut — Adjusts the frequency for the High Cut filter. For less treble, lower the frequency.
Reverb Time	Changes the length of the reverberation's decay.
Mix	Lets you balance the amount of dry signal with the amount of wet (processed) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Phaser (Audio Track Effect)

You can use the Phaser effect to apply a phaser to the audio signal for a unique sweeping sound.

The following table lists the AIR Phaser plug-in parameters:

Parameter	Description
Sync	When you enable Sync, the delay time synchronizes to the tempo of your audio sequence. When you disable Sync, you can set the delay time in milliseconds independently of the tempo. The Sync button is lit when it is enabled.

Parameter	Description

Rate	When you enable Sync, the Rate control lets you select a rhythmic subdivision or multiple of the beat for the Phaser Modulation Rate. When you disable Sync, you can change the phaser rate independently of the sequence tempo. Select from the following rhythmic values:
	
	• 16 (sixteenth note)
	• 8T (eighth-note triplet)
	• 16D (dotted sixteenth-note)
	• 8 (eighth note)
	• 4T (quarter-note triplet)
	• 8D (dotted eighth-note)
	• 4 (quarter note)
	• 2T (half-note triplet)
	• 4D (dotted quarter-note)
	• 2 (half note)
	• 1T (whole-note triplet)
	• 3/4 (dotted half note)
	• 4/4 (whole note)
	• 5/4 (five tied quarter notes)
	• 6/4 (dotted whole note)
	• 8/4 (double whole note)
	• Wave — Select from the following waveforms for the LFO:
	  - Sine (sine wave)
	  - Tri (triangle wave)
	  - Saw (saw-tooth wave)
	  - Square (square wave)
	  - Morse (Morse code-like rhythmic effect)
	  - S&H (Sample and Hold modulation)
	  - Random (random modulation)

Depth	Lets you adjust the depth of modulation, which in turn affects the amount of phasing applied to the audio signal.
Phaser	Provides control over the effect's center frequency and number of phaser stages (or poles). • Center — Lets you change the frequency center (100 Hz to 10.0 kHz) for the phaser poles. • Poles — Lets you select the number of phaser poles (stages): 2, 4, 6, or 8. The number of poles changes the character of the sound. The greater the number of poles, the thicker and more sweeping the sound.
LFO	Provides control over the waveform and stereo offset of the LFO. • Wave — Lets you interpolate between a triangle wave and a sine wave for modulating the phaser. • L/R Phase — Lets you adjust the relative phase of the LFO modulation applied to the left and right channels.

Parameter	Description
EQ	Provides tonal control over the phase signal. The Low Cut control lets you adjust the frequency of the Low Cut Filter in the phaser's feedback loop. This can be useful for taming low frequency "thumping" at high feedback settings.
Feedback	Feeds the output signal of phaser back into the input, creating a resonant or singing tone in the phaser when set to its maximum.
Mix	Lets you balance the amount of dry signal with the amount of wet (effected) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Reverb (Audio Track Effect)

Different physical environments have different early reflection signatures that our ears and brain use to localize sound. These reflections affect our perception of the size of a space as well as where an audio source sits within it. You can use the Reverb effect to apply Reverb to the audio signal, creating a sense of room or space.

The following table lists the AIR Reverb plug-in parameters:

Parameter	Description
Pre-Delay	Determines the amount of time that elapses between the original audio event and the onset of reverberation. Under natural conditions, the amount of pre-delay depends on the size and construction of the acoustic space, and the relative position of the sound source and the listener. Pre-Delay attempts to duplicate this phenomenon, and you can use it to create a sense of distance and volume within an acoustic space. Long Pre-Delay settings place the reverberant field behind rather than on top of the original audio signal.
Room Size	Changes the apparent size of the space.

Parameter	Description
Early Reflections	Changes the perceived location of the reflecting surfaces surrounding the audio source.
	Reverb simulates early reflections by using multiple delay taps at different levels that occur in different positions in the stereo spectrum (through panning). Long reverberation generally occurs after early reflections dissipate.
	Type — Provides the following Types of Early Reflection models:
	• Booth (a vocal recording booth)
	• Club (a small, clear, natural-sounding club ambience)
	• Room (the center of a small room without many reflections)
	• Small Chamber (a bright, small-sized room)
	• Medium Chamber (a bright, medium-sized room)
	• Large Chamber (a bright, large-sized room)
	• Small Studio (a small, live, empty room)
	• Large Studio (a large, live, empty room)
	• Scoring Stage (a scoring stage in a medium-sized hall)
	• Philharmonic (the space and ambience of a large, symphonic, concert hall)
	• Concert Hall (the space and ambience of a large concert hall)
	• Church (a medium-sized space with natural, clear-sounding reflections)
	• Opera House (the space and ambience of an opera house)
	• Vintage 1 (a vintage digital reverb effect)
	• Vintage 2 (a vintage digital reverb effect)
	Spread — Controls the length of the early reflections.
Reverb	Provides control over the stereo width of the reverb algorithm.
	• In Width — Widens or narrows the stereo width of the incoming audio signal before it enters the reverb algorithm.
	• Out Width — Widens or narrows the stereo width of the signal once reverb has been applied.
	• Delay — Sets the size of the delay lines used to build the reverb effect. Higher values create longer reverberation.
EQ	Provides tonal control over the reverb signal.
	• Low Cut — Adjusts the frequency for the Low Cut filter. For less bass, raise the frequency.
	• High Cut — Adjusts the frequency for the High Cut filter. For less treble, lower the frequency.
Room	Controls the overall spatial feel of the simulated room.
	• Ambience — Affects the attack of the reverb signal. At low settings, the reverb arrives quickly, simulating a small room. At higher settings, the reverb ramps up more slowly, emulating a larger room.
	• Density — Changes the rate at which the sound density of the reverb tail increases over time. Higher Density settings create a smoother reverberated sound. Lower settings result in more fluttery echo.

Parameter	Description
High Frequencies	Provides controls that let you shape the tonal spectrum of the reverb by adjusting the decay times of higher frequencies.
	• Time — Decreases or increases the decay time for mid- to high-range frequency bands. Higher settings provide longer decay times and lower settings provide shorter decay time. With lower settings, high frequencies decay more quickly than low frequencies, simulating the effect of air absorption in a hall.
	• Freq — Sets the frequency boundary between the mid- and high-range frequency bands.
	• Cut — Adjusts the frequency for the High Cut filter (1.00–20.0 kHz). Adjusting the High Cut control changes the decay characteristics of the high frequency components of the Reverb. To cut the high-end of the processed signal, lower the frequency.
Low Frequencies	Controls the low-frequency-heavy tail of the reverb signal.
	• Time — Decreases or increases the decay time for the low-range frequency band. Higher settings provide longer decay times and lower settings provide shorter decay time.
	• Freq — Sets the frequency boundary between the low and high-range frequency bands.
Reverb Time	Changes the rate at which the reverberation decays after the original direct signal stops. At its maximum value, infinite reverberation is produced.
Balance	Changes the output level of the early reflections. Setting the level control to 0% produces a reverb effect that is only the reverb tail.
Mix	Lets you balance the amount of dry signal with the amount of wet (processed) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Spring Reverb (Audio Track Effect)

You can use the Spring Reverb effect to apply a classic spring reverb sound. The analog spring reverb feeds a signal to a transducer at the end of a suspended metal coil spring. The transducer causes the spring to vibrate so that the signal reflects from one end of the spring to the other. At the other end of the spring another transducer converts the motion of the spring back into an electrical signal, which creates a delayed and reverberated version of the input signal. The Spring Reverb effect models this analog effect.

The following table lists the AIR Spring Reverb plug-in parameters:

Parameter	Description
Pre-Delay	Determines the amount of time (0–250 ms) that elapses between the original audio event and the onset of reverberation.
Reverb	Provides control over the diffusion and stereo width of the reverb signal.
	• Diffusion — Changes the rate at which the sound density of the reverb tail increases over time. Higher Diffusion settings create a smoother reverberated sound. Lower settings result in more fluttery echo.
	• Width — Changes the spread of the reverberated signal in the stereo field. A setting of 0% produces a mono reverb, but leaves the panning of the original source signal unprocessed. A setting of 100% produces a open, panned stereo image.

Parameter	Description
Low Cut	Lets you adjust the frequency of the Low Cut Filter (20.0 Hz–1.00 kHz). Use the Low Cut filter to reduce some of the potential low frequency resonance (or booming) you can get with longer reverb times.
Reverb Time	Changes the reverberation decay time (1.0–10.0 seconds) after the original direct signal stops. Shorter times result in a tighter, more ringing and metallic reverb, such as when walking down a narrow hall with hard floors and walls. Longer times result in a larger reverberant space, such as an empty, large, concrete cistern.
Mix	Lets you balance the amount of dry (non-reverb) signal with the amount of wet (reverb) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Stereo Width (Audio Track Effect)

You can use the Stereo Width effect to create a wider stereo presence for mono audio signals.

The following table lists the AIR Stereo Width plug-in parameters:

Parameter	Description
Mode	Lets you specify the method by which the Stereo Width plug-in will create the artificial stereo field. • Adjust — Adjusts the existing stereo width of the signal by M-S encoding, equalizing the S component with the Low/Mid/High controls and boosting/attenuating it with the Width control, then M-S decoding back to stereo. The Delay control delays the right signal relative to the left for an additional widening effect (known as "Haas panning"). • Comb — Adds artificial width to the signal by M-S encoding then adding a delayed version of the M component to the S component. This creates a comb filtering effect that shifts some frequencies to the left and others to the right. • Phase — Affects how the Low/Mid/High controls set the centre frequencies of 3 phase shifters. This shifts the relative phase of the left and right channels, giving a much more subtle effect than Comb mode.
Process	Boosts or cuts the Low, Mid and High-frequency bands of the generated stereo signal.
Trim	Adjusts the perceived center/source of the generated stereo signal. • Level — Sets the volume of the perceived center of the stereo signal. • Pan — Sets the position left-to-right of the perceived center of the stereo signal.
Delay	Lets you specify the duration of delay used in Phase mode (0–8 ms).
Width	Sets the final width of the generated stereo field.

AIR Talkbox (Audio Track Effect)

You can use the Talkbox effect to add voice-like resonances to audio signals.

The following table lists the AIR Talkbox plug-in parameters:

Parameter	Description
Vowel	Lets you choose the shape of the formant filter, by the vowel sound that is simulated (OO/OU/AU/AH/AA/AE/EA/EH /EE/ER/UH/OH).
Env Depth	Creates a positive or negative offset in the setting of the Vowel control, effected by the envelope follower. At its center, the knob has no effect. Turned to the right or left of center, the Env Depth knob shifts the value of the Vowel control up or down.
	When you trigger the envelope follower, the Vowel parameter moves to its normal setting (in time with the envelope's attack), then back to the offset value (in time with the envelope's release).
LFO	Provides controls that let you apply a Low Frequency Oscillator to modulate the Formant setting.
	Sync — Synchronize the LFO Rate to the audio sequence tempo. When you enable Sync, you can select a rhythmic subdivision or multiple of the beat for the LFO Rate. When you disable Sync, you can change the modulation rate independently of the sequence tempo.
	Rate — Select from the following rhythmic values:
	• 16 (sixteenth note)
	• 8T (eighth-note triplet)
	• 16D (dotted sixteenth-note)
	• 8 (eighth note)
	• 4T (quarter-note triplet)
	• 8D (dotted eighth-note)
	• 4 (quarter note)
	• 2T (half-note triplet)
	• 4D (dotted quarter-note)
	• 2 (half note)
	• 1T (whole-note triplet)
	• 3/4 (dotted half note)
	• 4/4 (whole note)
	• 5/4 (five tied quarter notes)
	• 6/4 (dotted whole note)
	• 8/4 (double whole note)
	Wave — Select from the following waveforms for the LFO:
	• Sine (sine wave)
	• Tri (triangle wave)
	• Saw (saw-tooth wave)
	• Square (square wave)
	• S&H (Sample and Hold modulation)
	• Random (random modulation)
	Depth — Lets you adjust the amount of modulation applied to the Formant setting.

Parameter	Description
Envelope	Modulates the Formant setting by using an envelope follower. This allows you to accentuate and enhance signal peaks in rhythmic material. • Thresh — Sets the amplitude threshold at which the Formant setting begins to be modulated by the envelope follower. • Attack — Sets the time (10.0 ms to 10 seconds) it takes to respond to increases in the audio signal level. • Release — Sets the time (10.0 ms to 10 seconds) it takes to recover after the signal level falls.
Mix	Lets you balance the amount of dry signal with the amount of wet (processed) signal. At 50%, the output includes equal amounts of dry and wet signal. At 0%, the output is all dry and at 100% it is all wet.

AIR Vintage Filter (Audio Track Effect)

You can use the Vintage Filter effect to apply a modulating, resonant filter to the audio signal. You can experiment with filter sweeps or give your sounds a large, resonant sound.

The following table lists the AIR Vintage Filter plug-in parameters:

Parameter	Description
Cutoff	Lets you adjust the Cutoff frequency (20.0 Hz to 20.0 kHz) of the filter.
Resonance	Lets you adjust the amount filter Resonance (0–100%). The filter can go into self-oscillation at high values creating a sine wave-like overtone at the Cutoff frequency.
Fat	Lets you adjust the amount of overdrive in the resonant peak. At lower settings the signal gets quieter at high resonance settings for clean distortion. At higher settings the signal is over-driven at high resonance settings.

Envelope	Provides an envelope follower for controlling the Cutoff frequency, which allows you to control the envelope's shape and depth of modulation.
	
	 • Attack — Sets the time (10.0 ms to 10 seconds) it takes to respond to increases in the audio signal level.
	
	 • Release — Sets the time (10.0 ms to 10 seconds) it takes to recover after the signal level falls.
	
	 • Depth — Determines how much the envelope follower affects the Cutoff frequency.
	
	     - At 0%, the envelope follower has no effect on the Cutoff frequency.
	
	     - At +100%, the Attack ramps up to the Cutoff frequency setting, and the Release starts from the Cutoff frequency setting and ramps down.
	
	     - At –100%, the Attack starts from the Cutoff frequency setting and ramps down, and the Release ramps up to the Cutoff frequency setting.

Parameter	Description
LFO	Provides a sinusoidal Low Frequency Oscillator (LFO) for modulating the filter cutoff frequency, which allows you to control the rate, depth and synchronization of the modulation. • Sync — Turns on and off the synchronization between the LFO and the sequence tempo. • Rate — Increases or decreases the frequency (0.01–100.0 Hz) of the LFO. Lower settings are slower and higher settings are faster. When you enable Sync, the Rate knob changes from counting in milliseconds to rhythmic values. • Depth — Increases or decreases the amount of modulation (0–100%) of the Cutoff frequency by the LFO. Lower settings create a slight vibrato (with the rate set high) and higher settings create a wide sweep of the Cutoff frequency range.
Mode	Select one of the following options for the type of filter: • LP24 — Provides a low pass filter with a 24 dB cutoff. • LP18 — Provides a low pass filter with a 18 dB cutoff. • LP12 — Provides a low pass filter with a 12 dB cutoff. • BP — Provides a band pass filter. • HP — Provides a high pass filter.
Output	Lets you lower the Output level from 0.0 dB to –INF dB.

Bomb Factory BF76 (Audio Track Effect and AudioSuite)

The Bomb Factory BF76 plug-in is a compressor modeled after the solid-state (transistor) 1176 studio compressor. Introduced in the late 1970s, the 1176 offers a much different compression sound than other compressors.

The following table lists the Bomb Factory BF76 plug-in parameters:

Parameter	Description
Input	Sets the input signal level to the compressor, which, in the 1176 design, determines both the threshold and amount of peak reduction.
Output	Sets output level. Use this control to bring the signal back to unity after applying gain reduction.
Attack	Sets the attack time of the compressor. Full counterclockwise is slowest, and full clockwise is fastest. Attack times vary between 0.4 milliseconds to 5.7 milliseconds.
Release	Sets the release time of the compressor. Full counterclockwise is slowest, and full clockwise is fastest. Attack times vary between 0.06 milliseconds to 1.1 seconds.

📄 *Setting either the attack or release time too fast generates signal distortion (as it did on the original 1176 compressor). This may or may not be the effect you want to achieve.*

Ratio	Selects the compression ratio. Available ratios range from 4:1 to 20:1. You can also Shift-click any one of the Ratio buttons to enable "All Buttons In" mode. The compression ratio is still only 20:1, but the knee changes drastically and the compressor starts (mis)behaving a little bit like an expander—watch the meter for details.

Parameter	Description
Meter	Determines how the meter operates.
	• GR shows the amount of gain reduction
	• –18 and –24 show the output level (calibrated so that 0VU indicates –18dB FS and –24dB FS respectively)
	• Off turns off the meter

Channel Strip (Audio Track Effect and AudioSuite)

Channel Strip provides EQ, Dynamics, Filter, and Gain effects. Channel Strip processing algorithms are based on the award winning Euphonix System 5 console channel strip effects.

The following table lists the Channel Strip plug-in parameters:

Parameter	Description
Input	
Input Trim	The Input Trim control sets the input gain of the plug-in before EQ processing, letting you make up gain or prevent clipping at the plug-in input stage.
Phase Invert	The Phase Invert button at the top of the Input section inverts the phase (polarity) of the input signal, to help compensate for phase anomalies that can occur either in multi-microphone environments or because of mis-wired balanced connections.
Input Meters	The Input meters show peak signal levels before processing:
	Dark Blue - Indicates nominal levels from –INF to –12 dB.
	Light Blue - Indicates pre-clipping levels, from –12 dB to 0 dB.
	White - Indicates full scale levels from 0 dB to +6 dB.
Gain Reduction Meters	The Input meter can be switched to show Gain Reduction metering for the processed signal from 0 dB to –36 dB.
	The Gain Reduction meters are usually displayed in yellow. When the Knee setting for either or both the Expander and the Compressor is greater than 0 dB, the Gain Reduction meter displays the amount of the Knee level in amber over the meter's usual yellow display.
Output Section	
Output Volume Control	The Output Volume control sets the output volume after processing, letting you make up gain or prevent clipping on the channel where the Channel Strip plug-in is being used.
Output Meters	The Output meters show peak signal levels before processing:
	Dark Blue - Indicates nominal levels from –INF to –12 dB.
	Light Blue - Indicates pre-clipping levels, from –12 dB to 0 dB.
	White - Indicates full scale levels from 0 dB to +6 dB.
Channel Strip FX Chain	

Parameter	Description
	Channel Strip lets you determine the signal path through the available Equalizer (EQ), Filter (FILT), Dynamics (DYN), and Volume (VOL) processing modules. This way you can determine the best signal path for the type of processing you want.

To set the FX Chain:

Click the FX Chain show/hide button to reveal the Process Order options.

Click an effects chain ordering option to select it. The available options include:

EQ > FILT > DYN

EQ > DYN > FILT

DYN > EQ > FILT

FILT > DYN > EQ

Select PRE or POST to place the Output Volume control at the beginning or at the end of the effects signal chain.

Channel Strip Dynamics

The Dynamics Graph display—used with Expander/Gate and Compressor/Limiter processing—shows a curve that represents the level of the input signal (on the horizontal x–axis) and the amount of gain reduction applied (on the vertical y–axis). The display shows two vertical lines representing the Threshold setting for the Expander/Gate and Compressor/Limiter, respectively.

The Dynamics Graph display also features an animated red ball in the gain transfer curve display. This ball shows the amount of input gain (x-axis) and gain reduction (y-axis) being applied to the incoming signal at any given moment. To indicate overshoots (when an incoming signal peak is too fast for the current compression setting), the cursor temporarily leaves the gain transfer curve.

Use this graph as a visual guideline to see how much dynamics processing you are applying to the incoming audio signal.

Expander/Gate Controls

Parameter	Description
Threshold	The Threshold (Thresh) control sets the level below which an input signal must fall to trigger expansion or gating. Signals that fall below the threshold will be reduced in gain. Signals that are above it will be unaffected. The Dynamics Graph display shows the threshold as a vertical line.
Attack	The Attack control sets the attack time, or the rate at which gain is reduced after the input signal crosses the threshold. Use this along with the Ratio setting to control how soft the Expander's gain reduction curve is.
Ratio	The Ratio control sets the amount of expansion. For example, if this is set to 2:1, it will lower signals below the threshold by one half. At higher ratio levels the Expander/Gate functions like a gate by cutting off signals that fall below the threshold. As you adjust the ratio control, refer to the Dynamics Graph display to see how the shape of the expansion curve changes.
Depth	The Depth control sets the depth of the Expander/Gate when closed. Setting the gate to higher range levels allows more and more of the gated audio that falls below the threshold to peek through the gate at all times.
Hold	The Hold control specifies the duration (in seconds or milliseconds) during which the Expander/Gate will stay in effect after the initial attack occurs. This can be used as a function to keep the Expander/Gate in effect for longer periods of time with a single crossing of the threshold. It can also be used to prevent gate chatter that may occur if varying input levels near the threshold cause the gate to close and open very rapidly.

Parameter	Description
Release	The Release control sets how long it takes for the gate to close after the input signal falls below the threshold level and the hold time has passed.
Knee	The Knee control sets the rate at which the Expander/Gate reaches full effect once the threshold has been exceeded.
Hysteresis	The Hysteresis (Hyst) control lets you adjust whether or not the gate rapidly opens and closes when the input signal is fluctuating near the Threshold. This can help prevent undesirably rapid gating of the signal. This control is only available when Ratio is set to Gate, otherwise it is greyed out.

Compressor/Limiter Controls

Parameter	Description
Threshold	The Threshold control sets the level that an input signal must exceed to trigger compression or limiting. Signals that exceed this level will be compressed. Signals that are below it will be unaffected.
Attack	The Attack control sets the attack time, or the rate at which gain is reduced after the input signal crosses the threshold. The smaller the value, the faster the attack. The faster the attack, the more rapidly the Compressor/Limiter applies attenuation to the signal. If you use fast attack times, you should generally use a proportionally longer release time, particularly with material that contains many peaks in close proximity.
Ratio	The Ratio control sets the compression ratio, or the amount of compression applied as the input signal exceeds the threshold. For example, a 2:1 compression ratio means that a 2 dB increase of level above the threshold produces a 1 db increase in output. The compression ratio ranges from 1.0:1 to 20.0:1. Once the Ratio control passes 20.0:1 the Compressor/Limiter effect functions as a limiter rather than a compressor. At the limiter setting (LMTR), for every decibel that the incoming signal goes over the set Threshold, 1 dB of gain reduction is applied. Once the Ratio control passes the LMTR setting, it provides negative ratio settings from –20.0:1 to 0:1. With these settings, for every decibel that the incoming signal goes over the set Threshold, more than 1 dB of gain reduction is applied according to the negative Ratio setting. For example, at the setting of –1.0:1, for each decibel over the set threshold, 2 db of gain reduction is allied. Consequently, the output signal is both compressed and made softer. You can use this as an creative effect, or as a kind of ducking effect when used with an external key input.
Depth	The Depth control sets the amount of gain reduction that is applied regardless of the input signal. For example, if the Limiter is set at a Threshold of –20 dB and Depth is set at 0 dB, up to 20 dB of gain reduction is applied to the incoming signal (at 0 dB). If you set Depth to –10 dB, no more than 10 dB of gain reduction is applied to the incoming signal.
Release	The Release control sets the length of time it takes for the Compressor/Limiter to be fully deactivated after the input signal drops below the threshold. Release times should be set long enough that if signal levels repeatedly rise above the threshold, the gain reduction "recovers" smoothly. If the release time is too short, the gain can rapidly fluctuate as the compressor repeatedly tries to recover from the gain reduction. If the release time is too long, a loud section of the audio material could cause gain reduction that continues through soft sections of program material without recovering.

Parameter	Description
Knee	The Knee control sets the rate at which the compressor reaches full compression once the threshold has been exceeded.
	As you increase this control, it goes from applying "hard-knee" compression to "soft-knee" compression:
	With hard-knee compression, compression begins when the input signal exceeds the threshold. This can sound abrupt and is ideal for limiting.
	With soft-knee compression, gentle compression begins and increases gradually as the input signal approaches the threshold, and reaches full compression after exceeding the threshold. This creates smoother compression.
Gain	The Gain control lets you boost overall output gain to compensate for heavily compressed or limited signals.

Side Chain Processing Controls

Parameter	Description
Source	The Source selector lets you set the source for side chain processing: Internal, Key, or All-Linked.
	Internal - If Internal is selected, the plug-in uses the amplitude of the input signal to trigger dynamics processing. With greater-than-stereo multichannel processing, the input signal for each stereo pair effects only those same channels, and likewise mono channels are effected only by their own input signal. For example, with an LCR multichannel format, the processing for the Center channel is only triggered when the Center channel input signal reaches the threshold. However, when the input signal reaches the threshold on the Left or the Right channel, processing is triggered for both the Left and the Right channel.
	Key - If Key is selected, the plug-in uses the amplitude of a separate reference track or external audio source to trigger dynamics processing. The reference track used is selected using the Plug-In Key Input selector in the Plug-In window header. With greater-than-stereo multichannel processing, the key signal triggers dynamics processing for all processed audio channels equally.
	All-Linked - If All-Linked is selected, dynamics processing is applied equally to all channels when the input signal reaches the threshold on any input channel, except for the LFE channel (if present). The LFE channel is processed independently based on its own input signal.
Detection	The Detection options include Peak or Avg (Average).
	Peak - Select the Peak option to apply side-chain processing according to the detected peak amplitude.
	Average - Select the Average option to apply side-chain processing according to the detected average amplitude.
Filter Frequency	The Filter Frequency control lets you set the frequency for the selected Filter Type.
	Four Filter Type options are available for side-chain processing:
	Low Pass - Select the Low Pass option to apply a low pass filter to the side-chain processing at the selected frequency.
	High Pass - Select the High Pass option to apply a high pass filter to the side-chain processing at the selected frequency.
	Notch - Select the Notch option to apply a notch filter to the side-chain processing at the selected frequency.
	Band Pass - Select the Band Pass option to apply a band pass filter to the side-chain processing at the selected frequency.

Parameter	Description
Side Chain Processing Graph	The Side Chain Processing Graph display shows the frequency curve for the selected Filter Type at the selected Filter Frequency.

Channel Strip EQ/Filters Section

Parameter	Description
EQ/Filters Graph	The EQ/Filters section provides an interactive Frequency Graph display that shows the response curve for the current EQ settings on a two-dimensional graph of frequency and gain. The Frequency Graph display also lets you modify frequency, gain, and Q settings for individual EQ bands by dragging their corresponding points in the graph. The Frequency Graph display also plots the frequency, Q, and filter shape of the two filters (when either or both are enabled).
Low Frequency EQ Controls	The LF tab provides controls for the low frequency band of the EQ. The low frequency band can be set to be a Peak or Low Shelf EQ.
	EQ Type - Select either the Peak or Low Shelf button to set the EQ type for the low frequency band.
	Frequency - The Frequency control lets you set the center frequency for the low frequency band (Peak or Shelf EQ).
	Gain - The Gain control lets you boost or attenuate the corresponding frequencies for the low frequency band.
	Q - With the low band EQ set to Peak, the Q control changes the width of the EQ band. Higher Q values represent narrower bandwidths. Lower Q values represent wider bandwidths.
	With the low band EQ set to Shelf, the Q control changes the Q of the shelving filter. Higher Q values represent steeper shelving curves. Lower Q values represent broader shelving curves.
Low Mid Frequency EQ Controls	The LMF tab provides controls for the low mid frequency band of the EQ. This band is a peak EQ.
	Frequency - The Frequency control lets you set the center frequency for the peak low mid frequency band.
	Gain - The Gain control lets you boost or attenuate the corresponding frequencies for the low mid frequency band.
	Q - The Q control changes the width of the low mid peak EQ band. Higher Q values represent narrower bandwidths. Lower Q values represent wider bandwidths.
High Mid Frequency EQ Controls	The HMF tab provides controls for the high mid frequency band of the EQ. This band is a peak EQ.
	Frequency - The Frequency control lets you set the center frequency for the peak high mid frequency band.
	Gain - The Gain control lets you boost or attenuate the corresponding frequencies for the high mid frequency band.
	Q - The Q control changes the width of the high mid peak EQ band. Higher Q values represent narrower bandwidths. Lower Q values represent wider bandwidths.

Parameter	Description
High Frequency EQ Controls	The High Frequency EQ tab provides controls for the high frequency band of the EQ.
	Filter Type - The High Frequency band can be set to be a Peak or High Shelf EQ.
	Frequency - The Frequency control lets you set the center frequency for the high frequency band (Peak or Shelf EQ).
	Gain - The Gain control lets you boost or attenuate the corresponding frequencies for the high frequency band.
	Q- With the high band EQ set to Peak, the Q control changes the width of the EQ band. Higher Q values represent narrower bandwidths. Lower Q values represent wider bandwidths.
	With the high band EQ set to Shelf, the Q control changes the Q of the shelving filter. Higher Q values represent steeper shelving curves. Lower Q values represent broader shelving curves.
Filter 1 and Filter 2 Controls	The Filter 1 and Filter 2 tabs provide the same set of controls for each filter.
	Filter Type - Both Filter 1 and Filter 2 can be set independently. Select from the following Filter Type options: High Pass, Low Pass, Band Pass, and Notch.
	Frequency - The Frequency control lets you set the center frequency for the selected Filter Type (from 20 Hz to 21.0 kHz).
	Slope - When the Filter Type is set to Low Pass or High Pass, the Slope control is available. The Slope control lets you set the slope for the filter from the selected Frequency to –INF (12 dB/O or 24 dB/O).
	Q - When the Filter Type is set to Band Pass or Notch, the Q control is available. The Q control changes the width of the filter around the center frequency band. Higher Q values represent narrower bandwidths. Lower Q values represent wider bandwidths.

Compressor/Limiter III — Dynamics III (Audio Track Effect and AudioSuite)

The Compressor/Limiter III plug-in applies either compression or limiting to audio material, depending on the ratio of compression used.

Compression reduces the dynamic range of signals that exceed a chosen threshold by a specific amount.

Limiting prevents signal peaks from ever exceeding a chosen threshold, and is generally used to prevent short-term peaks from reaching their full amplitude. Used judiciously, limiting produces higher average levels, while avoiding overload (clipping or distortion), by limiting only some short-term transients in the source audio. To prevent the ear from hearing the gain changes, extremely short attack and release times are used.
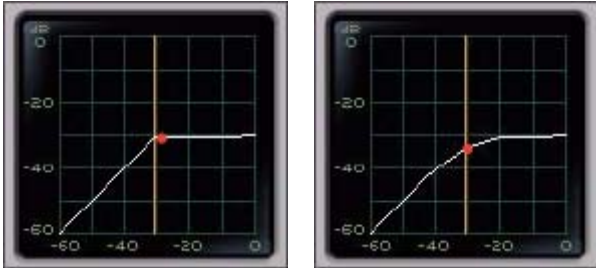
Limiting is used to remove only occasional peaks because gain reduction on successive peaks would be noticeable. If audio material contains many peaks, the threshold should be raised and the gain manually reduced so that only occasional, extreme peaks are limited.

The following table lists the Compressor/Limiter III plug-in parameters:

Parameter	Description
Levels panel	

Parameter	Description
Phase invert button	Inverts the phase (polarity) of the input signal, to help compensate for phase anomalies that can occur either in multi-microphone environments or because of mis-wired balanced connections.
Input/Output level meters	Show peak signal levels before and after processing.
	• Green indicates nominal levels
	• Yellow indicates pre-clipping levels, starting at –6 dB below full scale
	• Red Indicates full scale levels (clipping)
	Unlike scales on analog compressors, metering scales on a digital device reflect a 0 dB value that indicates full scale (fs)—the full-code signal level. There is no headroom above 0 dB.
	The clip indicators at the top of the Output meters indicate clipping at the input or output stage of the plug-in. Click an indicator to clear it.
Threshold arrow	The orange Threshold arrow next to the Input meter indicates the current threshold. You can drag the arrow up or down to adjust the threshold. For more information on threshold, see the Threshold row below in this table.
Gain Reduction meter (GR)	Indicates the amount the input signal is attenuated (in dB) and shows different colors during dynamics processing.
	• Light orange indicates that gain reduction is within the "knee" and has not reached the full ratio of compression
	• Dark orange indicates that gain reduction is being applied at the full ratio (for example, 2:1)
Graph display	Shows a curve that represents the level of the input signal (on the x–axis) and the level of the output signal (on the y–axis). The orange vertical line represents the threshold. Use this graph as a visual guideline to see how much dynamics processing you are applying.
Side-Chain panel	The side-chain is the split-off signal used by the plug-in's detector to trigger dynamics processing. The Side-Chain panel lets you toggle the side-chain between the internal input signal or an external key input, and tailor the equalization of the side-chain signal so that the triggering of dynamics processing becomes frequency-sensitive.
	For full information on how to work with the side-chain controls, see "Using the Side-Chain Input in Dynamics III" in the Avid *DigiRack Plug-Ins Guide*. Search for "digirack plug-ins guide" at www.avid.com.

Parameter	Description

Compressor/Limiter panel (COMP/LIMIT)

Knee	Sets the rate at which the compressor reaches full compression once the threshold has been exceeded. As you increase this control, it goes from applying "hard-knee" compression to "soft-knee" compression. Values range from 0dB (hardest response) to 30dB (softest response).

With hard-knee compression, compression begins when the input signal exceeds the threshold. This can sound abrupt and is ideal for limiting.

With soft-knee compression, gentle compression begins and increases gradually as the input signal approaches the threshold, and reaches full compression after exceeding the threshold. This creates smoother compression.

The following illustration shows examples of hard knee and soft knee compression in the graph display.

Hard knee (left) and soft knee (right)

Ratio	Sets the compression ratio, or the amount of compression applied as the input signal exceeds the threshold. For example, a 2:1 compression ratio means that a 2 dB increase of level above the threshold produces a 1 db increase in output. Values range from 1:1 (no compression) to 100:1 (hard limiting).

Limiting generally begins with the ratio set at 10:1 and higher. Large ratios effectively limit the dynamic range of the signal to a specific value by setting an absolute ceiling for the dynamic range.

Attack	Sets the attack time, or the rate at which gain is reduced after the input signal crosses the threshold. Values range from 10 microseconds (fastest attack time) to 300 milliseconds (slowest attack time).

The smaller the value, the faster the attack. The faster the attack, the more rapidly the Compressor/Limiter applies attenuation to the signal. If you use fast attack times, you should generally use a proportionally longer release time, particularly with material that contains many peaks in close proximity.

To use compression most effectively, the attack time should be set so that signals exceed the threshold level long enough to cause an increase in the average level. This helps ensure that gain reduction does not decrease the overall volume too drastically, or eliminate desired attack transients in the program material. Of course, compression has many creative uses that break these rules.

Parameter	Description
Release	Sets the length of time it takes for the Compressor/Limiter to be fully deactivated after the input signal drops below the threshold. Values range from 5 milliseconds (fastest release time) to 4 seconds (slowest release time).
	Release times should be set long enough that if signal levels repeatedly rise above the threshold, the gain reduction "recovers" smoothly. If the release time is too short, the gain can rapidly fluctuate as the compressor repeatedly tries to recover from the gain reduction. If the release time is too long, a loud section of the audio material could cause gain reduction that continues through soft sections of program material without recovering.
Gain	Lets you boost overall output gain to compensate for heavily compressed or limited signals. Values range from 0 dB (no gain boost) to +40 dB (loudest gain boost). 0 dB is the default value.
Threshold (THRESH)	Sets the level that an input signal must exceed to trigger compression or limiting. Signals that exceed this level will be compressed. Signals that are below it will be unaffected. Values range approximately from -60 dB to 0 dB (no compression or limiting). -24 dB is the default value.
	In the Levels panel, the orange Threshold arrow on the Input meter indicates the current threshold. You can drag the arrow up and down to adjust the Threshold setting.
	In the graph display, the threshold appears as an orange vertical line.

D-Verb (Audio Track Effect and AudioSuite)

Digital reverberation processing can simulate the complex natural reflections and echoes that occur after a sound has been produced. Reverberation can take relatively lifeless mono source material and create a stereo acoustic environment that gives the source a perceived weight and depth in a mix. In addition, digital signal processing can be used creatively to produce reverberation characteristics that do not exist in nature.

The character of reverberation depends on a number of factors. These include proximity to the sound source, the shape of the space, the absorptivity of the construction material, and the position of the listener. D-Verb provides control over these reverberation parameters so that extremely natural sounding reverb effects can be created and applied.

The D-Verb plug-in has the following parameters:

Parameter	Description
Input	Lets you adjust the input volume of the reverberation.
Mix	Lets you adjust the balance between the Dry (source) signal and the Wet (processed) signal, giving you control over the depth of the effect.

Parameter	Description
Algorithm	Lets you select one of seven reverberation algorithms. Selecting an algorithm changes the preset provided for it. • Hall — Good, general-purpose concert hall with a natural character • Church — Dense, diffuse space simulating a church or cathedral • Plate — Simulation of the acoustic character of a metal plate–based reverberation, which has the general effect of thickening the initial sound itself • Room 1 — Medium-sized, natural, rich-sounding room with an adjustable range from very small to large • Room 2 — Smaller, brighter reverberant characteristic than Room 1, with an adjustment range that extends to very small • Ambient — Transparent response for adding a sense of space without adding a lot of depth or density • Nonlin — Nonlinear reverberation with a natural buildup and an abrupt cutoff similar to a gate
Size	In conjunction with the Algorithm parameter, lets you adjust the overall size of the reverberant space. There are three sizes: Small, Medium, and Large. The character of the reverberation changes with each setting (as does the relative value of the Decay parameter).
Diffusion	Sets the degree to which initial echo density increases over time. High settings result in high initial buildup of echo density. Low settings cause low initial buildup. This control interacts with the Size and Decay parameters to affect the overall reverberation density.
Decay	Controls the rate at which the reverberation decays after the original direct signal stops. The value of the Decay parameter is affected by the Size and Algorithm parameters. You can set this parameter to infinity on most algorithms for infinite reverberation times.
Pre-Delay	Lets you determine the amount of time that elapses between the original audio event and the onset of reverberation.
HF (High Frequency) Cut	Controls the decay characteristic of the high frequency components of the reverberation. It acts in conjunction with the LP Filter control to create the overall high frequency contour of the reverberation.
LP Filter	Controls the overall high frequency content of the reverberation by allowing you to set the frequency above which a 6-dB-per-octave filter attenuates the processed signal.

DC Offset Removal (AudioSuite)

The DC Offset Removal plug-in removes DC offset from your audio files. DC offset describes a specific type of audio artifact that might appear in digital audio signals.

You can identify DC Offset in a waveform because it appears as a near-vertical fade-in with a constant or "steady-state" offset from zero when the file is actually "silent" (it contains no audible audio). The DC Offset plug-in can help remove (or at least reduce) the DC offset from your source audio files.

DeEsser III — Dynamics III (Audio Track Effect and AudioSuite)

The DeEsser III plug-in reduces sibilants and other high frequency noises that can occur in vocals, voiceovers, and wind instruments such as flutes. These sounds can cause peaks in an audio signal and lead to distortion.

The De-Esser reduces these unwanted sounds using fast-acting compression. A Threshold control sets the level above which compression starts, and a Frequency control sets the frequency band in which the De-Esser operates.

To use de-essing most effectively, insert the De-Esser after compressor or limiter plug-ins.

The De-Esser has no control to directly adjust the threshold level (the level that an input signal must exceed to trigger de-essing). The amount of de-essing will vary with the input signal.

The following table lists the DeEsser III plug-in parameters:

Parameter	Description
Levels panel	
Input/Output level meters	Show peak signal levels before and after processing.
	• Green indicates nominal levels
	• Yellow indicates pre-clipping levels, starting at –6 dB below full scale
	• Red Indicates full scale levels (clipping)
	Unlike scales on analog compressors, metering scales on a digital device reflect a 0 dB value that indicates full scale (fs)—the full-code signal level. There is no headroom above 0 dB.
	The clip indicators at the top of the Output meters indicate clipping at the input or output stage of the plug-in. Click an indicator to clear it.
Gain Reduction meter (GR)	Indicates the amount the input signal is attenuated (in dB) and shows different colors during de-essing.
	• Light orange indicates that gain reduction is being applied, but has not reached the maximum level set by the Range control
	• Dark orange indicates that gain reduction has reached the maximum level set by the Range control
Options panel	
HF Only button	When this button is enabled, gain reduction is applied only to the active frequency band set by the Frequency control. When this button is disabled, the De-Esser applies gain reduction to the entire signal.
Listen button	When this button is enabled, you monitor the sibilant peaks used by the De-Esser as a side-chain to trigger compression. This is useful for listening only to the sibilance for fine-tuning De-Esser controls. To monitor the whole output signal without this filtering, deselect the Listen button.

Parameter	Description
Graph display	Shows a curve that represents the level of gain reduction (on the y–axis) for the range of the output signal's frequency (on the x–axis). The white line represents the current Frequency setting, and the animated orange line represents the level of gain reduction being applied to the signal. Use this graph as a visual guideline to see how much dynamics processing you are applying at different points in the frequency spectrum.
De-Esser panel	
Frequency	Sets the frequency band in which the De-Esser operates. Values range from 500 Hz (lowest frequency) to 16 kHz (highest frequency).
	When HF Only is disabled in the Options panel, gain is reduced in frequencies within the specified range. When HF Only is enabled, the gain of frequencies above the specified value will be reduced.
	Set the Frequency control to remove sibilants (typically the 4–10 kHz range) and not other parts of the signal. This helps prevent deessing from changing the original character of the audio material in an undesired manner.
Range	Defines the maximum amount of gain reduction possible when a signal is detected at the frequency set by the Frequency control. Values range from –40 dB (maximum de-essing) to 0 dB (no de-essing).
	Set the Range control to a dB level low enough so that de-essing is triggered only by sibilants. If the Range is set too high, a loud, non-sibilant section of audio material could cause unwanted gain reduction or cause sibilants to be over-attenuated.
	To improve de-essing of material that has both very loud and very soft passages, automate the Range control so that it is lower on soft sections.

Dither (Audio Track Effect)

Dither is a dither-generation plug-in. The Dither plug-in minimizes quantization artifacts when reducing the bit depth of an audio signal to 16-, 18-, or 20-bit resolution.

The following table lists the Dither plug-in parameters:

Parameter	Description
Bit Resolution Button	Use this pop-up menu to choose one of three possible resolutions for the Dither processing. Set this control to the maximum bit resolution of your destination.
	`16-bit`
	Recommended for output to digital devices with a maximum resolution of 16 bits, such as DAT and CD recorders.
	`18-bit`
	Recommended for output to digital devices with a maximum resolution of 18 bits.
	`20-bit`
	Recommended for output to digital devices that support a full 20-bit recording data path, such the Sony PCM-9000 optical mastering recorder, or the Alesis ADAT XT 20. The 20-bit setting can also be used for output to digital effects devices that support 20-bit input and output, since it provides for a lower noise floor and greater dynamic range when mixing 20-bit signals directly in Pro Tools.
Noise Shaping Button	The Noise Shaping button engages or disengages Noise shaping. Noise shaping is on when the button is highlighted in blue.
	Noise shaping can further improve audio performance and reduce perceived noise inherent in dithered audio. Noise shaping uses filtering to shift noise away from frequencies in the middle of the audio spectrum (around 4 kHz), where the human ear is most sensitive.

Down Mixer (Audio Track Effect)

Avid Down Mixer can be used to automatically mix greater-than-stereo multichannel tracks (such as 5.1) down to stereo (Pro Tools HD only) or stereo tracks down to mono.

The following table lists the Down Mixer plug-in parameters:

Parameter	Description
Source	The Source section of the Down Mixer plug-in provides controls that let you mute, invert the phase, and adjust the level of each input channel to the Down Mixer.
Mute	When enabled, the Mute button mutes the channel input to the Down Mixer.
Phase	When enabled, the Phase button inverts the phase of the channel input to the Down Mixer.

Parameter	Description
Level	You can adjust the level of the channel input to the Down Mixer from –45 dB to +12 dB. For stereo to mono down mixing, both the Left and Right channels are mixed to summed mono. For greater-than-stereo multichannel down mixing, the following rules apply:
	• All left-channel sources (L, Lc, Ls, Lss, Lsr) feed to the left channel (L) of the down mixer.
	• All right-channel sources (R, Rc, Rs, Rss, Rsr) feed to the right channel (R) of the down mixer.
	• The center channel (C) and low-frequency channel (LFE) are panned center into the stereo field of the down mixer.
Meter	The level meters for source channels always show the input level (pre-fader) for the channel regardless of the Source Level setting.
Downmix	The Downmix section of the Down Mixer plug-in provides output meters and a single fader to adjust the output level of the Down Mixer from –45 dB to +12 dB.

Duplicate (AudioSuite)

The Duplicate plug-in creates a new master clip from a selected audio master clip. The plug-in uses the In and Out points on the selected clip to define the boundaries of the new clip. This plug-in applies only when you use the Create New Master Clips features of the AudioSuite plug-ins.

Eleven Free (Audio Track Effect and AudioSuite)

Eleven is a guitar amplifier plug-in. Eleven Free is a free version of Eleven with a reduced feature set.

The following table lists the Eleven Free plug-in parameters:

Parameter	Description
Input LED	The Input LED shows green, yellow, orange, or red to indicate whether you are under- or over-driving the plug-in. The Input LED is before the Input section of the Master section.
Gate	Noise Gate Threshold
	The Noise Gate Threshold control sets the level at which the Noise Gate opens or closes. At minimum Threshold setting, the Noise Gate has no effect. At higher Threshold settings, only louder signals will open the Gate and pass sound. Threshold range is from Off (–90 dB) to –20 dB.
	Noise Gate Release
	The Noise Gate Release control sets the length of time the Noise Gate remains open and passing audio. Adjust the Release to find the best setting for the current task (not too fast to avoid cutting off notes, and not too slow to avoid unwanted noise). Release range is from 10 ms to 3000 ms.
Amp Type	Amp Type selects which amplifier model to use
Cab Type	This selector lets you select which speaker cabinet model to use
Output	The Output control sets the output gain after processing, letting you make up gain or prevent clipping on the channel where the plug-in is being used. Output range is –60 dB to +18 dB

Parameter	Description
Amp Bypass	The Amp Bypass switch (or lamp) lets you bypass just the amp model, leaving the cab and mic settings in effect. The default setting is On. When set to Bypass, only the amp is bypassed; Master section, cabinet and microphone settings remain active.
Bright	The Bright switch provides extra high frequency response to the input signal, and alters the timbre of the distortion. On some amp models, the effect is most apparent at lower volume settings.
Gain	Gain determines the overall gain amount and sensitivity of the amp. When Gain is low it allows for cleaner, brighter sounds with enhanced dynamic response. When set high, the entire personality of the amp changes, becoming fatter and overdriven. Gain responds differently with each amp model and is designed to have a musical response that closely matches that of its original amp, at all settings.
Bass	The Bass control determines the amount of low end in the amp tone. The response of this control in some models is linked to the setting of the Treble control. The default setting is 5.0. Bass range is from 0 to 10.
Middle	The Middle control determines the mid-range strength in lower gain sounds. With high gain amp models, the Middle control has a more dramatic effect and can noticeably shape the sound of the amp at both the minimum and extreme settings. The default setting is 5.0. The Middle range is from 0 to 10.
Treble	In most amp models, the Treble control is the strongest of the three tone controls. Its setting determines the blend and strength of the Bass and Middle controls. When Treble is set to higher values, it becomes the dominant tone control, minimizing the effect of Bass and Middle controls. When Treble is set to lower values, the Bass and Middle have more effect, making for a darker amp tone. The default setting is 5.0. The Treble range is from 0 to 10.
Presence	The Presence control provides a small amount of boost at frequencies above the treble control. Presence is applied at the end of each amp model pre-amp stage, acting as a global brightness control that is independent of other tone controls. The default setting is 3.0. The Presence range is from 0 to 10.
Master	The Master control sets the output volume of the pre-amp, acting as a gain control for the power amplifier. In a standard master-volume guitar amp, as the Master volume is increased more power tube distortion is produced. The default setting is 5.0. Master range is from 0 to 10. Some might assume a Master volume knob capable of silencing the amp completely. Not so. Use the Output knob (in the Master section) to silence the output of the plug-in. Use Master volume for tone and distortion.
Tremolo	Tremolo is achieved through the use of amplitude modulation, multiplying the amplitude of the pre-amp output by a waveform of lower frequency. Tremolo is not available on all amps. Speed The Speed control sets the rate of the Tremolo effect. The Tremolo Speed LED pulses at the rate of Tremolo Speed. The default setting is 5.0. Eleven does not support Tempo Sync. Depth The Depth controls the amount of the Tremolo effect. The default setting for this control is 0.0, which is equivalent to off. Some amp models call the Tremolo Depth control Intensity.

EQ (AudioSuite)

EQ plug-ins provide a set of high-quality options for adjusting the frequency spectrum of audio material:

7-Band EQ III Parameters

The following table lists the 7-Band EQ III plug-in parameters.

Parameter	Description
In and Out meters	Show peak signal levels before and after EQ processing. Green indicates nominal levels. Yellow indicates pre-clipping levels, starting at –6 dB below full scale. Red indicates full scale (clipping) levels.
	The clip indicators to the right of each meter indicate clipping at the input of output stage of the plug-in. Click a clip indicator to clear it.
Input	Sets the input gain of the plug-in before EQ processing, letting you make up gain or prevent clipping at the plug-in input stage.
Input Polarity control	Inverts the phase (polarity) of the input signal, to help compensate for phase anomalies occurring in multi-microphone environments, or because of mis-wired balanced connections.
Output	Sets the output gain after EQ processing, letting you make up gain or prevent clipping on the channel where the plug-in is being used.
Bands	The plug-in has separate parameter controls for each of the following 7 bands: • High-Pass/Low-Notch (HPF) • Low-Pass/High-Notch (LPF) • Low Shelf/Low Peak (LF) • Low-Mid Peak (LMF) • Mid-Peak (MF) • High-Mid Peak (HMF) • High Shelf/High Peak (HF)
Band Enable button	Toggles the band in and out of the circuit. When a band's Enable button is highlighted, the band is in circuit. When a band's Enable button is dimmed, the band is bypassed.

Parameter	Description
Type selectors	The HPF, LPF, LF, and HF band sections have type selectors that toggle between the two available filter types for that section, as follows: • High-Pass Filter (HPF band) — Attenuates all frequencies below the Frequency setting at the selected slope while letting all frequencies above pass through. • Low-Notch EQ (HPF band) — Attenuates a narrow band of frequencies centered around the Frequency setting. The Q setting determines the width of the attenuated band. • Low-Pass Filter (LPF band) — Attenuates all frequencies above the Frequency setting at the selected slope while letting all frequencies below pass through. • High-Notch EQ (LPF band) — Attenuates a narrow band of frequencies centered around the Frequency setting. The Q setting determines the width of the attenuated band. • Low-Shelf EQ (LF band) — Boosts or cuts frequencies at and below the Frequency setting. The amount of boost or cut is determined by the Gain setting. The Q setting determines the shape of the shelving curve. • Low Peak EQ (LF band) — Boosts or cuts a band of frequencies centered around the Frequency setting. The Q setting determines the width of the selected band. • High-Shelf EQ (LF band) — Boosts or cuts frequencies at and above the Frequency setting. The amount of boost or cut is determined by the Gain setting. The Q setting determines the shape of the shelving curve. • High Peak EQ (LF band) — Boosts or cuts a band of frequencies centered around the Frequency setting. The Q setting determines the width of the selected band.
Q	(Peak and Notch bands) Controls the width of the EQ band. Higher values represent narrower bandwidths. Lower values represent wider bandwidths. (Shelf bands) Changes the Q of the shelving filter. Higher Q values represent steeper shelving curves. Lower Q values represent broader shelving curves. (High-Pass and Low-Pass bands) Lets you select from any of the following Slope values: 6 dB, 12 dB, 18 dB, or 24 db per octave.
Freq	Lets you set the center frequency (Peak, Shelf, and Notch EQs) or the cutoff frequency (High-Pass and Low-Pass filters).
Gain	Lets you control the amount that the selected frequencies are cut or boosted (for Shelf and Peak only).
Frequency Graph Display	Shows a color-coded control dot that corresponds to the color of the Gain control for each band, and a frequency response curve. You can adjust the parameters by dragging one or more of the control dots.

Expander/Gate III — Dynamics III (Audio Track Effect and AudioSuite)

The Expander/Gate III plug-in applies expansion or gating to audio material, depending on the ratio setting.

Expansion decreases the gain of signals that fall below a chosen threshold. It is particularly useful for reducing noise or signal leakage that creeps into recorded material as its level falls, as often occurs in the case of headphone leakage. Expanders can be thought of as soft noise gates since they provide a gentler way of reducing noisy low-level signals than the typically abrupt cutoff of a gate.

Gating silences signals that fall below a chosen threshold. To enable gating, simply set the Ratio and Range controls to their maximum values.

The following table lists the Expander/Gate III plug-in parameters:

Parameter	Description
Levels panel	
Phase invert button	Inverts the phase (polarity) of the input signal, to help compensate for phase anomalies that can occur either in multi-microphone environments or because of mis-wired balanced connections.
Input/Output level meters	Show peak signal levels before and after processing. • Green indicates nominal levels • Yellow indicates pre-clipping levels, starting at –6 dB below full scale • Red Indicates full scale levels (clipping) *Unlike scales on analog compressors, metering scales on a digital device reflect a 0 dB value that indicates full scale (fs)—the full-code signal level. There is no headroom above 0 dB.* The clip indicators at the top of the Output meters indicate clipping at the input or output stage of the plug-in. Click an indicator to clear it.
Threshold arrow	The orange Threshold arrow next to the Input meter indicates the current threshold. You can drag the arrow up or down to adjust the threshold. For more information on threshold, see the Threshold row below in this table.
Gain Reduction meter (GR)	Indicates the amount the input signal is attenuated (in dB) and shows different colors during dynamics processing. • Light orange indicates that gain reduction is within the "knee" and has not reached the full ratio of compression • Dark orange indicates that gain reduction is being applied at the full ratio (for example, 2:1)
Graph display	Shows a curve that represents the level of the input signal (on the x–axis) and the level of the output signal (on the y–axis). The orange vertical line represents the threshold. Use this graph as a visual guideline to see how much dynamics processing you are applying.
Options panel	
Look Ahead button	Normally, dynamics processing begins when the level of the input signal crosses the threshold. When this button is enabled, dynamics processing begins 2 milliseconds before the level of the input signal crosses the threshold. The Look Ahead control is useful for avoiding the loss of transients that may have been otherwise cut off or trimmed in a signal.
Side-Chain panel	The side-chain is the split-off signal used by the plug-in's detector to trigger dynamics processing. The Side-Chain panel lets you toggle the side-chain between the internal input signal or an external key input, and tailor the equalization of the side-chain signal so that the triggering of dynamics processing becomes frequency-sensitive. For full information on how to work with the side-chain controls, see "Using the Side-Chain Input in Dynamics III" in the Avid *DigiRack Plug-Ins Guide*. Search for "digirack plug-ins guide" at www.avid.com.

Parameter	Description
Expander/Gate panel (EXP/GATE)	
Range	Sets the depth of the Expander/Gate when closed. Setting the gate to higher range levels allows more and more of the gated audio that falls below the threshold to peek through the gate at all times. Values range from -80 dB (lowest depth) to 0 dB (highest depth).
Ratio	Sets the amount of expansion. For example, if this is set to 2:1, it will lower signals below the threshold by one half. At higher ratio levels (such as 30:1 or 40:1) the Expander/Gate functions like a gate by cutting off signals that fall below the threshold. As you adjust the ratio control, refer to the built-in graph to see how the shape of the expansion curve changes. Values range from 1:1 (no expansion) to 100:1 (gating).
Attack	Sets the attack time, or the rate at which gain is reduced after the input signal crosses the threshold. Use this along with the Ratio setting to control how soft the Expander's gain reduction curve is. Values range from 10 microseconds (fastest attack time) to 300 milliseconds (slowest attack time).
Release	Sets how long it takes for the gate to close after the input signal falls below the threshold level and the hold time has passed. Values range from 5 milliseconds (fastest release time) to 4 seconds (slowest release time).
Hold	Specifies the duration (in seconds or milliseconds) during which the Expander/Gate will stay in effect after the initial attack occurs. This can be used as a function to keep the Expander/Gate in effect for longer periods of time with a single crossing of the threshold. It can also be used to prevent gate chatter that may occur if varying input levels near the threshold cause the gate to close and open very rapidly. Values range from 5 milliseconds (shortest hold) to 4 seconds (longest hold).
Threshold (THRESH)	Sets the level below which an input signal must fall to trigger expansion or gating. Signals that fall below the threshold will be reduced in gain. Signals that are above it will be unaffected. Values range approximately from -60 dB to 0 dB (no expansion or gating). -24 dB is the default value.
	In the Levels panel, the orange Threshold arrow on the Input meter indicates the current threshold. You can drag the arrow up and down to adjust the Threshold setting.
	In the graph display, the threshold appears as an orange vertical line.

Funk Logic Mastererizer (AudioSuite)

The Funk Logic Mastererizer plug-in is a low-fidelity sound design tool, designed for the creative degradation of audio. By experimenting with adjustments to the controls, you can introduce varying amounts of hiss, hum, distortion, crackle, and other audio characteristics that are associated with old or flawed equipment, media decay, and so on.

Gain (AudioSuite)

Gain lets you boost or lower amplitudes in a file or selection by a specified amount. Use Gain for smoothing out undesirable peaks and other dynamic inconsistencies.

You can specify the desired gain level in several ways:

- Enter a numeric decibel value.

- Enter a percentage value.

- Drag the slider.

- Press and hold the Ctrl key (Windows) or the Command key (Macintosh), then drag the slider to fine-adjust.

- Use the rms and peak buttons to switch the calibration of gain adjustment between RMS and Peak modes.

  Peak adjusts the gain of the signal to the maximum possible level without clipping. RMS adjusts the input signal to a level consistent with the root-mean-square value, or the effective average level of the selected material.

Invert (AudioSuite)

The Invert plug-in reverses the polarity of the selected audio. All positive sample amplitude values become negative, and all negative amplitudes become positive. You can use this process for permanently altering the phase (polarity) relationship of tracks. Inverting can be useful when mixing because it alters frequency response between source tracks recorded with multiple microphones and also lets you correct for audio that was recorded out of phase.

Lo-Fi Plug-In (Audio Track Effect and AudioSuite)

Lo-Fi down-processes audio by reducing its sample rate and bit resolution. It is ideal for emulating the grungy quality of 8-bit samplers.

The following table lists the Lo-Fi plug-in parameters:

Parameter	Description
Sample Rate	The Sample Rate slider adjusts an audio file's playback sample rate in fixed intervals from 700 Hz to 33 kHz in sessions with sample rates of 44.1 kHz, 88.2 kHz, or 176.4 kHz; and from 731 Hz to 36 kHz in sessions with sample rates of 48 kHz, 96 kHz, or 192 kHz. Reducing the sample rate of an audio file has the effect of degrading its audio quality. The lower the sample rate, the grungier the audio quality
	The maximum value of the Sample Rate control is Off (which effectively means bypass).
	The range of the Sample Rate control is slightly different at different session sample rates because Lo-Fi's subsampling is calculated by integer ratios of the session sample rate.
Anti-Alias Filter	The Anti-Alias control works in conjunction with the Sample Rate control. As you reduce the sample rate, aliasing artifacts are produced in the audio. These produce a characteristically dirty sound. Lo-Fi's anti-alias filter has a default setting of 100%, automatically removing all aliasing artifacts as the sample rate is lowered.
	This control is adjustable from 0% to 100%, letting you add precisely the amount of aliasing you want back into the mix. This slider only has an effect if you have reduced the sample rate with the Sample Rate control.
Sample Size	The Sample Size slider controls the bit resolution of the audio. Like sample rate, bit resolution affects audio quality and clarity. The lower the bit resolution, the grungier the quality. The range of this control is from 24 bits to 2 bits.

Parameter	Description
Quantization	Lo-Fi applies quantization to impose the selected bit size on the target audio signal. The type of quantization performed can also affect the character of an audio signal. Lo-Fi provides you with a choice of Linear or Adaptive quantization.
Linear	Linear quantization abruptly cuts off sample data bits in an effort to fit the audio into the selected bit resolution. This imparts a characteristically raunchy sound to the audio that becomes more pronounced as the sample size is reduced. At extreme low bit-resolution settings, linear quantization will actually cause abrupt cut-offs in the signal itself, similar to gating. Thus, linear resolution can be used creatively to add random percussive, rhythmic effects to the audio signal when it falls to lower levels, and a grungy quality as the audio reaches mid-levels.
Adaptive	Adaptive quantization reduces bit depth by adapting to changes in level by tracking and shifting the amplitude range of the signal. This shifting causes the signal to fit into the lower bit range. The result is a higher apparent bit resolution with a raunchiness that differs from the harsher quantization scheme used in linear resolution.
Noise Generator	The Noise slider mixes a percentage of pseudowhite noise into the audio signal. Noise is useful for adding grit into a signal, especially when you are processing percussive sounds. This noise is shaped by the envelope of the input signal. The range of this control is from 0 to 100%. When noise is set to 100%, the original signal and the noise are equal in level.
Distortion/ Saturation	The Distortion and Saturation sliders provide signal clipping control. The Distortion slider determines the amount of gain applied and lets clipping occur in a smooth, rounded manner. The Saturation slider determines the amount of saturation added to the signal. This simulates the effect of tube saturation with a roll-off of high frequencies.
Output Meter	The Output Meter indicates the output level of the processed signal. Note that this meter indicates the output level of the signal — not the input level. If this meter clips, the signal may have clipped on input before it reached Lo-Fi. Monitor your send or insert signal levels closely to prevent this from happening.

Maxim (Audio Track Effect and AudioSuite)

Maxim is a unique and powerful peak-limiting and sound maximizing plug-in. Maxim is ideal for critical mastering applications, as well as standard peak-limiting tasks.

Maxim offers several critical advantages over traditional hardware-based limiters. Maxim takes full advantage of the random-access nature of disk-based recording to anticipate peaks in audio material and preserve their attack transients when performing reduction. This makes Maxim more transparent than conventional limiters, since it preserves the character of the original audio signal without clipping peaks or introducing distortion.

The following table lists the Maxim plug-in parameters:

Parameter	Description

Maxim Controls and Meters

Parameter	Description
Maxim Input Level Meter	This meter displays the amplitude of input signals prior to limiting. Unlike conventional meters, Maxim's Input meter displays the top 24 dB of dynamic range of audio signals, which is where limiting is typically performed. This provides you with much greater metering resolution within this range so that you can work with greater precision.
Maxim Histogram	The Histogram displays the distribution of waveform peaks in the audio signal. This graph is based on audio playback. If you select and play a short loop, the histogram is based on that data. If you select and play a longer section, the Histogram is based on that. Maxim holds peak data until you click the Histogram to clear it.
	The Histogram provides a visual reference for comparing the density of waveform peaks at different decibel levels. You can then base limiting decisions on this data.
	The X axis of the Histogram shows the number of waveform peaks occurring at specific dB levels. The Y axis shows the specific dB level at which these peaks occur. The more waveform peaks that occur at a specific dB level, the longer the X-axis line. If there appears to be a pronounced spike at a certain dB level (4 dB for example), it means that there are a relatively large number of waveform peaks occurring at that level. You can then use this information to decide how much limiting to apply to the signal.
	By dragging the Threshold slider downwards, you can visually adjust the level at which limiting will occur. Maxim displays the affected range in orange.
Maxim Threshold Slider	This slider sets the threshold level for limiting. Signals that exceed this level will be limited. Signals below it will be unaffected. Limited signal peaks are attenuated to match the threshold level, so the value that you set here will determine the amount of reduction applied.
Maxim Output Meter	This meter displays the amplitude of the output signal. The value that appears here represents the processed signal after the threshold, ceiling, and mixing settings have been applied.
Maxim Ceiling Slider	This slider determines the maximum output level. After limiting is performed you can use this slider to adjust the final output gain. The value that you set here will be the absolute ceiling level for limited peaks.
Maxim Attenuation Meter	This meter displays the amount of gain reduction being applied over the course of playback, with the maximum peak displayed in the numeric readout at the bottom of the meter. For example, if the numerical display at the bottom of the Attenuation meter displays a value of 4 dB, it means that 4 dB of limiting has occurred. Since this is a peak-hold readout, you can temporarily walk away from a session during playback and still know the maximum gain reduction value when you come back. To clear the numeric readout, click it with the mouse.
Maxim Release Knob	This knob sets how long it takes for Maxim to ease off of its attenuation after the input signal drops below the threshold level. Because Maxim has an attack time of zero milliseconds, the release control has a very noticeable effect on the character of limiting. In general, if you are using heavy limiting, you should use proportionally longer release times in order to avoid pumping that may occur when Maxim is forced to jump back and forth between limited and unlimited signal levels. Lengthening the release time has the effect of smoothing out these changes in level by introducing a lag in the ramp-up or ramp-down time of attenuation. Use short release times on material with peaks that are relatively few in number and that do not occur in close proximity to each other. The Release control has a default value of 1 millisecond.
Maxim Mix Slider	This slider sets the ratio of dry signal to limited signal. In general, if you are applying Maxim to a main output mix, you will probably want to set this control to 100% wet. If you are applying heavy limiting to an individual track or element in a mix to modify its character, this control is particularly useful since it lets you control precisely the amount of the processed effect mixed with the original signal.

Parameter	Description
Maxim Link Button	When depressed, this button (located between the Threshold and Ceiling numeric readouts) links the Threshold and Ceiling controls. These two sliders will then move proportionally together. As you lower the Threshold control, the Ceiling control is lowered as well. When these controls are linked you can conveniently compare the effect of limiting at unity gain by clicking the Bypass button.
Maxim Dither Button	When selected, this applies dither. Dither is a form of randomized noise used to minimize quantization artifacts in digital audio systems. Quantization artifacts are most audible when the audio signal is near the low end of its dynamic range, such as during a quiet passage or fade-out.
	Applying dither helps reduce quantization noise that can occur when you are mixing from a 24-bit source to a 16-bit destination, such as CD-R or DAT. If you are using Maxim on a Master Fader during mixdown, Maxim's built-in dither function saves you the trouble and DSP resources of having to use a separate Dither plug-in.
	If Dither is disabled, the Noise Shaping and Bit Resolution controls will have no effect.
Maxim Noise Shaping Control	When selected, this applies noise-shaped dither. Noise shaping biases the dither noise to less audible high frequencies so that it is not as readily perceived by the ear. Dither must be enabled in order to use Noise Shaping.
Maxim Bit Resolution Button	These buttons select dither bit resolution. In general, set this control to the maximum bit resolution of your destination media.
	16-bit is recommended for output to digital devices such as DAT recorders and CD recorders since they have a maximum resolution of 16 bits.
	18-bit is recommended for output to digital devices that have a maximum resolution of 18 bits.
	20-bit is recommended for output to digital devices that support a full 20-bit recording data path.

Mod Delay III (Audio Track Effect and AudioSuite)

Mod Delay III provides mono, multi-mono, mono-to-stereo, and stereo modulating delay effects.

The following table lists the Mod Delay III plug-in parameters:

Parameter	Description
Input	
Input Meters	The Input meters show peak signal levels before processing:
	• Dark Blue - Indicates nominal levels from –INF to –12 dB.
	• Light Blue - Indicates pre-clipping levels, from –12 dB to 0 dB.
	• Red - Indicates clipping.
Phase Invert	The Phase Invert button at the top of the Input section inverts the phase (polarity) of the input signal, to help compensate for phase anomalies that can occur either in multi-microphone environments or because of mis-wired balanced connections.
	To enable (or disable) phase inversion on input:
	Click the Phase Invert button so that it is highlighted. Click it again so that it is not highlighted to disable it.
Delay	

Parameter	Description
Link	For stereo and mono-to-stereo tracks, enable the Link button to link the Delay, Modulation, and Mix controls between the Left and Right channels. This option is highlighted when it is enabled. For mono tracks, this option reads Mono and is display only.
Delay Time	The Delay Time control sets the delay time between the original signal and the delayed signal (from 0.0 ms to 5,000.0 ms).
Feedback (FBK)	The Feedback setting controls the amount of feedback applied from the output of the delay back into its input (from –100% to 100%). It also controls the number of repetitions of the delayed signal. Negative feedback settings give a more intense "tunnel-like" sound to flanging effects.
Low Pass Filter (LPF)	The Low Pass Filter setting controls the cutoff frequency of the Low Pass Filter (from 10 Hz to 22 kHz). Use the LPF setting to attenuate the high frequency content of the feedback signal. The lower the setting, the more high frequencies are attenuated. The maximum value for LPF is Off. This lets the signal pass through without limiting the bandwidth of the plug-in.
Sync	When Sync is enabled, and a Duration (a rhythmic note value) is selected, the Delay Time setting is affected by the session tempo. When Sync is disabled, and a Duration is selected, the Delay Time setting is affected by changes to the Tempo setting.
Meter	The Meter setting lets you enter either simple or compound time signatures. The Meter control defaults to a 4/4 time signature. When Sync is enabled, the Meter control is unavailable.
Tempo	The Tempo control sets the tempo in beats per minute (from 5.00 to 500.00 bpm). This setting is independent of the Pro Tools session tempo. When a specific Duration is selected, moving this control affects the Delay Time setting. When Sync is enabled, the Tempo control is unavailable.
Duration	The Duration setting lets you set the Delay Time based on a rhythmic value. Select a note value (whole note, half note, quarter note, eight note, or sixteenth note). Additionally, you can select the Dot or Triplet modifier buttons to dot the selected note value or make it a triplet. For example, selecting a quarter note and then selecting the dot indicates a dotted quarter note, and selecting an eighth note and then selecting the triplet indicates a triplet eighth note.
Groove	The Groove control provides fine adjustment of the delay in percentages of a 1:4 subdivision of the beat (from –100% to 100%). It can be used to add "swing" by slightly offsetting the delay from the precise beat of the track.
Modulation Section	
Rate	The Rate control sets the rate of modulation of the delayed signal (from 0.00 Hz to 20.0 Hz).
Depth	The Depth control sets the depth of the modulation applied to the delayed signal (from 0% to 100%).
Mix	The Mix control sets the balance between the delayed signal (wet) and the original signal (dry). If you are using a delay for flanging or chorusing, you can control the depth of the effect somewhat with the Mix setting. Click the Dry button to set the Mix to 100% dry. Click the Wet button to set the Mix to 100% wet.
Output	The Output section provides output metering and controls for adjusting the level of the output signal.

Parameter	Description
Output Meters	The Output meters show peak signal levels after processing:
	Dark Blue Indicates nominal levels from –INF to –12 dB.
	Light Blue Indicates pre-clipping levels, from –12 dB to 0 dB.
	Red Indicates clipping.
Output Gain	The Output Gain control sets the output level after processing. For mono instances of Mod Delay III, there is a single Gain control. For stereo and mono-to-stereo instances of Mod Delay III, there are independent Gain controls for each channel (left and right)

Normalize (AudioSuite)

In cases where a sound file has been recorded with too little amplitude, the Normalize plug-in ensures that the inherent dynamics of the performance remain unchanged while the overall volume level of the passage is raised.

The controls let you specify how close to maximum level (the clipping threshold) the peak level of your selection or file is boosted. You can enter this information in several ways.

- Enter a numeric decibel value below the clipping threshold.

- Enter a percentage of the threshold.

- Drag the slider.

- Press and hold the Ctrl key (Windows) or the Command key (Macintosh), then drag the slider to fine-adjust.

- Use the rms and peak buttons to switch the calibration of normalizing between RMS and Peak modes.

    Peak normalizes the signal at the maximum possible level without clipping. RMS normalizes the input signal at a level consistent with the root-mean-square value, or the effective average level of the selected material.

Pitch Shift (AudioSuite)

The Pitch Shift plug-in lets you adjust the pitch of any source audio file with or without a change in its duration. This powerful function allows sounds to be transposed a maximum of a full octave up or down in pitch with or without altering playback speed.

Edit the Pitch Shift parameters by double-clicking and typing in any Destination text box or by dragging a slider to adjust. All Pitch Shift plug-in controls are linked, so that changing one changes the others.

The following table lists the Pitch Shift plug-in parameters.

Parameter	Description
Gain	The Gain controls set the input level, in tenths of a decibel. Set the input level so that the plug-in can adequately handle amplitude peaks in the selection. Dragging the slider to the right increases gain, and dragging the slider to the left decreases gain.

Parameter	Description
Coarse and Fine	Adjust the pitch by dragging either of the two faders, or by typing values in the Coarse and Fine text boxes. The Coarse slider transposes in semitones (half steps); the Fine slider transposes in cents (hundredths of a semitone).
Ratio	The Ratio slider lets you set the amount of transposition (pitch change). Dragging the slider to the right raises the pitch of the processed file, and dragging the slider to the left decreases its pitch. Press and hold the Ctrl key (Windows) or the Command key (Macintosh) when you drag the slider to fine-adjust.
Crossfade, Min Pitch, Accuracy	For information on these parameters, see the parameters table in "Time Compression Expansion (AudioSuite)" on page 376.
Time Correction	Click the Time Correction check box to enable or disable time correction. ⚠ **You can deselect the Time Correction check box if you use the Create New Master Clips feature of the AudioSuite plug-ins. However, you must select the Time Correction check box when you apply AudioSuite plug-ins to audio clips in the Timeline.** If the Time Correction check box is deselected, it has the effect of "permanently varispeeding" your audio file. Like working with tape, the file's duration is compressed or extended according to the settings of the Coarse and Fine controls. Playback speed increases proportionally as the sound file is transposed up in pitch and decreases proportionally as it is transposed down in pitch, just like a tape recorder that is varispeeding. Altering a file in this way has little detrimental effect on the fidelity of audio files, whereas time correction can affect fidelity in a pronounced way.
Reference Pitch	The Reference Pitch feature generates a sine wave tone that you can adjust to match a selected portion of audio material, and then use as an audible reference when pitch-shifting other audio material in your session. **To use the Reference Pitch feature:** 1. Select the audio material you want to use as a pitch reference. Click the Preview button to begin playback of the selected audio. 2. Click the Reference Pitch button to activate the reference sine wave tone. 3. Adjust the Note and Detune settings to match the reference tone to the pitch of the audio playback. Adjust the Level setting to change the relative volume of the reference tone. You can also switch the Reference Pitch on and off to compare pitch. 4. Select the audio material where you want to shift pitch. 5. Adjust the Coarse and Fine controls to match the pitch of the audio playback to the reference pitch.

Pow-r Dither (Audio Track Effect)

POW-r Dither is a dither-generation plug-in. The POW-r Dither plug-in is an advanced type of dither that provides optimized bit depth reduction. It is designed for final-stage critical mixdown and mastering tasks where the highest possible fidelity is required when reducing bit depth.

The following table lists the POW-r Dither plug-in parameters.

Parameter	Description
Bit Resolution	Use this pop-up menu to choose either 16- or 20-bit resolutions for POW-r Dither processing. Set this control to the maximum bit resolution of your destination.
	• 16-bit - Recommended for output to digital devices with a maximum resolution of 16 bits, such as DAT and CD recorders.
	• 20-bit - Recommended for output to devices that support a full 20-bit recording data path.
Noise Shaping	Noise shaping can further improve audio performance and reduce perceived noise inherent in dithered audio. Noise shaping uses filtering to shift noise away from frequencies in the middle of the audio spectrum (around 4 kHz), where the human ear is most sensitive.
	The POW-r Dither plug-in is not appropriate for truncation stages that are likely to be further processed. It is recommended that POW-r Dither be used only as the last insert in the signal chain (especially when using Type 1 Noise Shaping).
	The POW-r Dither plug-in provides three types of noise shaping, each with its own characteristics. Try each noise shaping type and choose the one that adds the least amount of coloration to the audio being processed.
	`Type 1`
	Has the flattest frequency spectrum in the audible range of frequencies, modulating and accumulating the dither noise just below the Nyquist frequency. Recommended for less stereophonically complex material such as solo instrument recordings.
	`Type 2`
	Has a psychoacoustically optimized low order noise shaping curve. Recommended for material of greater stereophonic complexity.
	`Type 3`
	Has a psychoacoustically optimized high order noise shaping curve. Recommended for full-spectrum, wide-stereo field material.

Recti-Fi (Audio Track Effect and AudioSuite)

Recti-Fi provides additive synthesis effects through waveform rectification. Recti-Fi multiplies the harmonic content of an audio track and adds subharmonic or superharmonic tones.

The following table lists the Recti-Fi plug-in parameters:

Parameter	Description
Pre-Filter	The Pre-Filter control filters out high frequencies in an audio signal prior to rectification. This is desirable because the rectification process can cause instability in waveform output — particularly in the case of high-frequency audio signals. Filtering out these higher frequencies prior to rectification can improve waveform stability and the quality of the rectification effect. If you wish to create classic subharmonic synthesis effects, set the Pre-Filter and Post-Filter controls to a relatively low frequency, such as 250 Hz.
	The range of the Pre-Filter is from 43 Hz to 21 kHz, with a maximum value of Thru (which effectively means bypass).

Parameter	Description
Rectification	• Positive Rectification — This rectifies the waveform so that its phase is 100% positive. The audible effect is a doubling of the audio signal's frequency.
	• Negative Rectification — This rectifies the waveform so that its phase is 100% negative. The audible effect is a doubling of the audio signal's frequency.
	• Alternating Rectification — This alternates between rectifying the phase of the first negative waveform excursion to positive, then the next positive excursion to negative, and so on, throughout the waveform. The audible effect is a halving of the audio signal's frequency, creating a subharmonic tone.
	• Alt-Max Rectification — This alternates between holding the maximum value of the first positive excursion through the negative excursion period, switching to rectify the next positive excursion, and holding its peak negative value until the next zero crossing. The audible effect is a halving of the audio signal's frequency, and creating a subharmonic tone with a hollow, square wave-like timbre.
Gain	Gain lets you adjust signal level before the audio reaches the Post-Filter. This is particularly useful for restoring unity gain if you have used the Pre-Filter to cut off high frequencies prior to rectification. The range of this control is from –18dB to +18dB.
Post-Filter	Waveform rectification, particularly alternating rectification, typically produces a great number of harmonics. The Post Filter control lets you remove harmonics above the cutoff frequency and smooth out the sound. This is useful for filtering audio that contains subharmonics. To create classic subharmonic synthesis effects, set the Pre-Filter and Post-Filter to a relatively low frequency.
	The range of the Post-Filter control is 43 Hz to 21 kHz, with a maximum value of Thru (which effectively means bypass).
Mix	Mix adjusts the mix of the rectified waveform with the original, unprocessed waveform.
Output Meter	The Output Meter indicates the output level of the processed signal. Note that this meter indicates the output level of the signal — not the input level. If this meter clips, the signal may have clipped on input before it reached Recti-Fi. Monitor your send or insert signal levels closely to prevent this from happening.

Reverse (AudioSuite)

Reversed sounds are useful effects in many music and video projects. The Reverse plug-in lets you easily perform this type of processing.

SansAmp PSA-1 (Audio Track Effect and AudioSuite)

SansAmp PSA-1 is a guitar amp simulator plug-in. Punch up existing tracks or record great guitar sounds with the SansAmp PSA-1. Capture bass or electric guitar free of muddy sound degradation and dial in the widest range of amplifier, harmonic generation, cabinet simulation and equalization tone shaping options available! Tube sound, speaker simulation, warm equalization and cool lo-fi textures—no wonder thousands of records feature the classic sounds of SansAmp!

The following table lists the SansAmp PSA-1 plug-in parameters:

Parameter	Description
PSA-1 Controls	Use the eight knobs to dial in your tone or effect. • Pre-Amp - Determines the input sensitivity and pre-amp distortion. Increasing the setting produces an effect similar to putting a clean booster pedal ahead of a tube amp, overdriving the first stage. For cleaner sounds, use settings below the unity-gain point. • Buzz - Controls low frequency break up and overdrive. Boost the effect by turning clockwise from the center point indicated by the arrows. As you increase towards maximum, the sound becomes (you guessed it) buzzy, with added harmonic content. For increased clarity and definition when using distortion, position the knob at its midpoint or towards minimum. • Punch - Sets midrange break up and overdrive. Decreasing from the center produces a softer, "Fender"-style break up. Increasing the setting produces a harder, heavier distortion. At maximum, it produces a sound similar to a wah pedal at mid-boost position placed in front of a Marshall amp. • Crunch - Brings out upper harmonic content and, on guitars, pick attack. For cleaner sounds or smoother high end, decrease as needed. • Drive - Increases the amount of power amp distortion. Power amp distortion is associated with the "Vintage Marshall" sound—using SansAmp, you can produce the effect even at low levels. • Low - Provides a tone control specially tuned for maximum musicality when used to EQ low frequencies on instruments. Boost or cut by ±12 dB by turning from the center point indicated by the arrows. • High - Boosts or cuts high frequencies by ±12 dB. • Level - Boosts or cuts the overall gain to re-establish unity after adding distortion or equalizing the signal.

Sci-Fi (Audio Track Effect and AudioSuite)

Sci-Fi is designed to mock-synthesize audio by adding effects such as ring modulation, resonation, and sample & hold, that are typically found on older, modular analog synthesizers. Sci-Fi is ideal for adding a synth edge to a track.

The following table lists the Sci-Fi plug-in parameters:

Parameter	Description
Input Level	Input Level attenuates signal input level to the Sci-Fi processor. Since some Sci-Fi controls (such as Resonator) can cause extreme changes in signal level, adjusting the Input Level is particularly useful for achieving unity gain with the original signal level. The range of this control is from –12 dB to 0 dB.
Effect Type	Sci-Fi provides four different types of effects: • Ring Mod — Modulates the signal amplitude with a carrier frequency, producing harmonic sidebands that are the sum and difference of the frequencies of the two signals. The carrier frequency is supplied by Sci-Fi itself. The modulation frequency is determined by the Effect Frequency control. Ring modulation adds a characteristic hard-edged, metallic sound to audio. • Freak Mod — Modulates the signal frequency with a carrier frequency, producing harmonic sidebands that are the sum and difference of the input signal frequency and whole number multiples of the carrier frequency. Frequency modulation produces many more sideband frequencies than ring modulation and an even wilder metallic characteristic. The Effect Frequency control determines the modulation frequency of the Freak Mod effect. • Resonator+ and Resonator — Adds a resonant frequency tone to the audio signal. This frequency is determined by the Effect Frequency control. The difference between these two modules is that Resonator– reverses the phase (polarity) of the effect, producing a hollower sound than Resonator+. The Resonator can be used to produce metallic and flanging effects that emulate the sound of classic analog flangers.
Effect Amount	Effect Amount controls the mix of the processed sound with the original signal. The range of this control is from 0-100%.
Effect Frequency	Effect Frequency controls the modulation frequency of the ring modulator and resonators. The frequency range is dependent on the effect type. For Ring Mod, the frequency range of this control is from 0 Hz to 22.05 kHz. For Freak Mod, the frequency range is from 0 Hz to 22.05 kHz. For Resonator+, the frequency range is from 344 to 11.025 kHz. For Resonator–, the frequency range is from 172 Hz to 5.5 kHz. You can also enter a frequency value using keyboard note entry.
Modulation Type	Modulation Type determines the type of modulation applied to the frequency of the selected effect. Depending on the type of modulation you select here, the sliders below it will change to provide the appropriate type of modulation controls. If the Mod Amount is set to 0%, no dynamic modulation is applied to the audio signal. The Effect Frequency slider then becomes the primary control for modifying the sound.
LFO	Produces a low-frequency triangle wave as a modulation source. The rate and amplitude of the triangle wave are determined by the Mod Rate and Mod Amount controls, respectively.
Envelope Follower	Causes the selected effect to dynamically track the input signal by varying with the amplitude envelope of the audio signal. As the signal gets louder, more modulation occurs. This can be used to produce a very good automatic wah-wah-type effect. When you select the Envelope Follower, the Mod Amount slider changes to a Mod Slewing control. Slewing provides you with the ability to smooth out extreme dynamic changes in your modulation source. This provides a smoother, more continuous modulation effect. The more slewing you add, the more gradual the changes in modulation will be.
Sample+Hold	Periodically samples a random pseudo-noise signal and applies it to the effect frequency. Sample and hold modulation produces a characteristic random stair-step modulation. The sampling rate and the amplitude are determined by the Mod Rate and Mod Amount controls, respectively.

Parameter	Description
Trigger+Hold	Trigger and hold modulation is similar to sample and hold modulation, with one significant difference: If the input signal falls below the threshold set with the Mod Threshold control, modulation will not occur. This provides interesting rhythmic effects, where modulation occurs primarily on signal peaks. Modulation will occur in a periodic, yet random way that varies directly with peaks in the audio material. Think of this type of modulation as having the best elements of both sample and hold modulation and with an envelope follower.
Mod Amount and Mod Rate	These two sliders control the amplitude and frequency of the modulating signal. The modulation amount ranges from 0% to 100%. The modulation rate, when LFO or Sample+Hold are selected, ranges from 0.1 Hz to 20 Hz. If you select Trigger+Hold as a modulation type, the Mod Rate slider changes to a Mod Threshold slider, which is adjustable from –95 dB to 0 dB. It determines the level above which modulation occurs with the trigger and hold function. If you select Envelope Follower as a modulation type, the Mod Rate slider changes to a Mod Slewing slider, which is adjustable from 0% to 100%.
Output Meter	The Output Meter indicates the output level of the processed signal. Note that this meter indicates the output level of the signal — not the input level. If this meter clips, the signal may have clipped on input before it reached Sci-Fi. Monitor your send or insert signal levels closely to prevent this from happening.

Signal Generator (Audio Track Effect and AudioSuite)

The Signal Generator plug-in produces audio test tones in a variety of frequencies, waveforms, and amplitudes. The plug-in has the following options:

Option	Description
Frequency	Sets the frequency of the signal in hertz. Values range from a low of 20 Hz to a high of 20 kHz.
Level	Sets the amplitude of the signal in decibels. Values range from a low of –95 dB to a high of 0.0 dB.
Signal	Lets you select the waveform: • Sine • Square • Sawtooth • Triangle • White Noise • Pink Noise

Use the rms and peak buttons to switch the calibration of the generated signal between RMS and Peak modes. Peak generates the signal at the maximum possible level without clipping. RMS generates the signal at levels consistent with the root-mean-square value, or the effective average level of the signal.

The Signal Generator produces a tone as soon as it is inserted on a track. To mute the tone, click the Bypass button.

Time Compression Expansion (AudioSuite)

The Time Compression Expansion plug-in lets you adjust the duration of selected regions by increasing or decreasing the selection's length without changing pitch. This function is particularly important in audio postproduction applications because it lets you adjust sounds to specific time lengths or timecode durations for synchronization.

The Time Compression Expansion plug-in is in the Unused Plug-ins folder. Avid recommends you use the Time Shift plug-in.

To change duration (length) and pitch simultaneously, use the Pitch Shift plug-in.

The Time Compression Expansion plug-in can compress or expand two tracks as a "stereo pair," processing the two sides of the stereo signal relative to each other.

The Time Compression Expansion plug-in has special parameters that let you enter time compression or expansion values in different formats. They are located in the Source and Destination columns, and include the Ratio slider. You can also fine-tune the compression and expansion process in the following ways:

- Press and hold the Ctrl key (Windows) or the Command key (Macintosh) to engage slider fine-tune mode.

- Alt+click (Windows) or Option+click (Macintosh) a field or slider to reset its default value.

The following table lists the Time Compression Expansion plug-in parameters.

Parameter	Description
Source and Destination	The Source text boxes display the length of the current selection before processing in each of the listed formats. All the text boxes in both columns update dynamically, so a change made to one value is immediately reflected in the values displayed in the other text boxes.
	The text boxes in the Destination column display and control the length of the selection after processing using the current settings. You can enter the length of the Destination file by double-clicking the appropriate text box in the Destination column. Type the number of samples in *min:secs:msec* format or type timecode values as start and end locations. All the Destination text boxes update dynamically, so a change made to one value is immediately reflected in the values displayed in the other text boxes.
	You can also enter a new tempo, *bars:beats:ticks* length, or time signature for regions that have tempo or Bars & Beats settings. This can be any region associated with a MIDI Metronome value (such as an overdub recorded to a MIDI click) or regions that have been processed with the Pro Tools Identify Beat command.
	The Ratio slider lets you set the destination length in relation to the source length. Dragging the slider to the right increases the length of the destination file, and dragging the slider to the left decreases its length.
	The controls below the bar line lets you fine-tune the time compression and expansion process. They include the Crossfade, Min Pitch, and Accuracy sliders.

Parameter	Description
Crossfade	The Crossfade slider lets you manually adjust the crossfade length in milliseconds to optimize performance of the Time Compression Expansion plug-in according to the type of audio material you process. The Time Compression Expansion plug-in achieves length modification by replicating or subtracting very small portions of audio material and very quickly crossfading between these alterations in the waveform of the audio material.
	Crossfade length essentially affects the amount of smoothing performed on audio material to prevent audio artifacts such as clicks. In general, small narrow-range time (length) changes require longer crossfades while larger changes in length require shorter crossfades. The disadvantage of long crossfade times is that they smooth the signal, including any transients. While this can be desirable for audio material such as vocals, it is not appropriate for material with sharp transients such as drums or percussion.
	The default setting for this parameter is Auto (leftmost position), in which crossfade times are set automatically according to the percentage of change in length for the current process. This setting should suffice for most applications, but you can use this slider to manually adjust and optimize crossfade times, if necessary. For audio material with sharper attack transients, use shorter crossfade times. For audio material with softer attack transients, use longer crossfade times with a range in values of 1 to 200 ms.
Min Pitch	The Min Pitch slider lets you select the minimum (lowest) pitch that is used in the plug-in's calculations during the time compression and expansion process. The slider has a range of 40 Hz to 1000 Hz. By controlling the minimum pitch, you can focus the time compression and expansion process for maximum efficiency depending on the audio's spectral shape.
	Set this slider lower when you process bass guitar or another instrument with a similarly low range. Set the min pitch higher when processing instruments such as snare drums, violins, and other higher range instruments and sounds. Experiment with combinations of the other fine-tune controls in relation to the Min Pitch slider.
Accuracy	Use the Accuracy slider to prioritize the processing resources allocated to audio quality (sound) or timing (rhythm). Dragging the slider toward sound generally results in better sonic quality and fewer audio artifacts. Dragging the slider toward rhythm puts the emphasis on keeping the tempo consistent. When working with loops, listen carefully and adjust accuracy until you find the setting that keeps timing solid within the region. Start and end times are precise, but the perception of beats might be "shuffled" if the Accuracy slider's rhythm setting is too low.

⚠ **The smallest time ratio allowed for time compression and expansion is 0.25. The largest time ratio allowed is 4.0.**

📄 *Normalizing a selection before applying the Time Compression Expansion plug-in can sometimes produce better-sounding results.*

Time Shift (AudioSuite)

The Time Shift plug-in provides high quality time compression and expansion algorithms and formant-correct pitch-shifting. Time Shift is ideal for music production, sound design, and post-production applications. You can use it to manipulate audio loops for tempo matching or to transpose vocal tracks using formant-correct pitch-shifting, or you can use it in audio postproduction for pullup and pulldown conversions as well as for adjusting audio to specific time or SMPTE durations for synchronization purposes.

The Time Shift plug-in has special parameters that let you enter time compression or expansion values in different formats and edit the pitch shift parameters displayed in the plug-in window. Time Shift plug-in controls are organized in four parts: Audio, Time, Formant/Transient, and Pitch.

The following table lists the Time Shift plug-in parameters.

Parameter	Description
Audio	You use the Audio parameter controls to select the most appropriate time compression and expansion mode for the type of material you want to process, and to attenuate the gain of the processed audio to avoid clipping.

Audio parameter controls let you select the following Mode settings to determine the correct time compression and pitch shift algorithms:

- Monophonic — for processing monophonic sounds (such as a vocal melody)

- Polyphonic — for processing complex sounds (such as a multipart musical selection)

- Rhythmic — for processing percussive sounds (such as a mix or drum loop)

- Varispeed — for linking time and pitch change for tape-like pitch and speed change effects, and postproduction workflows

You can also select the following frequency Range settings:

- Low — for low-range material, such as a bass guitar

- Mid — for mid-range material, such as male vocals

- High — for material with a high fundamental frequency, such as female vocals

- Wide — for more complex material that covers a broad frequency spectrum

In Polyphonic mode, Wide is the default Range setting and is usually best for all material. In Monophonic mode, Mid is the default Range setting and usually matches the range of most monophonic material. Range settings are not available when you select either Rhythmic mode or Varispeed mode.

The Audio Gain control attenuates the input level to avoid clipping. Adjust the Gain control from 0.0 dB to –6.0 dB to avoid clipping in the processed signal.

The Clip indicator is active when clipping occurs in the processed signal. If the processed signal clips, remove the AudioSuite plug-in effect, attenuate the input gain using the Gain control, and then reapply the plug-in.

The Level indicator displays the level of the output signal, which uses the full range of plasma-level meter colors.

Parameter	Description
Time	You use the Time parameter controls to specify the amount of time compression or expansion you want to apply.
	The Original column displays the Start and End times, and Length of the edit selection. Times are displayed in units of the timebase selected in the Units menu.
	The Processed column displays the target End time and Length of the processed signal. Times are displayed in units of the timebase selected in the Units menu. You can click the Processed End and Length text boxes to type the desired values. These values update automatically when you are adjusting the Time control.
	The Tempo row displays the Original Tempo and Processed Tempo in beats per minute (bpm). You can click the Original Tempo and Processed Tempo text boxes to type the desired values. The Processed Tempo value updates automatically when adjusting the Time control.
	You use the Units menu to select the desired timebase for the Original and Processed time fields:
	• Bars|Beats
	• Min:Sec
	• Time Code
	• Feet+Frames
	• Samples
	The Shift text box displays the target time compression or expansion as a percentage of the original. You can adjust the Time control, or click the Shift text box and type the desired value. You can shift time from 25.00% to 400.00% of the original speed (or 4 to 1/4 times the original duration). The default setting is 100.00%, or no time shift. Selecting 25.00% results in 4 times the original duration and 400.00% results in 1/4 of the original duration.
	The Shift field displays up to 2 decimal places, but you can type in as many decimal places as you require (up to the IEEE standard). While the display rounds to 2 decimal places, the actual time shift is applied based on the number typed in the Shift text box. This is useful for postproduction pullup and pulldown factors.

Parameter	Description
Formant/Transient	You use the Formant or Transient parameter controls to adjust either the amount of formant shift or the transient detection parameters, depending upon which mode you select in the Audio section.

The Formant parameter is available only when you select Monophonic as the Audio mode. The Transient section is available with slightly different controls, depending on whether you select Polyphonic or Rhythmic as the Audio mode.

The Formant section provides a single control for transposing the formants of the selected audio by –24.00 semitones (–2 octaves) to +24.00 semitones (+2 octaves). You can specify a Formant value by adjusting the Formant Shift control or typing a value in the Shift text box.

Transient material tends to change its content quickly in time, as opposed to parts of the sound which are more sustained. You can use the controls in the Transient section to adjust the following:

- Threshold — the transient detection threshold in the processed audio when you are time-stretching. You can set the threshold from 0.0 dB to –40.0 dB (the default is – 6.0 dB).

- Window — the analysis window length for processing audio (Polyphonic mode only). You can set the window length from 6.0 milliseconds (ms) to 185.0 ms (the default is 18.0 ms) by adjusting the Window control or typing in the Window text box.

- Decay Rate — the amount of decay, or audio fade, from a transient that is heard in the processed audio when you time-stretch (Rhythmic mode only).

The Follow button enables an envelope follower that simulates the original acoustics of the audio being stretched (Polyphonic mode only). Click the Follow button to enable or disable envelope following.

Parameter	Description
Pitch	You use the Pitch parameter controls to shift the pitch of the audio. You can pitch shift audio by using the Transpose and Shift text boxes:

- Transpose — displays the transposition amount in semitones; you can transpose pitch from –24.00 semitones (–2 octaves) to +24.00 semitones (+2 octaves).

- Shift — displays the pitch shift amount as a percentage. You can pitch shift from 25.00% (–2 octaves) to +400.00% (+2 octaves).

In Monophonic mode, pitch shift can also be formant-correct.

Trim (Audio Track Effect)

The Trim plug-in can be used to attenuate an audio signal from -[Infinity] dB to +6 dB or [Infinity] dB to +12 dB. For example, using a multi-mono Trim plug-in on a multichannel track provides simple, DSP-efficient muting control over the individual channels of the track.

This capability is useful, since Mute buttons mute all channels of a multichannel track and do not allow muting of individual channels within the track.

The following table lists the Trim plug-in parameters:

Parameter	Description
Phase Invert	Inverts the phase (polarity) of the input signal to change the frequency response characteristics between multi-miked sources or to correct for miswired microphone cables.
Gain	Provides -[Infinity] dB to +6 dB or +12 dB of gain adjustment, depending whether the Gain toggle is set to +6 or +12.
+6/+12 Gain Toggle	Switches the maximum level of attenuation between -[Infinity] dB to +6 dB and -[Infinity] dB to +12 dB.
Output Meter	Indicates the output level, including any gain compensation added using the Gain control.
Mute	Mutes the signal output.

14 MultiCamera Editing

The Avid MultiCamera editing features let you incorporate multiple camera angle sources into the nonlinear editing process. Techniques for using these features are described in the following topics:

- Understanding Grouping Clips
- Creating Group Clips
- MultiCamera Displays
- MultiCamera Editing Techniques
- Selective Camera Cutting

Understanding Grouping Clips

The grouping procedures gather selected clips into a single unique clip.

- Grouping creates a separate group clip out of a single set of master clips, from the IN point to the OUT point of the longest clip.
- The Group function lets you sync clips based on common source timecode, auxiliary timecode, or marks placed in the footage.
- Because the Group function lets you sync the clips based on customized IN points or OUT points, you can group any collection of clips for quick cutting of montage sequences or music-video sequences.

Creating Group Clips

You can group clips that were shot at different times, on different days, and on completely different source tapes. This means that you can use group clips to:

- Create montage sequences quickly with fast-cutting between unrelated clips.
- Sync and edit an audio track (music, for example) with two or more video tracks, useful in music-video editing.
- Isolate each take as a group for multicamera editing and edit selectively, rather than build a larger sequence clip.
- Group selected portions of multicamera clips using carefully synchronized marks.

The last two options are generally used in smaller multicamera projects. Sorting, marking, selecting, and grouping individual takes of a larger project can be very time-consuming.

To create a group clip:

1. If you are using a sync point, load the clips and mark an IN point at the sync point at the start of each clip, or mark an OUT point at the sync point at the end of each clip.

   For multicamera video shoots, you typically use a slate for marking IN and OUT points; however, you can use any visual or aural event that is recorded by all cameras simultaneously.

2. In the bin, select all the clips you want to group.

3. Select Clip > Group Clips.

4. Select an option, based on the following:

Option	Description
Inpoints	Use this option if you are syncing according to IN points set in each clip.
Outpoints	Use this option if you are syncing according to OUT points set in each clip.
Source Timecode	Use this option if the clips have matching timecode.
Auxiliary TC1–TC5	Use this option if the clips have matching timecode in the same Auxiliary Timecode column. Select an Auxiliary TC, 1 through 5, from the menu.
Waveform Analysis	The editing application performs an analysis of the waveforms of the selected clips and creates a group clip. When you play the group clip in 4 split or 9 split mode you can see that the clips are synchronized properly.

5. Click OK.

A group clip appears in the bin, with the name of the first clip in the group, followed by the file name extension Grp.n.

The n is the incremental number of group clips with the same name in the same bin. You might want to rename them for easier reading, such as *name.*Group.

MultiCamera Displays

There are several displays that let you view and edit with multiple camera angles. You can edit with either group clips in all of the displays.

Full-Monitor Display

When you first load a grouped clip, the Source monitor displays a single frame from one clip in the group in Source/Record mode. This is called Full-Monitor display when working with group clips because you can view each angle in full-monitor size as you edit.

Group clip loaded in Source monitor. Top Left: Group icon and Group clip name

The basic features of Full-Monitor display:

- Provides *source-oriented* control of multicamera material. You can switch camera angles, cue, and mark material without affecting the sequence.

- Provides the same Source monitor controls that are available when you edit other clips in Source/ Record mode.

Quad Split Source View

After loading a group clip into the Source monitor, you enter Quad Split Source view by clicking the Quad Split button located in the Command palette in the MCam tab. The Source monitor splits into four camera angles of the group clip. A Group Menu icon appears above the Source and Record monitors.

You can also map the Quad Split Button to the Source Monitor tool bar. See .

Quad Split Source view, with the four camera angle views in the Source monitor and the sequence or linecut in the Record monitor. The location of the Group Menu icon is highlighted.

The basic features of Quad Split Source view:

- Provides *source-oriented* control of multicamera material. You can switch camera angles, play back (one camera angle at a time), cue, and mark material without affecting the sequence.

- Provides the same Source monitor controls that are available when you edit other clips in Source/ Record mode.

- Provides a list of all group clip video and audio tracks in the Group menu for custom selection and patching.

⊞ • Lets you use the Quad Split button to switch the Source monitor between Full-Monitor display and Quad Split Source viewing and editing modes (editing functions are the same in both displays).

⊞ • Lets you use the Swap Cam Bank button to switch the Quad Split Source view from one bank of four camera angles to another bank of four camera angles. The Multi-angle View menus let you change the camera angles of the split displays.

- Does not gang the Record monitor with Quad Split Source view.

MultiCamera Editing Techniques

When you load a group clip into the Source monitor and begin editing, the Timeline adds a unique identifier to indicate the presence of a group.

Your Avid editing application uses the name of the clip within the group to identify the clip in each cut, and adds a G in parentheses to indicate the group.

Group clips in the Timeline

Note: The Quad Split button and M Keys will only work from the Source Monitor. You need to upgrade to Media Composer to get full Multicam Editing support from the Timeline.

Using the Add Edit Button During Multicamera Editing

⊞ You can use the Add Edit button like a hot key to add edits while stepping through a sequence during playback. The only difference is that you are not switching camera angles until *after* you set the edit points.

This method is especially useful when editing to music because it lets you concentrate on the beats and ignore camera angles until the edits are placed.

To add edits:

1. Load the group clip into the Source monitor and splice it into a sequence.

2. Play the sequence. Each time you want to make an edit, stop and press the Add Edit key.

   The edits appear in the Timeline.

   Play the sequence repeatedly to add more edits, or remove edits in Trim mode by lassoing them in the Timeline and pressing the Delete key.

3. After adding the edits, place the position indicator within each segment and use the arrow keys to switch camera angles.

Using the Multi-angle View Menus During Multicamera Editing

You can use the Multi-angle View menus to group up to 18 clips at a time, and select additional clips to be shown in any of the multi-split displays in the Source monitor. You can also select Sequence from the Multi-angle View menus to display the entire sequence.

To select an additional clip from the group to appear in one of the multi-split displays:

1. Press the Ctrl key to activate the display of clip names in the multi-split displays.

2. Ctrl+click the multi-split display where you want to show the new clip.

   The clips in the group are listed in the Multi-angle View menu.
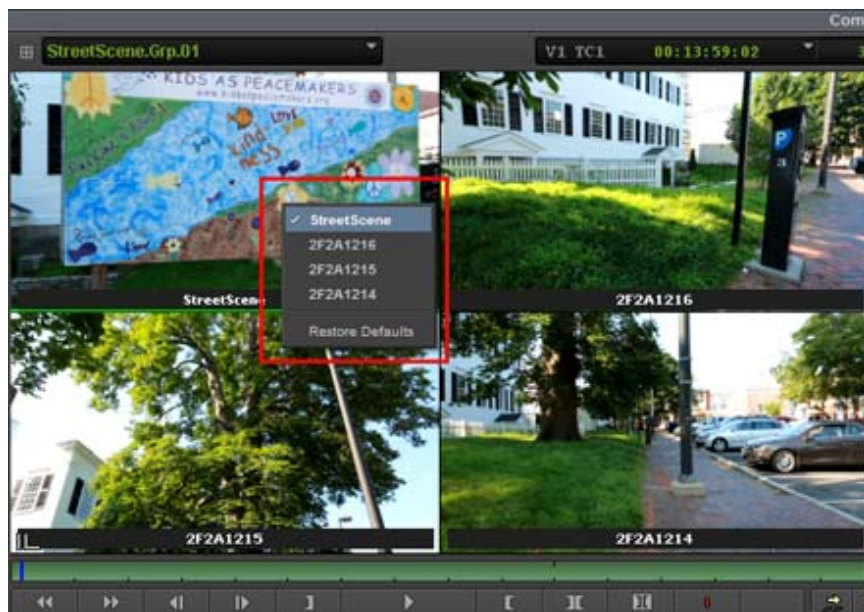
Select additional angles from the Multi-angle View menu

3. Select the clip you want to display from the Multi-angle View menu.

   The new clip appears in the multi-split display.

Using Match Frame in MultiCamera Editing

You can use the Match Frame button to display the matching clip within the group when match framing from the sequence, or you can display the original clip when match framing from the source group. For more information on using the Match Frame feature, see .

📖 *If the group contains more clips than are displayed and you match a clip that is not visible (for example, clip 5 and above for the Quad Split display), your Avid editing application selects the clip but does not display it.*

Selective Camera Cutting

Selective camera cutting involves marking and editing source material into the sequence, much as you build a sequence by using nongrouped clips in a normal session. You can play, cue, and mark clips on the source side, and then splice, overwrite, and trim clips in the sequence.

To perform selective camera cutting, do one of the following:

▶ Lay down an entire group as a master sequence, and then add edits, switch camera angles, and trim within the sequence or cut in new clips.

▶ Edit one clip at a time without laying down a master sequence first, effectively building a sequence as you would with single-camera material.

The advantage of selective camera cutting with grouped clips is that all the clips are synchronized, which simplifies the selection of camera angles. Selective camera cutting generally requires the use of a detailed line script or detailed notes that enable you to select clips and assemble the sequence one clip at a time.

To perform selective camera cutting with grouped clips:

1. Load the group clip into the Source monitor.

2. Using timecode notes and the numeric keypad, type the timecode for the first take to begin the sequence, and press Enter to cue the clip in the Source monitor to the take.

3. Mark IN and OUT points for the entire scene.

4. Select a camera angle for the first clip, and then splice the entire scene into a sequence.

5. Use the arrow keys, the Add Edit button, or both to select edit points and switch to different angles throughout the master scene in the sequence.

6. To replace a portion of the take with a part from another take, use the timecode notes again to cue the take, set marks, and perform a replace edit.

7. When you are finished with a scene, repeat the procedure for each additional scene in the sequence.

15 The Avid Marketplace

The Avid Marketplace menu provides options for accessing plug-ins for purchase to work with your Media Composer | First application. You can also use the Avid Marketplace to upgrade to Avid Media Composer.

You must be connected to the Internet to access features offered in the Avid Marketplace.

Purchasing and Downloading Plug-ins from the Avid Marketplace

To purchase and download from the Avid Marketplace Plug-ins window:

1. Open your Avid editing project.
2. Select Marketplace > Avid Marketplace.

   A list of available plug-ins appears.
3. Click the plug-in you want to purchase and download.

   The purchase window with the selected product displays.
4. Follow the on screen prompts to complete the purchase.

Upgrading to Avid Media Composer

You can use the Marketplace menu to easily upgrade to Avid Media Composer.

To upgrade to Avid Media Composer:

1. Select Marketplace > Upgrade to Media Composer.

   The Avid Store opens with the options for purchasing Avid Media Composer.
2. Choose the Media Composer product you want to purchase and continue with the on screen prompts.

16 Settings

This chapter provides information on how to use settings.

- Understanding Settings
- Working with Settings
- Audio Ducking Settings
- Bin Settings
- Full Screen Playback Settings
- General Settings
- Import Settings
- Interface Settings
- Link Settings
- Media Creation Settings
- Timeline Settings

Understanding Settings

The Settings tab in the Project window contains a list of settings that control many aspects of your Avid editing application's behavior. Using the Settings list, you can:

- Open Settings dialog boxes to view and modify settings.
- Switch between settings.

For more information, see "Working with Settings" on page 390.

The following illustration shows the Settings tab in the Project window.
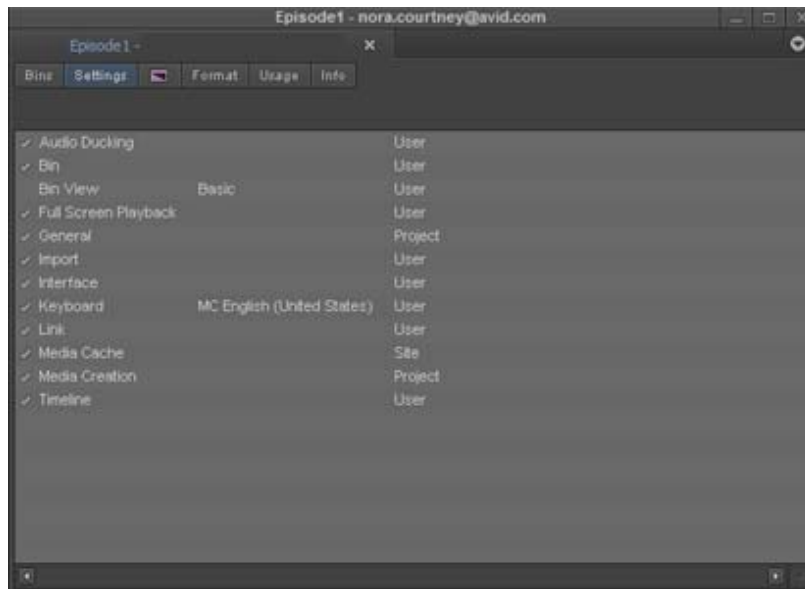
Types of Settings

There are two types of settings:

• User settings are specific to a particular editor and reflect individual preferences for adjusting the user interface in your Avid editing application.

   User settings are stored in each user folder.

• Project settings are directly related to individual projects. When you change a Project setting, it affects all editors working on the project.

   Project settings are stored in each project folder.

Examples of Ways to Use Settings

If you organize and manage your settings carefully, you can use them to speed your workflow. For example, you can use settings to address specific needs for one stage of your workflow. Because you can have multiple versions of settings in your Settings list in the Project window, you can also establish settings specific to one user on your team and that user's work tasks.

For example, you can create two Bin settings, one where you automatically save more often when you are editing intensively and one when you are doing organizational work in the bins.

If you establish your settings once, and then select the appropriate setting for your current needs, you can save time and effort that you might spend searching for information or adjusting bin headings on-the-fly.

Working with Settings

You can open a dialog box for most settings that lets you view the current settings and to change them if necessary. You can also duplicate, rename, copy, and move settings among files or systems.

Viewing and Modifying Settings

You can view most settings in a dialog box or window that also lets you change the settings.

You cannot modify the following types of settings:

- Settings that require the presence of standalone peripherals.
- Settings that are only modifiable from within the tools in which they are used, such as Timeline views.

To view a category of settings:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Double-click a setting in the Settings list.

   A dialog box or window opens.

Duplicating Settings

To create a new version of a setting:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click the setting you want to copy. Ctrl+click (Windows) or Command+click (Mac) any additional settings you want to copy.

   You can also right-click a setting and select Duplicate.

3. Select Edit > Duplicate.

   A copy of each selected setting appears in the Settings list.

If you are duplicating settings with custom setting names, a period followed by a version number appears at the end of the custom setting name of the duplicated settings.

4. Name your settings to indicate their functions.

   For more information, see "Naming Settings" on page 391.

Naming Settings

You can give settings custom names to differentiate among copies or to indicate a specific use.

To enter a custom setting name:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click the Custom setting name column to the right of the setting name.
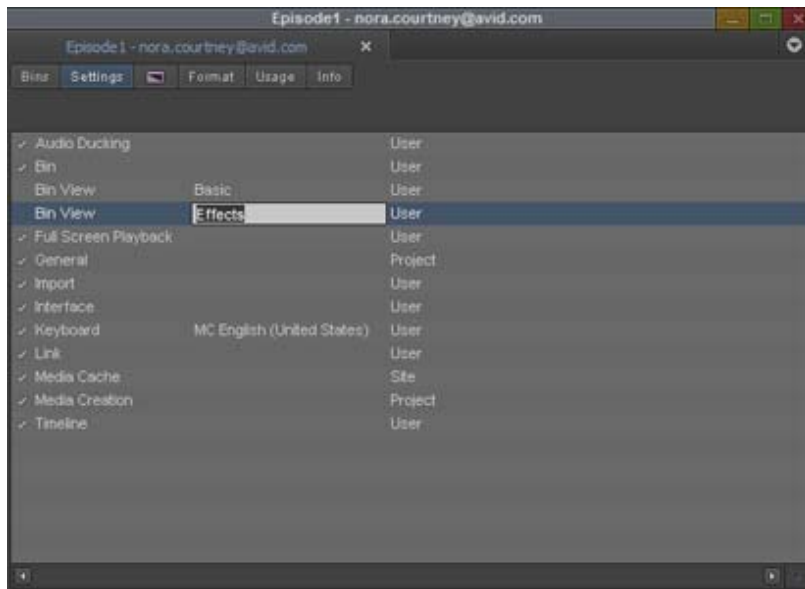
Custom setting name column in the Project window

3. Type a name, and press Enter.

   The new name appears in the list and is saved in the settings file.

Selecting Among Multiple Settings

If you have multiple versions of a setting (for example, multiple Export settings), only one setting at a time is active. Settings that are currently active have a check mark to the left of the setting name.

To change the active setting:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click in the space to the left of the setting that you want to select as the active setting.

Deleting Settings

You can delete settings from the Settings list in the Project window at any time. For example, you might choose to delete one or more versions of a particular setting, or you might want to delete all but a few settings for transfer into another Settings window.

To delete a setting:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click a setting to select it. Ctrl+click (Windows) or Command+click (Mac) each additional setting you want to delete.

3. Do one of the following:

   ▶ Press the Delete key.

   ▶ Select Edit > Delete.

   ▶ Right click and select Delete.

The selected settings are removed immediately.

Restoring Default Settings

To restore settings to their default values:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click a setting to select it. Ctrl+click (Windows) or Command+click (Mac) each additional setting you want to select.

3. Right-click the selected setting (or one of the multiple selected settings), and select Restore to Default.

   A message box opens.

4. Click Copy & Restore to copy the current settings before restoring the default settings, or click Restore to discard the current settings.

   The system restores the default values for the selected settings.

Audio Ducking Settings

Option	Description
Use Marks	Select Use Marks if you want to set IN and OUT points to determine the starting and ending frames for applying audio ducking.
Dialog track parameters	Threshold: Enter a value to set how aggressive key frames will be applied when analyzing the Dialog tracks.
	Hold time: Enter a value in frames to set how long a track will remain ducked after the last known peak above the threshold value in the Dialog tracks.
Music track parameters	Attenuation: Sets how much the volume will be reduced in the Music track(s).
	Ramp time: Sets how many frames it takes to ramp the Music track(s) down from or back to full volume.

Bin Settings

Option	Description
Auto-Save interval *n* minutes	Defines the interval between attempts to auto-save project files. The default is 15 minutes.
	To avoid interrupting an edit, your Avid editing application waits until your system is inactive before auto-saving. Use the option "Force Auto-Save at" to specify an interval at which your Avid editing application interrupts an edit to make the auto-save.
Inactivity period *n* seconds	Defines how long your Avid editing application waits when your system is inactive before automatically saving the project files. The default is 15 seconds.

Option	Description
Force Auto-Save at *n* minutes	Defines the maximum interval between auto-saves. Once this time elapses, your Avid editing application auto-saves the project files even if it must interrupt an edit to do so. The default is 17minutes.
Double-click loads object in	Determines what happens when you double-click an object in the bin: • New Pop-up Monitor: Creates a new Source pop-up monitor and automatically loads the clip when you double-click an object in the bin. • Source or Record Monitor: When you have the Composer monitor stretched into two monitors, loads the clip into the Source monitor or the sequence into the Record monitor. When you are using the single Composer monitor, loads the clip or sequence into the existing Source pop-up monitor.
If no column is selected in the Bin, typing in the Quick Filter text box will	Allows you to choose between searching on the Name column only or on all columns when using the bin Quick Filter text box. See "Filtering Items in the Bin" on page 84.
Set Default Bin View	Allows you to set a bin view to be used as the default when creating a new bin.
Enable edit from bin (Splice, Overwrite)	Lets you edit clips directly from a bin by selecting a clip and clicking the Splice-in or the Overwrite button.
Show local media icons	Clip icons will appear blue to indicate the media is local or pink to indicate mixed resolution.
Skip prompts to save locked bins on Auto-Save	Allows you to disable the prompts that appear when saving locked bins during Auto-save.
Frame View	Determines how border colors and icons appear in Frame View Show Border Colors: Use color based on object type displays a colored border around the following: • Blue - Precomputes and source side motion effects • Green - Master clips • Dark Green - Subclips and Group clips • Red - Sequences • Purple - Media files in the Media Tool Show Border Colors: Use clip color, assigns the same colors you assigned to clips in Text View to items in Frame View.
Show icons	Show icons displays the applicable bin item icon, for example sequence, clip, subclip, title.

Full Screen Playback Settings

For information on using Full Screen Play, see "Playing Video to a Full-Screen Monitor" on page 113.

Option	Description
Reformat	Determines how images are scaled for full-screen playback. Choose from the following: • Stretch • Pillarbox/Letterbox • Center Crop • Center Keep Size • Raw Pixel: This option lets you see the frame in the full screen window, pixel for pixel, with no scaling. If the image is larger, it is scaled to fit the screen. This is only useful when viewing SD in which pixels are non-square.
Current Monitor Position	Defines which monitor displays the full screen playback. Drag the entire Full Screen Playback Settings dialog box to the desired monitor, and then click Select Monitor. (Mac only) If two or more graphics cards are installed, choose a monitor that is connected to the primary graphics adapter.

General Settings

Option	Description
Project Format	Displays the format currently selected for the project.
Temporary File Directory	When you Publish a movie file, your Avid editing application must store the intermediate file, which can be large. By default, the Temporary File Directory is located in the same directory as your Avid editing application.
Default Starting TC	Defines the timecode value you want your Avid editing application to use as the default starting timecode for each new sequence. For more information, see "Understanding Timecode" on page 17.

Import Settings

Import Settings: Image Tab

Option	Description
Image Size Adjustment	Controls the dimensions of imported images.

Option	Description	
	Image sized for current format	Select this option if the image is properly sized and formatted for the current project format, or to maintain field data when you import two-field media that follows exact NTSC or PAL dimensions. Your Avid editing application converts the existing pixel dimensions, if necessary, so that the image fills the screen.
		If the aspect ratio of the original frames does not match the aspect ratio your Avid editing application is using, the imported frames might appear distorted.
	Do not resize smaller images	Select this option to import graphic files that have a smaller size than the full-raster SD or HD frame. You typically use this option for either temporary web graphics (in either SD or HD) or to bring SD-formatted graphics into an HD project without blowing them up and losing quality.
	Resize image to fit format raster	Select this option to resize both smaller and larger images to fit the full-raster SD or HD frame. Your Avid editing application maintains the file's aspect ratio.
Alpha Channel	Controls how your Avid editing application handles the alpha channel in imported images. The following options are available:	

- Invert on import (white = opaque): Select this option to reverse the black and white elements of the alpha channel if they differ from the matte key requirements of your Avid editing application. Avid applications use a white background, a black foreground, and a gray transparency blend between the two.

- Do not invert (black = opaque): Select this option to import the image, using the existing alpha channel information.

- Ignore: Select this option to import an image that contains alpha channel transparency information as one opaque graphic. The imported graphic appears as a single master clip in the bin.

> *If an image contains an embedded alpha channel but your Avid editing application does not support alpha channel import for the file type, select this option to import the image successfully. For information on alpha channel support, see "Import Specifications for Supported Graphics File Formats" on page 1.*

- Dilate Fill: This option bleeds the fill just a bit along the edges where transparent alpha meets non-transparent alpha. It is useful when importing graphics files containing alpha that have abrupt transitions between transparent and opaque. It can help prevent black/gray pixels from seeping into the fill.

Option	Description
Frame Import Duration Duration n seconds	Defines the duration of the single frame your Avid editing application creates from the import. The default is 30 seconds. This option does not apply to importing sequential image files because each file represents one frame of the clip, so the total number of files determines the total duration.
	Importing an image with alpha channel creates a matte key effect as a single frame, with no associated media file.
	Importing as a single frame takes less time and requires less storage than importing as a media file. However, a single frame has limited real-time playback capabilities, particularly at high resolutions, because your Avid editing application loads the frame into memory and handles it in real time, rather than playing it back from a disk.

Option	Description
Autodetect Sequentially Numbered Files	When this option is selected, your Avid editing application recognizes that a sequence of connected files is present and automatically imports the whole sequence.
	When this option is deselected, your Avid editing application does not automatically import a whole sequence of files that have sequential extensions. You can then select any single file for import.
	You can import sequential files for any of the supported still-image formats. For information on preparing a sequence of image files, see "Specifications for Animation Files" on page 5.

Import Settings: Audio Tab

Option	Description
Multichannel Audio	Allows you to map source audio channels to multichannel or mono tracks in your imported clips. Click Edit to open the Set Multichannel Audio dialog box and specify mono or audio tracks for a maximum of 16 audio channels. For more information, see "Importing with Multichannel Audio" on page 2.
Apply attenuation/ gain effect on import	When this option is selected, your Avid editing application applies attenuation/ gain effects made to clips prior to import. If you apply gain from the Clip menu after you have adjusted the gain before import, the pre-import gain is ignored. For example, if you apply -6 dB before import, and then apply another -6 dB to the clip, the clip remains at -6 db and not -12 db.
Automatically center pan monophonic clips	When this option is selected, your Avid editing application adds a center pan effect to all monophonic clips on import.

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.
Show Source/Record colors in Composer	When enabled, the Source monitor ruler displays as green and the Record monitor ruler displays as blue.
Show Source/Record colors in Timeline	When enabled, the Source track buttons in Timeline are green and the Record track buttons in the Timeline are blue.
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.

Option	Description
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.
Use Custom Timeline background	When selected, allows you to choose a background color of the Timeline.
Use Custom Project background	When you select this option, you can set custom background colors for projects.
Override Project font	Allows you override the Project font, by selecting the desired font from the pulldown menu.
Override Project font size	Allows you to override the Project font size by entering a value in the text box.
Allow Custom Bin Backgrounds	When you select this option, you can set custom background colors for bins.
Default background color for new Bins	Allows you to set the background color for newly created bins.
Default font for new Bins	Allows you to set the font for newly created bins.
Override all Bin fonts	Allows you override the Bin font, by selecting the desired font from the pulldown menu.
Override all Bin font sizes	Allows you to override the Bin font size by entering a value in the text box
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.
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.
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.

Option	Description
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.

Keyboard Settings

The following illustration displays the default keyboard settings.

To view the name of a button in the Keyboard settings window, move the mouse pointer over the button. To get help for the button, right-click and select What's This?

For information on mapping buttons, see "Mapping User-Selectable Buttons" on page 61.

When you open the Keyboard palette from the Settings list and select Map Foreign Keyboard, you can map user-selectable buttons to the keyboard. If the Windows operating system is set to French or German regional settings, and you click the center of the Enter key in the Keyboard palette, foreign keyboard mapping mode turns off. To return to foreign keyboard mapping mode, Select Standard, and then select Map Foreign Keyboard again.

Link Settings

Link Settings: Link Options Tab

Option	Description
Multichannel Audio	Select this option if you want to assign audio tracks to specific channels in your linked media, up to a maximum of 8 audio channels for the clips in your bins. This allows you to specify which source channels are treated as mono or multichannel audio tracks in your project, rather than having to modify the clips in your bin after you link to the media.
	Click Edit to open the Multiple Mixes dialog box, which allows you to map audio tracks to channels. For more information, see "Linking with Multichannel Audio" on page 90.
Audio Start-Time Option (for Broadcast Wav	Sets the interpretation of audio start time for Broadcast Wave and iXML files.
Alpha Channel	Controls how your Avid editing application handles the alpha channel in linked images. The following options are available
	• Invert on import (white = opaque): Select this option to reverse the black and white elements of the alpha channel if they differ from the matte key requirements of your Avid editing application. Avid applications use a white background, a black foreground, and a gray transparency blend between the two.
	• Do not invert (black = opaque): Select this option to import the image, using the existing alpha channel information.
	• Ignore: Select this option to import an image that contains alpha channel transparency information as one opaque graphic. The imported graphic appears as a single master clip in the bin.
Properties of New Clips	
Reformattting option	Set the default for all new clips that are created.
Always use 16:9 aspect ratio for SD clips	Forces all SD media to be set to a 16:9 aspect ratio.

Media Cache Settings

Media Cache Settings: Thumbnail

Option	Description
Cache location	Allows you to set the folder location for the cached files.
Disk Cache Size (MB)	Allows you to establish how much memory can be utilized for caching thumbnails to disk. Saving them to the disk cache allows them to be recalled after relaunching the application and can avoid the need for the application to have to create them again.
Memory Cache Size (MB)	Caching images in memory allows thumbnails to quickly be recalled.

Media Cache Settings: Source Browser

Option	Description
Cache location	Allows you to set the folder location for the cached files.
Disk Cache Size (MB)	Allows you to establish how much memory can be utilized for caching thumbnails to disk. Saving them to the disk cache allows them to be recalled after relaunching the application and can avoid the need for the application to have to create them again.
Memory Cache Size (MB)	Caching images in memory allows thumbnails to quickly be recalled as you populate the Source Browser.

Media Cache Settings: Video Memory

Option	Description
Current Video Memory Allocated (GB)	Displays the current video memory allocated.
Desired Video Memory (GB)	Here you can allocate video memory for running the editing application. This might be useful for situations where you experience underruns. Use the slider to select a desired memory allocation
	Click the Set Low button to set the memory allocation to the lowest recommended amount based on your system configuration.
	Click the Set High button to set the memory allocation to highest recommended amount based on your system configuration
Enable Playback Video Frame Cache	Select Enable Playback Video Frame Cache to improve performance during playback by reusing recently played frames.
Enable FX Editing Video Frame Cache	Select Enable FX Editing Video Frame Cache to improve performance during effects editing by reusing recently played frames.
Flush Frame Cache	Clears the cache from the cache folder.

Media Creation Settings

For more information about options in the Media Creation Settings dialog box, see "Selecting Video Resolutions and Media Drives" on page 6.

Media Creation Settings

Option	Description
Video Resolution	Select a resolution.
Video/Audio Drive	Defines the drives your Avid editing application uses to store video and audio media. In the Titles tab, only a Video Drive option is available.

Timeline Settings

Timeline Settings: Display Tab

Option	Description
Show Toolbar	When this option is selected, the Timeline top toolbar displays.
Show Marked Region	When this option is selected, the region from the IN point to the OUT point is highlighted in the Timeline.
	This option modifies the behavior of the Replace Edit function. When this option is selected, Replace Edit obeys IN and OUT marks in the Timeline. When this option is deselected, Replace Edit ignores IN and OUT marks in the Timeline. For more information, see "Performing a Replace Edit" on page 155.
Show Marked Waveforms	When this option is selected, your Avid editing application draws waveforms between an IN point and an OUT point instead of over the entire composition.
Highlight Suggested Render Areas After Playback	When this option is selected, thin colored indicator lines display in the Timecode track of the Timeline. These lines provide information about the real-time effects in your sequence. For more information, see "Real-Time Playback of Video Effects" in the Help.
Show Position Bar	When this option is selected, the Timeline shows the blue position bar.
Show Effect Contents	When this option is selected, your Avid editing application displays effect information in the Timeline.
Double-Click to Show Nesting	When this option is selected, your Avid editing application lets you double-click segments in the Timeline to display the nested effects.
Show Four-Frame Display	When this option is selected, your Avid editing application shows the head and tail of incoming or outgoing frames of video when you drag a segment.
Use Fast Scrub	When this option is selected, your Avid editing application responds faster and more smoothly when you drag the position indicator through the Timeline (scrub). However, markers such as the start-of-clip and end-of-clip marks, sawtooth marks for IN and OUT points, and markers do not display, and some effects do not display completely in HD projects.
	When this option is deselected, all markers and HD effects display. This is the default option.
Wireframe dragging	Select this option to show a wireframe representation of segments that are being dragged in the Timeline. Deselect it to show a dimmed representation of the segment.
Movement During Play	Select one option to control the movement of the Timeline while you play a sequence: • Page — moves the Timeline section by section as the position indicator reaches the end of the visible Timeline. • Scroll — moves the Timeline while keeping the position indicator stationary. • None — keeps the Timeline stationary as the position indicator moves, even after the indicator goes beyond the end of the visible Timeline.

Timeline Settings: Edit Tab

Option	Description
Start Filler Duration	Defines a default duration for the filler added at the start of a sequence. For more information, see "Adding Filler" on page 151.
Find Flash Frames Shorter Than *n* frames	Defines the maximum number of flash frames you want your Avid editing application to detect. The default is 10, which tells your Avid editing application to detect clips with 9 frames or fewer. For more information, see "Finding Black Holes and Flash Frames" on page 224.
Auto-Patching	When this option is selected, your Avid editing application automatically patches the enabled source tracks to the tracks enabled in the Timeline sequence.
Auto-Monitoring	When this option is selected, your Avid editing application monitors the track you patch. This option is selected by default.
Segment Drag Sync Locks	When this option is selected and you click the Sync Lock buttons in the Track Selector panel, your Avid editing application maintains audio and video synchronization when you drag clips in Segment mode. Your Avid editing application adds filler where necessary. For more information, see "Maintaining Sync with Segment Edits" on page 201.
Segment Drag Snap	When this option is selected, clips snap to an existing transition endpoint or to the position bar when you drag them from a bin to the Timeline. When this option is deselected, clips move freely to any position on the track.
Position Bar Snap	When this option is selected, clicking in the Timeline will snap the position indicator to the nearest event, such as IN and OUT points, markers, and segment start and end points.
Default Sync Locks On	Enables sync locks on all video and audio tracks as the default Timeline setting.
Select Filler with Segment Tools	This option allows you to choose whether or not you want filler to be selected when using the Segment Tools.
Applying Effects Opens the Effect Editor	When this option is enabled, the applicable Effect Editor opens when you apply an effect to your sequence. This does not apply if the effect is applied from a bin template or from the Quick Transition dialog
Dupe Detection Handles	Defines the size of the handles, in frames, to use for dupe checking. Your Avid editing application adds the chosen number of frames at the beginning and the end of each clip before checking for overlap. Your Avid editing application uses the handles only for internal calculations.
Clicking the TC Track or ruler Disables Smart Tools	Allows you to disable all edit tools in the Smart tool on the Timeline palette by clicking either the Timeline ruler or the Timecode track.
Only One Segment Tool Can Be Enabled At A Time	Prevents both segment tools from being enabled at once.
Default Segment Tool	Specifies which segment tool — Segment Insert or Segment Overwrite — is enabled by default when you select segments for segment editing with no segment tools active on the Timeline palette.
New Sequences	Defines the number of video and audio tracks that display in the Timeline for new sequences.

Option	Description
Lassoing transitions enters:	Trim Mode: Select this option if you want the editing application to enter Trim Mode when lassoing transitions.
	Segment Mode: Select this option if you want the editing application to enter Segment Mode when lassoing transitions. This works only when the Keyframe Selection Tool is deselected.

17 International Character Support (ICS) in Avid Editing Applications

This chapter provides information on international character support (ICS) in your Avid editing application.

•   Choosing a Locale on an English Language Operating System

•   Using a Local Language Operating System (Windows Only)

•   Non-English Character Support (Mac)

•   Non-English Character Support (Windows)

•   Using Foreign Keyboard Mapping (Windows)

•   Considerations for International Character Support

Choosing a Locale on an English Language Operating System

You can display and input international characters within the English language version of your operating system by choosing a locale for another language.

You need to instruct your operating system to display the appropriate language in menus and dialog boxes and specify the language you want to use for keyboard layouts by following the instructions for your operating system in either "Non-English Character Support (Mac)" on page 406 or "Non-English Character Support (Windows)" on page 408

On Windows systems only, if you are using a language other than English, French, Italian, German, or Spanish, you might need to adjust the mapping for the keyboard so the keys in the Keyboard palette match the keys on your physical keyboard. See "Using Foreign Keyboard Mapping (Windows)" on page 411.

Using a Local Language Operating System (Windows Only)

On Windows systems only, you can display and input characters in languages other than English by installing the local language version of the operating system and working within that operating system.

When you start your Avid editing application for the first time, it automatically creates a keyboard setting for that language. You can view the keyboard mapping by clicking the appropriate Keyboard setting in the Settings list.

If you are using a language other than English, French, Italian, German, or Spanish, you might need to adjust the mapping for the keyboard so the keys in the Keyboard palette match the keys on your physical keyboard. For more information, see "Using Foreign Keyboard Mapping (Windows)" on page 411.

You can also work with international characters within the English language version of the Windows operating system. For more information, see "Choosing a Locale on an English Language Operating System" on page 405.

Non-English Character Support (Mac)

To enable international character support on Mac OS X systems, you need to specify the language for menus and dialog boxes in the System Preferences > Language & Text window. You must make sure that the operating system lists your language at the top of the language list in the Language tab and that you specify your region in the Formats tab. You can also add the language in which you want keyboard layouts and input methods to function.

To set the language in the Language & Text window:

1. Select Apple menu > System Preferences > Language & Text.

   The Language & Text window opens to the Language tab.
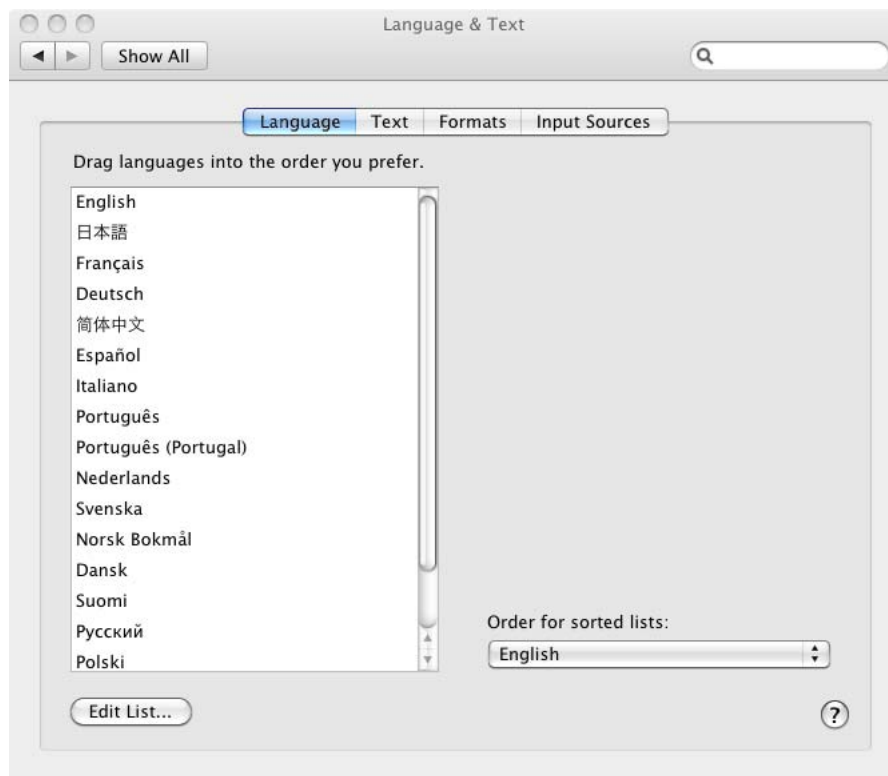
2. In the Languages list, click the language you want, and drag it to the top of the list. If you do not see the language you want in the list, click Edit List, select the language, and click OK.

3. (Option) Click the Text tab and select other options.

4. Click the Formats tab, and then click the Region menu and select your region.
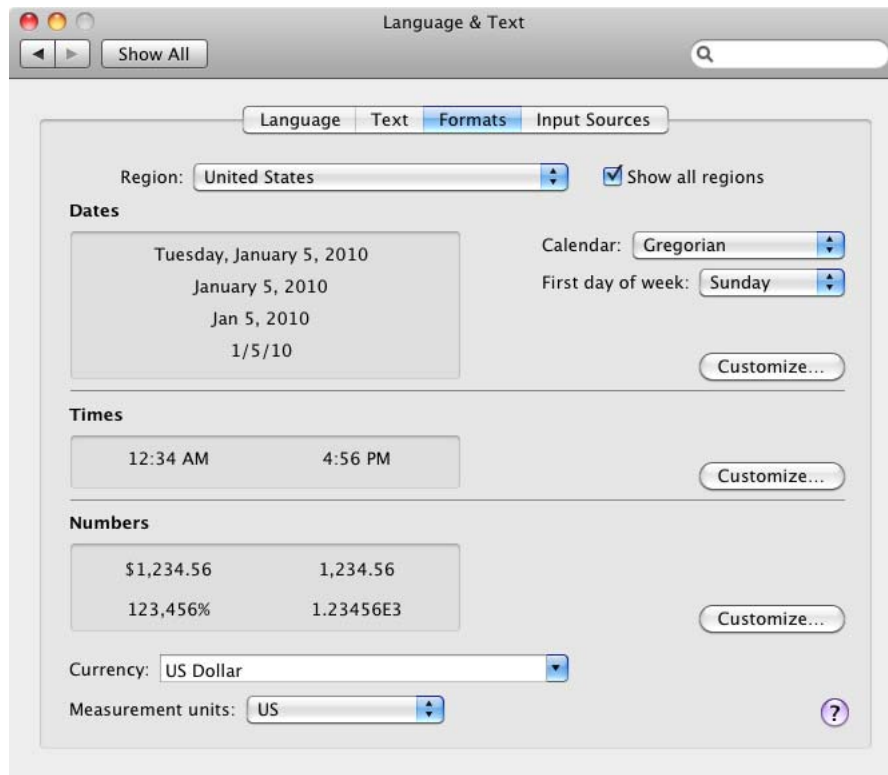
If you do not see your region, select "Show all regions" and then click the Region menu again.

5. Click the Close button.

6. Logout and log back in to enable the changed settings.

For more information about the Language & Text window, see Mac Help by clicking the question mark icon in the window.

To add your language's keyboard layout, input method, and character set palette to the operating system's Input menu (Flag icon):

1. Select Apple menu > System Preferences > Language & Text.

   The Language & Text window opens to the Language tab.

2. Click the Input Sources tab.

3. Select the language or languages in which you want to type.

4. Select "Show input menu in menu bar."

5. Click the Close button.

6. In the Finder title bar, click the Flag icon and select the input language. You can also select a character set palette.

   The Flag icon changes depending on which input language you select.

7. Restart your system.

Non-English Character Support (Windows)

On Windows systems only, you can specify a non-English keyboard layout and text entry format for the language in which you want to type. The operating system itself does not need to be in the same language as that in which you are typing.

For more information, see and your Windows documentation.

To specify a language in which to type (Windows 7):

1. (Option) Attach a regional keyboard to your system.

2. Click the Start button, and select Control Panel.

3. Do one of the following:

   ▶ If the View by menu is set to Category, in the Clock, Language, and Region area, click "Change display language."

▶ If the View by menu is set to Large icons or to Small icons, click Region and Languages.

The Region and Language dialog box opens.
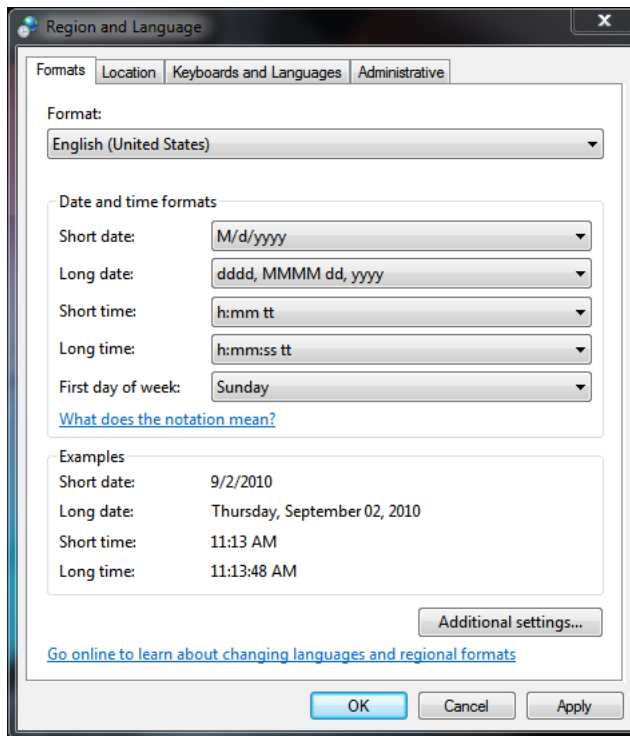
4. Click the Formats tab, and then click the Format menu and select a language.

5. Click the Location tab, and then click the Current location menu and select your location.

6. Click the Keyboards and Languages tab.
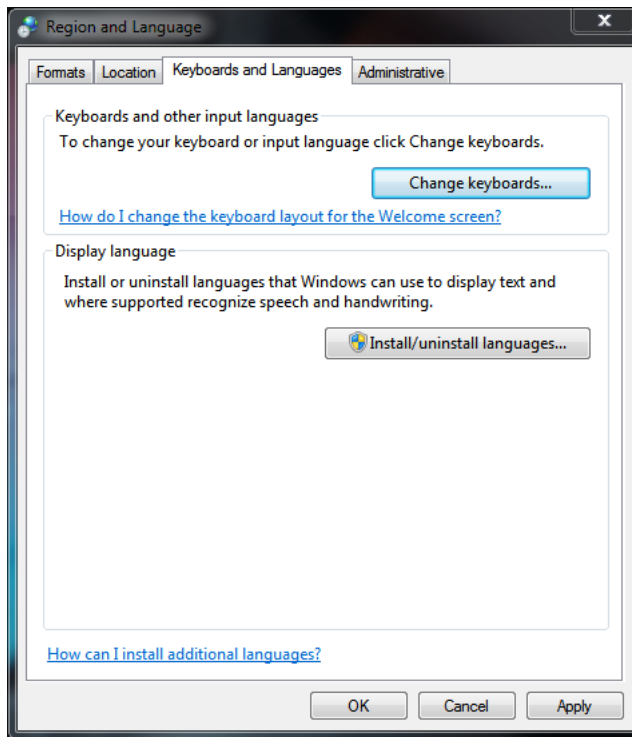
7. If necessary, click "Install/uninstall languages" and follow the prompts to install supplemental languages.

8. Click "Change keyboards."

   The Text Services and Input Languages dialog box opens.
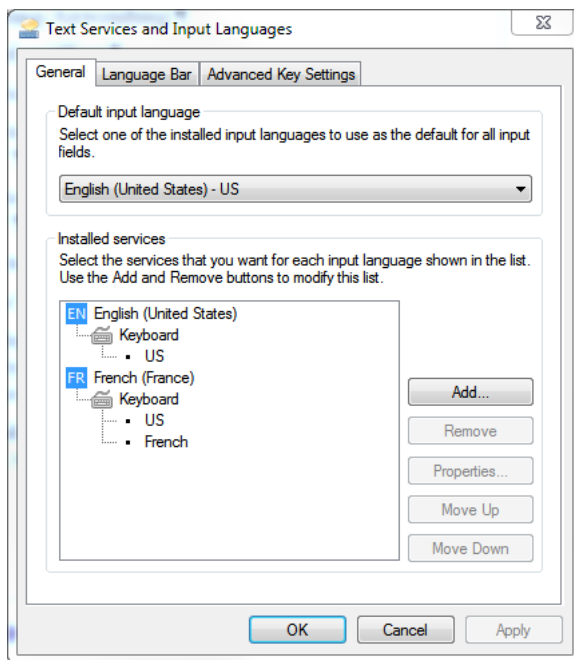
9. In the "Installed services" area in the General tab, select a language and a keyboard layout for that language.

10. If the language you want is not in the list, click Add, select an input language and a keyboard layout for the language, and then click OK.

11. In the "Default input language" area, select an input language.

    You must select a language in the Installed Services area (step 9) before it appears in the Default input Language list.

12. Click OK to close the Text Services and Input Languages dialog box.

13. Click the Administrative tab, and click the Change system locale button and select your language.

⚠ **It is important to select your language in the "Language for non-Unicode programs" area. Do not skip this step.**

14. Click OK to close the Region and Language dialog box.

    A keyboard icon appears in the taskbar to let you switch keyboard layouts.

15. Restart your system.

Using Foreign Keyboard Mapping (Windows)

On Windows systems, when you start your Avid editing application under a new locale, your Avid editing application automatically creates a Keyboard setting for your language. You can view the keyboard layout by clicking the appropriate Keyboard setting in the Settings list.

The default Avid keyboard layouts for English, French, or German map correctly to the characters on the physical keyboard. If you are using another language, the display in the Keyboard palette might not match your physical keyboard layout. You can use the Foreign Keyboard Mapping button in the Keyboard palette to display the correct character in the Keyboard palette.

Avid supports the international English keyboard for Spanish and Italian. The default keyboard setting for Spanish and Italian is an English keyboard. If you use a Spanish or Italian keyboard, use keyboard mapping to match the physical keyboard to the Keyboard setting layout.

To set the keyboard mapping for a key:

1. In the Settings list of the Project window, double-click Keyboard.

    The Keyboard palette opens.

2. Compare the layout to your physical keyboard.

    If some of the letters do not match, you can change the characters displayed in the Keyboard palette.

3. Click the Foreign Keyboard Mapping button.

4. Click the key that you want to change in the Keyboard palette.

    The key changes to white.

5. Press the corresponding key on your keyboard.

    The image in the Keyboard palette changes to match your keyboard, and the mapped key changes to blue.

Each language has a certain number of keys that do not map to functions in your Avid editing application. These are referred to as "dead" keys. You cannot map functions to these dead keys. If you try to do so, your Avid editing application displays an error message.

Considerations for International Character Support

This topic provides recommendations, tips, and information on limitations for using international character support in your Avid editing application.

Use One Locale When Sharing Files

Make sure that your projects do not contain characters from more than one locale. File sharing might not work correctly. See "Choosing a Locale on an English Language Operating System" on page 405

Entering ASCII Characters in Double-Byte Systems

If you are working on a double-byte operating system, you should use single-byte ASCII characters to name bins, projects, tapes, or other Avid elements. If you use double-byte characters, they might appear with extra space between them and the names might not be recognizable by other systems.

Operating systems that use a double-byte character system usually allow the user to choose between single-byte ASCII or double-byte ASCII characters. If you have a choice, use single-byte characters when entering ASCII text.

Characters to Avoid When Naming Avid Elements

Do not use the Japanese yen symbol in the ASCII character set. Your Avid editing application converts the symbol to a backslash, and this can cause problems with pathnames.

Do not use the Y-acute and Y-diaeresis characters. Your Avid editing application does not recognize the Y-acute character, and it can cause problems with file recognition. Your Avid editing application might not display the Y-diaeresis character correctly.

When you name a Mac OS X computer, use single-byte ASCII characters without spaces. Your Avid editing application uses the name in .pmr files (in the OMFI MediaFiles folder), and non-ASCII characters and spaces can cause problems with .pmr files.

If you plan to move projects between Mac and Windows systems, avoid using characters that are not in both the MacRoman and Latin1 (ANSI) character sets. Search the Avid Knowledge Base for "MacRoman" to access documents that list the characters you should avoid. You might have to set your Web browser to display characters in Unicode format to see all the characters in these documents correctly. For example, in Internet Explorer 7, select View > Encoding > Unicode (UTF-8).

Traditional Chinese Big 5 Character Set

When using Traditional Chinese, set the Input Method Editor (IME) to use the Traditional Chinese Big 5 character set.

(Windows) When setting the Input Locale in the Regional Options dialog box, click IME Settings and select the bottom option, which translates to "Only show Big 5 characters."

(Mac) When you select Traditional Chinese in the System Preferences > Language & Text window, your system displays a menu with several options. Select Big 5.

Rebuilding the asifont.map File (Windows Only)

If you cannot display Chinese or Japanese characters in your Avid editing application, you might need to regenerate the asifont.map file under the Japanese or Chinese locale. If you install your Avid editing application after you set up your system for international character support, you should not need to rebuild the asifont.map file.

To rebuild the asifont.map file, do one of the following:

• Navigate to Program Files\Avid*application name*, locate the asifont.map file, and delete it. Ensure you are in the Japanese or Chinese locale and restart your Avid editing application.

• Uninstall your Avid editing application and then reinstall it under the Japanese or Chinese locale.

Note that your system uses the current locale to create the asifont.map file appropriate for that locale.

Additional Tips and Limitations for Working with International Characters

• You must install your Avid editing application after you set up your system for international character support.

• If you export files from a FIGS (French, Italian, German, or Spanish) operating system that contain certain diacritical marks (for example, a capital A, I, or E with circumflex), they might not import or display correctly on an English operating system. When you attempt to import the file, your system displays the following error message:

"File: [File name and location] not found."

followed by:

"EXCEPTION: SYS ERROR, status: 2, msg: The system cannot find the file specified."

To work around this limitation, retype the file name (with the same diacritical marks if desired) and then import it from the English OS.

• If you use New Change input (Traditional Chinese), you cannot use certain key combinations to form Chinese characters in user, project, bin, clip, and sequence names. When you press Enter to execute these key combinations, a question mark appears in the text. The following are examples of non-functional combinations: R + Y, S + D, R + J, F + U, Q + U + Q + U.

• You might see problems with certain combinations of Japanese and Roman characters in user names.

Avoid mixing Roman and Chinese or Japanese characters in user names. Your system might generate error messages or extra user names with incorrect text strings.

• Do not use fonts that have an "@" sign at the start of the font name when naming Avid elements. These fonts are intended for text that displays vertically. Letters or characters might appear on their side in elements such as bin and clip names.

Index

Index

Index

Index