

Autodesk®
Backdraft® Conform 2010

User Guide

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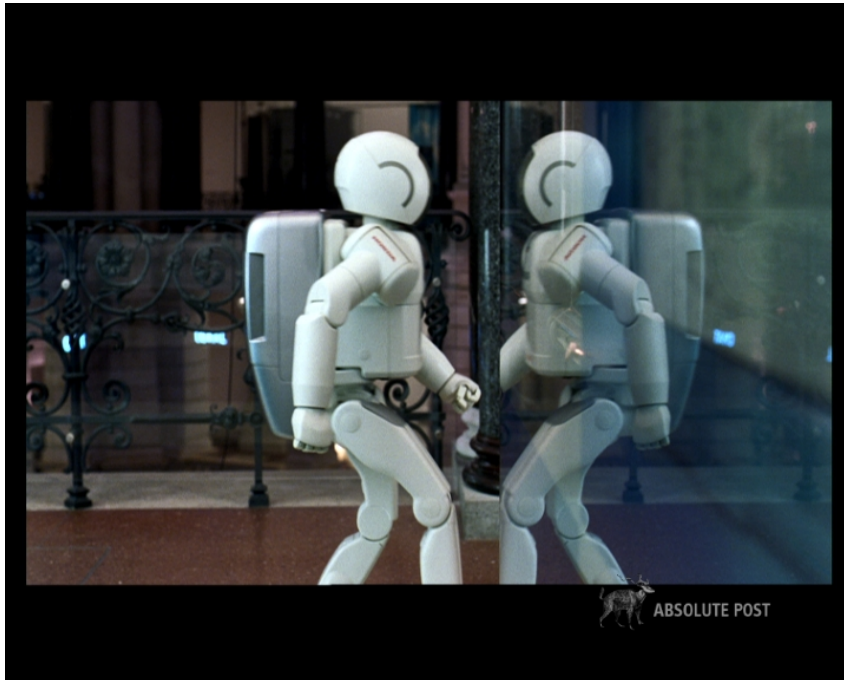


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Introduction

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About the Documentation

Autodesk® Backdraft Conform® 2010 includes documentation that helps you install, configure, and use your product.

For a list of all the documentation available to you, visit
<http://www.autodesk.com/backdraftconform-documentation>.

Refer to the Release Notes for all late-breaking release information.

Viewing Tooltips

Your application includes tooltips that describe objects on the user interface (such as buttons and fields). The tooltips also display the hotkey for the object, if one is configured.

To view tooltips:

- Move the cursor over the object.
After a few seconds, the tooltip displays.

In the Preferences menu, you can turn on and off the display of tooltips. You can also change the amount of time your cursor must rest on an object before the tooltip displays. See [Tooltips Preferences](#) on page 516.

Viewing the Help

Included with your application is a Help system that you can view in a Web browser. The Help is installed automatically and is accessible from anywhere within your application.

The Help is best viewed using Firefox® 2 or Internet Explorer 7.

To view the Help:

- 1 Start your application.
- 2 Click Preferences to open the Preferences menu and click Help.
You can also access the Help by clicking the Help button, which appears on the bottom-right of the EditDesk.

TIP Press **Ctrl+=** to open the Help from anywhere in your application.

A browser launches displaying the Help. See “Using the Help”.

TIP To view the Help without interrupting a client session, copy the *documentation/help* folder from the product DVD to another system, such as your laptop. To view the Help, open the *help/index.html* file.

Viewing PDF Documentation

The documentation set is available in PDF for online viewing or printing. They are installed in the *documentation* directory of your application. You can view any of the PDF files in that directory from your application.

We recommend Adobe® Reader® or Xpdf for best results when viewing PDF files.

To view the PDF files from your application:

- 1 Click Preferences to display the Preferences menu.

- 2 Select a document from the PDF Documentation box.

The document opens automatically in Xpdf on Linux® workstations.

TIP You can access other PDF documents from your application by copying them to the directory.

Autodesk Media and Entertainment Training

There are a number of training options available to you to help you be more creative and productive with your application, including free self-paced training, and instructor-led training.

For all your training options, see: http://www.autodesk.com/me_training

Notation Conventions

A number of style conventions are used throughout your documentation. These conventions and examples of their use are shown as follows.

Convention	Example
Text that you enter in a command line or shell appears in Courier bold. Press the Enter key after each command.	install rpm -qa
Variable names appear in Courier, enclosed in angle brackets.	<filename>
Feedback from the command line or shell appears in Courier.	limit coredumpsize

Convention	Example
Directory names, filenames, URLs, and command line utilities appear in italics.	<i>/usr/discreet</i>

Contacting Customer Support

For Autodesk® Media and Entertainment Customer Support, visit <http://www.autodesk.com/support>.

Customer support is also available through your Autodesk reseller. To find a reseller near you, consult the reseller look-up database at <http://www.autodesk.com/resellers>.

Part 2: Getting Started

Part 2 includes these chapters:

- [Starting and Exiting Backdraft Conform](#) on page 9
- [The EditDesk](#) on page 11
- [The Player](#) on page 75
- [Modules](#) on page 97



Image courtesy of Optix Digital Pictures

Starting and Exiting Backdraft Conform

2

Topics in this chapter:

- [Starting Backdraft Conform](#) on page 9
- [Exiting Backdraft Conform](#) on page 10

Starting Backdraft Conform

If you are running Backdraft Conform for the first time, make sure you have correctly installed and configured the application.

To start Backdraft Conform:

- 1 Double-click the application icon on your desktop.
The Project Management menu appears.
- 2 Select the project and user you want to use or create new ones. See [Managing Projects and Users](#) on page 335.
- 3 Click Start.
When the message “Startup Complete” appears, the application has finished loading.

- 4 Tap the pen, click the mouse, or press **Enter** to display the EditDesk.
To learn about the EditDesk, see [The EditDesk](#) on page 11.

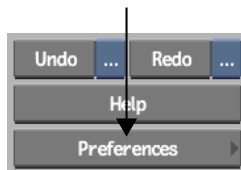
NOTE There are several advanced start-up options you can use to specify a particular setup or to enable a customized configuration. See [Command Line Start-up and Exit Options](#) on page 609.

Exiting Backdraft Conform

At any time, you can choose to exit Backdraft Conform. Any clips, along with the effects and edits that you applied, are automatically and continually saved throughout your Backdraft Conform session, so there is no need to save before exiting.

To exit Backdraft Conform:

- 1 On the lower-right side of the EditDesk, click Preferences, or press **Ctrl+Alt+F6** from anywhere in the application.



- 2 In the Preferences menu, click Exit Backdraft Conform.
The button changes to a Confirm button.
- 3 Click Confirm.

The EditDesk

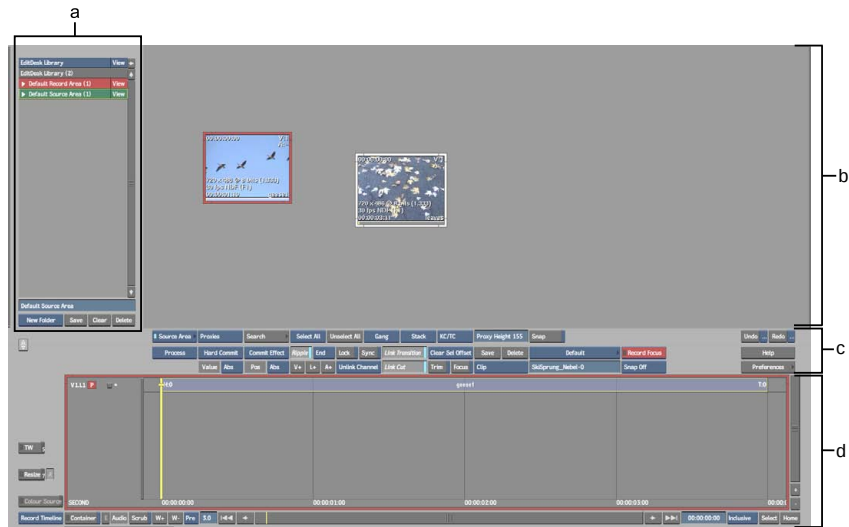
3

Topics in this chapter:

- [About the EditDesk](#) on page 11
- [Navigating on the EditDesk](#) on page 20
- [Fields, Buttons and Hotkeys](#) on page 22
- [Managing EditDesk Clips](#) on page 27
- [Naming Items on the EditDesk](#) on page 42
- [Adding Notes to Clips](#) on page 43
- [EditDesk Library](#) on page 46
- [Undoing and Redoing Operations](#) on page 58
- [Accessing System Messages](#) on page 59
- [Colour Picker](#) on page 60
- [Browsing the File System](#) on page 68

About the EditDesk

The EditDesk provides the primary working space for performing edits. When you first enter Backdraft Conform, the EditDesk appears. The EditDesk is divided into four regions: the EditDesk Library, the Source Area, the EditDesk menu, and the Record Area.



(a) EditDesk Library (b) Source Area (c) EditDesk menu (d) Record Area

EditDesk Library Where you organize material into multiple folders, Source Areas, and Record Areas.

Source Area Holds the clips that you use in an editing session.

EditDesk menu Contains menu buttons and commands pertaining to image-processing modules as well as other tools useful to the editing process.

Record Area Where you edit clips.

NOTE If you try to access a project on a remote framestore that is already in use, you will not be able to access that project's EditDesk; instead, you will go directly to the project's clip library. For more information on remote access, see [Managing Projects and Users](#) on page 335.

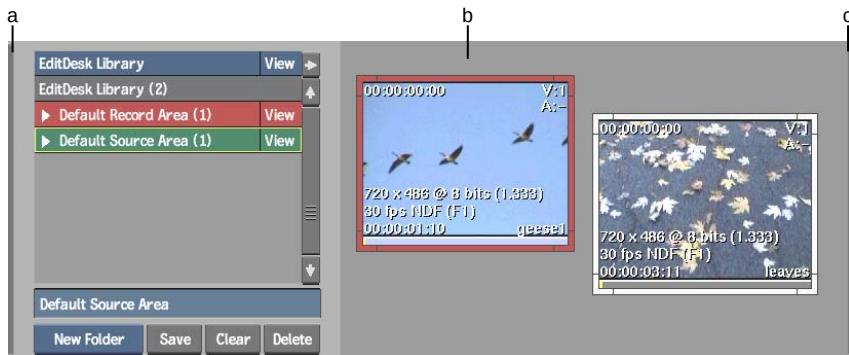
EditDesk Library

Use the EditDesk Library to organize your clips. You can create folders, Source Areas, and Record Areas inside an EditDesk Library, save these items individually to the clip library, or save the entire EditDesk Library to the clip library. You can also load these items from the clip library to the EditDesk Library.

You can temporarily hide the EditDesk Library if you need extra space in the Source Area. Press **Ctrl** and swipe the bar next to the EditDesk Library to toggle its display. You can also press **Ctrl** and swipe the bar opposite the EditDesk Library to move its display to the opposite side of the Source Area.

Source Area

The Source Area acts as a holding bin for clips that you use in Backdraft Conform. When you start Backdraft Conform for the first time, the Source Area does not contain any source clips. To add clips to this area, you load them from the clip library.

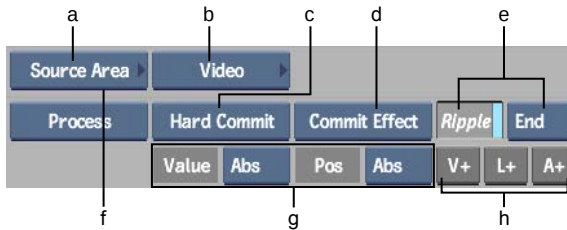


(a) Swipe bar (b) Clip holding area (c) Swipe bar

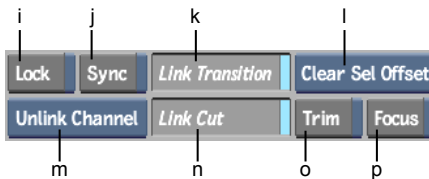
The Source Area has a swipe bar on its left and right border. Swipe either bar by touching it with the cursor to toggle the display of the Player, a full-featured image window containing controls for playing clips. For information on the Player, see [About the Player](#) on page 75.

EditDesk Menu

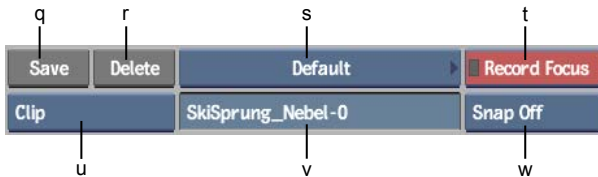
All Backdraft Conform features are accessed through the EditDesk menu (broken into three parts as follows).



(a) Menu Priority box (b) A/V Tools box (c) Media Management option box (d) Commit Effect box (e) Ripple button and Ripple Direction box (f) Timeline Process box (g) Modify Soft Effect options (h) Add video tracks, video layers, audio layers buttons

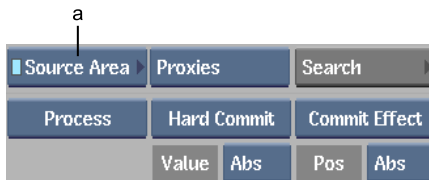


(i) Lock button (j) Sync button (k) Link Transition button (l) Clear Offsets box (m) Channel box (n) Link Cut button (o) Trim button (p) Focus button



(q) Save button (r) Delete/Clear button (s) Clip Library box (t) Focus box (u) Item box (v) Name field (w) Snap box

Menu Priority box The menu bar on the top row of the EditDesk menu changes depending on the operation you are performing. To display a menu bar, select the appropriate option from the Menu Priority box and then enable it.



(a) Menu Priority box

The Menu Priority box functions as both a selection box and an enable box. Enabling the selected item locks the menu priority option so the menu bar remains visible even when the Player is displayed.

Select and enable: **To view:**

Source Area	The Source Area Management menu. This menu contains items for managing and searching for clips in the Source Area. See Managing EditDesk Clips on page 27.
Edit Sync	The Edit Sync menu. This menu allows you to create edit sync groups. See Maintaining Sync between Elements on page 900.
Editing	The Editing quick menu. The quick menu that appears is based on the soft effect or transition applied to the focus clip.
Effects	The Effects menu. If you want to access the A/V Tools box while monitoring clips in the Player, select and enable this option.
Filter Select	The Filter Select menu. This menu contains controls for searching for items on the timeline. See Searching for Timeline Elements on page 897.
Patch Panel	The Patch Panel menu. This menu contains controls for patching. You can use either the Automatic or Manual patching method. For more information, see Using the Patch Panel on page 911.

A/V Tools box Contains options that, when enabled, display a new set of menu controls in the EditDesk menu area that are specific to the enabled option. The A/V Tools box appears on the EditDesk when:

- Effects is selected and enabled from the Menu Priority box.
- No Menu Priority box option is enabled, and the Source Area (as opposed to the Player) is displayed.

Undo and Redo buttons Undo and redo operations on the EditDesk. See [Undoing and Redoing Operations](#) on page 58.

Focus box Switches the focus between the Source Area and Record Area. See [Focus Clip and Focus Area](#) on page 18.

Snap box Affects how clips are placed when gesturally moved or copied to the timeline. See [Setting Snap Options](#) on page 932.

Clip Library box Contains a list of the available clip libraries and an option to create a new clip library. The displayed option indicates the current clip library. See [Opening Clip Libraries](#) on page 371.

Name field Is used to rename a selected item, such as a clip or Source Area. See [Naming Items on the EditDesk](#) on page 42.

Clear/Delete button Deletes a specified item such as a clip, or clears a specified area of the EditDesk such as the Record Area. See [Deleting Items from the EditDesk](#) on page 41.

Save button Saves a specified item to the current clip library. You cannot save timeline items such as layers and elements. See [Saving to Clip Libraries](#) on page 377.

Item box Is used to specify an item, such as a clip or Source Area, to which you want to apply an operation, such as renaming or deleting.

Clear Offsets box Resets trimming offsets to 0. See [Viewing Head, Tail, and Offset Information](#) on page 971.

Focus button When trimming, snaps the positioner to the transition and updates the Player. See [Viewing Frames While Trimming](#) on page 974.

Trim button Enables Trim mode. See [About Trimming](#) on page 969.

Link Transition and Link Cut buttons Affect how dissolving transitions behave when trimmed or slid. See [Linking Transitions and Cuts](#) on page 975.

Sync button Activates a defined edit sync group. See [Creating Edit Sync Groups for Multiple Video Tracks](#) on page 903.

Channel box When trimming elements with animated soft effects, controls how the animation channel is affected by the trim. See [Trimming Animated Soft Effects](#) on page 988.

Lock button When trimming, locks the segment or transition being trimmed to the cursor so that the opposite end of the segment or transition is trimmed. See [Locking Clips While Trimming](#) on page 974.

Ripple Direction box Controls the direction in which a sequence ripples when editing with the Ripple button enabled. See [Setting the Ripple Mode](#) on page 931.

V+, L+, and A+ buttons Add video tracks, layers, and audio tracks, respectively, to the timeline. See [Adding Tracks](#) on page 886 and [Vertical Editing Interface](#) on page 956.

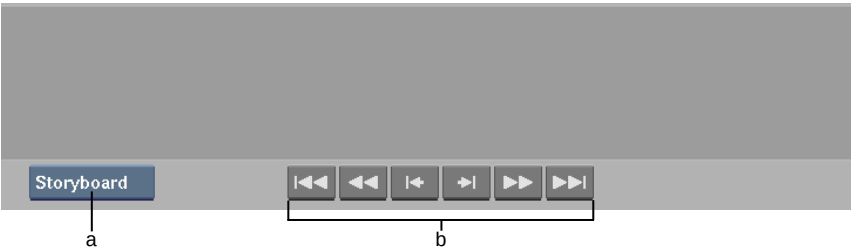
Ripple button Controls whether the edit sequence changes length when editing. See [Setting the Ripple Mode](#) on page 931.

- Commit Effect box** Commits soft effects.
- Modify Soft Effects options** Provide options for modifying several soft effects at once. See [Editing with Soft Effect Quick Menus](#) on page 1006.
- Media Management option box** Contains options for modifying the state of timeline segments. See [Editing to the Timeline](#) on page 929 and [Vertical Editing](#) on page 955.
- Timeline Process box** Processes effects created on the timeline. See [Processing Soft Effects](#) on page 314.

Record Area

The Record Area contains all the views you need for editing clips. For example, use reel mode views such as Storyboard for performing basic editing tasks; timeline views for performing core editing operations; and list views for viewing detailed information about timelines.

When you start Backdraft Conform for the first time, only the View Modes box and the scroll buttons appear in the Record Area. To load a clip to the Record Area, see [Adding Clips to an Empty Record Area](#) on page 930.



(a) View Modes box (b) Scroll buttons

- View Modes box** Changes the current view mode. See [Record Area View Modes](#) on page 867 and [Editing to the Timeline](#) on page 929.
- Scroll buttons** Scroll the clips in reel mode views such as Storyboard and Collapsed view, as detailed in the following table.

Click:	To scroll:
	To the previous clip.

Click:	To scroll:
	Backward. Press and hold for continuous scrolling.
	To the previous transition.
	To the next transition.
	Forward. Press and hold for continuous scrolling.
	To the next clip.

Resizing the Record Area Reel

You can resize the Record Area reel by grabbing any part of the Record Area (except a clip) and dragging the cursor down to shrink the reel, or up to enlarge the reel.

NOTE Use this method to resize the reel views (Storyboard, Head/Tail, Collapsed, and Frames). For information on resizing the timeline, see [Manipulating the Timeline](#) on page 878.

Focus Clip and Focus Area

When a clip is selected, it is said to be the focus clip. Keyboard commands such as editing operations are applied to the focus clip. The focus clip is also the clip that appears in the Player and the timeline.

Focus also applies to the Record and Source Areas, as both the Record Area and the Source Area can have a focus clip. The area that has focus dictates whether it is a Source Area or Record Area clip that is the current focus clip.

The Focus box in the EditDesk menu indicates which area currently has the focus.



(a) Focus box

To work with a clip on the EditDesk, it must be the focus clip, and the area in which it is located must have the focus. The Record Area focus clip is represented in the Source Area by a clip proxy with a red border around it. The Source Area focus clip has a green border.

To make a Source Area clip the focus clip:

- Click the clip in the Source Area.
The clip border changes to green, indicating that it is the Source Area focus clip. Also, the Focus box changes to Source Focus indicating that the Source Area currently has the focus.

To make a Record Area clip the focus clip:

- In a reel view, scroll to the clip using the scroll buttons.
The border of the Record Area clip in the Source Area changes to red, indicating that it is the Record Area focus clip. Also, the Focus box changes to Record Focus indicating that the Record Area currently has the focus.

To switch the focus between the Source and Record Area:

- Do one of the following:
 - Click the Focus box to toggle between Record Focus and Source Focus.
 - Press **F7** to change to Record Focus; press **F8** to change to Source Focus.

NOTE To switch focus, there must be a focus clip in the area that you want to have focus. The focus clip is the one that was previously selected in that area.

You can lock the Record Area or Source Area focus so that it does not change when you select clips in either area. This can be useful when editing clips. For example, if you are editing source clips to the record timeline (such as an overwrite edit), you may not want the area focus to change each time you perform an edit.

To lock the Record or Source Area focus:

- 1 If needed, click the Focus box to select the area on you want to lock the focus.
- 2 Click the LED light on the Focus box to enable it.
The light turns blue indicating it is enabled. Once locked, the focus will remain fixed on the selected area regardless of which clip is selected.

Navigating on the EditDesk

All Backdraft Conform systems come with a mouse and a pen and tablet for navigating and performing tasks. As you work with these devices, the appearance of the cursor changes according to the operation you are performing.

The Pen

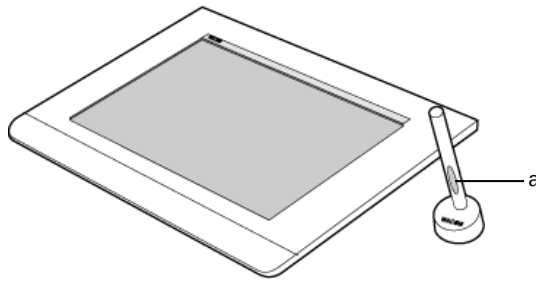
The pen is the recommended pointing device for using Backdraft Conform. Use the pen as you would a mouse—to move the cursor around the screen and select buttons and objects. As you move the pen over the tablet, the cursor on the screen follows the same path.

To click an item on the screen using the pen, point to the item, push down on the pen and then release.

NOTE To select multiple files or clips, press and hold the pen button and then press on each clip or file.

The pen is pressure-sensitive. This is useful when modifying values in numeric displays. For example, applying more pressure causes the values in numeric fields to change at a faster rate.

NOTE By default, the mouse is always active. To switch to mouse-only mode, press **Shift+M+Insert**. To switch back to pen mode, press **Shift+T+Insert**. The mouse remains active after switching back to pen mode.



(a) Pen button

The Mouse

To select a clip or other object, or to enable a menu button, click that item. Some functions are pressure-sensitive, such as the rate of change when dragging in numeric fields and sliders. When using the mouse, there are three levels of pressure.

Button	Pressure/Result
Left	Light: produces the slowest rate
Centre	Medium: yields a medium rate
Right	Heavy: produces the fastest rate

The Cursors

There are four basic cursor actions: pointing, clicking, pressing, and dragging. When Backdraft Conform starts, the cursor is a yellow cross. The shape and colour of the cursor change depending on the action you are performing.

Cursor	Name	Description
	Yellow cross cursor	Use to click menu buttons, select options, and enter values in numeric fields.
	Arrow cursor	Use to select frames and clips for editing and processing. You can also perform intermediate actions, such as entering numeric values or choosing options, while the arrow cursor is active.

Cursor	Name	Description
	Delete cursor	The cursor changes to a green recycling symbol when you drag a clip to the bottom of the EditDesk. When you release the clip, it disappears from the EditDesk. If no other copies of the clip exist on the EditDesk or in the clip library, the clip is permanently deleted. You can undo such deletions, up to the number of undo levels that you set in the Preferences menu. See Undo on page 523.
	Stop cursor	The cursor changes to a red stop symbol when you drag one or more clips to perform an action that is not allowed. Releasing the clip(s) will have no effect.
	Information cursor	Shows detailed information about an element on the timeline. To display information, Alt -click an element. See Displaying Detailed Clip Information on page 30.

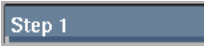
Fields, Buttons and Hotkeys

Use alphanumeric fields, buttons, and hotkeys to enter commands and perform most operations.

Buttons

There are several button styles on the Backdraft Conform interface. The following table illustrates the button types and fields, and describes their functions and purpose.

Item	Appearance	Use
Text field	Blue recessed box. 	Enter text. NOTE A black field indicates a non-editable field.

Item	Appearance	Use
Numeric field	Blue recessed box with an indicator along the bottom showing the current value relative to the permissible range. 	Enter numeric values. NOTE A black field indicates a non-editable field.
Toggle button	Grey button with a blue bar on the right side. 	Toggle the status of the item on or off. When enabled, the button is recessed and text appears in <i>italic</i> face.
Radio button	Same as toggle button, except the bar on the right is dark grey. 	Choose a mode from a series of mutually exclusive options. In a radio button series, only one can be “on” at a time. Turning one on causes any other in the series to turn off.
“Action” button	Grey raised button. 	Initiate an action, such as process or “undo”.
Option box	Blue raised button. 	Click and hold to display a pop-up menu of options. In some cases, the selected option is an action you can perform by clicking the box—this is indicated by the text on the box being centered. An example of this is the Output/Assemble box in the Clip Output menu.
Button arrow	A dark grey arrow on the left or right side of a button. 	Arrow on the right side indicates that pressing the button brings you deeper into the item's menu structure or into an alternative menu. Arrow on the left indicates that pressing the button takes you out of the menu structure.

Item	Appearance	Use
		
LED indicator	A square coloured “light” on a button. 	Status indicator. Blue indicates that the status is “on” or “active.” Dark grey indicates that the status is “off” or “inactive.” Yellow indicates that the status is “muted.”
Status boxes	Flat black box (neither recessed nor raised). 	Locked text that displays the status of a setting or application parameter.
Labels	Flat grey box (neither recessed nor raised). 	Labels, or categorizes, the items that lie under it.

Numeric Fields

Use numeric fields to enter numeric values.



(a) Current value (b) Relative position of current value in total range

When you click a numeric field, the field lightens (highlights) to indicate it is active. You can then use one of the following methods to enter a numeric value:

- Enter the value by dragging the cursor. To increase the value, press the field and drag right. To decrease the value, press the field and drag left. To decrease drag speed, **spacebar**-drag the field. To increase drag speed, **Alt+spacebar**-drag.

- To reset a value to the default with the pen, hold down the pen button and click the field. To reset a value with the mouse, hold **Ctrl** and click the field.
- Enter the value using the numeric keypad. See [Using the Numeric Keypad](#) on page 25.

Numeric fields indicate the relative position of the current value within the total range of allowable values. While dragging in the numeric field, an indicator shows the previous value. The indicator area turns black when the value in the field is not at its default. This indicator can be disabled in the Preferences menu. See [User Interface Preferences](#) on page 512.

Using the Numeric Keypad

The numeric keypad appears when you click a numeric field. Use the keypad as you would a calculator. When you click a number key, the number appears in the keypad field. To clear the keypad field, click the C key. To show intermediary results, click the = key.

To load the number from the keypad into the active numeric field and close the keypad, click the active field, click the keypad field, or press **Enter**. To cancel loading the number from the keypad into the active numeric field, click anywhere else.

Click Add or Subtract to add or subtract from the active number in the active numeric field. Alternatively, you can enter +/- (timecode fields) or + (numeric fields) before entering the number in the keypad.

TIP You can also use the numeric keypad on the workstation keyboard to enter numeric values.

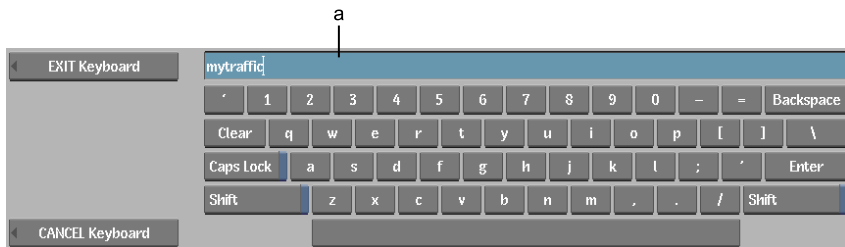
You can move the numeric keypad by dragging it from the bar along its upper edge. Its default location on the screen depends on a user interface preference set in the Preferences menu. See [User Interface Preferences](#) on page 512.

There are other types of calculators: the timecode calculator and the keycode calculator. The timecode calculator appears when you click a Timecode field. See [About the Timecode Calculator](#) on page 738. The keycode calculator appears when you click a Keycode field. See [About the Keycode Calculator](#) on page 739.

Entering Text with the Keyboard

When you are required to enter text in an alphanumeric field, you can use an on-screen keyboard or enter the text directly in the field. Set this preference in the User Interface section of the Preferences menu:

- When On-screen Keyboard is disabled, you enter text directly in a field.
- When On-screen Keyboard is enabled, you enter text in the on-screen keyboard that appears when you click a field.



(a) Keyboard field

Use the keyboard on the screen as you would use your workstation's keyboard. When you press a key on the screen, the character appears in the Keyboard field. You can also use your workstation's keyboard to type text.

To save the text entered into the workstation's keyboard, press **Enter**. To save the text entered into the on-screen keyboard, click Enter or click Exit Keyboard. To return to the previous menu from the on-screen keyboard without saving your changes, click Cancel Keyboard.

Press **Esc** to clear either keyboard field.

TIP You can use the **up** and **down arrow** keys on your workstation keyboard to retrieve previously typed character strings.

X Windows Copy and Paste Support

You can copy and paste text between text fields in Autodesk applications and other applications.

To copy and paste a section of text between text fields:

- 1 Select the text to copy from the source text field.

TIP Double-click to select the word and triple-click to select the entire line.

- 2 Click the destination text field using the middle mouse button or the pen button.

Hotkeys

Most menu buttons and operations have a hotkey equivalent. Backdraft Conform employs a robust hotkeys arrangement, including a Hotkey Editor that allows you to customize existing hotkeys and create new ones. See [Managing Hotkeys](#) on page 551.

The **Ctrl** and **Alt** keys on the right side of the keyboard are used for marking in and out points, respectively. The left **Ctrl** and **Alt** keys are used for all other hotkey combinations.

The **right arrow** and **left arrow** hotkeys allow you to navigate through clips in the Source Area, Record Area, and players. In the Source Area, you can navigate through clips using these hotkeys even when you are selecting clips with the arrow cursor. See [The Cursors](#) on page 21.

Managing EditDesk Clips

The EditDesk provides numerous tools for keeping clips organized. You can resize Source Area clip proxies, arrange them in different ways, sort them into multiple Source Areas using the EditDesk Library, and rename clips.

You can load images and audio into Backdraft Conform from a VTR, across a network, or from another media source. Media is stored as a frame on a disk array (also referred to as a framestore).

A sequence of imported images or audio, called a clip, can contain one or more frames. The number of frames in a clip is limited only by the size of your framestore.

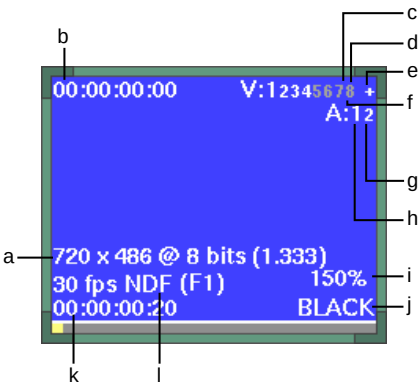
Using Clips with Different Resolutions

The EditDesk supports clips with different resolutions, bit depths, framerates, scan mode, and aspect ratio. Information on these characteristics is displayed on the clip proxy and in the clip information window. Clips that have a

resolution, framerate, or bit depth that differs from the project's default resolution are easy to identify—the information on the proxy is in blue text.

Clip Information

Source Area clip proxies and timeline segments contain information on the clip or segment such as the name and length in frames or timecode. The amount and type of information that appears depends on the option you choose in the Clip Information box found in the General section of the Preferences menu and in the Source Area menu bar (see [General Preferences](#) on page 517). The frames in a clip are numbered sequentially using either frame numbers or timecode (depending on which you choose to display). Timecode is always read from left to right, in hours, minutes, seconds, and frames.



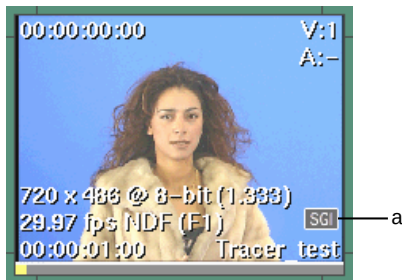
(a) Resolution, bit depth, and aspect ratio (b) Current frame number, timecode, and/or keycode (c) Video track in the clip: large font indicates the Primary track (d) Video track: small font indicates non-Primary tracks (e) The "+" means there are more than eight tracks (f) Audio and Video: grey text indicates locked tracks (g) Audio: small font indicates tracks not assigned to output channels (h) Audio: large font indicates tracks assigned to output channels (i) Speed indicator: appears if speed is other than 100% (j) Clip name (k) Duration (l) Framerate and Scan mode

The clip's name and a duration value appear at the bottom of each frame. The duration value differs depending on whether in and out points are marked on the clip, as outlined in the following table.

Clip contains:	Duration displayed:	Actual display:
No in or out points	The total length of the clip.	35

Clip contains:	Duration displayed:	Actual display:
An in point	The number of frames between the in point and the end of the clip.	[35
An out point	The number of frames between the beginning of the clip and the out point.	35]
An in and out point	The number of frames between the in and out points.	[35]

Soft-import clips have the same display characteristics, but also have an icon above the clip name. The icon indicates that the clip is a soft-import video or audio clip and the format of the source files.



(a) Soft-import icon of video displaying file format



(a) Soft-import icon of audio showing file format

Soft effects copied from the timeline to the EditDesk appear as follows.



(a) Axis soft effect (b) Clip name (c) Duration

Image courtesy of The Post Group

Displaying Detailed Clip Information

You can display detailed information about clips in the Source Area and elements on the timeline by **Alt**-clicking the clip or segment. You can also hold down **Alt** and drag the cursor over proxies or elements to view information on several clips.

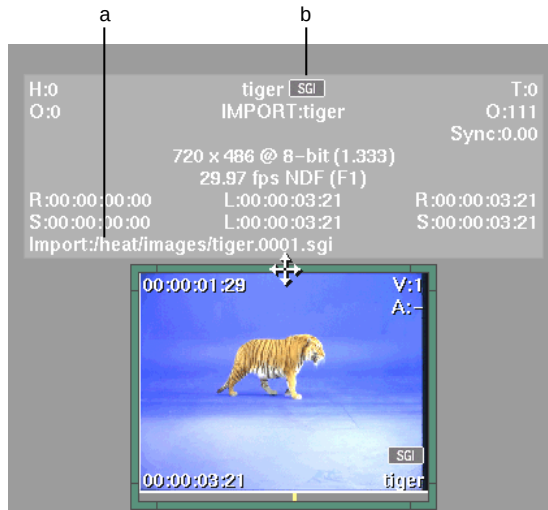
The information displayed for Source Area proxies differs depending on whether the proxy is for a source clip or for a sequence containing more than one source. The borders of sequence proxies have darkened corners, while the corners of source clip proxies are the same shade as the rest of the border.



Image courtesy of The House

The following information is displayed for source clips:

- Record name (if any), and the number of frames in the head and tail of the shot (if applicable)
- The source name (if any), and the offset value (if applicable)
- The resolution, bit depth, and aspect ratio
- The framerate and scan mode
- The proxy resolution (when proxies are defined)
- The offset value for elements out of sync with the master sync
- Audio gain status on audio elements
- Audio bit depth on audio clips
- Record and source timecode, and length of the clip
- Keycode
- Number of frames in the clip
- If the clip is a soft-import clip, the source format and path to its source files appears.



(a) Path to source file (b) Format of source

Image courtesy of The House

- The source start, duration, and end timecode (if any)
- The record source, duration, and end timecode

The following information is displayed for sequences:

- The clip name
- The number of video and audio tracks
- The default resolution, bit depth, and aspect ratio of the edited sequence (based on the parameters of the first clip dragged down to the timeline)
- The framerate, drop frame or non-drop frame clip, and scan mode



Accessing the Source Area Menu

Many tools for managing Source Area clips are located in the Source Area menu.

To access the Source Area menu:

- Select Source Area from the Menu Priority box and then enable it.



(a) Menu Priority box (b) Source Area menu

Selecting Clips

There are several methods you can use to select clips in the Source Area.

To select a single clip:

- Click the clip.
The border of the clip proxy turns green indicating it is the Source Area focus clip and that it is selected.

To select several clips:

- Do one of the following:
 - Drag a rectangle around the clips.

- **Ctrl**-click each clip proxy you want to select.
- To select a range of clips, click the first clip in the range, then while holding down the **Shift** key, click the last clip in the range.

The border of the last selected clip turns green; the borders of other selected clips turn yellow. The clip with the green border is both selected and the focus clip. Clips with the yellow border are only selected.

To select all clips:

- 1 Access the Source Area menu.
- 2 Choose Select All from the Select Clips box, or click Select All if it is already displayed.



All clips in the Source Area are selected.

To unselect all clips:

- Do one of the following:
 - In the Source Area menu, click Unselect All.
 - Click anywhere in the Source Area.

To select ganged clips:

- Choose Select Gang from the Select Clips box.



The gang to which the focus clip belongs is selected. For information on creating gangs, see [Ganging Source Clips](#) on page 39.

Arranging Source Clips

You can arrange selected clips in the Source Area.

To arrange clips in the Source Area:

- 1 Select some or all clips in the Source Area.
- 2 In the Source Area menu, select an option from the Clip Arrangement box.



The screenshot shows a menu bar with the following items: Source Area, Proxies, Search, Select All, Unselect All, Gang, and Stack. An arrow points to the Stack option.

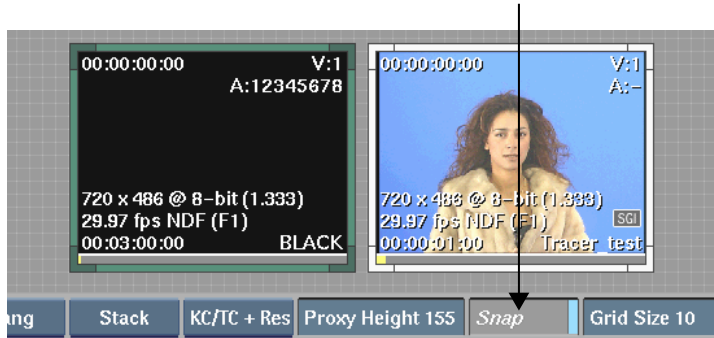
Select:	To:
Stack	Stack the clips one on top of the other. The clips are stacked under the focus clip. There is no indication of how many clips are in the stack.
Tile	Arrange the clips in a linear tiling pattern with the first clip selected appearing on the bottom left. If space runs out in the Source Area, the tiles overlap.
Cascade	Arrange the clips in a cascading pattern, which is similar to a stack except that there is a significant offset, so you can see the underlying clips. The focus clip appears at the top of the cascade. If one or all clips are selected, the origin of the cascade is the lower-left corner. Otherwise, the origin of the cascade is the focus clip position.

Using Snap to Grid

You can add a grid to the Source Area. Proxies snap to this grid, allowing you to align them. When you move proxies, the left and bottom edges of the proxies snap to the grid.

To add a grid:

- 1 Enable Snap in the Source Area menu.



- 2 Set the size of the grid cells (in pixels) using the Grid Size field.

For more information, see [Working with Grids and Guides](#) on page 104.

Setting a Default Proxy Height

Use the Proxy Height field to set a default size for proxies when they are loaded into the Source Area. The size range is from 100 pixels to the full resolution height of the clip that the proxy represents. Once in the Source Area, proxies can be resized gesturally.

Resizing Source Area Proxies

Resize proxies in the Source Area individually or as a group. You can reduce the size of proxies if your Source Area contains many clips, or enlarge a selected few that you might want to compare.

To resize a Source Area proxy:

- While holding down **Alt**, grab any side or corner of the proxy with the cursor and drag it. An indicator on the proxy displays its current size.

To resize a group of Source Area proxies:

- 1 Select the clips that you want to resize. See [Selecting Clips](#) on page 33.
- 2 While holding down **Alt**, grab a side or corner of the current source clip (green border) and drag it.

When you let go of the resized clip, the selected clips are resized to match it. If the focus source clip is not among the clips you select, the most recent focus clip within that selection becomes the current source clip.

TIP You can also resize Source Area proxies using one of the clip arrangement buttons. When you tile, cascade, or stack clips in the Source Area, all selected clips are resized to match the focus clip.

Searching for Clips

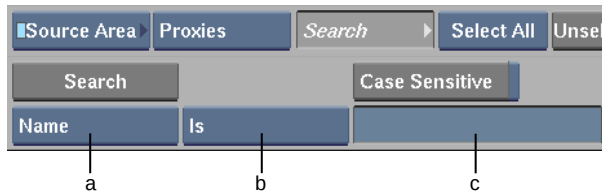
The search tool in the Source Area menu allows you to easily find clips located in any Source Area of your EditDesk.

To search for clips in the Source Area:

- 1 In the Source Area menu, click Search.



The Search controls appear.



(a) Search Criteria box (b) Argument option box (c) Argument field

- 2 Select options from the Search Criteria and Argument boxes.

Criteria Option	Specify	Possible Arguments
Name	A clip name	Is; Is Not; Contains; Does Not Contain; Is Less Than; Is Greater Than; Matches Pattern
Source TC	A source time-code	Is Equal To; Is Not Equal To; Is Less Than; Is Greater Than; Contains; Does Not Contain

Criteria Option	Specify	Possible Arguments
Record TC	A record time-code	Is Equal To; Is Not Equal To; Is Less Than; Is Greater Than; Contains; Does Not Contain
Date	A date	Is Equal To; Is Not Equal To; Is Earlier Than; Is Later Than
Clip Length	A clip's length	Is Equal To; Is Not Equal To; Is Greater Than; Is Less Than
Audio	Whether or not a clip contains audio	Contains; Does Not Contain
Resolution	A clip resolution	Is Equal To; Is Not Equal To; Is Less Than; Is Greater Than; Is Less Or Equal; Is Greater Or Equal
Soft Edit	Whether or not a clip contains soft edits	Contains; Does Not Contain
Soft Import	Whether or not a clip contains a soft imported source	Does Not Contain, Contains
Clip History	Whether or not a clip has a clip history, or is a clip history's source clip	Contains; Does Not Contain, Intermediates, Intermediates + Src, Sources
Archive Date	A date and time	Is Equal To; Is Not Equal To; Is Earlier Than; Is Later Than; Whenever; Never
Tape	A tape name or number	Is; Is Not; Contains; Does Not Contain; Is Less Than; Is Greater Than; Matches Pattern

Criteria Option	Specify	Possible Arguments
Comment	A comment	Is; Is Not; Contains; Does Not Contain; Is Less Than; Is Greater Than; Matches Pattern NOTE See Adding a Comment to a Clip on page 396.
Notepad	Text within a note	Exists; Does Not Exist; Contains; Does Not Contain; Matches Pattern NOTE See Adding Notes to Clips on page 43.
Deliverables	Whether or not a clip contains Deliverables	Contains; Does Not Contain

3 Supply the necessary search information in the Argument field.

4 Click Search.

If a match is found, the clip is selected and appears with a green border in the Source Area. If more than one match is found, the first clip appears with a green border and the other clips appear with a yellow border.

Ganging Source Clips

You can gang source clips or record clips together so that when you jog one, they are all jogged. This is useful for multicam setups. When you play a clip that is part of a gang, the current frame of all other ganged clips is updated once playback has stopped.

To gang clips on the EditDesk:

- 1 Display the Source Area menu.
- 2 Locate all the clips you want to group, and move their positioners to the timecode you want to lock.

TIP Each clip can have its own timecode offset, but if you are working with a multicam setup, you need to make sure all positioners are parked at the same location.

- 3 Select all the clips you want to gang.

NOTE You can select multiple source clips and one record clip.

- 4 If you want to add a record clip to a group, make sure you are in Record Focus. See [Focus Clip and Focus Area](#) on page 18.
- 5 Select Gang from the Gang box, or click Gang if it is already displayed.



All selected clips are ganged and the clip information turns green.

- 6 Jog the positioner of one of the ganged clips.
All ganged clips are also jogged.

To select all clips in a gang:

- 1 Select any clip that is part of a gang.
- 2 In the Source Area menu, click Select Ganged.

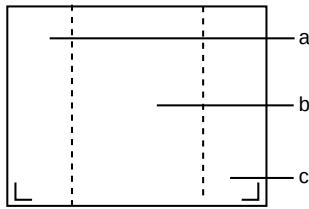
To remove a clip from a gang:

- 1 Select the clip you want to remove from the group.
- 2 Select Ungang from the Gang box, or click Ungang if it is already displayed.
All selected clips are unganged and the clip information turns yellow.

Copying Clips on the EditDesk

You can copy proxies only on the EditDesk; you cannot copy a clip while in the Player. You can also use the pen button to copy a clip. The copied clip becomes the current clip.

To copy the current clip, hold **F** and drag the copy away from the original clip. If you drag from the edge rather than the centre, you will extract a portion of the clip.



(a) Copy from the positioner to the end (b) Copy the entire clip (c) Copy from the start to the positioner

You can copy clips from either the Source Area or the Record Area.

Deleting Items from the EditDesk

You can delete items from the Source Area and Record Area gesturally or using a hotkey. You delete clips from the Source Area, and tracks, layers, and elements from the timeline in the Record Area.

To delete an item from the EditDesk gesturally:

- 1 Select the item you want to delete.
- 2 Drag it to the bottom of the screen.
The green recycle cursor appears.
- 3 Release the mouse button to delete the item.

To delete an item from the EditDesk using the Delete button:

- 1 From the Item box, select the type of item you want to delete.



- 2 Click Delete.
- 3 Select the item you want to delete.

To delete a clip or element using a hotkey:

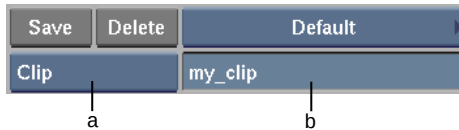
- 1 Put the cursor over a Source Area clip or a Record Area element.
- 2 Press **Alt+D**.

Naming Items on the EditDesk

You can name clips, the Source Area, the Record Area, the EditDesk, the EditDesk Library, layers, and elements.

See [Track Basics](#) on page 885.

You can also select multiple clips in the Source Area and rename them all with sequential numbers.



(a) Item box (b) Name field

To name an item:

- 1 Select the item.
- 2 Select the item type in the Item box. For example, to name a clip, select “Clip” in the Item box.
- 3 In the Name field, type the name you want to use.

To rename multiple clips with sequential numbers:

- 1 In the Source Area, select the clips you want to rename. **Ctrl**-click each proxy or drag a box around the proxies.
- 2 Select Clip from the Item box.
A numeric field appears next to the Name field.



- 3 Enter the number you want the sequence to start with.

4 Optional: Type a name for the clips in the Name field.

5 Press **Enter**.

The clips are renamed and given a sequential number. The assigned numbers increment based on the selection order; the sequential number is appended to the clip name if one exists.

Adding Notes to Clips

You can add notes to clips on the EditDesk using the built-in notepad, which is a simple text editor. Each entry is annotated with the creation date and time of the note and the user who entered it, so you can use the clip notepad as an informal discussion area for clips in progress.

Notes are saved as part of the clip's metadata so the information is preserved if you transfer the clip to another workstation using Wire®. When you copy a clip on the EditDesk that contains notes, the notes are copied too. When you archive a clip, its notes are saved with the archived clip.

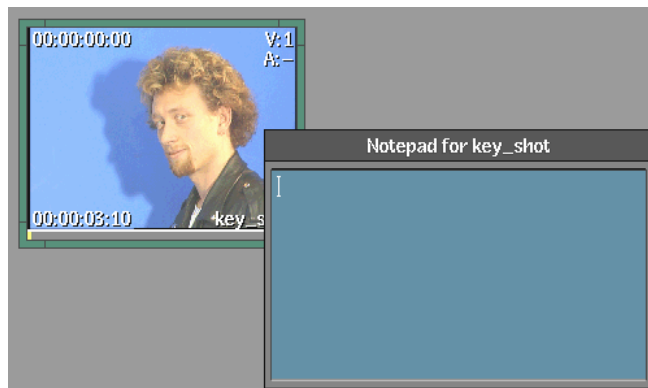
EditDesk search tools make it easy to find clips based on their notes.

NOTE Notes in the notepad should not be confused with comments that you add to clips in the clip library. You cannot add comments to clips on the EditDesk, and you cannot edit a clip's notepad in the clip library.

To add notes to a clip's notepad:

1 On the EditDesk, **Shift+V**-click a clip.

The clip's notepad appears.



TIP You can edit the notepad of any clip in the Source Area, including the record viewer. In the Record Area, you can edit a clip's notepad provided it is not in Timeline, List or Clip History view.

- 2 Enter your notes.
- 3 Click anywhere outside the notepad to close it.
An icon with the letter “N” appears on the clip, indicating that the clip has a note.

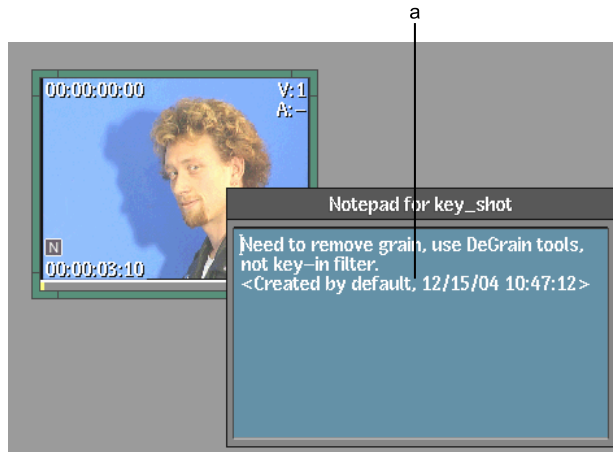


To edit a clip's notepad:

- 1 On the EditDesk, do one of the following:
 - **Ctrl+spacebar**-click a clip that has a note.
 - Double-click the “N” icon.

The clip's notepad appears.

The annotation that tracks the creation date and time and the user who added each note makes it easy to conduct informal discussions about a clip.



(a) Annotation

- 2 Place the cursor after the last line and then enter your notes.

TIP When you enter a note, the annotation is always added as the last line. To ensure an easily trackable sequence of notes, add new notes at the end.

- 3 Click anywhere outside the notepad to close it.

To delete a clip's notepad:

- 1 On the EditDesk, **Ctrl+spacebar**-click a clip that has a note.
- 2 Select all text in the notepad and then delete it.
- 3 Click anywhere outside the notepad to close it.
The “N” icon disappears, indicating that the note has been deleted.

To search for clips with notes:

- 1 On the EditDesk, select Source Area from the Menu Priority box.
- 2 Click Search.
- 3 From the Search Criteria box, select Notepad.



- 4 Define the arguments for your search.

Select:	To:
Exists	Search for all clips to which notes have been added.
Does Not Exist	Search for all clips to which notes have not been added.
Matches Pattern	Search for notes containing a text string that you specify (this option supports wildcards such as * and \$).
Does Not Contain	Search for notes not containing a text string that you specify (case-sensitivity is optional).
Contains	Search for notes containing a text string that you specify (case-sensitivity is optional)

- 5 Click Search.

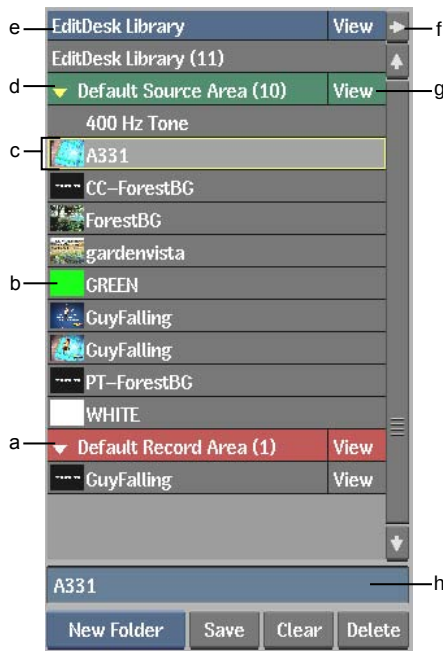
Search results appear selected on the EditDesk.

To resize a notepad:

- Click the lower-right corner of the notepad and drag.
A red outline of the notepad appears as you drag.

EditDesk Library

An EditDesk Library is a set of Source and Record Areas. Use EditDesk libraries to organize your clips by creating Source and Record Areas and sorting related clips into them. The EditDesk Library optimizes the use of an otherwise relatively small area by providing access to multiple folders, Source Areas, and Record Areas. Folders can be collapsed and expanded if they contain Source Areas and Record Areas. Similarly, Source Areas and Record Areas can be collapsed and expanded if they contain clips. Entries can be reorganized and moved within the EditDesk Library.



(a) Record Area (red entry) (b) Proxy (c) Clip (d) Source Area (green entry) (e) EditDesk (f) Expand button (g) View label (h) Name field

The View label indicates which Source Area, Record Area, and Record Focus clip are currently displayed on the EditDesk.

You can save the EditDesk Library and its entries to the current clip library.

Controlling the Display of the EditDesk Library

The EditDesk Library appears on the left or right side of the Source Area. You can toggle the visibility of the EditDesk Library and set the side of the screen on which you want it to appear:

- To toggle the visibility of the EditDesk Library, press **Ctrl** and swipe the side of the screen.
- To switch the EditDesk Library's sides, press **Ctrl** and swipe the side of the screen opposite the EditDesk Library.

Working with Folders

Folders can contain Source and Record Areas. Use multiple folders to help you organize your work. The hierarchy of EditDesk Library entries is indicated by indentation. The EditDesk Library default folder is the grey entry at the top of the EditDesk Library.

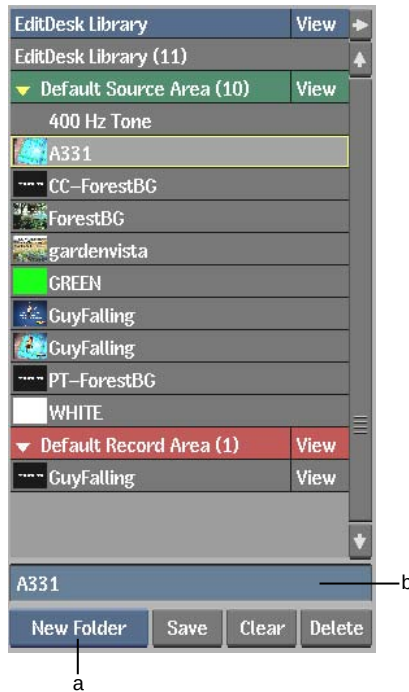
When you create a folder, its location in the EditDesk Library depends on the current selected entry:

- If the top-level folder is the current selection (with a yellow border), the new folder appears at the bottom of the EditDesk Library.
- If a Source or Record Area is the current selection, the new folder appears immediately below that entry.
- If a nested Source or Record Area is the current selection, the new folder appears below the contents of the parent folder.

You can always move a folder as needed, as described in [Moving Entries in the EditDesk Library](#) on page 53.

To create a folder:

- 1 Select an item in the EditDesk Library according to the location you want for the new folder.
- 2 From the New Entry box, select New Folder.



(a) New Entry box (b) Name field

- 3 Type a name for the new folder in the Name field.

Working with Source and Record Areas

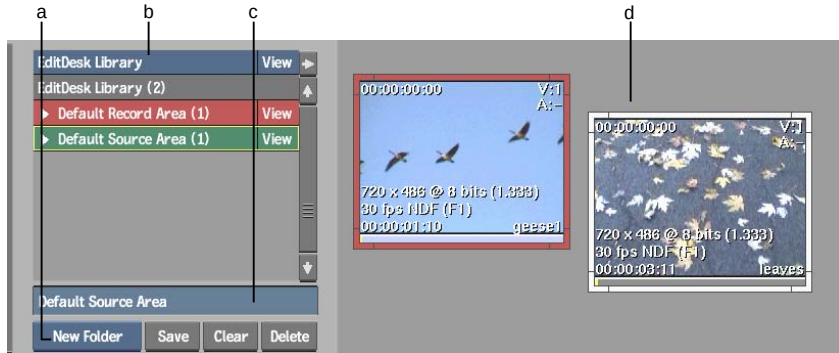
You can create multiple Source Areas to hold the clips that you use for each scene. You can also create multiple Record Areas to sort the multitrack clips you are editing. These areas can contain any number of clips. The number of clips they contain is indicated by the number to the right of the area name in the EditDesk Library.



By default, the EditDesk has one Source Area and one Record Area. When you capture clips from a VTR or another clip I/O device, you capture them to the current Source Area or to a clip library. To work with clips captured to a clip library, you must load them to the Source Area. Because the Source Area is the

starting point for almost all the clips you work with, you often have to keep track of many sources in a single Source Area. Using the EditDesk Library, you can create multiple Source Areas and sort clips into them as needed. For example, you can separate sources according to the scenes in which they are used, or sort types of shots to make it easier to find what you want when you need a specific shot.

When the EditDesk Library contains multiple Source and Record Areas, you can sort clips in them gesturally.



(a) New Entry box (b) EditDesk Library (c) Name box (d) Source Area

To create a Source or Record Area:

- 1 Select the Source Area, Record Area, or folder under which you want to create the area.
- 2 From the New Entry box, select New Src Area or New Rec Area.
A new entry appears in the EditDesk Library. It is the current Source or Record Area, as indicated by a yellow border around the entry, and is empty.
- 3 Type a name for the new area in the Name field.

TIP To activate the EditDesk Library Name field for the currently selected item, press **Alt+9**.

Showing or Hiding the Contents of Folders and Areas

Expand or collapse a folder, Source Area, or Record Area to show or hide its contents.

To expand or collapse a folder or area:

- Click the triangle to the left of its name.



Selecting Areas and a Focus Clip to Display on the EditDesk

The View label indicates which Source Area, Record Area, and Record Focus clip are currently displayed on the EditDesk.

To select a new Source Area, Record Area or Record Focus:

- Click the View column in an area or Record Focus clip's row.
The View label appears, and the selected entry is displayed.



TIP You can accomplish the same thing by double-clicking a row. Also, to view a clip in the Player, double-click its thumbnail in the EditDesk library.

Selecting Entries in the EditDesk Library

You can only select one folder or area at a time. Selected folders or areas are indicated by a yellow border. Selecting areas does not affect Source and Record Focus.

You can select multiple clips.

To select an entry in the EditDesk Library:

- Click it once.

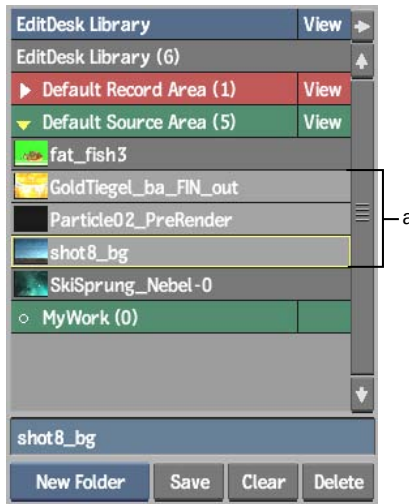
To select multiple clips:

- While holding down **Ctrl**, click the clips you want to select.

To select a range of clips:

- While holding down **Shift**, click the first and last items in the range.

Selected clips turn light grey. If more than one clip is selected, the last clip selected is highlighted with a yellow border.



(a) Selection of multiple clips

If one or more (but not all) clips in an area are selected, the arrow next to the area turns yellow. If all clips in an area are selected, the arrow turns green. This applies even if an area is collapsed.

Editing in the EditDesk Library

Perform editing actions in the EditDesk Library using editing hotkeys. For example, perform insert and replace operations by selecting a current Source Area clip and pressing the appropriate editing hotkey. You can also copy clips using the **F** (copy) key and dragging the copy away from the list. For example, you can drop the copy back onto the list, into the Record Area, or into another Source Area or Record Area in the EditDesk Library.

Moving Entries in the EditDesk Library

Move entries in the EditDesk Library by clicking and dragging them. Move clips into areas, and areas into folders. Move folders and areas up or down in the EditDesk Library. When dragging entries in the EditDesk Library, the cursor turns green when it is over a valid drop area; otherwise, it is white.

To move clips to another area:

- 1 Select the clips you want to move.
- 2 Drag the selection over an area and release the cursor.
The clips are moved to that area.

To move an area to another folder:

- 1 Select the area you want to move. If the area is collapsed, you can expand it to verify its contents.
- 2 Drag the area over a folder and release the cursor.
The area and its contents are moved to that folder.

To move folders or areas up or down in the EditDesk Library:

- 1 Select the entry you want to move. If the entry is collapsed, you can expand it to verify its contents.
- 2 Drag the folder over another folder, or an area over another area, and release the cursor.
The entry and its contents are inserted just above that folder or area.

Renaming, Deleting, and Clearing Entries in the EditDesk Library

You can rename entries in the EditDesk Library. You can also delete entries, or clear entries of their contents.

To rename an EditDesk Library entry:

- 1 Select the entry.
- 2 Click the Name box at the bottom of the EditDesk Library.
- 3 Press **Esc** to clear the Name box.

- 4 Type in a new name for the entry and press **Enter**.

To delete or clear an EditDesk Library entry:

- 1 Select the entry you want to delete or clear.
- 2 Click Delete or Clear as required. (Clips can only be deleted, because they do not contain other entries.)

When deleting or clearing entries, keep in mind the following:

- When an entry is deleted, so are its contents. This includes clips and, in the case of folders, areas. For example, if you delete a Source Area, all its clips are deleted along with the Source Area itself.
- When an entry is cleared, all of its contents are deleted. However, the entry itself remains. For example, if you clear a folder, all its Source Areas, Record Areas, and their respective clips are deleted, but the folder remains.
- Deleting the top-level default folder clears the EditDesk Library of all entries. A new default folder, Source Area, and Record Area are then created.

NOTE Clearing and deleting EditDesk Library entries does not affect the contents of the clip libraries belonging to your project.

Saving to the Clip Library

You can save the following components of the EditDesk Library to the clip library:

- A Source Area
- A Record Area
- The EditDesk Library itself (all areas and folders in the current EditDesk Library)

When you save these components to the clip library, they are appended to the existing clip library contents. For example, when you save a Source Area to the clip library, the Source Area appears as an entry in the clip library. You can expand the Source Area in the clip library to see the list of clips it contains.

Similarly, when you save an EditDesk Library to the clip library, all its entries appear in the clip library. You can expand these entries in the clip library to see their contents.

When you do a save, if entries of the same name are found to already exist in the clip library, you are given the following options.

Add Adds the entry without overwriting the existing entry. The two entries will have the same name and will coexist.

Replace Replaces the existing entry. If there are multiple existing entries with the same name, they are all replaced.

Skip The entry is not saved.

To save a Source Area or Record Area to the current clip library:

- 1 In the EditDesk Library, select the Source or Record Area you want to save.
- 2 Under the EditDesk Library, click Save.

To save the EditDesk Library to the clip library:

- 1 In the EditDesk Library, select the grey, top-level default folder.
- 2 Under the EditDesk Library, click Save.

Once entries are saved to the clip library, they can be loaded back to an EditDesk Library. If you do this, just make sure to select EditDesk Library in the Destination box to load the selected entries to the EditDesk Library.

For more information on working with clip libraries, see [Clip Libraries](#) on page 369.

Using List View

The List View is an expanded view of the EditDesk Library. It contains extra columns of information about your clips. All the same functionality as the EditDesk Library is available, along with some additional features.

To display List View:

- Do one of the following:
 - Click the Expand button  at the top-right corner of the EditDesk Library.
 - Press **Shift+L** to switch between the EditDesk Library default view and List View.
 - In the Source Area menu, select List View from the View box.



The List View appears.

EditDesk Library	View	S-I	D	H	TC In	TC Out	Duration
EditDesk Library (26)							
▼ Default Record Area (2)	View	S-I	D	H	TC In	TC Out	Duration
 TX	View				00:00:00:00	00:00:00:06	00:00:0
 WHITE					00:00:00:00	00:00:00:01	00:00:0
▼ Default (21)	View	S-I	D	H	TC In	TC Out	Duration
 1 kHz Tone					00:00:00:00	00:00:30:00	00:00:3
 A001					00:00:00:00	00:00:00:01	00:00:0
 A031_1					00:00:00:00	00:00:00:01	00:00:0
 ClockStab					00:00:00:09	00:00:00:10	00:00:0
 COL_NOISE					00:00:00+00	00:00:00+01	00:00:0
 Corridor					00:00:00:20	00:00:01:11	00:00:0
 ...rplace-CNSLD-shot_6_swirl					00:00:00:00	00:00:01:02	00:00:0
 DeInterlace-COL_NOISE					00:00:00+00	00:00:00+02	00:00:0
 GoldTiegel_ba_FIN_out.0009					00:00:00:00	00:00:00:01	00:00:0

Customizing List View

You can change the width of List View columns, specify which columns you want displayed, and move columns.

To change the width of List View columns:

- Drag the border of a column heading to the right or left.

To show, hide, or move List View columns:

- 1 Click Preferences.
- 2 Under EditDesk Library, select the columns you want displayed. Items denoted with a star (*) are displayed.
- 3 Drag items up or down in the list to change the order in which they appear. The selections listed from top to bottom represent the display order from left to right.

See [EditDesk Library](#) on page 524 in the Preferences chapter.

Sorting in List View

Click a column heading to sort the list according to that column's criterion. For example, to sort by name, click the Name column heading. To reverse the sort order, click the column heading again. A sort arrow appears when you click the column heading indicating the direction of the sort. The sort occurs within each area or folder.

Editing Clips in List View

You can change clip names in the EditDesk Library. In the List View, you can also modify additional clip properties:

- TC In
- TC Out
- Duration (based on the changes you make to TC In and TC Out)
- Tape (only for source clips)
- Comment

If a property you want to edit is not displayed, change extended List View display options in the Preferences.

To edit clip properties in List View:

- 1 Display List View.
- 2 Click the property you want to edit and either enter a new value or drag the cursor left or right to change a numeric value.

To lock clip properties so they cannot be modified:

- Disable the Edit List box under the bottom right corner of the List View.

Using Clip List View

Clip List View shows the contents of the record focus clip, including layers, soft effects, and history. The history of a clip is collapsed by default.

To display Clip List View:

- 1 In the EditDesk Library, set the focus to the Record Area clip you want to view in Clip List View.
- 2 In the Source Area menu, select Clip List View from the View box.



Clip List View for the selected clip appears.

The diagram shows a hierarchical tree structure of a clip's history. A vertical line with a circle at the top is labeled 'a' at the top and 'b' at the bottom. The tree structure is as follows:

- Root: GuyFalling (Type: GuyFalling, Element: GuyFalling)
- Video Track 1 (Type: Video Track 1, Element: *)
 - Layer 2 (Type: Layer 2, Element: *)
 - Video Source (Type: Video Source, Element:)
 - It: (Type: It:, Element:)
 - Video Track 1 (Type: Video Track 1, Element:)
 - Layer 1 (Type: Layer 1, Element: *)
 - SoftEffect (Type: SoftEffect, Element: GuyFalling)
- In Mark (Type: In Mark, Element:)
- Out Mark (Type: Out Mark, Element:)
- Cut (Type: Cut, Element:)
- Video Source (Type: Video Source, Element: PT-ForestBG)
 - It: CC-ForestBG (Type: It: CC-ForestBG, Element: CC-ForestBG)

(a) Expanded History (b) Collapsed History

Undoing and Redoing Operations

You can undo and redo operations you perform in the EditDesk, the Player, the Triptych Player, and the full-screen Player, using the Undo and Redo

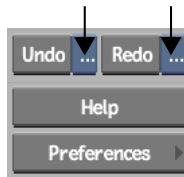
buttons. For example, you can undo most editing actions, as well as operations made to Source Area clips such as clip deletions.

The Undo and Redo buttons on the EditDesk and in the players have multiple levels, which you set in the Preferences menu. By default, you can undo any of the last 10 operations. See [Undo](#) on page 523. The Undo buttons in the Backdraft Conform modules have various levels of undo.

Operations performed in the EditDesk, the Player, and the Triptych Player that you can undo and redo are listed in a pop-up box, so that you can easily select the operation that you want to undo or redo.

To undo or redo an operation of your choice:

- 1 Click the Undo List or Redo List button on the right side of the screen.



A list of the recently performed operations appears. Operations are listed in the order they were performed, the oldest operation appearing at the top of the list and the most recent at the bottom of the list.

- 2 Select the operation you want to undo or redo.

Alternatively, press Backspace to undo the last performed operation, and press Shift+Backspace to redo the last undone operation.

Accessing System Messages

The message bar that appears on the EditDesk provides feedback from the system as it is performing an operation. You can also access a log of the system messages in the message history at any time during the current session. The next time you start a session, the message history is cleared and the system begins logging messages for that session.

To prevent too many messages from being displayed, the log identifies identical messages instead of listing each one separately. It also identifies messages that are similar. For example, the first and last frames of a processing operation are listed as two separate messages. Since all the frames processed in-between are treated as similar, they are grouped into one processing message.

To access the message history for the current session:

- From anywhere in the application, press **Ctrl+Alt+F7**.
The Message History window appears showing a list of all messages logged for the current session. Identical and similar messages are identified in the Repeated column.

# ▾	Time	Message	Source	Repeated	
1	Tue Mar 21 16:41:40 2006	Processing: Axis – frame 10 of 10 – 00:00.	message		
2		Processing: ...	message	Similar messages: 4	
3	Tue Mar 21 16:41:39 2006	Processing: Axis – frame 0 of 10 – 00:00.	message		

(a) Four similar processing messages indicate processed frames between the first and last frames, which are listed as separate processing messages.

You can set the number of values saved, reset the message history, and do specific searches. For information on these settings, see [Miscellaneous Preferences](#) on page 516.

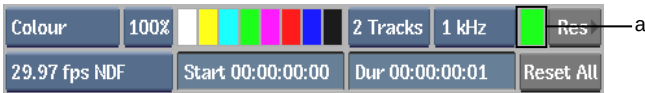
Colour Picker

Use the colour picker to pick and mix colours from the image, and to display or change the colour values of any colour. It is available in many modules.

The colour picker takes LUTs and the exposure and contrast settings into account. Disable LUTs and reset exposure and contrast to display actual colour values.

NOTE The colour picker used with overlays (grids, letterboxes...) does not take LUTs or the exposure and contrast settings into account.

To display the colour picker, click a colour pot in any module.



(a) Colour Source tool

You can then set the colour pot to use the colour you need. Using the colour picker, you can pick colours by:

- Setting colour model channel values

- Sampling pixels in a clip
- Selecting a colour pot
- Mixing colours on a palette



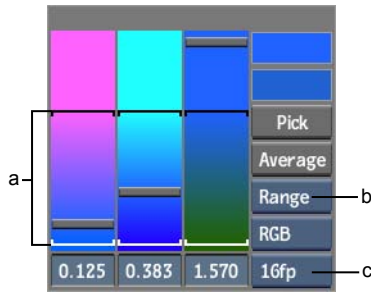
(a) Current Colour pot (b) Reference Colour pot

By default, the colour picker appears over the colour pot you clicked to open it. Once it is open, you can move it to another location by dragging the grey bar along its upper edge. You can also set colour picker preferences to open the colour picker at other locations (the colour picker inherits the same preferences as those you set for the calculator). See [User Interface Preferences](#) on page 512.

To cancel colour picking at any time, click anywhere outside the colour picker.

Using the Colour Picker with 16-bit Floating Point Colours

The colour picker allows you to pick colours from a 16-bit floating point media. And to accommodate the wide range of possible values in 16-bit floating point, the colour picker displays additional information.



(a) Range Brackets (b) Mode box
(c) Bit Depth box

Whenever you set the Bit Depth box to 16fp:

- Each colour slider contains a pair of brackets. The brackets define the 0-1 colour range. Only values inside this 0-1 range are valid once converted to a 8-, 10-, and 12-bit colours.
- You can set values below 0 or over 1. Such values are only possible in the 16-bit floating point colourspace and are not valid in 8-, 10-, and 12-bit colours.
- The numeric fields can use negative values.

Picking Colours by Setting Colour Model Channel Values

You can pick colours by adjusting colour model channel sliders. You can also enter channel values directly into the fields below each slider.

The Mode box, Colour Model box, and Bit Depth box settings, and channel value units (percentages or bit-values) are saved on a per-user basis, at the end of each session.

To pick colours by setting colour model channel values:

- 1 Click a colour pot to open the colour picker.
The Current Colour pot and Reference Colour pot both display the incoming colour.
- 2 (Optional) To pick a colour at a bit depth different from the one of the displayed image or clip, select a an option from the Bit Depth box.



(a) Mode box (b) Colour Model box (c) Bit Depth box

NOTE The option selected in the Bit Depth box only affects the representation of colours in the picker: it does not affect the bit depth of the displayed image or clip.

- From the the Mode box, select how the numeric values represent each channel.

Select:	To:
Colour	Use a range based on bit depth (0-255 for 8-bit, 0-1023 for 10-bit, 0-4095 for 12-bit). Only available with Bit Depth set at 8-bit, 10-bit, or 12-bit.
Colour %	Use a percentage value, relative to the entire range of the selected bit depth, ranging from 0-100%. Only available with Bit Depth set at 8-bit, 10-bit, or 12-bit.
Range	Use the full range of colours in a 16-bit floating point colourspace, entered as a floating-point number. The brackets enclose the 0-1 range. Only available with Bit Depth set at 16fp.
[0-1]	Display the 0-1 range inside the full 16-bit floating point range, where 0 and 1 are enclosed by brackets. You can still use values outside the 0-1 range. Only available with Bit Depth set at 16fp.

- From the Colour Model box, select the colour model you want to work with.

Select:	To set colours using the:
RGB	Red, green, and blue channels.

Select:	To set colours using the:
HLS	Hue, luma, and saturation channels.
YUV	Luma (Y) and chroma (U, V) channels.

- 5 Adjust the sliders, drag the numeric fields, or enter the values in the fields for each slider.

As you adjust the sliders, the colour in the Current Colour pot changes to reflect the current colour. You can compare the current colour to the incoming colour in the Reference Colour pot.

- 6 To apply the selected colour, click the Current Colour pot.

Sampling Colours in a Clip

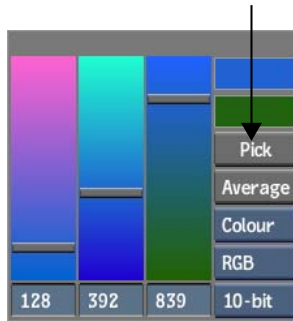
Sampling pixels in a clip is often the best way of setting the colour you need. For example, to suppress colour spill when keying a clip, the best way to set the colour suppression target is to zoom in on the result clip and then sample the colour spill directly.

You can sample single pixels, take an average along a path, or take an average from inside a selection box.

NOTE Applying a LUT or changing exposure/contrast affects the display, but colour picking is done using the original values of the media. Disabling LUTs and resetting exposure/contrast values will show the actual pixel values.

To sample a pixel:

- 1 Click a colour pot to open the colour picker.
The Current Colour pot and Reference Colour pot both display the incoming colour.
- 2 Click Pick.



- 3 Click in the Player or image window to sample a pixel in the clip.
The sampled colour appears in the Current Colour pot.
- 4 To apply the selected colour, click the Current Colour pot.

TIP From any colour pot, **Shift**-click to enter Pick mode. Clicking while dragging the Pick icon over an image will display its RGB values. Click again to transfer the colour to the colour pot.

To sample an average colour along a path:

- 1 Click a colour pot to open the colour picker.
The Current Colour pot and Reference Colour pot both display the incoming colour.
- 2 Click Average.



- 3 Drag a path in the Player or image window to take an average from the clip.
The sampled colour appears in the Current Colour pot.

- 4 To apply the selected colour, click the Current Colour pot.

TIP To sample from paths in different parts of the clip, press **Alt** when finishing the first path-sample and then begin another path elsewhere. Repeat if necessary. Release the cursor without pressing **Alt** to apply the cumulative average to the Current Colour pot.

To sample an average inside a selection box:

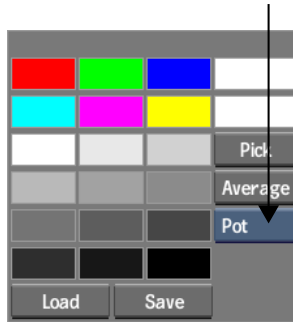
- 1 Click a colour pot to open the colour picker.
The Current Colour pot and Reference Colour pot both display the incoming colour.
- 2 Click Avg.
- 3 **Ctrl**-drag a path in the Player or image window to take an average from the clip.
The sampled colour appears in the Current Colour pot.
- 4 To apply the selected colour, click the Current Colour pot.

Selecting a Colour from the Colour Pots

Select from 1 of 18 preset colours in the colour pots. You can also store custom colours in the colour pots.

To select a colour from the colour pots:

- 1 Click a colour pot to open the colour picker.
The Current Colour pot and Reference Colour pot both display the incoming colour.
- 2 From the Mode box, select Pot.



- 3 Click one of the colour pots to apply the colour to the Current Colour pot.
- 4 To apply the selected colour, click the Current Colour pot.

To customize the colour pots:

- 1 Click a colour pot to open the colour picker.
The Current Colour pot and Reference Colour pot both display the incoming colour.
- 2 Use the colour picker to apply the colour that you want to store to the Current Colour pot.
- 3 From the Mode box, select Pot.
- 4 Click and hold on the pot in which to store the selected colour.

When you select Pot from the Mode box, Save and Load buttons appear at the bottom of the colour picker to save custom sets of colour pots. See [Saving Setups and Preferences](#) on page 481.

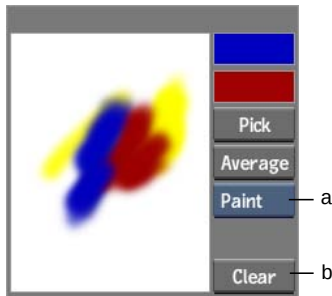
Mixing Colours Using the Colour Palette

You can use the colour picker to mix colours on a palette.

To mix colours:

- 1 Click a colour pot to open the colour picker.
The Current Colour pot and Reference Colour pot both display the incoming colour.

- 2 From the Mode box, select Paint.

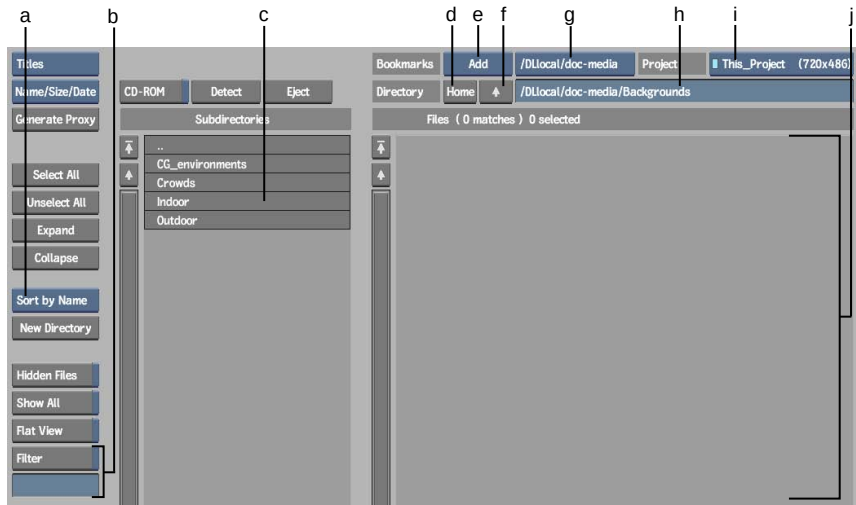


(a) Mode box (b) Clear button

- 3 Use the colour picker to apply the colour that you want to store to the Current Colour pot.
- 4 Drag over the mixing palette to add a swatch of the current colour.
- 5 Repeat the steps 3 and 4 to add other colours to the palette.
Colour mixing occurs as more colours are added and they blend.
- 6 To clear the mixing area at any time, click Clear.
- 7 To select a colour from the mixing palette, click Pick and then click in the mixing area.
The mixed colour appears in the Current Colour pot.
- 8 To apply the selected colour, click the Current Colour pot.

Browsing the File System

Use the file browser to import or export files to the UNIX file system. For example, when you load a file from the Import Image menu in the clip library, the file browser appears.



(a) Sort box (b) Filter tool (c) Subdirectories list (d) Return to home project directory
 (e) Add/Delete Bookmark (f) Go to Parent Directory (g) Bookmarks list (h) Directory
 box (i) Project box (j) File list

Filter tool Displays a subset of the files in the current directory.

Sort box You can sort files in the File list by name or by date.

Select:	To:
Sort by Name	Sort files alphabetically by name.
Sort by Date	Sort files by their creation (or modification) date.

Subdirectories list Displays all available subdirectories in the current directory. To go to a subdirectory, click its name in the list.

Reset button Resets the Project box to the current project.

Parent button Navigates to the parent directory.

Add/Delete Bookmark box Bookmarks (or removes a bookmark to) the current directory.

Bookmarks List Contains current bookmarks.

Directory box Displays the current directory. You can navigate to other directories using the navigation aids (such as the Go To Parent Directory arrow). Alternatively, click the Directory box and enter a new path.

You can abort the scanning of a directory by clicking anywhere in the file browser. Files scanned up to the point you abort appear. You have to re-enter the directory if you then want to scan all of its files.

You can create a new directory within the current one by clicking the Create Directory button and entering the new name.

NOTE You can opt to have the on-screen keyboard appear when you click the Directory box. Select Keyboard On in the EditDesk Preferences.

Project box Displays the current project. To load or save images, setups, or preferences to a different project, select the project in the Project box.

File list Displays all available files in the current subdirectory, depending on the options you specify in the File Extension box, the Filter settings (if any), and whether or not you are showing hidden files. You can view the File list in Titles or Proxy mode. You can select a single file, a range of files, or all the files in a sequence. See [Selecting and Loading Files](#) on page 72.

Titles/Proxies Select Titles to view files by name. Select Proxies to view files by image proxy. Proxies view is useful for viewing image or font files. Select List View to view files by name and file description, such as size and date.

Name/Size/Date This item is only available in Titles mode. Select Name/Size/Date to view files including all file information. Select Name to view only the file name.

Hidden Files Enable to list all files including “hidden” system files such as *.cshrc*.

Expand and Collapse Use these items to expand and collapse groups of files in the File list. For example, a series of images can be grouped (collapsed) into a single entry in the file browser. These buttons correspond to the expand and collapse arrows that appear in the File list.

a	➤ 2002_faster.sgi [1-120]	120.19 MB	2005/07/20	14:50:59
b	➤ 2002_slow.sgi [1-120]	120.19 MB	2005/07/20	14:58:54
	2002_slow.0001.sgi	1.00 MB	2005/07/20	14:58:54
	2002_slow.0002.sgi	1.00 MB	2005/07/20	14:58:59
	2002_slow.0003.sgi	1.00 MB	2005/07/20	14:59:03
	2002_slow.0004.sgi	1.00 MB	2005/07/20	14:59:07
	2002_slow.0005.sgi	1.00 MB	2005/07/20	14:59:12

(a) Expand arrow (b) Collapse arrow

Show All Displays all files in the current directory, regardless of their file extension. This button overrides the specified file extension.

Flat View Displays all files in the current directory without grouping image sequences.

Create Dir Use to create a new directory within the current directory.

Delete Use to delete a file or selection of files from the current directory. You are prompted to confirm the deletion.

Gen. Proxies Use to generate proxies for the selected file or sequence in the file browser. Generating browsing proxies make it easier for you to identify images on the file system using Proxies view.

Refresh Use to refresh the view in the file browser.

User box Appears if you are setting preferences for a specific user.

Using Bookmarks

You can save frequently visited paths in the Bookmarks list. These bookmarks, which are stored with your user settings, can be recalled for quick directory navigation.

To add a bookmark:

- 1 Navigate to the directory that you want to add as a bookmark.
- 2 Select Add in the Add/Delete Bookmarks box.

To recall a bookmark:

- Select the bookmark that you want to recall from the Bookmarks list.

To delete a bookmark:

- 1 Select the bookmark that you want to delete from the Bookmarks list.
- 2 Select Delete in the Add/Delete Bookmarks box and then click Confirm.

Using the Filter Tool

When there are many files in a directory, it can be cumbersome to search for a particular file. You can use the Filter tool to display a particular subset of the existing files.

To use the Filter tool:

- 1 Enable the Filter button.
- 2 Type in a character string in the Filter String field, including wildcards such as *.

NOTE Text entered in the Filter field is case-sensitive.

- 3 Press **Enter**.

The filter is applied: only the files that have the character string in their file name are displayed in the file browser.

- 4 To disable the current filter and view all files, disable the Filter button.

NOTE The Filter tool uses standard UNIX wildcard conventions. For example, if you filter on the word “Oblique” (without a wildcard), the tool will not recognize something like “Helvetica-Oblique”.

Selecting and Loading Files

To load a file into Backdraft Conform, you must select it in the File list. You can load a single file, a range of files, or all the files in a sequence.

To select and load files:

- 1 Select the files you want to load:
 - To select a single file, click the file name in the File list.
 - To select a range of files, **Shift**-click the first and last files in the range you want. Alternatively, click and drag across the desired file names in the list.
 - To add to a range of files, hold **Ctrl** or the pen button while selecting the file in the File list.
 - To select all files in a sequence, double-click any of the files in the sequence in the File list.

NOTE You can also select all entries by clicking the Select All button, or unselect all entries by clicking the Unselect button.

- 2 Once you select the file(s) you want to load, click Load.

To load from a CD-ROM:

- 1 Ensure that the CD-ROM is mounted. For instructions on mounting a CD-ROM, refer to the installation guide.
- 2 Click Detect.
The files on the CD-ROM appear in the file browser, and Enable CD-ROM is automatically enabled.
- 3 Select a file and click Load.
The file is loaded to the EditDesk.
- 4 When you are ready to remove the CD-ROM, click Eject.

To load from a floppy disk:

- 1 Click Detect.
The type and size of the disk are automatically detected. The files on the floppy disk appear in the file browser, and Enable Floppy is automatically enabled.
- 2 Select a file and click Load.
The file is loaded to the EditDesk.
- 3 When you are ready to remove the disk, click Eject.

NOTE If you change the disk in the floppy drive, click Detect to refresh the File list in the file browser.

The Player

4

Topics in this chapter:

- [About the Player](#) on page 75
- [Playing Clips in the Player](#) on page 76
- [Setting Player Display Options](#) on page 80

About the Player

You can play clips that you work with on the EditDesk in the Player module.

The Player contains tools for visual overlays and reference views, providing options for monitoring sources, clips-in-progress, and rendered results. You can also apply 3D LUTs to clips in the Player. These tools are available in all module image windows. See [Modules](#) on page 97.

The Player plays source or processed clips in real time. Some systems may not be capable of playing high-resolution clips in real time. Some soft effects can be rendered in real time. For clips with transitions or stacked soft effects, the Player has a preview option that displays the rendered result on a frame-by-frame basis.

When working with high-resolution clips, you can view them in the fullscreen Player. The fullscreen Player can display HD 1920x1080 clips at their native size (provided your graphics monitor supports, and is set, to display 1920 pixels across). The fullscreen Player supports most of the same features as the Player.

You can also play clips using the Source/Record Player and Triptych Player. The Source/Record Player displays players side by side for both the source clip (on the left) and the record clip or container clip (on the right), which you can use to perform editing operations in the Player module on the EditDesk. The Triptych Player provides three Players, side-by-side, which you can use to simultaneously view the same clip in different contexts. For example, you can set the middle Player to play the clip, the left Player to show the clip's incoming frame of the current element in the timeline, and the right Player to show the clip's outgoing frame.

Playing Clips in the Player

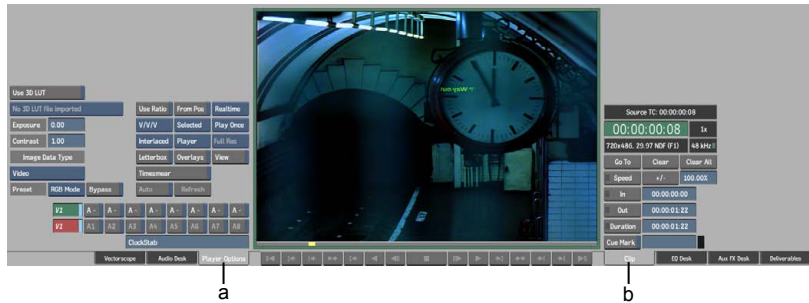
Load clips from the Record Area or Source Area into the Player. The Player provides the controls you need to play a clip of any resolution, navigate clips, and identify dropped frames during playback.

There are a few ways to load clips from the EditDesk into the Player.

To load a clip into the Player:

- 1 On the EditDesk, make sure the clip you want to view in the Player is the focus clip.
- 2 Do one of the following:
 - Press **Esc**.
 - Swipe the cursor against the swipe bar on the left or right side of the Source Area.
 - In the EditDesk library, double-click the proxy of a clip.

The Player appears, replacing the Source Area. The Player displays the clip that is the currently selected clip in either the Record Area or the Source Area — whichever has the focus.



(a) Player Options tab (b) Clip tab

Image courtesy of Behavior Communications Inc.

Use the Player Options tab on the left side of the Player to view the image display options, overlay options, letterbox formatting options, and view options. When a setting is made in the Player, it applies to all clips that are viewed in the Player until that setting is changed.

Use the Clip tab on the right side of the Player to view information about the displayed clip. This tab also displays controls for marking in and out points and adding cue marks. For more information on editing marks, see [Navigating the Timeline](#) on page 875.

Use the Deliverables tab on the right side of the Player to access and configure Real-Time Deliverables. See [Accessing the Deliverables Menu](#) on page 188.

- 3 To close the Player and return the view to the Source Area, press **Esc** again, or swipe the cursor against the swipe bar on the left or right side of the Player.

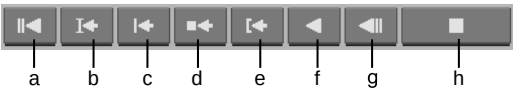
To switch between the Source and Record focus clips:

- Do one of the following:
 - Press the **F7** Record Focus hotkey or the **F8** Source Focus hotkey.
 - Click the Focus box in the EditDesk menu.



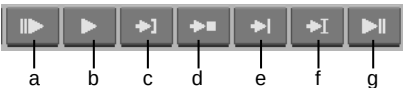
Controlling Playback in the Player

You can play a clip in the Player using the playback controls that appear below the image window. The following image represents the backward playback controls and the Stop button.



(a) Go to first frame of clip (b) Go to previous cue mark (c) Go to in point (d) Go to previous keyframe (e) Go to incoming frame of current shot (f) Play clip backward (g) Go backward one frame (h) Stop playing clip

The following image represents the forward playback controls.



(a) Go forward one frame (b) Play clip forward (c) Go to outgoing frame of current shot (d) Go to next keyframe (e) Go to out point (f) Go to next cue mark (g) Go to last frame of clip

You can also jog a clip back and forth by dragging the positioner along the time bar. When you jog through an edit sequence (a series of clips edited together), you can constrain the jogging to the current clip in the sequence by holding down **Ctrl** while jogging.

Another way to navigate a clip in the Player is to use the arrow keys on your keyboard. By default, pressing the **left arrow** and **right arrow** keys steps frame-by-frame.

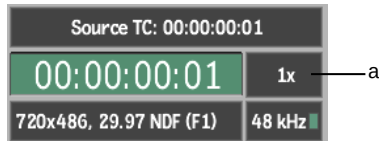
Changing the Play Speed

While you play a clip, you can speed up or slow down the play speed in the Player using the **up arrow** and **down arrow** keys on your keyboard.

Use:	To:
up arrow	Increase the play speed. Each tap of the key doubles the play speed.
down arrow	Decrease the play speed. Each tap of the key halves the play speed.

Use:	To:
spacebar	Stop playing and return the play speed setting to “1x” (normal speed).

The current play speed is indicated in the Clip tab next to the Timecode field.



(a) Play speed

Synchronizing Audio and Video Playback

In the Clip tab, the Output Audio Rate field displays the output audio rate set in the Output Clock box of the Audio Preferences. The Output Clock should have a 48-Khz sync reference to prevent drift between audio and video signals during playback.



(a) Output Audio Rate

Cycling through Multiple Clips

If you have multiple clips in the Source or Record Area, you can use hotkeys to cycle the currently selected focus clip to the next or previous clip. The Player updates to display the current focus clip.

To cycle the Source or Record focus between multiple clips:

- 1 From the EditDesk or the Player, specify the required EditDesk focus — Record or Source Area focus. See [Focus Clip and Focus Area](#) on page 18.
- 2 Do one of the following:
 - To cycle the current selection through the next clips, press **Alt+V** one or more times.

- To cycle the current selection through the previous clips, press **Alt+C** one or more times.

Identifying Dropped Frames

As you play clips, the positioner in the image window time bar changes colours if frames are dropped. The colours indicate the following.

Colour:	Indicates:
Yellow	Real-time playback with no dropped frames.
Orange	Real-time playback with no dropped frames of soft-imported clips.
Green/Blue	Alternating dropped frames. Green indicates the first and subsequent alternating dropped frame.
Red/White	Alternating occurrences of dropped audio. Red indicates the first occurrence.

Setting Player Display Options

The Player provides display options that you can use to customize the playback and monitoring environment. You can adapt the playback environment to your needs throughout the course of your project, whether you are reviewing a clip in progress or showing clips to your clients.

Use these options to define playback mode, resolution, preview overlays, and processing options. Many of these options can be accessed in the Display Options tab.

Setting Playback Resolution and Mode

Use the playback mode and resolution options to define how you want clips to play and at what resolution. The resolution options are active only if the clip you loaded into the Player has proxies or a Deliverable. They are available from both the standard and fullscreen Player. To load clips into the Player using proxies, see [Setting Proxy Management Options](#) on page 346.



(a) Playback Mode box (b) Playback Resolution box

To set playback mode and resolution:

- 1 Click the Player Options tab.
- 2 Select an option from the Playback Mode box.

Select:	To:
Play Once	Play through the clip one time.
Ping Pong	Continuously play in a forward and backward cycle.
Loop	Play in a continuous loop.

- 3 Select an option from the Playback Resolution box.

Select:	To:
Full Res	Play back the full-resolution clip.
Proxies	Play back using the clip's proxies.
Deliverable	Play back using the current Real-Time Deliverable.

Reversing Player Dominance on the Broadcast Monitor

You can toggle between default Player dominance and reversed Player dominance on the broadcast monitor. For example, when playing a PAL clip, which is field 1 dominant, reversing the Player's dominance results in the clip playing on the broadcast monitor with field 2 dominance. See [Managing Field Dominance](#) on page 1156.

This reversal is not committed to the clip, nor does it affect the clip's display on the graphics monitor.

To reverse the Player dominance on the broadcast monitor:

- 1 Click the Player Options tab.
- 2 As the clip is playing, **Ctrl**-click Full Res in the Player to toggle between reversed Player dominance and the default Player dominance.



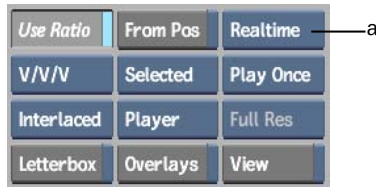
The field dominance of the Player output on the broadcast monitor is toggled. This affects all clips output to the broadcast monitor from the Player in the current session of Backdraft Conform.

Playing Clips at Their Native Framerate

The Player can play a clip at its native framerate regardless of the default project framerate, or it can play all clips at the project framerate. You set the playback speed using the Native Framerate option in the Player section of the Preferences menu. When this option is enabled, the Player plays clips at their proper speed on a “best effort” basis, meaning that the result is a close approximation of the actual framerate. Use this option to preview, for example, a PAL clip in a project with an NTSC default resolution. See [Player Preferences](#) on page 524.

Setting Preview Options

When working with clips that have multiple soft effects on one or more layers, there are preview options you can use to view clips in the Player. Depending on the number of soft effects on the timeline, you may need to process often as you make changes. In the Clip tab, select an option from the Preview box.



(a) Preview box

Realtime

Realtime mode plays clips and tracks in real time, allowing you to view your soft effects. It is recommended that you do most of your timeline work in Realtime mode. However, if your clip has more than one soft effect, the Player may drop frames or display black frames during playback. In this case, process the soft effects to get real-time playback (see [Processing Soft Effects](#) on page 314). This is true especially if you have stacked soft effects on many layers. Also, when playing a track with multiple layers containing unprocessed soft effects in Realtime mode, you only see the focus layer (with its soft effects).

Preview FX

Preview FX mode processes all soft effects to create a preview for the current frame. It is useful for viewing soft effects (stacked or not) in context. Every time you use the frame advance controls or jog the positioner, the image in the Player is updated with all the processed soft effects. This allows you to make changes to the vertical edit and immediately see your changes. However, when you play the track or clip, the functionality temporarily returns to Realtime mode (until play is stopped). If you create complex soft effects and find that unrendered black sources appear in some or all your soft effects when playing in Realtime mode, switch to Preview FX mode to immediately see the results of your changes on the current frame.

Preview FX mode is also useful if you have many unrendered soft effects, or transitions that use an unrendered soft effect as an outgoing or incoming clip. Use this mode while you make changes to complex vertical edits, and return to Realtime mode to view the rendered result.

If you are working in an HD project, you should enable the Proxy-Size Player option before using Preview FX mode for faster display of the image. See [Player Preferences](#) on page 524.

If you have a complicated vertical edit with many soft effects, you may notice that the Player slows down when jogging or advancing frames. This is normal. Preview FX mode processes the entire vertical edit for the current frame as you jog, which may take more time as you add more soft effects. It is

recommended to use this mode when changing the timing of a layer, such as slipping or sliding, so that you can immediately see the result for the current frame, and then use Realtime mode to view the processed result.

NOTE In Preview FX mode, the Axis, Blend, Text, and Wipe soft effects are unavailable for preview in the broadcast monitor. See [Displaying a Clip in the Broadcast Monitor](#) on page 507.

View Src

View Src mode shows the original media without any soft effects. If you applied many soft effects to the timeline, select View Src to compare the result with the original clip. The focus layer — the layer under the focus point on the positioner — appears in the Player with no soft effects applied. View Src works when jogging or stepping through the clip.

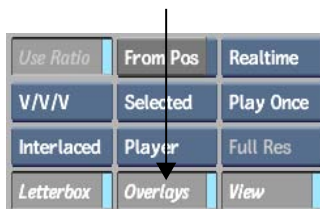
Viewing Safe Action and Safe Title Overlays

When you view a clip using the Player, the entire frame appears from edge-to-edge. Most video monitors, such as home television sets, crop the edges of the image slightly. Overlays are used to help you visualize how much of the video in the Player may be lost on other monitors.

Use the Overlays button to turn on or off the display of overlays. Use the Overlay controls to determine which overlays are displayed.

To view overlays:

- 1 Click the Player Options tab.
- 2 Enable Overlays.



- 3 If multiple display options are enabled, select Overlays from the Preview Setup box.
The Overlay controls appear.



(a) Preview Setup box

- 4 Select the overlay(s) you want to view.

Enable:	To:
Centre	Put a crosshair in the centre of the display.
Safe Title	Indicate the maximum image area where it is safe to put title information without the risk of it being cropped.
Safe Action	Indicate the maximum image area where it is safe to include action in the scene without the risk of it being cropped.
Resizing	Indicate the maximum image area where it is safe to include action in the scene without it being cropped by the Pan and Tilt settings.

Applying a Letterbox Format to a Clip

Use the Letterbox options to change the visible part of video clips. This is achieved by masking the top and bottom or left and right edges of the image in the Player (and not by applying an anamorphic effect to the image).

There are six predefined letterbox formats, and an option that allows you to create a custom format.

To apply a letterbox format to a clip:

- 1 Click the Player Options tab.
- 2 Enable Letterbox.



- 3 If multiple display options are enabled, select Letterbox from the Preview Setup box.

The Letterbox controls appear.



(a) Preview Setup box (b) Letterbox Format box (c) Letterbox Offset field

- 4 Select a format from the Letterbox Format box.
- 5 By default, the top and bottom letterbox masks are identical, and the image is centred in the image window. To offset the position of the letterbox masks, enter a positive or negative value in the Letterbox Offset field.
- 6 If you selected Custom, enter a custom size in the Ratio field that appears.
- 7 Optional: Use the colour pot to change the colour of the letterbox masks.

Removing the Letterbox Format Attribute

When you set a letterbox format for a clip in the Player, it becomes an attribute of the clip. It is saved with the clip, so every time you play the clip in the Player, the format is already there. Thus, each clip can have its own letterbox format.

When you output a clip with a letterbox format from the Output Clip menu, the Letterbox option in that menu is automatically enabled so that you can output the clip with the previously specified format. To output the clip without letterbox, disable Letterbox in the Clip Output menu prior to output. See [Clip Input/Output Using a VTR](#) on page 131.

To remove the letterbox format attribute from a clip:

- 1 Select the clip.
- 2 Display the Player.
- 3 Click the Player Options tab.
- 4 Disable Letterbox.

Saving and Loading Letterbox Formats

You can save a letterbox format separately from the focus clip, and then apply it to another clip.

To save a letterbox format:

- 1 Click the Player Options tab.
- 2 In the Letterbox controls, click Save.
The file browser appears.
- 3 Type a filename in the Save field, and press **Enter**.

To load a letterbox format:

- 1 Select the clip to which you want to apply a saved letterbox format and display it in the Player.
- 2 Click the Player Options tab.
- 3 In the Letterbox controls, click Load.
The file browser appears.
- 4 Select a format from the File list.
The letterbox format is applied to the focus clip in the Player.

Setting the View Options to Compare Video Tracks

Use the View options to display images from two video tracks simultaneously. You can choose to view the two tracks in a screen that is split horizontally, vertically, or at a custom set angle. Alternatively, the two tracks can be viewed as a transparency blend. The two tracks viewed are the Primary and Secondary tracks.

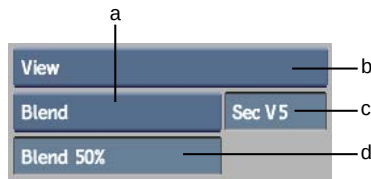
To view the two video tracks in the Player:

- 1 Click the Player Options tab.
- 2 Enable View.



- 3 If multiple display options are enabled, select View from the Preview Setup box.

The View controls appear.



(a) Preview Setup box (b) View Style box (c) Secondary Video Track field (d) View Percentage/Position field

- 4 Enter the Secondary video track you want to display in the Secondary Video Track field.
- 5 Select how you want to view the two tracks using the View Style box.
- 6 Optional: Modify the appearance of the split screen by doing one of the following:
 - If you selected Horizontal or Vertical Split, set the position of the split.
 - If you selected Angle Split, set the position and angle of the split.
 - If you selected Blend, set the percentage of the secondary track that is displayed. For example, if you specify 60, the image is composed of a blend of 40% of the Primary track and 60% of the Secondary track.

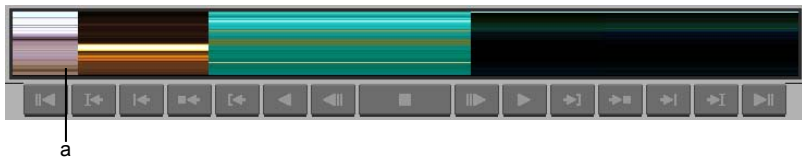
NOTE The Secondary video track appears black if it is an unrendered effect, or if both the Primary and Secondary video tracks contain unrendered dissolves.

Navigating Clips Using the Timesmear

Timesmear provides a visual “snapshot” of the contents of the focus clip. A timesmear is comprised of one vertical line of pixels scanned from each frame in the clip; the lines are arranged sequentially and displayed horizontally below the image window in the Player. The timesmear gives you an idea of the contents of the clip or track, and shows the relative location of different parts of it. You can use the timesmear to navigate the clip or track, and you can set in and out points and cue marks directly on it. You can also use it to verify the colour or luminance consistency of a clip.

In Source Focus, the timesmear is created for the current (focus) source clip; in Record Focus, it is created for the current Primary track or current layer.

There are two preferences for timesmear that you set in the Preferences menu. One specifies the number of frames that are sampled, in steps. The other specifies the location on the frame where the line of pixels is sampled. See [Timesmear](#) on page 526.



(a) Timesmear

You can opt to render the timesmear automatically or manually. With automatic rendering, the timesmear is updated each time you make a change to the focus clip or change the focus clip. Automatic timesmear rendering is set at the lowest priority in relation to all user interface interactions. The moment you perform any action in Backdraft Conform, automatic timesmear rendering is interrupted, and only resumes when that action is completed. With manual rendering, you update the timesmear when needed. Unlike automatic rendering, with manual rendering you must wait until it is completed before you can resume working in Backdraft Conform.

Rendered timesmears are saved with every layer or video track on the framestore, so they are available for use when you restart the application.

To display the timesmear for the focus clip:

- 1 Click the Player Options tab.
- 2 Enable Timesmear.
- 3 Enable Auto to have the timesmear rendered automatically each time you modify the clip, or click Refresh to manually render the timesmear. The timesmear appears below the image window.

To navigate the clip using the timesmear:

- Do one of the following:
 - Click on the timesmear at the location you want to go to.
 - Jog the timesmear positioner.

The current frame updates to the new location.

NOTE In Backdraft Conform PAL projects, when using small-size monitors at 1280 x1024 resolution, the playback controls do not appear when timesmear is enabled due to a lack of space.

Displaying Other Player Views

You can use the Player Options tab to display three other Players in addition to the regular Player— the Source/Record Player, fullscreen Player and the Triptych Player.



(a) Player box

Select:	To:
Src/Rec	Display the Source/Record Player. See Viewing Clips in the Source/Record Player on page 91.

Select:	To:
Player	Display the Player. Press Esc to toggle between the Player and the EditDesk.
Triptych	Display the Triptych Player. You can also press Shift+Esc to toggle between the Triptych Player and the EditDesk. See Viewing Clips in the Triptych Player on page 93.
Fullscreen	Display the fullscreen Player. The Player menu options are rearranged to accommodate the large view area. Press Ctrl+Esc to toggle between the fullscreen Player and the EditDesk. Press Ctrl+spacebar and drag to the right to zoom in or left to zoom out. When using the fullscreen Player to play a 10-bit clip (HD resolution and above), the clip switches to 10 bit; when exiting the fullscreen Player, the clip switches back to the project's default resolution.

Viewing Clips in the Source/Record Player

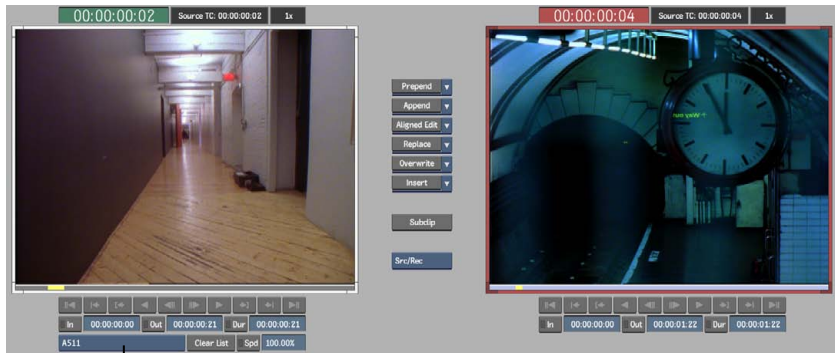
Use the Source/Record Player to view the source clip and record clip in the same view. The Source/Record Player is only accessible from the EditDesk, and it does not exist in module players.

The EditDesk Library appears when the Source/Record Player is active. Each view window has an aspect ratio appropriate for the selected clip.

The timecode, source timecode and playback speed are displayed above each Player. Controls for playback and in and out marks are displayed below each Player.

To display the Source/Record Player:

- 1 In the Player, click the Player Options tab.
- 2 From the Player box, select Src/Rec (**Shift+Esc**).



(a) Source History box

Image courtesy of Behavior Communications Inc.

Inactive image windows have a grey border, while the active image window has a red (record clip), green (source clip), or purple (container clip) border.

Select a source clip to display it in the Source Player. Use the Source History box to select or keep track of the list of source clips you have already worked with. Use the Clear List box to delete the list, and display the name of the current clip.

Use the editing controls to perform editing operations between clips and create subclips. See [Editing to the Timeline](#) on page 929.

To generate a subclip:

- 1 Select the Player with the clip you want to use.
- 2 Insert in and out marks to determine the beginning and end of the subclip.
- 3 Click Subclip or press **Ctrl+F**.
- 4 Enter the name of the subclip.
- 5 Press **Enter** to create the new clip.

When you generate a subclip, you can automatically name the new clip using the name of the original clip and a numerical increment, beginning with the suffix **_001** (or the next available number).

To generate a subclip with a numerical increment:

- 1 Select the Player with the clip you want to use.
- 2 Insert in and out marks to determine the beginning and end of the subclip.
- 3 Do one of the following:
 - Press **Ctrl+Alt+F** to create a new subclip.
 - Hold down the **Alt** key and click Subclip.

Viewing Clips in the Triptych Player

Use the Triptych Player to view three different shots while you adjust your clips, view clips at various points in time, or view up to three different layers simultaneously. You can switch the focus track and focus layer using the positioners and view the changes in the Triptych Player.

For information on using the Triptych Player with the timeline, see [Using the Triptych Player with Vertical Editing](#) on page 964.



(a) Triptych View Mode box

Inactive image windows have a grey border, while the active image window has a green (source clip), or blue (container clip) border.

To control the material that is displayed in the Triptych windows, use the Triptych View Mode box.

Select:	To view:
Prev/Next	The last frame of the previous clip and the first frame of the following clip.
In/Out	The first and last frames of the current segment.

Select:	To view:
Free	Any clip at any point in time. Set the view by moving the positioners and focus points.
Locked	The positioners with fixed offsets as you move them through the timeline.
Aligned	All three focus points at the same timecodes.

Press **Esc** to exit the Triptych Player and return to the Player.

Toggling Pixel Aspect Ratio Display

When you work with clips that have a resolution that does not use square pixels, such as NTSC or PAL, Backdraft Conform can adjust the display so that it appears with the correct aspect ratio. By default, the adjusted image is sent to the broadcast monitor. You can switch the adjusted display from the broadcast monitor to the Player.

To enable aspect ratio display in the Player:

- 1 Click the Player Options tab.
- 2 Enable Use Ratio.



NOTE The Use Ratio button is only active if you are viewing a clip with a resolution that does not use square pixels.

Changing Playback Scan Mode Options

The options in the Scan Mode box let you view interlaced and progressive material correctly when displayed at a size other than their actual size, for example, when you play an HD clip in the standard-sized Player (in Full Res mode, not Proxies), or a clip proxy in the Source Area, or a clip in Frames view

in the Record Area. This option defines the method used to resize the current frame.

To change playback scan mode options:

- 1 Click the Player Options tab.
- 2 From the Scan option box, select a scan mode for the clip.



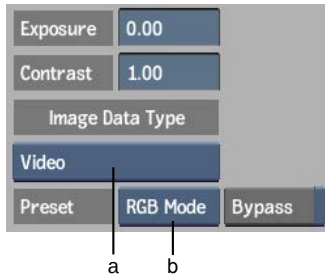
Select:	To:
Progressive	Resize the frame as a progressive frame. Use this option for progressive material. When applied to interlaced material, field integrity is not retained.
Field 1	Display only field 1 of an interlaced clip when the clip is stopped. Alternate lines are also filled by field 1. On playback, the interlaced resize method is used.
Field 2	Display only field 2 of an interlaced clip when the clip is stopped. Alternate lines are also filled by field 2. On playback, the interlaced resize method is used.
Interlaced	Play back the clip with interlaced scan mode. When this option is selected, field 1 and field 2 are resized separately, and then interlaced, producing better results when playing back interlaced material.

Using 3D LUTs in the Player

If you configured Backdraft Conform to initialise more than one 3D LUT, you can toggle the Player to use these LUTs instead of the default one defined in the Preferences menu. See [Applying 3D LUTs to the Player](#) on page 1176.

Using the Image Display Viewer in the Player

You can change the display of an image based on the exposure and contrast settings, and the type of image data you are working with. By default, all images are displayed in RGB mode with a transformation for video images. You can apply transformations to the image to display an optimal view of logarithmic and linear images.



(a) Image Data Type box (b) Preset box

See [Controlling Image Display using Exposure and Image Data Type](#) on page 1204.

You can also adjust the exposure and contrast settings gesturally in the image window. See [Controlling Image Display Gesturally](#) on page 1206.

Synchronizing Audio with the Broadcast Monitor

To view a clip on the broadcast monitor, play the clip in the Player.

There is a slight audio synchronization difference between the Player and your system's broadcast monitor. You can choose which image window will have correct audio/video synchronization by selecting it from the Audio Sync box in the Preferences menu. see [Audio Preferences](#) on page 538 and [Broadcast Monitor Preferences](#) on page 506.

Modules

5

Topics in this chapter:

- [About the Module Editor](#) on page 97
- [Accessing Modules](#) on page 98
- [Viewing Clips in the Image Window](#) on page 100
- [Setting Image Window Display Options](#) on page 104

About the Module Editor

From the EditDesk, you can enter modules - discrete areas where you can modify relevant parameters or perform a group of related operations - and then return to the EditDesk with a processed clip.

When you work in a module, you play and view clips in-progress in the image window. Because you may be applying effects to one or more clips at a time, real-time playback is not always possible. However, the image window still provides fast clip navigation, scrubbing, and, if you play the clip, the system renders as many frames per second as it can.

The image window provides clip display tools that aid the creative process. Use the Grid menu to display a reference grid and overlays such as letterbox, safe action and title, and centre-point.

The View menu provides some modules access to the reference area: a tool that displays reference clips or stored reference frames comparatively using a split

bar. In some modules, you can also display multiple viewports and select 3D LUTs to apply to the clip.

Accessing Modules

When you enter a module from the EditDesk, you select the input clips that you want to work with. Each module allows for different variations of input clips, but the loading order is the same: front first, back second, matte third, and destination fourth.

Using the EditDesk Module Editor

The EditDesk Module Editor lets you preview an effect before it is applied to the clip. The option is only available for certain tools, and is indicated by an “E” that appears on the button prior to selecting the clip destination.



You can preview operation results using the EditDesk Module Editor. This feature allows you to perform the same functions as on the EditDesk, but with the added benefit of being able to preview and, in most cases, modify, the effect before it is applied to the clip.

The EditDesk Module Editor is available for the following tools:

- Add Pulldown
- Remove Pulldown
- Average
- Deal
- DeInterlace
- Interlace
- Field Merge

To preview an operation using the Module Editor:

- 1 Click the button for the operation you want to use.

- 2 Select the source clips.

NOTE When using the same material as in the previous session, you can automatically enter an editing module by first clicking the button when the S appears, and then selecting a destination.

When the Editing Module option is available for a tool, an E appears on the button.



- 3 Click the operation button again.
- 4 Select a destination.

The editing module appears. Use the controls in the editing module as you would on the EditDesk.



(a) Deinterlace editing module

Accessing Modules with Previous Clips

The Same Clips option is a shortcut for selecting clips from the EditDesk when you want to access Backdraft Conform modules. When you use the Same Clips option, the clips that you selected the last time you used that module during the current work session are automatically used—you do not have to manually select the clips.

The search for the same clips is done by clip ID. The searched first; if the clip is not found there, the current clip library is searched, and then the other clip libraries.

NOTE If a clip is deleted from the EditDesk but is still in the Undo buffer, the Same Clips option will not find it, unless Undo is used to return the clip to the EditDesk.

To open a module with the same clips as previously used:

- 1 Click the button for the module you want to use.
An “S” button appears to the right of the module button.
- 2 Click the module button again to activate the Same Clips option.
- 3 Select a destination.

The module opens with the clips from the previous session (if they are found). The most recent settings are also restored.

NOTE If you select the Same Clips option and have not used the module in the current work session, or if the clips cannot be found, an error message is displayed indicating that no previous clips were selected.

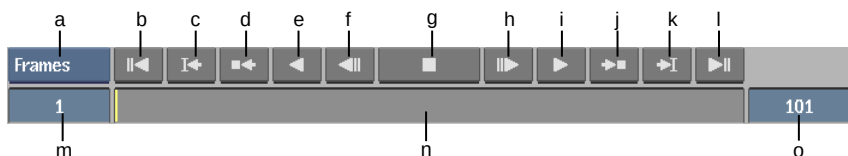
Viewing Clips in the Image Window

When working on clips in modules, you view the effects of your work in the image window. The image window is similar to the Player except it renders uncommitted effects on-the-fly. As a result, real-time playback is frequently unsupported; however, the system plays back as many frames per second as it can render.

When you process clips in a module, you can load them into the Player for real-time playback without having to exit the module.

Controlling Playback in the Image Window

Use the playback controls below the image window to play and navigate the clip. You can also use the playback controls to change the frame displayed in the image window.



- (a) Frames/Timecode box (b) Go to first frame of clip (c) Go to previous cue mark
(d) Go to previous keyframe (e) Play clip backward (f) Go backward one frame (g) Stop

playing clip (h) Go forward one frame (i) Play clip forward (j) Go to next keyframe
(k) Go to next cue mark (l) Go to last frame of clip (m) Current Frame field (n) Timebar
(o) Duration field

The elements directly below the playback controls are the following.

Frames/Timecode box Displays frame numbers or timecode.

Current Frame field Displays the frame number or timecode of the current frame. You can jump to a frame by entering a frame number or timecode in this field.

Duration field Displays the duration of the clip in frames or timecode. In some modules, you can change the length of the generated clip by changing the total number of frames in this field.

Timebar Represents the duration of the clip. The positioner (a yellow marker) indicates the frame you are viewing relative to this duration. You can scrub the clip by dragging the positioner.

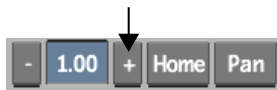
Zooming and Panning the Image Window

The zoom and pan controls are located to the right of the image window controls. Use these controls to zoom in, zoom out, and pan the image. If more than one viewport is displayed in the image window, select the viewport you want to pan or zoom.

To zoom the image window:

- 1 Do one of the following to zoom in:

- Click + .



- Press **Ctrl+spacebar** and drag right.

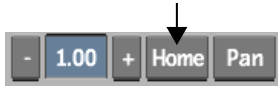
- 2 Do one of the following to zoom out:

- Click - .



- Press **Ctrl+spacebar** and drag left.

- 3 Click Home to restore the default zoom factor.



- 4 **Ctrl-click** Home to fit the image window to the viewport.



To pan the image window:

- 1 Click Pan.



The cursor changes to a grabber hand.

- 2 Move the grabber cursor into the image window.
- 3 Press down and drag the image window.

TIP You can also hold down **spacebar** and then drag over the image window to pan it.

Displaying Clip Views

When you enter a module from the EditDesk, the image window usually displays the result clip. You can change the display of the image window to view relevant context for the process.

To display a clip view:

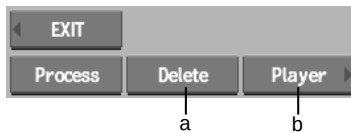
- Select an option from the View box or press its associated hotkey.

Select:	To view:
Front	The front clip (F1).
Back	The back clip (F2).
Matte	The matte clip (F3).
Result	The result clip (F4).

Some modules support other clip view options. These options are documented in the corresponding chapters.

Accessing the Player from Modules

When you process a clip in a module, a Player button appears. Click Player to load the processed clip into the Player for real-time playback (or, depending on your hardware configuration and the clip's resolution, best-possible). Click Delete to delete the most recently processed clip.



(a) Delete button (b) Player button

Scrubbing Audio in Modules

When you load a clip with audio into a module, you can scrub the audio; you can perform both locked rate and free form scrubbing. The level heard when scrubbing in modules is affected by the level set for the channels using the level meters in the AudioDesk.

To scrub audio in a module:

- 1 Load a clip with audio into a module.
- 2 If there is a Play Lock option in the module's Setup menu, disable it.

3 Do one of the following:

- For a free form scrub, press **Alt** and drag the positioner in the timebar. You can hear all the tracks by pressing **Alt+Shift**.
- For a locked rate scrub, press **Alt+Ctrl** and drag the positioner in the timebar. You can hear all the tracks by pressing **Alt+Ctrl+Shift**.

The audio scrubs as you drag.

You can toggle between locked and unlocked scrub modes on the fly, by alternating between the **Alt** and **Alt+Ctrl** hotkeys.

Setting Image Window Display Options

The image window provides display options for your clip. You can display grids and guides, overlays, compare the current result against a reference area, and control RGB channel display.

The image window in Resize also supports applying 3D LUTs to the image window, reference area, and reference overlay.

Working with Grids and Guides

Grids and guides are reference overlays that appear over the image window in modules.

Use grids to view an overlay for spatial reference in your clips. A lattice of horizontal and vertical lines can be helpful when trying to place objects in a scene. You can even enable snap-to-grid functionality to ensure the accuracy of your placement.

Use guides to overlay horizontal and vertical reference lines. You can verify the working area, frame aspect ratio, safe areas for action and text, and the centre of the working area. You can also set up free guides for non-standard horizontal and vertical references.

Grids and guides are accessible from all modules using the Grid menu. However, not all modules support all grids and guides features.

To access the Grid menu:

- Click the Grid button that appears on the right side of the image window controls.



The Grid menu appears.



Use the controls in:	To:
Working Area	Define the area relevant to the output result. See Setting Up Working Area Guides on page 107.
Free Guide	Set up a freely defined rectangular overlay. See Setting Up Free Guides on page 108.
Guide	Display aspect ratio guides. See Setting Up Aspect Ratio Guides on page 109.
Safe	Display safe text and safe action areas. See Setting Up Safe Area Guides on page 112.
Grid	Display reference grids. See Setting Up Grids on page 113.
Centre	Display the centre point of the working area. See Displaying a Centre Point on page 115.

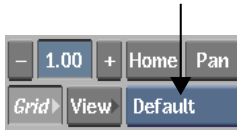
To reset grids and guides to the default settings, click Reset All in the lower-right corner of the Grid menu.

Selecting Grids and Guides Presets

You can display grids and guides presets without having to enter the Grid menu.

To select grids and guides presets:

- Select an option from the Quick Guides box.



Select:	To:
PAN_16x9_to_4x3	Display reference guides for panning and scanning a 16x9 clip to a 4x3 format.
TILT_to_16x9	Display reference guides for a 16x9 letterbox clip in a 4x3 ratio.
TILT_to_14x9	Display reference guides for a 14x9 letterbox clip in a 4x3 ratio.
Default	Display the grids and guides currently defined in the Grids and Guides menu.
Quick Off	Turn grids and guides off.

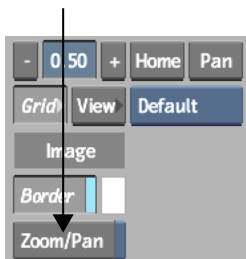
TIP If you have grid and guide setups saved to your user `~/guides` directory, each setup appears as an option in the Quick Guides box.

Saving Grids and Guides Setups

You can save grids and guides setups to your user `~/guides` directory.

To save grids and guides setups:

- 1 With grids and guides displayed and configured, display the Grid menu.
- 2 Enable or disable Zoom/Pan.



- Enable Zoom/Pan to include the current zoom and pan settings with the grids and guides setup.

- Disable Zoom/Pan to exclude the current zoom and pan settings with the grids and guides setup.
- 3 Click Save to open the file browser.
 - 4 Set a destination for the setup, and then click Save.

TIP Grids and Guides setups saved to the default directory (*~/guides* in your user home directories) appear as options in the Quick Guides box provided you start Backdraft Conform by selecting your user name.

Loading Grids and Guides Setups

You can load grids and guides setups that reside in other directories.

To load grids and guides setups:

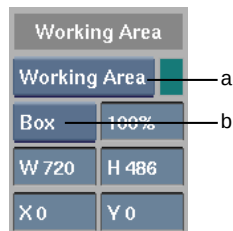
- 1 In the Grid menu, click Load to open the file browser.
- 2 Locate the setup file using the file browser, and then click Load.

Setting Up Working Area Guides

Set up working area guides to delimit the relevant area in the frame. For example, if you are working on a film project, audio is printed in a thin strip on the side of each frame. You can set up the working area guides to indicate only the part of the film frame that is not affected by the audio print.

To set up a working area guide:

- 1 From the Working Area box, select Working Area.



(a) Working Area box (b) Overlay Type box

2 From the Overlay Type box, select Line or Box.

Select:	To:
Line	Indicate the working area by outline only.
Box	Cover the area outside the working area.

TIP If you select Box, you can change its opacity using the Opacity field that appears to the right of the Overlay Type box.

- 3 To change the colour of the working area overlay, use the colour pot next to the Working Area box.
- 4 To set the size of the overlay, enter values in the working area Width and Height fields.

TIP These values can be no larger than the clip's resolution.

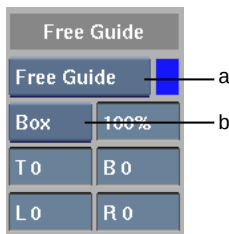
5 To offset the working area, enter values in the X and Y Offset fields.

Setting Up Free Guides

A free guide is a rectangular overlay that you can set up to mark a region of the frame. This may be useful if you are working on a background graphic for a composite where a picture-in-picture effect is applied.

To set up a free guide:

1 From the Free Guide box, select Free Guide.



(a) Free Guide box (b) Overlay Type box

- 2 From the Overlay Type box, select Line or Box.

Select:	To:
Line	Indicate the working area by outline only.
Box	Cover the area outside the working area.

TIP If you select Box, you can change its opacity using the Opacity field that appears to the right of the Overlay Type box.

- 3 To change the colour of the free guide overlay, use the colour pot next to the Free Guide box.
- 4 To set the size of the overlay, enter values in the free guide T (top), B (bottom), L (left), and R (right) fields.

TIP These values are interior offsets relative to the working area guide. If you have not set up a working area guide, these values are relative to the frame border.

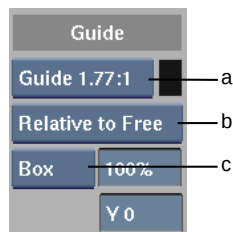
Setting Up Aspect Ratio Guides

Aspect ratio guides provide an overlay for the aspect ratios of broadcast and film formats. Use the guides when you are working on a format that you will deliver in another format. By selecting the delivery format's aspect ratio, you can preview the result without processing the format conversion.

If the aspect ratio you need an overlay for is not among the preset options, you can create custom aspect ratio guides based on a decimal aspect ratio or on pixel values.

To set up a preset aspect ratio guide:

- 1 From the Aspect Ratio box, select a preset aspect ratio.



(a) Aspect Ratio box (b) Relative box (c) Overlay Type box

These options include:

- 1.37:1 (Academy)
- 1.66:1 (European 35mm)
- 1.77:1 (HDTV)
- 1.85:1 (American 35mm)
- 2.35:1 (CinemaScope)

- 2 From the Overlay Type box, select an option.

Select:	To:
Line	Indicate the working area by outline only.
Box	Cover the area outside the working area.

TIP If you select Box, you can change its opacity using the Opacity field that appears to the right of the Overlay Type box.

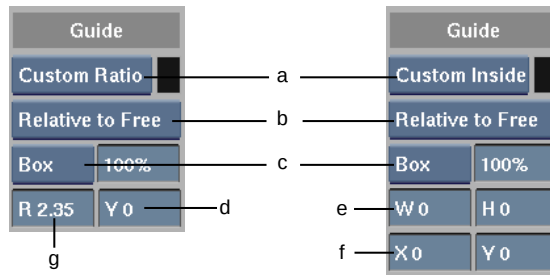
- 3 To change the colour of the aspect ratio overlay, use the colour pot next to the Aspect Ratio box.
- 4 From the Relative box, select an option.

Select:	To define the aspect ratio guide relative to:
Relative to Border	Frame border.
Relative to Work	Working area.
Relative to Free	Free guide.

- 5 To offset the aspect ratio guide vertically, enter a value in the Y Offset field.

To set up a custom aspect ratio guide:

- 1 From the Aspect Ratio box, select Custom Ratio or Custom Inside.



(a) Aspect Ratio box (b) Relative box (c) Overlay Type box (d) Y Offset field (e) W, H fields (f) X, Y Offset fields (g) Ratio field

- 2 From the Overlay type box, select an option.

Select:	To:
Line	Indicate the working area by outline only.
Box	Cover the area outside the working area.

TIP If you select Box, you can change its opacity using the Opacity field that appears to the right of the Overlay Type box.

- 3 To change the colour of the aspect ratio overlay, use the colour pot next to the Aspect Ratio box.
- 4 Set the aspect ratio:
 - If you selected Custom Ratio, enter the decimal ratio (for example, 1.33 for 4:3) in the R (ratio) field.
 - If you selected Custom Inside, enter values, in pixels, in the Width and Height fields. You can also offset this aspect ratio using the X and Y Offset fields.

- 5 From the Relative box, select an option.

Select:	To define the aspect ratio guide relative to the:
Relative to Border	Frame border.
Relative to Work	Working area.
Relative to Free	Free guide.

Setting Up Safe Area Guides

Safe area guides overlay the parts of the frame inside which you should keep relevant action in the shot, text, or other graphics:

- The safe action area marks a rectangle inside the frame, representing the amount of cropping that occurs during broadcast. This guide should line up with the edges of your broadcast monitor.
- The safe title area marks a rectangle inside the safe action area, providing a margin on all sides inside which you should place titles and graphics to ensure they are not too close to the edges of the broadcast result.

Use the safe area guide controls to select default safe area guides. You can also create a custom safe area guide.

To set up default safe area guides:

- 1 From the Safe Area box, select a safe area guide option.



(a) Safe Area box (b) Relative box

Select:	To view:
Safe Title	The default safe title area guide.
Safe Action	The default safe action guide.
Action & Title	Both safe action and safe title guides.

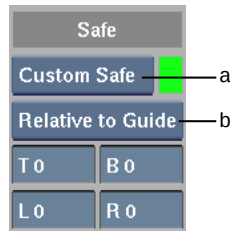
- 2 To change the colour of the safe area(s), use the colour pot next to the Safe Area box.
- 3 From the Relative box, select an option.

Select:	To define the safe area guide relative to:
Relative to Border	Frame border.
Relative to Work	Working area.

Select:	To define the safe area guide relative to:
Relative to Free	Free guide.
Relative to Guide	Aspect ratio guide.

To set up a custom area guide:

- 1 From the Safe Area box, select Custom Safe.



(a) Safe Area box (b) Relative box

- 2 To change the colour of the safe area, use the colour pot next to the Safe Area box.
- 3 From the Relative box, select an option.

Select:	To define the safe area guide relative to:
Relative to Border	Frame border.
Relative to Work	Working area.
Relative to Free	Free guide.
Relative to Guide	Aspect ratio guide.

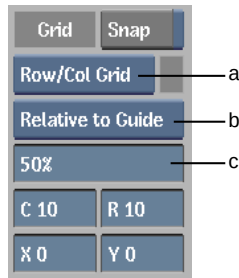
- 4 Enter values, in pixels, in the T (top), B (bottom), L (left), and R (right) fields to set the position of each side of the safe area guide relative to the selection you made in the previous step.

Setting Up Grids

Set up a grid of horizontal and vertical lines along the XY plane to help you place objects in a scene. You can set up a grid based on rows and columns, or on a pixel scale.

To set up a grid based on rows and columns:

- 1 From the Grid box, select Row/Col Grid.



(a) Grid box (b) Relative box (c) Opacity field

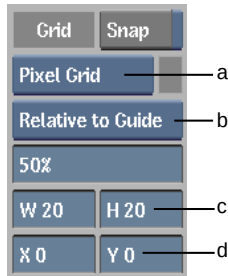
- 2 From the Relative box, select an option.

Select:	To define the grid relative to:
Relative to Border	Frame border.
Relative to Work	Working area.
Relative to Free	Free guide.
Relative to Guide	Aspect ratio guide.

- 3 To change the colour of the grid, use the colour pot next to the Grid box.
- 4 Enter values into the C (columns) and R (rows) fields to define the grid.
- 5 To offset the grid, enter values in the X and Y Offset fields.
- 6 To make objects snap to grid points, enable Snap.
- 7 To decrease the opacity of the grid, enter a value in the Opacity field.

To set up a grid based on a pixel scale:

- 1 From the Grid box, select Pixel Grid.



(a) Grid box (b) Relative box (c) W, H fields (d) X, Y Offset fields

- 2 From the Relative box, select an option.

Select:	To define the grid relative to:
Relative to Border	Frame border.
Relative to Work	Working area.
Relative to Free	Free guide.
Relative to Guide	Aspect ratio guide.

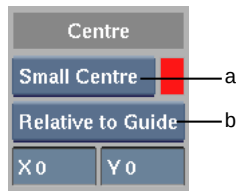
- 3 To change the colour of the grid, use the colour pot next to the Grid box.
- 4 Enter values into the W (width) and H (height) fields to define the grid. Values are in pixels, and define the number of pixels between vertical (W) and horizontal (H) lines.
- 5 To offset the grid, enter values in the X and Y Offset fields.
- 6 To make objects snap to grid points, enable Snap.
- 7 To decrease the opacity of the grid, enter a value in the Opacity field.

Displaying a Centre Point

Display a centre point to keep a constant reference to the centre of your clip. In most cases, the centre point is fixed relative to the frame border. However, you can offset the centre point, or set it relative to another guide.

To set up a centre point:

- 1 From the Centre box, select Small Centre, Medium Centre, or Large Centre.



(a) Centre box (b) Relative box

- 2 From the Relative box, select an option.

Select:	To define the centre point relative to:
Relative to Border	Frame border.
Relative to Work	Working area.
Relative to Free	Free guide.
Relative to Guide	Aspect ratio guide.

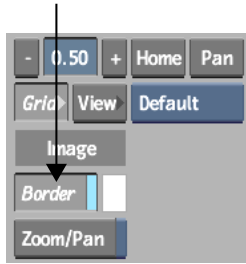
- 3 To change the colour of the centre point, use the colour pot next to the Centre box.
- 4 To offset the centre point, enter values in the X and Y Offset fields.

Displaying the Frame Border

In cases where you are scaling clips so they are larger than the delivery format's frame size, it is helpful to enable the frame border display. The frame border is a thin outline of the delivery format's frame size relative to the scene.

To display the frame border:

- 1 In the Grid menu, enable Border.



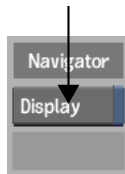
- 2 To change the colour of the frame border, use the colour pot next to the Border button.

Using a Viewport Navigator

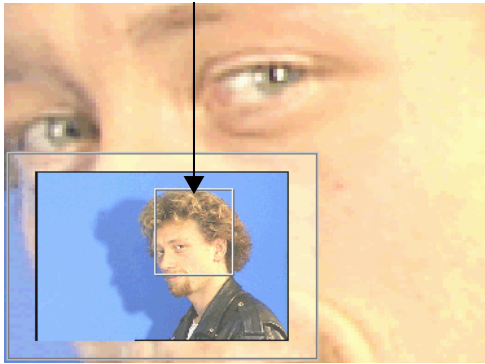
You can enable a viewport navigator in any module that supports multiple viewports. The navigator displays an overlay of the viewport's area of interest. You can adjust the area of interest gesturally as an alternative to zooming and panning the view.

To use the viewport navigator:

- 1 In a module that supports multiple views, click View.
- 2 With a viewport selected, select Display.



The viewport navigator appears in the selected viewport. A grey outline indicates the current area of interest.



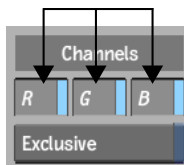
- 3 To adjust the area of interest:
 - Drag over the area of interest to move it.
 - **Ctrl**-drag a new box to change the area of interest.
- 4 You can also **Alt**-drag the viewport navigator to move it.

Monitoring RGB Channels Independently

When working in a module that supports multiple viewports, you can monitor the red, green, and/or blue channels of clips, or a greyscale representation of any channel, in the image window.

To monitor the red, green, and blue channels independently:

- 1 Display the View menu.
- 2 Toggle the R, G, and B buttons in the Viewing area to change the display of the red, green, and blue channels, respectively.



- 3 To monitor an exclusive greyscale representation of the red, green, or blue channel, enable the Exclusive button and then the R, G, or B button.

- 4 To restore full RGB display, disable Exclusive, and then enable R, G, and B.

Displaying the Proper Aspect Ratio

Some video and film formats use rectangular instead of square pixels. This explains why NTSC and PAL video formats have a different frame dimension in terms of pixels, but are ultimately broadcast to the same 4:3 aspect ratio screen.

- NTSC pixels are narrower than they are high, which allows for the 720x486 (1.481) aspect ratio frame to fit into a 4:3 (1.333) aspect ratio broadcast screen.
- PAL pixels are wider than they are high, which allows for 720x576 (1.25) aspect ratio frame to fit into a 4:3 (1.333) aspect ratio broadcast screen.

When you capture video or import film frames that use rectangular pixels into Backdraft Conform, the pixels become square because computer graphics work only with square pixels. This is why the NTSC and PAL frames appear as though they are different size—displayed with square pixels, they are.

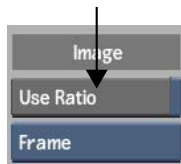
You can set the image window to display clips originating from rectangular pixel formats using filters to simulate the use of rectangular pixels. This provides a display that corresponds with the delivery format.

Using the aspect ratio display affects system performance, so if you are using the aspect ratio filter and notice a performance slowdown, you can disable the option and return to square-pixel display.

NOTE Many HD video formats such as 1920x1080 and 1280x720 use square pixels, so enabling this option has no effect. One HD video format that does use “slightly” rectangular pixels is 1920x1035.

To display the proper aspect ratio:

- In the View menu, enable Use Ratio.

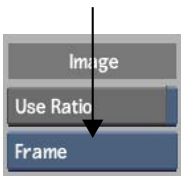


Monitoring Full Frames and Dominant Fields

When you are working in Resize, the full frame of an image is displayed in the image window by default. When working with interlaced video, you can set the image window to display only the dominant field. In this case, the lines representing the dominant field are doubled.

To monitor the full frame or dominant field:

- 1 Display the View menu.
- 2 Select an option from the Frame Display box.



Displaying Multiple Views

In Resize, you can display two viewports at a time in the image window. Multiple views are convenient for setting channel values and previewing your results all at the same time without having to switch views.

To view multiple viewports:

- 1 In a module that supports multiple viewports, for example, Resize, click View.
- 2 Select an option from the Viewport Layout box.



Select:	To view:
1-up	A single viewport (Alt+1).
2-up	Two viewports, side-by-side (Alt+2).

Displaying Widgets in Selected Viewports

If you are working in multiple viewports, you can display widgets such as icons, crop boxes, and 3D histograms in all viewports or in a selected viewport.

To display widgets in selected viewports:

- 1 In a module that supports multiple views, click View.
- 2 From the Widget Display box, select Widget Sel to display widgets in the selected viewport, or select Widget All to display widgets in all viewports.



Changing the Multiview Layout

When you select a multiple viewport layout, a default layout appears, and each viewport is set to display a default view. You can change both the default layout and the views in each viewport to suit your needs.

To change the default viewport layout:

- 1 Do one or more of the following:
 - Hold the cursor over the lines dividing the image window and drag. The current zoom/pan settings of affected viewports are unchanged. (You can **Ctrl**-click the Home button to set the width of the frame to match its viewport.)
 - Hold the cursor over the lines dividing the image window and **Ctrl**-drag. The current zoom/pan settings automatically change so the frame matches its viewport's width.
 - Select the viewport to make it current (a yellow border indicates the current viewport) and then select a view option (for example, Front) or press a hotkey (for example, **F1**).
- 2 To restore the default settings, select an option from the Reset box.



Select:	To:
Reset Layout	Restore the default layout for the current viewport layout option. You can also Alt -click a viewport border.
Reset All	Restore the default layout for all viewport layout options.

Synchronizing Current Frame Display Across All Viewports

By default, when you scrub or jog a clip, only the current viewport (a yellow border indicates the current viewport) is updated. The other viewports continue to display the last frame at which they were parked until you release the cursor. However, you can set all viewports to be updated in sync with the current viewport.

To synchronize the current frame display across all viewports:

- 1 Display the View menu.
- 2 Select an option from the Viewport Update box.



Select:	To:
Update All	Update all viewports to display the same frame as the current viewport.
Update Sel	Update only the current viewport. Other viewports continue to display the last frame at which they were parked only once you release the cursor.

Controlling Image Display in Multiple Viewports

You can change the display of an image in the current viewport based on the type of image data you are working with. By default, all images are displayed with a transformation for video images in RGB mode. You can apply transformations to the image to display an optimal view of logarithmic and linear images. Enable the Apply All button to apply the transformation settings to all viewports using the same Preset mode as the current viewport.



(a) Image Data Type box (b) Preset box

See [Controlling Image Display using Exposure and Image Data Type](#) on page 1204.

Set the exposure settings and image data type in the module's View menu or set them interactively in the current viewport. The image display settings of each image are displayed in each viewport. See [Controlling Image Display Gesturally](#) on page 1206.

Displaying LUTs

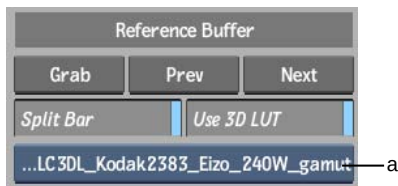
You can use the options in the View menu to apply a gamma or 1D LUT to the monitor. You can apply 3D LUTs to the image window (in modules that support multiple viewports), the reference area, and the reference overlay in Resize.



(a) Monitor LUT List box



(a) Current Viewport 3D LUT List box



(a) Reference Buffer 3D LUT List box

The options in the Monitor LUT List and 3D LUT List boxes are defined in the Preferences menu. See [LUT Preferences](#) on page 546 and [Applying 3D LUTs to the Image Window](#) on page 1177.

Displaying the Reference Area

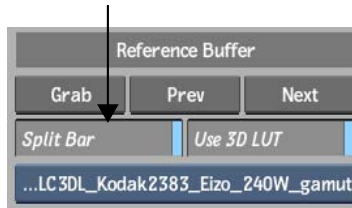
In the image window of modules that support multiple viewports, you can view the reference area with the currently displayed clip. A split bar divides the view between the current clip display (above the bar) and the reference area. The reference area can display one of the reference frames that you grab on-the-fly.

Turning On the Split Bar

Turn on the split bar from the View menu or by using a hotkey in any module where you can view reference frames.

To turn on the split bar:

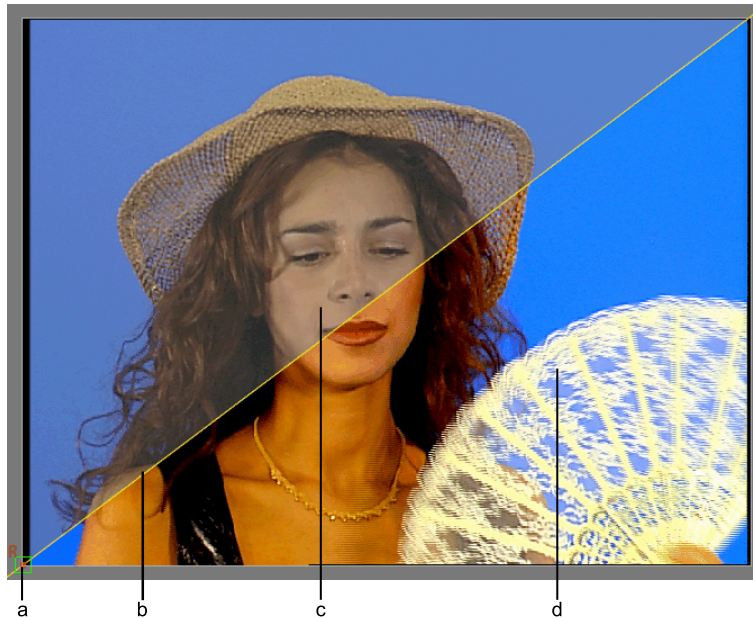
- Enable Split Bar (or press **Ctrl+B**).



Moving the Split Bar

When the split bar is on, by default it lies along the lower edge of the image window.

The split bar has a pivot point (indicated by a small box) around which the split bar can be rotated, or from which the split bar can be moved. The letter R next to the pivot box indicates the side of the bar where the reference clip is displayed.



(a) Pivot point (b) Split bar (c) Current display (d) Reference display

Rotate and move the split bar using these techniques:

- To rotate the split bar around its pivot point, drag the split bar.

- To move the split bar, drag the pivot point. You can also **Ctrl+Alt**-click the image to place the pivot point under the cursor, and then drag over the image to move the split bar.
- To restore the split bar to its default position, **Ctrl**-click the pivot point.

NOTE Depending on your hardware configuration and your project's bit depth, you may only be able to rotate the split bar in 90-degree increments.

Showing and Hiding the Split Bar

When the split bar is on, you can show or hide it in the image window.

To show or hide the split bar:

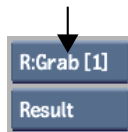
- **Ctrl**-click the split bar.
When the split bar is hidden, it is still active. The letter R is displayed indicating the location of the reference clip.

Loading a Clip into the Reference Area

You can display one of the module's clip views in the reference area.

To load a clip into the reference area:

- Select an option from the Reference box.



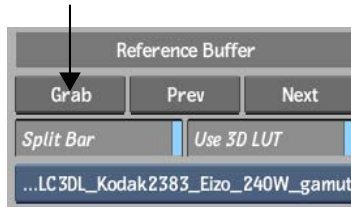
Storing Reference Frames in the Reference Buffer

Backdraft Conform has a graphics buffer that is dedicated to storing reference frames. InResize, you can display these frames in the reference area to compare the current result of a clip with a snapshot that you took earlier in the creative process.

You can grab any number of reference frames in the reference area, limited only by framestore space.

To store reference frames in the reference area:

- 1 Display the frame you want to grab in the viewport.
- 2 In the View menu of a module, click Grab (or press **Ctrl+G**).



The current frame appears in the reference area.

- 3 To grab another frame, display it in the viewport (or make the changes to the current frame) and then do one of the following:
 - Press **Ctrl+G** to replace the current reference frame.
 - Press **Ctrl+Shift+G** to append the new frame to all existing reference frames.

Cycling Through Multiple Reference Frames

When you work with several frames stored in the reference buffer, you can cycle their display in the reference area.

To cycle through multiple reference frames:

- With the split bar on and the reference area showing, click the Prev and Next buttons in the View menu.

To cycle through multiple reference frames using the reference overlay:

- 1 Press and hold **Ctrl+NUM5** to display the reference overlay.
- 2 While holding **Ctrl**, press **NUM4** and **NUM6** to cycle backwards and forwards through all stored reference frames.

TIP The reference overlay works from any location in Backdraft Conform, even on the EditDesk.

Working with Multiple Viewports and a Broadcast Monitor

The View menu displays options for broadcast monitor settings if your workstation includes one. See [Broadcast Settings Preferences](#) on page 505.

By default, Backdraft Conform sends the graphics signal of the upper-right viewport to the broadcast monitor. However, you can set any viewport to be sent to the broadcast monitor.

To send a viewport to the broadcast monitor:

- Click the Monitor symbol in the viewport you want to send to the broadcast monitor.



Part 3: Inputting and Outputting Media

Part 3 includes these chapters:

- [Clip Input/Output Using a VTR](#) on page 131
- [Clip Output Using Real-Time Deliverables](#) on page 183
- [Clip Input/Output Using HSDL Devices](#) on page 205
- [VTR Emulation](#) on page 211
- [Importing Media Files](#) on page 219
- [Exporting Media Files](#) on page 267
- [Processing and Publishing](#) on page 301



Image courtesy of Cutting Edge

Clip Input/Output Using a VTR

6

Topics in this chapter:

- [About Clip Input and Output Using a VTR](#) on page 132
- [Configuring Hardware For Clip Input and Output Using a VTR](#) on page 133
- [Configuring Software For Clip Input and Output Using a VTR](#) on page 133
- [Inputting Clips From a VTR](#) on page 134
- [Outputting Clips To a VTR](#) on page 141
- [Monitoring Video During Clip Input and Output Operations](#) on page 158
- [Setting Input and Output In and Out Points](#) on page 159
- [Inputting and Outputting a Live Video Signal](#) on page 159
- [Working with Multi-Format Input and Output](#) on page 161
- [Supported HD Formats for Video I/O](#) on page 164
- [Generating Proxies](#) on page 165
- [Capturing Proxies Only](#) on page 165
- [Capturing Material with Variable Frame Rate](#) on page 166
- [Controlling a VTR](#) on page 168
- [Adjusting Audio Gain on Output Clip](#) on page 170
- [Setting Video Input and Output Engineering Menu Controls](#) on page 172
- [Inputting and Outputting with Headroom](#) on page 176
- [Capturing 60i Material with 2:3 Pulldown Removal](#) on page 179
- [Configuring Dual-Serial Link I/O on Linux Workstations](#) on page 181

About Clip Input and Output Using a VTR

Inputting and outputting clips using various VTR devices is the most common means of handling AV material. Backdraft Conform allows you to perform numerous VTR-based clip input and output operations in a fast and efficient manner. You can capture individual clips or frames, or log clips for capture using an EDL. To learn about the complete EDL conforming process, see [Importing EDL Files](#) on page 621 and [Exporting EDLs](#) on page 721. Similarly, the application allows you to output single clips or frames, as well as multiple clips to a VTR device.

Clip input and output general workflow:

- 1 Make sure all hardware devices involved in the clip input and output process are properly configured. If not, the Output Clip and Input Clip buttons will be disabled. See [Configuring Hardware For Clip Input and Output Using a VTR](#) on page 133.
- 2 Edit the software initialization configuration file to ensure the proper devices and settings are initialized on application start-up. See [Configuring Software For Clip Input and Output Using a VTR](#) on page 133.
- 3 Do one of the following:
 - Input clips. See [Inputting Clips From a VTR](#) on page 134.
 - Output clips. See [Outputting Clips To a VTR](#) on page 141.

NOTE If you want to input or output clips using a live video signal, see also [Inputting and Outputting a Live Video Signal](#) on page 159.

- 4 Carry out additional required procedures, depending on the clip input and output operations that you perform. See:
 - [Adjusting Audio Gain on Output Clip](#) on page 170
 - [Setting Video Input and Output Engineering Menu Controls](#) on page 172

If you are using an NVIDIA® Quadro® FX 5600 SDI graphics card, Backdraft Conform also supports real-time output of certain operations. See the section [Outputting Clips with a Logo Overlay](#) on page 152 and the chapter [Clip Output Using Real-Time Deliverables](#) on page 183.

Configuring Hardware For Clip Input and Output Using a VTR

When preparing for a clip input and output session, confirm the following:

- Audio and video outputs of the VTR are connected to the audio and video inputs of the Backdraft Conform system. Audio and video inputs of the VTR are connected to the audio and video outputs of the Backdraft Conform system.
- The VTR is connected, using an RS-422 video I/O control cable, to a serial port of your workstation to enable remote control of the device.
- A video sync signal is connected to the sync input of the video device to ensure frame-accurate capture. If there is a separate audio device, an audio sync signal must be connected to it as well.

Video hardware configuration procedures are detailed in the “Setting Up Video Hardware” chapter of the *Hardware Setup Guide* for your workstation..

Configuring Software For Clip Input and Output Using a VTR

Software configuration in preparation for clip input and output session involves editing the software initialisation configuration file. The procedures for enabling devices in the software initialization configuration file are described in the “Configuration Files” and “Configuration Keywords” chapters of the *Autodesk Visual Effects and Finishing Configuration File Reference Guide*.

When you are preparing for a clip input and output session, consult the software initialization configuration file to confirm the following keyword sections are uncommented and properly configured:

- VIDEO KEYWORD
You do not need to specify the default video I/O timing. The initial timing corresponds to the default resolution and frame rate of the project that you select on start-up. If you select a film or custom resolution for your project on start-up, video I/O timing corresponds to the resolution that was selected as the preferred resolution when the application was installed.
- VTR KEYWORD
You must assign a specific VTR timing, such as NTSC, PAL, or 1920x1080_5994i. Multi-format video input and output capability of your

system allows you to modify the VTR timing, without exiting the project, to any timing supported by your system's video board.

If you plan to perform input and output operations using a live video signal from a broadcast feed or from a device that does not support remote control functionality using RS-422 interface, such as a VCR or camcorder, uncomment the corresponding Live video keyword at the bottom of the SD DECKS section.

NOTE When working in HD projects and capturing material from a Varicam (variable frame rate 720p material), ensure that the following VTR tokens are enabled: *VTR DVCProHD 720 59p*, *SERIAL1*, *1280x720_5994P* and *VTR DVCProHD 720 60p*, *SERIAL1*, *1280x720_60p*.

Inputting Clips From a VTR

Once you have set up your hardware devices and configured the software initialization file, you are ready to perform clip input and output. The Input Clip menu contains various controls to help you perform operations, such as capturing a single frame, capturing a single clip, capturing and logging multiple clips.

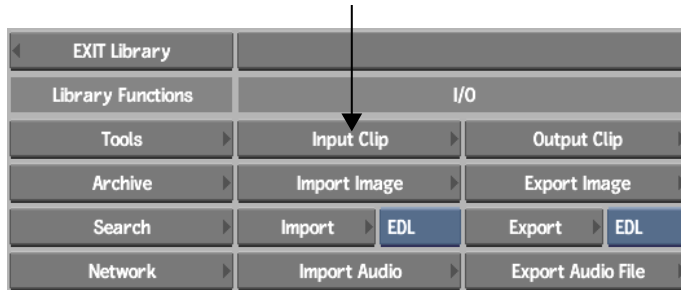
Accessing the Input Clip Menu

Use the Input Clip menu to adjust the settings for the clip you want to input.

Typically, you access the Input Clip menu from the clip library into which you want to capture clips. However, you can also access the Input Clip menu directly from the EditDesk.

To access the Input Clip menu from a clip library:

- 1 From the EditDesk, enter the clip library into which you want to capture a clip.
- 2 Click Input Clip or press **F9**.

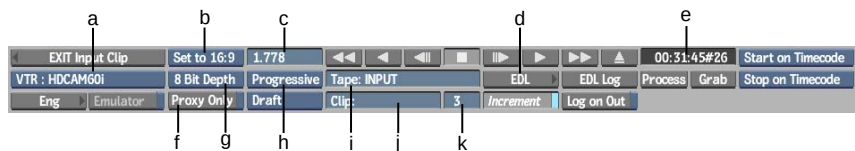


The Input Clip menu appears.

To access the Input Clip menu from the EditDesk:

- Press **F9**, or select I/O from the A/V Tools box and click the Input button that appears.

When you capture clips to the EditDesk, it is a good idea to save them to a clip library immediately.



- (a) Device Name box (b) Aspect Ratio box (c) Aspect Ratio field (d) EDL button
 (e) Current Timecode field (f) Proxy Quality box (g) Bit Depth box (h) Scan mode box
 (i) Tape Name field (j) Clip Name field (k) Increment Name field

Input Clip Menu Options

The basic Clip Input controls are described as follows.

Device Name box Provides an option for each uncommented VTR keyword line in the software initialization configuration file. Select the option that corresponds to the VTR you want to input clips from.

Aspect Ratio box Determines the aspect ratio of the clip you want to capture.

Aspect Ratio field Enter a custom aspect ratio, if the ratio you want to use is not among the options in the Aspect Ratio box.

Bit Depth box Provides the option of capturing clips at a frame depth of 8 or 10 bits per channel, depending on the project you are working with.

Scan Mode box Determines the scan mode metadata tags of the clips created on input. In most cases, select the option that matches the format you are capturing. All workstations provide Progressive, Field 1, and Field 2 options.

Engineering button Click to view the clip input and output Engineering menu. See [Setting Video Input and Output Engineering Menu Controls](#) on page 172.

Emulator button Enable to use a VTR emulator. See [VTR Emulation](#) on page 211.

Proxy Only button Provides the option of capturing proxies only.

Proxy Quality box Proxies generated during capture are always of draft quality. Using the Proxy Quality box, you can set the default quality for proxy generation after capture. Results vary depending on the type of clips involved, so it is a good idea to try different settings.

Select:	To:
Draft	Generate proxies in the least amount of processing time, at the expense of proxy quality. This setting is the default setting for proxy generation following video I/O.
Coarse	Get better results than Draft, in more processing time.
Medium	Get better results than Coarse, in more processing time.
Quality	Get the best results, in more processing time than Medium.
Bicubic	Often get good results, usually faster than Quality. Results are likely not as good as Quality, but acceptable.
Lanczos	Usually get the best results, often with better performance than Bicubic.

The previous two controls appear only if the current project is configured, in the Project Setup menu, to store proxies. See [Setting Proxy Management Options](#) on page 346.

Process button Click to start clip input.

Grab button Click to grab the current frame. See [Capturing Single Frames](#) on page 140.

EDL Log button Click to log clip to EDL.

EDL button Click to view the EDL menu. See [Capturing Clips Using an EDL](#) on page 681.

Log On Out button Enable to log EDL events every time you enter an out point. See [Outputting Multiple Clips](#) on page 149.

Tape Name field Enter the name of the tape from which you are capturing. This step is important for EDL assembly and media recapture procedures.

Clip Name field Enter the name you want to use for the clip you are capturing.

Increment Name button Enable to append numerical increments to the clip name automatically. For example, enter “My_Clip” in the Clip Name field and then enable Increment Name. The first clip you capture is named “My_Clip-1”, the second is named “My_Clip-2”, and so on. You can change the initial numerical increment by entering a number in the field that appears when you enable Increment Name.

Start Mode box Determines the start mode for clip input.

Select:	To:
Start On Pen	Capture starting from the currently displayed frame on the tape. Click Process to activate the start-on-pen trigger.
Start On Timecode	Capture starting from the timecode you enter in the In field. Click Process to start the clip input process.

Stop Mode box Determines the stop mode for clip input.

Select:	To capture until:
Stop On Pen	You click anywhere on the screen.
Stop After Frames	A specific number of frames have been captured. When you select this option, a field appears in which you enter the number of frames you want to capture.
Stop On Timecode	A timecode on the tape has been reached (entered in the Out Timecode field).

Current Timecode field Indicates the current timecode of the tape in the VTR.

In Timecode field Indicates the timecode on the tape at which point the clip output process begins.

Out Timecode field Indicates the timecode on the tape at which point the clip output process ends.

Duration field Indicates the duration, in timecode, between the clip output in point and out point.

The following controls are found on the right side of the menu (not shown in preceding illustration).

Tape EE button A status button that, when lit, indicates that the VTR is in E-to-E mode (electronic to electronic). This means that the VTR output is showing its input signal. Clicking Tape EE toggles E-to-E on and off.

Standby button A status button that, when lit, indicates that the VTR is in standby mode. Click Standby to toggle between standby off and standby on.

In/Out Point controls Use to enter, adjust, and cue to clip output in and out points. See [Setting Input and Output In and Out Points](#) on page 159.

VTR Status display Indicates the current status of the VTR. See [Controlling a VTR](#) on page 168.

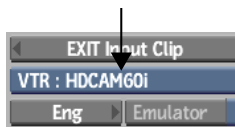
Selecting a VTR Device For Input

The VTR devices available depend on the VTR keyword lines uncommented in the software initialisation configuration file. Make sure the VTR you select is appropriately connected using the corresponding audio, video, and RS-422 connections.

In certain situations, Backdraft Conform pre-selects a VTR with appropriate timing for you, as described in [Working with Multi-Format Input and Output](#) on page 161.

To select the VTR device for input:

- 1 From the Device Name box, select an option corresponding to your VTR device.



- 2 Make sure that the selected device is in Remote mode. See [Controlling a VTR](#) on page 168.

Naming Tapes and Clips

Proper media management is an essential part of the clip input and output process. One of the elements of efficient media management is methodical and consistent naming of the clips you capture and the tapes from which they originate. Before capturing a clip, assign a name to the tape and the resulting clip. This assignment makes it easier to organize your clips, trace them back to the source tape, and, when necessary, recapture them.

To name a tape and clip:

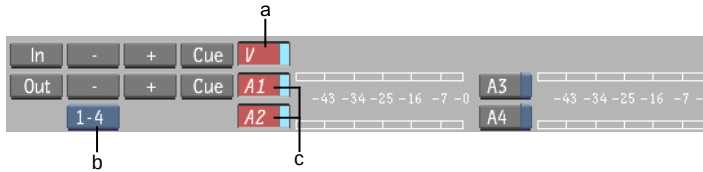
- 1 In the Tape field, enter the tape name.
The tape name is stored with the clip. In the clip library or on the EditDesk, you can **Alt**-click the clip to view its information, including the tape name.
- 2 In the Clip field, enter a clip name.
- 3 Enable Increment to use the same name for multiple clips captured in sequence. This appends a numerical tag at the end of each clip so you can differentiate them.
- 4 To change the number of the numerical tag for the next captured clip, enter a number in the Clip Index field. By default, the increment begins at 1.

Selecting Tracks and Channels to Capture

Whether you are inputting single frames, single clips, multiple clips or conforming EDLs, you must select the tracks and channels you want to capture from the VTR.

To select the tracks and channels to capture:

- 1 To capture the video track, enable V.
- 2 To toggle between audio tracks 1-4 and 5-8, click the Toggle Audio Tracks button.
- 3 To capture audio channels, enable the corresponding channel selection buttons.



(a) Video track enabled for capture (b) Toggle Audio Tracks button (c) Audio channels 1 and 2 enabled for capture

Audio meters display the gain level being captured. You cannot change this level during capture. You can modify the gain of a clip once capture is complete, as described in [Audio](#) on page 1045.

Capturing Single Frames

A single frame capture, or a frame grab, is the simplest clip input operation. This is useful for extracting snapshot frames for a preview or promotion piece.

To capture a single frame:

- 1 Cue up to the frame you want to capture using the VTR Transport controls or by scrubbing the preview window.
- 2 Click Grab.



The captured frame is saved in the location from which you entered the Input Clip menu.

- 3 Click EXIT Input Clip to view the captured frame.
- 4 If you want to compare the captured frame against the frame in the preview window, load the clip into the Output Clip menu and enable split-screen view. See [Monitoring Video During Clip Input and Output Operations](#) on page 158.

Capturing Single Clips

You can capture a single clip from a VTR. You can capture on the fly with your in and out points determined by mouse clicks during playback, or be more precise by setting in and out points in the corresponding fields.

To capture a single clip:

- 1 Cue up the tape to the frame at which you want to begin capturing.
- 2 Do one of the following:
 - From the Capture Method box, select Start On Pen/Stop On Pen.
 - Enter clip input in and out points in the In and Out fields. See [Setting Input and Output In and Out Points](#) on page 159.
- 3 To begin capturing, click Process.

The timecode field turns green, indicating that capture is in progress. Depending on your hardware configuration, the preview window may go black during capture.
- 4 To end the capture at any time, click the cursor anywhere over the preview window.

Depending on your project proxy settings, a post-process may occur, generating proxies for each captured frame. You can see a notification on the process that is taking place in the message bar.

Once all capture-related processes are complete, the clip is saved to the location from which you entered the Input Clip menu.

Outputting Clips To a VTR

Once you have clips that are ready for output to tape, you can use the Output Clip menu to perform this operation. Like capturing, you can output single clips or multiple clips, and enable a split view to preview the clip you want to output alongside the media on the tape simultaneously.

Another way to output multiple clips is to generate an EDL and then output the clips using the EDL.

Most of the procedures in this section assume that you have already blacked your tape. However, if necessary, you can output in assemble mode, which allows you to perform clip output to a tape that was only partially blacked. See [Outputting Clips in Assemble Mode](#) on page 157.

For HD-specific considerations, see [Supported HD Formats for Video I/O](#) on page 164.

Accessing the Output Clip Menu

You access the Output Clip menu from the clip library that contains the clips that you want to output, from Output Clip menu directly from the EditDesk, or from the Player if you are also using Real-Time Deliverables.

To access the Output Clip menu from a clip library:

- 1 From the EditDesk, enter the clip library that contains the clips you want to output.
- 2 Select the clips you want to output.
- 3 Click Output Clip.



To access the Output Clip menu from the EditDesk:

- 1 Press **Shift+F9**, or select I/O from the A/V Tools box and click the Output button that appears.
- 2 Do one of the following:
 - Select the clip you want to output. If the timing of the clip differs from your current preview timing setting in Preferences, Backdraft Conform switches to that timing and attempts to select a matching VTR from the list of available devices. See [Working with Multi-Format Input and Output](#) on page 161.
 - **Ctrl-click** multiple clips to select them for output. If the clips have different timing settings, you are prompted to select which timing

you want to use, and the clips that do not match this timing are discarded.

To access the Output Clip menu from the Player:

- 1 From the EditDesk, enter the Player with the clip to output.
- 2 In the Deliverables tab, select the Deliverable to output.
- 3 Click Output Clip.

Output Clip Menu Controls

You can view the Output Clip menu in large or small form depending on which tab is selected.

When the Output, Audio, or Engineering tab is selected, both the large and small forms are available. To toggle between the large and small forms, **Ctrl**-swipe the bottom of the screen.

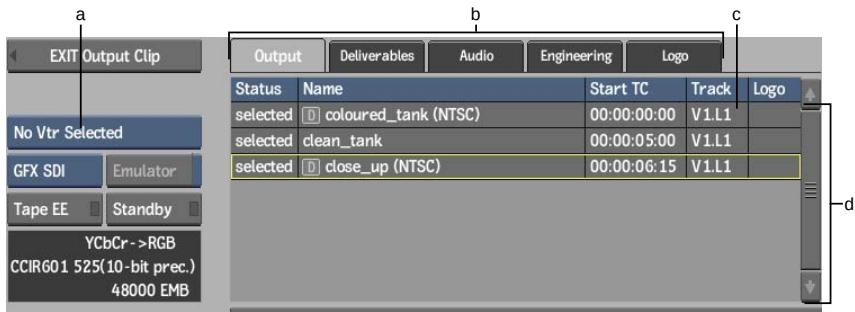
When the Deliverables or Logo tab is selected, only the large form is available, but additional Pan and Zoom controls are available.

If you are using the large Output menu with an HD clip, the menu automatically switches to the smaller form during clip output, and then switches back when output is complete. This gives you an unobstructed view of the clip during output.

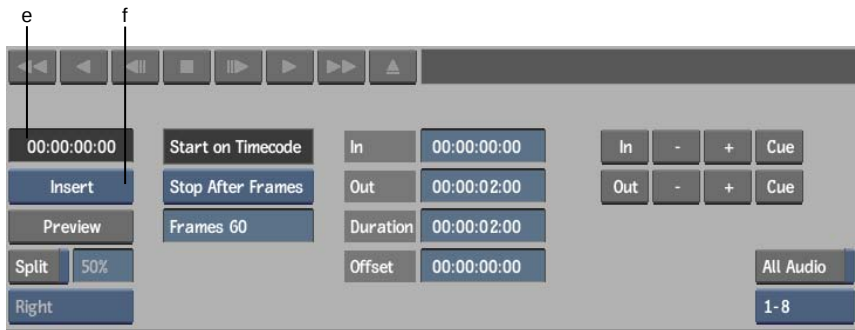
Small Output Clip menu (left portion):

EXIT Output Clip	YCbCr -> RGB					Previous	Next	Output
1080 60i (10-bit prec.)		#	Name	Start TC	Track	Logo	Template	
VTR : HDCAM60i	LOCAL	48000 EMB	1 ... ay 23 12:52:51 2008	00:00:00:00	V1.L1			Preview

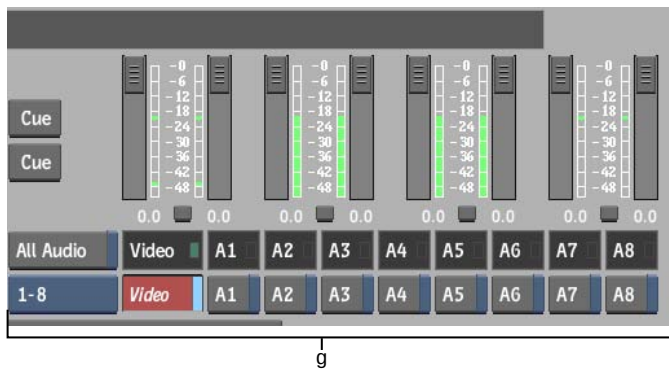
Large Output Clip menu (broken into three parts):



(a) Device Name box (b) Navigation tabs (c) Video Layer field (d) Output Clip list



(e) Current Timecode field (f) Output box



(g) Audio controls

In this documentation, the large menu is described. Differences present in the small menu are noted where applicable.

Device Name box Displays the options for each uncommented VTR keyword line in the software initialisation configuration file. Select the option corresponding to the VTR to which you want to output clips. See [Selecting a VTR Device For Output](#) on page 147.

Navigation tabs Switch between different Output Clip menus.

Select:	To:
Output	Configure the output settings described in this section. This is the default menu.
Deliverables	Set up Real-Time Deliverables on output, such as Letterboxes or LUTs. See Outputting Clips With a Letterbox Overlay on page 151 and Clip Output Using Real-Time Deliverables on page 183.
Audio	Set Audio preferences. Changes are reflected in the Audio section of the Preferences menu, and vice versa. See Audio Preferences on page 538.
Engineering	View the output clip Engineering menu. See Setting Video Input and Output Engineering Menu Controls on page 172.
Logo	Set up a logo on output. See Outputting Clips with a Logo Overlay on page 152.

NOTE The Deliverables and Logo tabs are only available if the workstation uses an NVIDIA Quadro FX 5600 SDI graphics card. See [Hardware Requirements for Real-Time Deliverables](#) on page 184.

Output Clip list Displays information about the clip selected for output. If there are multiple clips, you can sort them by clicking the column headings. This changes the output sequence order. You can also edit the Timecode field in this list. See [Outputting Multiple Clips](#) on page 149. If the list includes Deliverables and you do not have the hardware required by Real-Time Deliverables, the Deliverables are greyed out. See [Outputting Deliverables](#) on page 192.

Video Layer field Indicates the track to output in a multi-track clip. Drag the field to browse through the video tracks and video layers. This field is red when the selected layer is not the top layer of the selected video track; this does not prevent output.

Graphics Card box If you have the NVIDIA Quadro FX 5600 SDI graphics card for using Real-Time Deliverables, switch between it and the standard

AJA_OEM2K card using this box. See [Hardware Requirements for Real-Time Deliverables](#) on page 184.

Emulator button Enable to use a VTR emulator. See [VTR Emulation](#) on page 211.

Tape EE button When lit, indicates that the VTR is in E-to-E mode (electronic to electronic). This means that the VTR output is showing its input signal. When E-to-E is off, the VTR shows the contents of the tape it contains. Click this button to toggle E-to-E on and off.

Standby button When lit, indicates that the VTR is in standby mode. Click this button to toggle between on and off.

VTR Status display Indicates the current status of the VTR. See [Verifying the VTR Status](#) on page 168.

Current Timecode field Indicates the current timecode of the tape in the VTR.

Output box Switch between insert or assemble mode. Click to perform the selected action.

Preview button Triggers a simulation of the output process. The VTR behaves as if it is inserting material, however no material is recorded to tape.

Split View button Enable to simultaneously monitor the clip selected for output and the contents of the tape. See [Monitoring Video During Clip Input and Output Operations](#) on page 158.

Start On Timecode field A locked field indicating that clip output begins at the timecode entered in the In Timecode field.

Stop Mode box Determines the stop mode for clip output.

Select:	To output the current clip until:
Stop On Timecode	A timecode on the tape is reached (indicated in the Out Timecode field).
Stop After Frames	A specified number of frames is output. When you select this option, a field appears in which you enter the number of frames to output.

In Timecode field Indicates the timecode on the tape at which point the clip output process begins.

Out Timecode field Indicates the timecode on the tape at which point the clip output process ends.

Duration field Indicates the duration, in timecode, between the clip output in and out points.

Offset field Indicates the offset, in timecode, by which the selected clip is output. For example, an offset of 00:00:00:05 indicates that the first five frames of the clip to be output are skipped. The first frame to be output is frame 5 of the clip (counting frames from 0).

In/Out Point controls Use to enter, adjust, and cue the in and out points. See [Setting Input and Output In and Out Points](#) on page 159.

All Audio button Enable to output all audio channels for monitoring, even if only some audio channels are enabled for recording to tape.

Audio Channel buttons Enable and control audio output signals. See [Adjusting Audio Gain on Output Clip](#) on page 170.

Selecting a VTR Device For Output

The VTR devices available depend on the VTR keyword lines uncommented in the software initialisation configuration file. Make sure the VTR you select is appropriately connected using the corresponding audio, video, and RS-422 connections.

Backdraft Conform pre-selects a VTR with appropriate timing when entering the Output clip module, as described in [Working with Multi-Format Input and Output](#) on page 161.

To select the VTR device for output:

- 1 From the Device Name box, select a VTR device.
- 2 Make sure that the selected device is in Remote mode. See [Controlling a VTR](#) on page 168.

Outputting a Single Clip

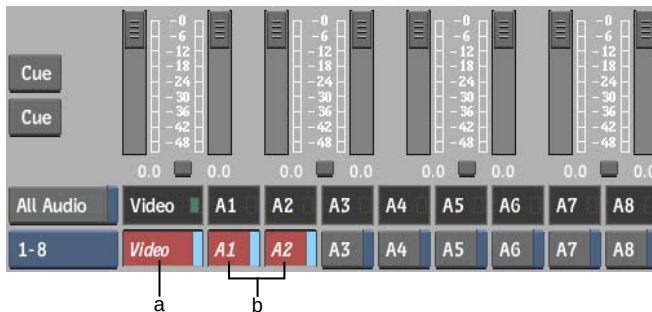
To output a clip to a VTR, load a clip into the Output Clip menu and then set the in and out points for clip output. If necessary, enable the options to offset the start frame for output and to apply a letterbox overlay. See [Output Clip Menu Controls](#) on page 143.

If the duration marked by the in and out points that you set for output is greater than the duration of the clip you are outputting, black frames fill the gap between the end of the clip and the out point of the clip. For example, if

you set an in point at 01:00:00:00 and an out point at 01:01:00:00, the clip output process has a duration of one minute. If the clip you are outputting is 30 seconds long, the last 30 seconds of the output result on tape are filled with black frames.

To output a single clip to a VTR:

- 1 Load the clip that you want to output into the Output Clip menu. See [Accessing the Output Clip Menu](#) on page 142.
- 2 Make sure that the correct video track and audio channel buttons are enabled so that the corresponding video track and audio channels are output to tape.



(a) Video track enabled for output (b) Audio channels 1 and 2 enabled for output

- 3 Enable or disable All Audio in the Clip Output menu (to the left of the audio controls).

When All Audio is enabled, all audio channels are sent to the audio converter, not just the ones you enabled in the previous step.

This means you can monitor all audio, even though you are only recording one or two tracks to the VTR. You can also route the other audio channels to a mixer or any other device capable of capturing an audio signal.

- 4 Make sure the appropriate VTR is selected in the Device Name box. See [Selecting a VTR Device For Output](#) on page 147.

The preview window displays the contents of the tape currently in the selected VTR.

- 5 To preview the clip before outputting, click Preview.

- 6 To preview the clip you are outputting against the contents on the tape, enable Split View. See [Monitoring Video During Clip Input and Output Operations](#) on page 158.
- 7 To output the selected clip starting at any frame other than the first one, enter the start timecode in the Start Offset field.
- 8 Set the in and out points for clip output. See [Setting Input and Output In and Out Points](#) on page 159.
- 9 To output the clip to the VTR, select Insert from the Output box.
The clips with Status *selected* are output to tape. During output, the Status column is updated to reflect the status of each clip:
 - Pending: the clip is waiting to be output to tape.
 - Output: the clip is being output to ape.
 - Done: the clip has been ouput to tape.
- 10 After the transfer is complete, verify that it was successful by playing the transferred clip. To do so, cue to the in timecode and click the Play button in the VTR Transport controls.
- 11 When you are done, click EXIT Output Clip.

Outputting Multiple Clips

You can output more than one clip to a VTR in a single pass. When you load multiple clips into the Output Clip menu, you must define in and out points (and any other output clip options) for each clip before starting the clip output process.

When multiple clips in the same session are selected for output, the application performs a validation check to determine if certain parameters match the project settings and whether or not the video device is capable of outputting these clips. The following outcomes are possible:

- If the clips have mixed timing settings, you are prompted to select which timing you want to use. Clips having timings different from the one you select are discarded.
- Clips with field dominance mismatch are discarded or kept, depending on your selection.

- Clips exceeding the maximum bit depth are discarded from the selection. A selection containing 8- and 10-bit clips can be output.
- If all the clips are discarded from the selection after the validation check, a message appears allowing you to confirm.

If some of the clips have overlapping timecodes, their timecodes are highlighted in red in the clip list. To fix overlapping timecodes, edit the timecodes in the clip list, or use the timecode fields in the Output tab. For additional information on setting timecodes, see [About the Change TC/KC/Rate Tools](#) on page 742.

To output multiple clips with the large Output Clip menu:

- 1 Load multiple clips into the Output Clip menu. See [Accessing the Output Clip Menu](#) on page 142.
- 2 If the clips have conflicting timings, you are prompted to select the timing you want to use. Clips that do not match this timing are discarded.
- 3 To output a clip, its status field must have the *selected* indicator. Click the Status field to alternate between the *selected* indicator and an empty field.
- 4 Set output options for each clip. See [Outputting a Single Clip](#) on page 147.
- 5 Optional: Click the column headers to sort the list. This changes the order of the output sequence.
- 6 To output the clip to the VTR, select Insert from the Output box.
The clips with Status selected are output to tape. During output, the Status column is updated to reflect the status of each clip:
 - Pending: the clip is waiting to be output to tape.
 - Output: the clip is being output to tape.
 - Done: the clip has been output to tape.
- 7 After the transfer is complete, verify that it was successful by playing the transferred clips: cue to the in timecodes and click the Play button in the VTR Transport controls. Clips that have been output are highlighted in the clip list of the large Output Clip menu.
- 8 When finished, click EXIT Output Clip.

When outputting multiple clips with the small Output Clip menu, note the following differences:

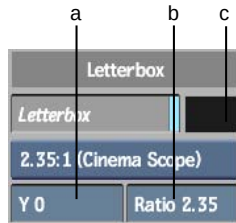
- Use the Previous and Next buttons to navigate the clip list.
- Once output options have been set for each clip, make sure you are viewing the first clip you want to output.
- When you select Insert in the Output box, the clip you are viewing, and all subsequent clips, are output to tape. Clips that precede the clip you are viewing are not output to tape.

Outputting Clips With a Letterbox Overlay

When you load clips on the EditDesk into the Player, you can enable a letterbox overlay using the Player View options. This letterbox view option is saved with the clip. You can output the clip with the same letterbox setting. You can also add a letterbox on output.

To output clips with a letterbox overlay:

- 1 In the Output Clip menu, click the Deliverables tab to see the Letterbox controls.



(a) Letterbox Offset field (b) Letterbox aspect ratio field (c) Colour selector box

- 2 Enable Letterbox.
- 3 Set the letterbox options:
 - In the Aspect Ratio field, enter a value to set the aspect ratio of the letterbox overlay. Alternatively, select a preset from the Aspect Ratio box.
 - In the Letterbox Offset field, enter a value to shift the letterbox overlay up or down, as required.

- Use the Colour Selector box to set the colour of the letterbox overlay.

Outputting Clips with a Logo Overlay

You can add a logo overlay on output, in real time. This feature is available only if your workstation is equipped with an NVIDIA Quadro FX 5600 SDI graphics card. The configuration for using this card is described in the *Hardware Setup Guide* for your workstation.

To add a logo, make sure the FX 5600 SDI card is selected in the Output Clip engineering menu. If AJA_OEM2K is selected, you cannot use the Logo Overlay feature.

To select the FX 5600 SDI card in the Output Clip menu:

- 1 Open the Output Clip menu.
- 2 From the Graphics Card box, select GFX SDI.

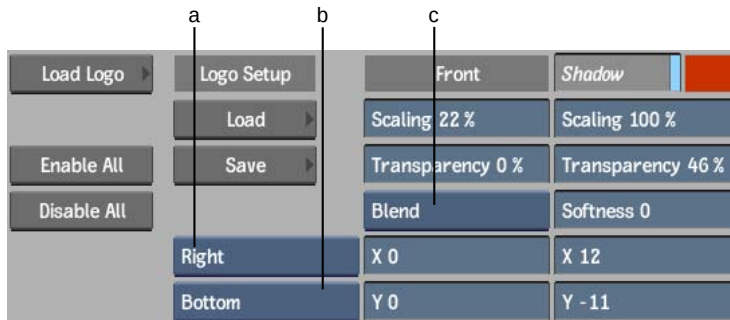
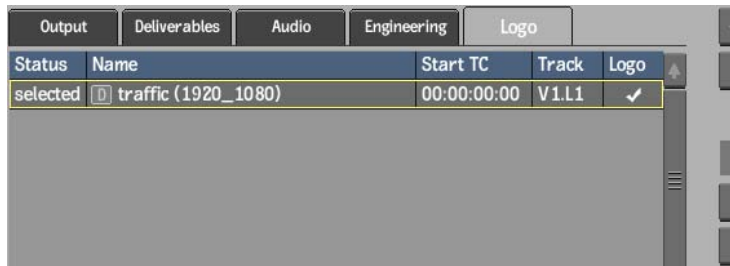


If you do not see GFX SDI as an available option in the Graphics Card box, it is either not installed, or it is not set up or configured properly. See one of the hardware guides previously cited.

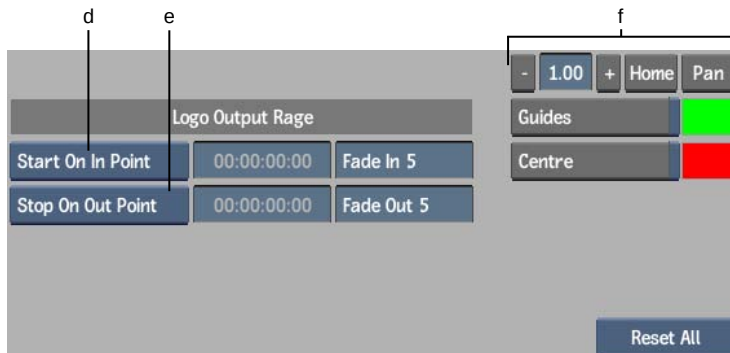
About the Logo Controls

The logo controls are found in the Output Clip menu, under the Logo tab.

NOTE When you select the Logo tab, you see the clip selected in the Output Clip list instead of the VTR feedback.



(a) Horizontal alignment button (b) Vertical alignment button (c) Blend Mode box



(d) In point (e) Out point (f) Zoom controls

Logo Enables or disables burning of the selected logo on output.

Load Logo Opens the Clip Select menu where you can select logo clips. See [Inserting Logos for Real-Time Output](#) on page 156.

Enable All Use to display the logo on all clips to output.

Disable All Use to remove the logo from all clips to output.

Scaling (Front) Changes the size of the Logo clip. The range of values is 0 to 100, with 100 being the actual size of the Logo clip.

Transparency (Front) Changes the transparency of the Logo (front clip). 0% is Opaque. 100% is Transparent.

Position controls (X and Y fields) Moves the logo along the X and Y axes.

Blend Mode box Selects how the front and matte clips or the front and back clips are combined:

Select:	To:
Add Trans	Compensate for the soft or anti-aliased edge on an object in a front and matte clip media, with transparency.
Blend	Punch the matte through the front. This blends the edge of the front clip and adds additional softness to the media.

Shadow Uses the Matte clip to add a Shadow. The default position is set to X:-5 and Y:-5. A colour pot on the right allows for the shadow colour to be changed.

Scaling (Shadow) Changes the size of the shadow. The range of values is 0 to 100, with 100 being the actual size of the shadow.

Transparency (Shadow) Changes the transparency of the Shadow. 0% is Opaque. 100% is Transparent.

Softness Softness can be added to the Shadow. The range of values is 0 to 200.

Horizontal alignment Positions the logo along the X-axis using one of the following options:

Select:	To:
Horizontal Centre	Center the logo on the X-axis.
Left	Snap the left edge of the clip to the Safe Title guide on the left.
Right	Snap the right edge of the clip to the Safe Title guide on the right.

Vertical alignment Positions the logo along the Y-axis using one of the following options:

Select:	To:
Vertical Centre	Center the logo on the Y-axis.
Top	Snap the top edge of the logo to the Safe Title guide at the top.
Bottom	Snap the bottom edge of the clip to the Safe Title guide at the bottom.

Guides Enables the display of the Safe Action and Safe Title guides within the Clip Preview window. Use the colour pot to change the colour of the guides.

Centre Enables the display of the Centre guide within the Clip Preview window. Use the colour pot to change the colour of the Centre guide.

In point Select an option to specify when the logo appears on the clip:

Select:	To:
Start On In Point	Have the logo appear at the in point of the clip.
Start After Frames	Specify after how many frames the logo appears. Enter the number of frames in the adjacent field.

Out point Select an option to specify when the logo disappears from the clip:

Select:	To:
Stop on Out Point	Have the logo disappear at the out point of the clip.
Duration	Specify how long the logo remains on screen. Enter the duration in the adjacent field.
Stop Before Frames	Hide the logo before the end of the clip, by the number of frames specified in the adjacent field. For example, selecting this option and entering a value of 5 makes the the logo disappear by frame 15 in a 20-frame clip.

Fade In Defines the length of the logo fade in. A value of 0 indicates there is no fade in.

Fade Out Defines the length of the logo fade out. A value of 0 indicates there is no fade out.

Zoom controls The small output clip menu is not available from the Logo tab. Use the Zoom controls to view oversized clips.

Reset All Use to reset the Logo controls to default:

Select:	To:
Reset All	Reset every field, and delete the logo.
Reset	Reset every field, but keep the logo.

Inserting Logos for Real-Time Output

Keep in mind the following when selecting clips to use as logos:

- If the clip has more than one frame, only the first frame is used.
- A clip that is Burn pending, unlinked or unlinked HiRes, cannot be used.
- The higher the resolution for the clip, the more impact it has on the capacity of the application to output in real time.

Logo settings are persistent, and are reloaded the next time you open the Output Clip menu.

NOTE The same logo, with its settings, is applied to all clips for which you have checked the Logo column in the Output Clip list.

To insert a logo in real time:

- 1 Access the Output Clip menu as described in [Outputting Clips To a VTR](#) on page 141.
- 2 In the Output Clip menu, use the Logo column to indicate the clips on which to overlay the logo.
- 3 Click the Logo tab to access the logo controls.
- 4 Select one or two clips to be used as your logo:
 - If you select one clip, it is used as the front clip and a luminance key is applied to it. If the clip has multiple frames, only the first frame is used.

- If you select two clips, the first is used as the front and the second as the matte.
- 5 Use the logo controls to position and configure the appearance of your logo, and to define in and out points. See [About the Logo Controls](#) on page 152.
- 6 Output the clip.

Outputting Clips in Assemble Mode

If you do not have time to black an entire tape, you can black a small portion of the tape and output clips to the tape in assemble mode. In this mode, the timecode on the tape is generated by the VTR as part of the recording process. Make sure that timecode regeneration is properly configured on the VTR. Autodesk recommends blacking one minute at the beginning of the tape.

If outputting a clip in assemble mode, extend the duration of the output to avoid problems when you need to recapture the segment. For example, this can be done by adding 5 to 10 seconds of black at the beginning and at the end of the clip, before entering the output clip module.

To output a clip in assemble mode:

- 1 On the VTR, set the TC generator switch to Internal and Regen to make the VTR generate the timecode. Refer to your VTR manual for instructions on setting the TC generator.

TIP If you have just added black to your tape, the VTR should already have these settings.

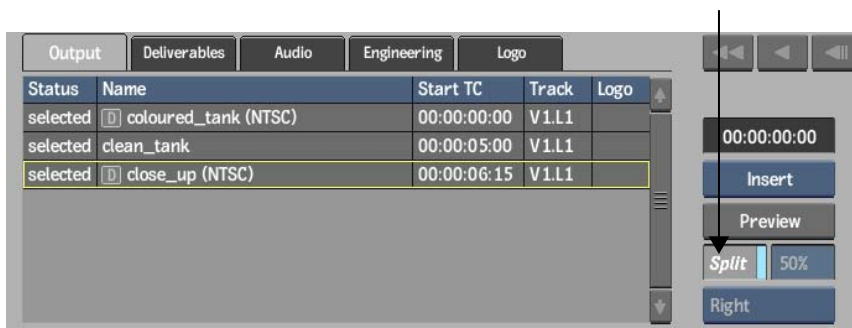
- 2 Set clip output options. See [Outputting a Single Clip](#) on page 147.
- 3 With the clip you want to output in the Output Clip menu, set the clip output in and out points. See [Setting Input and Output In and Out Points](#) on page 159.
- 4 If black was not added at the end of the clip, make sure the out point exceeds the duration of the clip by five to ten seconds.
- 5 Select the Assemble option from the Output box.
- 6 Click Assemble to output the clip in assemble mode.

Monitoring Video During Clip Input and Output Operations

When you output a clip to a tape that already has media on it, you can enable a split view to compare a clip with a portion of tape, in much the same way as split view allows to compare two video segments in the player. This can be especially useful if you are outputting a clip to seamlessly overwrite a section on the tape.

To use the split view preview option:

- 1 In the Output tab of the Output Clip menu, enable Split.



The Split View controls are enabled and you can view the clip that is currently set for output alongside the content on the tape.

- 2 Set Split View preview options:
 - In the Split field, enter a value to set the relative position of the split.
 - From the Current Clip Display box, select an option to set the location of the current clip display.
 - From the Split Orientation box, select Horizontal Split or Vertical Split to set the Split View orientation.
- 3 With Split View enabled, you can scrub the VTR to locate the frame that matches the frame of the current clip.
- 4 Set the In point to the timecode of the frame on tape that corresponds to the first frame of the clip.
- 5 Cue to the In point. The first frame of the clip and matching frame on tape are displayed in Split View.

- 6 Click Play to play the tape and the clip simultaneously in Split View.
- 7 Click Stop, and disable Split View when you are finished.

Setting Input and Output In and Out Points

You can enter timecode values directly in the In, Out, and Dur fields to set in and out points for clip input and output. However, there are other methods of setting the in and out points that are more convenient if you are scrubbing the tape in the VTR to locate reference frames for clip input and output. For example, if you output a clip to overwrite a segment on a tape, you scrub the tape to locate the frame that matches the first frame of the clip you are outputting.

Besides the described methods of entering timecodes in the In, Out, and Dur fields, you can modify clip in and out points or cue the VTR to these points using the following controls on the right side of the Input or Output menu.

Start on Timecode	In	00:00:00:00	In	-	+	Cue
Stop After Frames	Out	00:00:01:00	Out	-	+	Cue
Frames 30	Duration	00:00:01:00				
	Offset	00:00:00:00				

In button Click to set the In field to the VTR's current timecode.

Out button Click to set the Out field to the VTR's current timecode.

+ and - buttons Click to frame-step the In or Out timecodes forward or backward. If Stop After Frames is selected from the Stop Mode box, both the in and out points move because the duration between them is locked.

Cue buttons Click to cue the VTR to the in or out point.

Inputting and Outputting a Live Video Signal

If you uncomment a Live Video VTR keyword you can capture a live video signal or crash-record a clip using the pen to start and stop the clip input or output process.

On input, use the Live NTSC or PAL option to capture directly from a camera, VCR, or any other device that does not support remote control via RS-422. You can also feed a live video signal from satellite or any other broadcast source.

On output, use the Live Video option to output clips to a device that does not support remote control via RS-422.

To input a live video signal:

- 1 Enter the Input Clip menu.
- 2 From the VTR Device box, select Live NTSC or Live PAL.

The incoming live video signal appears in the preview window. The Start Mode box is unavailable. With Live Video capture, you must use Start On Pen mode. You can use Stop On Pen or Stop On Frames to end the capture.

Start on Pen	In	00:00:00:00
Stop on Pen	Out	04:00:00:00
	Dur	04:00:00:00

NOTE When Stop On Pen is selected as the preferred capture stop mode, the out point and the duration timecode fields are updated to reflect the longest possible duration corresponding to the full capacity of a framestore. The capture stops either when you click anywhere on the screen or the timecode indicated is reached, meaning that the framestore is full.

- 3 Set input options. For example, enter the clip name and enable the video tracks and audio channels that you want to capture. See [Inputting Clips From a VTR](#) on page 134.
- 4 Make sure you are receiving the live video signal.
- 5 If you are capturing from a device that does not support remote control, press Play (allowing enough time to click Process in Backdraft Conform).
- 6 To begin capturing, click Process.
After a moment, you are prompted to click anywhere to begin the output process.
- 7 Click anywhere on the screen.
- 8 To end capturing in Stop On Pen mode, click anywhere on the screen.

To output a live video signal:

- 1 Load a clip into the Output Clip menu.
- 2 From the VTR Device box, select Live NTSC or Live PAL.

The Start Mode box is unavailable. With Live Video output, you must use Start On Pen mode. You can use Stop On Pen or Stop On Frames to end the output.

- 3 Set output options. For example, enter the clip name and enable the video tracks and audio channels that you want to capture. See [Outputting Clips To a VTR](#) on page 141.
- 4 If you are outputting to a device, click Record, or take any action required to enable the device and capture the signal being output from Backdraft Conform.
- 5 To begin capturing, click Process.
After a moment, you are prompted to click anywhere to begin the output process.
- 6 Click anywhere on the screen.
- 7 To end capturing in Stop On Pen mode, click anywhere on the screen.

Working with Multi-Format Input and Output

The following sections describe important information about working with multi-format video material in Backdraft Conform projects.

About Working with Multi-Format Input and Output

You can work with clips of any resolution in your project. You can process images of differing resolutions in Backdraft Conform. The video I/O procedures that you perform to input and output clips to and from Backdraft Conform using a VTR, as well as capture and assemble EDLs, are not restricted to your project's default resolution. You can input and output clips of another video resolution to and from your project.

Keep track of the different resolutions and video standards to which your clips belong to make it easier to work in the mixed resolution environment of Backdraft Conform. Enable clip information display on the EditDesk and in the clip library to identify clip resolution and frame rate at a glance. See [General Preferences](#) on page 517.

On start-up, when you select or create a user and a project, you set the video I/O timing for your project (for example, NTSC or PAL). If you are in a session and you want to change the video I/O timing option set at start-up, you can

do so without exiting Backdraft Conform by selecting the required timing from the VTR Timing box, provided this timing is supported by your video board.

You can also change the preview timing in the Preferences menu. The preview timing in the Preferences menu is linked to the Clip Input menu. In other words, when you change preview timing in the Preferences menu, the change is reflected in the Clip Input menu. This lasts for the duration of the current session, or until you change the preview timing again.

To be able to output to a VTR that has the timing that matches your new clip timing, you need to change the corresponding audio, video, and RS-422 connections to the VTR. See [Configuring Hardware For Clip Input and Output Using a VTR](#) on page 133.

Detection of Sync and Timing

In the following circumstances, Backdraft Conform checks whether or not your incoming sync matches the project timing you are working on:

- When you load a project on start-up.
- When you change projects in the Preferences menu.
- When you change preview timing in the Preferences menu.
- When you change your VTR to one with a different timing, or change the timing on your VTR.

If your video sync is correct, you can proceed as expected.

If it does not match, you are prompted to fix the sync and click Confirm. One of the following occurs:

- If you click Confirm without fixing the sync, the check is done again and you are not allowed to proceed.
- If you click outside of the Confirm button, you proceed in “free-run” mode, and using the workstation’s internal sync. You can work in this mode, but input and output can have unpredictable results. No more sync checks are done.
- If you fix the sync and click Confirm, the workstation is now genlocked. You can proceed as expected.

The incoming video sync is displayed in the preferences menu. See [Timing Preferences](#) on page 505.

When changing project timing, Backdraft Conform selects an appropriate VTR for you. The VTR devices available depend on the VTR keyword lines uncommented in the software initialisation configuration file. If multiple VTR matches are found in the list, Backdraft Conform selects the first match. If no match is found, VTR selection reverts to "No VTR selected" with the appropriate timing.

You can also manually select a VTR, as described in [Selecting a VTR Device For Input](#) on page 138 and [Selecting a VTR Device For Output](#) on page 147.

NOTE If you are outputting a clip whose timing differs from the preview timing setting in the Preferences menu, the timing and VTR switch are done automatically by Backdraft Conform as soon as you select the clip to open the Output Clip menu.

Changing Resolutions for Clip Input

The following steps describe how to change resolution and timing when performing clip inputs.

To switch from one resolution to another for clip input:

- 1 In the Clip Input menu, select the required VTR from the Device Name box.



When you select a VTR, the current preview timing for the project switches to correspond to the VTR, if necessary.

- 2 Change the hardware connections and sync reference to match the resolution that you have chosen. If using a broadcast monitor, connect a valid signal to a reference input to enable a video preview.

Once the input is done and you close the menu, you are reminded that the preview timing for the project has changed.

Things to Remember

When working with multi-format video material in the same session, consider the following:

- You set the default timing for your project when you assign it the resolution and frame rate at the time of creation.
- Even if a project has a specific timing (resolution and frame rate), it can contain clips of various timing.
- You can input clips from any device supported by your system's video board, but clips are captured at their native device-based resolution and format.
- You can output clips to any device supported by your workstation, but clips selected for output must be of the resolution and format that correspond to the video timing of the device.
- You can change the video timing of your VTR device without exiting your session, but to output to a VTR of this timing, you must also change the corresponding hardware connections.
- The preview timing in the Preferences menu is linked to the Clip Input menu. In other words, when you change preview timing in the Preferences menu, the change is reflected in the Clip Input menu.
- Backdraft Conform checks if your video sync matches the timing of the material you are working on when you load a project on start-up, change projects in the Preferences menu, change preview timing in the Preferences menu, or select an output clip.
- When a project is loaded or timing is changed, Backdraft Conform selects an appropriate VTR for you, if necessary. The VTR devices available depend on the VTR keyword lines uncommented in the software initialisation configuration file.

Supported HD Formats for Video I/O

You can input and output clips in the following HD formats.

Format	Resolution	Scanning	Supported Frame Rates
720p	1280 x 720	Progressive	25, 50, 59.94, and 60 fps, Hz
1080i	1920 x 1080	Interlaced	25, 29.97, and 30 fps, Hz

Format	Resolution	Scanning	Supported Frame Rates
1080p	1920 x 1080	Progressive	23.976, 24, 25, and 30 fps, Hz
1080PsF	1920 x 1080	Progressive	23.976, 24 and 25 fps, Hz

Generating Proxies

With sufficient processing power, proxies are generated in real time. Otherwise, this occurs as a post-process. To achieve better performance, or to use higher quality proxy types, you might want to perform clip input without proxy generation, then edit project settings to generate proxies overnight.

The following guidelines refer to working on HD projects set to generate proxies.

On HD-capable workstations, you may create projects with proxy management options set to generate proxies for HD clips. If your hardware configuration supports on-the-fly proxy generation, your clips are captured and proxies are generated as part of the real-time input process. Otherwise, you may be required to wait for proxy generation once the capture process itself is complete.

If you are capturing many clips one-at-a-time, you may want to turn off proxy generation for you project. That way, you can capture your clips without having to wait for proxy generation.

Once you have completed the capture process, turn proxy generation back on. If you have captured many clips, this process could take a long time. You may want to do this when you can leave the workstation unattended, for example, overnight.

Capturing Proxies Only

On HD-capable workstations, you may create projects with proxy management options set to generate proxies for HD clips. One finishing or digital intermediate workflow is to capture HD video and then unlink the high-resolution media. This workflow provides lower-resolution media that you can interact with more quickly while creating effects and editing sequences. Once your effects and sequences are complete, you relink the high-resolution media so you can output your high-resolution masters. See [Unlinking and Relinking Media and Clips](#) on page 695.

Rather than capturing high-resolution media, generating proxies, and then unlinking the high-resolution media, you can capture only proxies. In this case, the high-resolution media is captured, proxies are generated, but the high-resolution media is discarded. As a result, much less space is required on the framestore.

You work with the proxies to do most of your creative work, such as visual effects and edit sequences. When they are complete, you recapture the media so you can output the masters. Some creative procedures, however, cannot be reliably completed using only a proxy reference. You need full resolution clips to successfully finish these tasks.

To capture proxies only:

- 1 Open the Input Clip menu.
- 2 Enable Proxy Only.



If your proxies are set to be generated as a post process, you can see an estimated time required for proxies generation in the message bar. You can abort this process at any time by clicking anywhere on the screen. When you click the screen, a message appears asking you to confirm the operation. Only the captured media that corresponds to completed proxy generation is preserved. Any captured frames for which no proxies have been generated are purged.

Capturing Material with Variable Frame Rate

To perform frame-accurate video input and output using Panasonic® variable frame rate VTR decks, you must use the following firmware versions:

- AJ-HD3700H D5-HD deck:
SYSCON: 1.04 or later
AV: 0.21 or later
FRONT: 0.13 or later
- AJ-HD1200A DVCPRO HD deck:
SYSIF: 1.30 or later

AVDV: 1.39 or later
SERVO: 1.22 or later

Regular video input and output is not affected by a firmware version.

NOTE Refer to your Panasonic documentation for information on verifying the firmware version.

To capture material from a Varicam device:

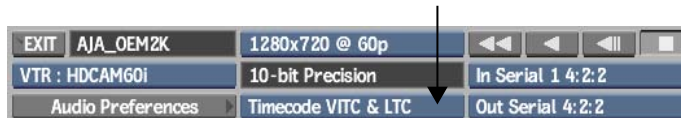
- 1 Ensure your devices are properly connected and the corresponding VTR keywords are enabled in the software initialization configuration file. See [Configuring Software For Clip Input and Output Using a VTR](#) on page 133.
- 2 Open the Input Clip menu. See [Accessing the Input Clip Menu](#) on page 134.
- 3 From the Device Name box, select a video device, supporting variable frame rate (for example, one of the following options: VTR DVCProHD 720 59p or VTR DVCProHD 720 60p).



- 4 Enter the Engineering menu and enable Varicam (on the right side).

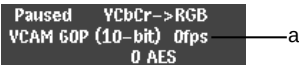


- 5 Make sure the Video Input Delay is set to zero or a positive value (negative video input delay is not supported on Varicam capture).
- 6 From the Timecode Mode box, select the required timecode.



- 7 Exit the Engineering menu and click Process.

Backdraft Conform removes the redundant frames so that the frame rate of the captured clip corresponds to the frame rate of the project. You can monitor the process using the VTR Status display. The Current Frame Rate field is updated depending on the frame rate of the captured material.



(a) Current Frame Rate field

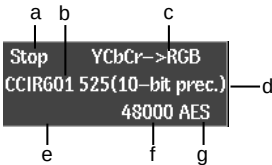
NOTE When performing operations in Varicam mode, audio/video synchronization largely depends on frame rate compatibility and can be guaranteed only if the following conditions are observed: (1) Material shot at 24 fps and captured into a 24 fps project (2) Material shot at 30 fps and captured into a 30 fps project (3) Material shot at 60 fps and captured into a 60 fps project.

Controlling a VTR

The RS-422 serial connection between the VTR and your workstation enables full remote control of the device from Backdraft Conform. Connected VTR devices send their current status to Backdraft Conform, and this status is displayed in the Input Clip and Output Clip menus.

Verifying the VTR Status

The following illustration shows a VTR status display.



(a) VTR Status (b) VTR Timing (c) Colour Space (d) Bit Precision (e) Control Mode (f) Audio Sample Rate (g) Audio Input/Output Type

Other VTR status values include:

VTR field:	Indicates:
VTR Status	Play, Play Lock, Stop, Jog, Fast Forward (FFW), Rewind (RWD), 3x, 4x, 8x, 15x, 30x. When the field is blank the VTR is disengaged.

VTR field:	Indicates:
VTR Timing	The video timing currently configured on the video device
Colour Space	The colour space conversion method for both input and output of clips.
Control Mode (LOCAL, REMOTE, or REC INHIBIT)	Whether the VTR is in Local or Remote control mode. Local appears in yellow when the VTR is in Local mode. In Local mode, the VTR cannot be controlled from Backdraft Conform. You can switch the VTR between Local and Remote mode only on the VTR. Rec Inhibit implies REMOTE mode, but you cannot output to the tape.
Audio Sample Rate	The audio sampling rate when you input or output from the VTR.
Audio Input/Output Type	The source audio interface type when inputting and the destination audio interface type when outputting.
Bit Precision	The accuracy used (SDI bit depth) when transferring data. This cannot be changed.

Using the VTR Transport Controls

The current frame on the cassette in the VTR appears in the image window and the Current Timecode field (the uppermost timecode field in the Clip Input and Output menus) displays the timecode of the current frame.



(a) Current Timecode field

Use the following VTR Transport controls to play the VTR.

NOTE The VTR must be in Remote mode to use the VTR Transport controls.

Click:	To:	Hotkey:
	Rewind the tape.	Shift+C

Click:	To:	Hotkey:
	Play the tape backward.	C
	Move backward one frame. Hold down to slowly jog backward.	left arrow key (down arrow key for -10 frames)
	Stop the tape.	spacebar
	Move forward one frame. Hold down to slowly jog forward.	right arrow key (up arrow key for +10 frames)
	Play the tape forward.	V
	Fast-forward the tape.	Shift+V
	Eject the tape.	none

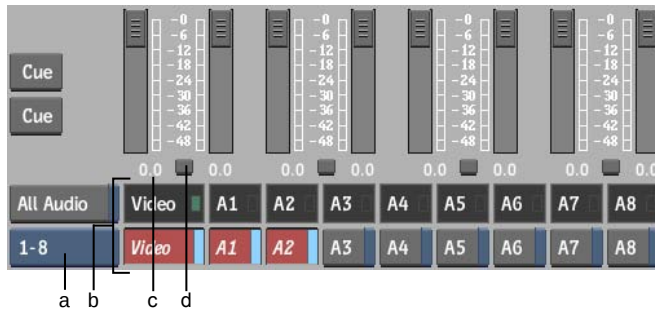
You can also shuttle the VTR by dragging the cursor in the image window. Place the cursor on the image, press the pen or mouse button, and drag the cursor to the right to shuttle forward and to the left to shuttle backward. The farther away you move the cursor horizontally from the middle of the image, the faster the speed.

You can also change the reverse or forward playback speed by pressing the **Up** or **Down arrow Keys** on your keyboard. Each press reduces or increases the speed by two.

Adjusting Audio Gain on Output Clip

Audio gain adjustment is a part of the clip output process only. The clips you are outputting are unaffected by audio gain adjustments made using the Output Clip menu.

On output, you can adjust the audio gain, for example, to restore the levels you had monitored on capture.



(a) Audio Tracks Toggle button (b) Channel Selection buttons and indicators (c) Audio Level fields (d) Fader Lock buttons

All Audio button When enabled, outputs to the audio monitor every audio channels. When disabled, outputs only the enabled audio channels to the audio monitor. The All Audio button has no impact on the audio tracks recorded by the VTR.

Audio Tracks Toggle button Toggles the Channel Selection buttons and indicators between audio tracks 1-8 and 9-16.

Channel Selection buttons and indicators Controls and displays which audio channels are recorded by the VTR. The black boxes with the green LEDs indicate video tracks and audio channels that are part of the clip that you want to output. The red buttons indicate the tracks and channels the VTR records on output.

Audio Level fields Displays the audio gain, in decibels. Adjust using the faders. In the small Output Clip menu, increase or decrease the gain by dragging left or right on the fields. By default, audio gain is 0 db.

Fader Lock buttons When enabled, locks the faders for the corresponding pair of audio channels together.

To adjust the audio gain on output clip:

- 1 Enable the Fader Lock buttons (so that they are light grey) if you want to apply the identical value to pairs of audio channels.
- 2 Slide the faders to adjust the audio gain before you start processing. Use the All Audio button to monitor all the audio tracks that are output, regardless of what audio tracks the VTR records.
- 3 In the Output Clip menu, enable Output All Audio.
- 4 Select or deselect channels for output by clicking the Channel Selection button for each channel as needed.

NOTE In a multiple clip selection, channel selection is independent for each clip but the gain levels set with the faders are the same for all clips.

- 5 Process the clip.
Selected channels are output.

Setting Video Input and Output Engineering Menu Controls

Clip input and output engineering options include video I/O settings such as pre-roll, post-roll, play delay, colour space conversion, and settings that define the process by which YUV video material on a tape is converted to the RGB format used by Backdraft Conform, and vice-versa.

Each VTR device is associated with a set of default engineering settings that are specified in the software initialisation configuration file, in the VTR KEYWORD section.

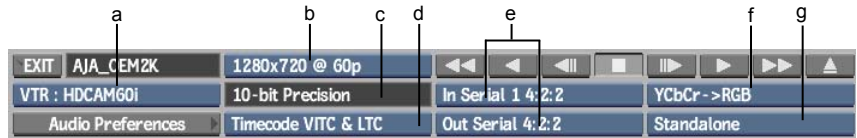
When you start Backdraft Conform and set the video I/O timing for your project, uncommented VTR devices are initialized, and the settings in the Engineering menu are populated accordingly. However, if necessary, you can modify these settings on a session-to-session basis.

To change the default Engineering menu settings for a VTR device, you must edit the software initialisation configuration file. See the *Autodesk Visual Effects and Finishing Configuration File Reference Guide*.

To open the Engineering menu:

- From the Input Clip menu, click Eng, or from the Output Clip menu, click the Engineering tab.

Consult the following illustration (broken into three parts) and explanations of the options in the Engineering menu. These illustrations are of the Clip Input Engineering menu. The Output Clip Engineering menu contains a subset of these controls.



(a) Device Name box (b) Video I/O Timing box (c) Precision box (d) Timecode Source box (e) Input and Output Connection boxes (f) Colour Space box (g) Output Sync box



(h) VTR Current Timecode field (i) PreRoll/PostRoll fields (j) Cue Up box (k) Error Retry field (l) Proxy Box



Device name box Provides an option for each uncommented VTR keyword line in the software initialisation configuration file. To modify settings for a specific VTR device, select the corresponding option from this box.

Video I/O Timing box Provides video timing options (resolution and frame rate) corresponding to different video formats supported by the video input/output board of the system.

Precision box Determines the video interface precision, or SDI bit depth used. This value cannot be changed.

Audio Preferences button Click to view the Audio Preferences menu. See [Audio Preferences](#) on page 538.

Timecode Source box Determines which type of timecode is obtained from the VTR device.

Select:	To obtain:
Timecode VITC	Vertical interval timecode (VITC).
Timecode LTC	Longitudinal timecode (LTC)

Select:	To obtain:
Timecode VITC & LTC	Both types of timecode. At normal playback speed, Backdraft Conform obtains LTC, but switched to VITC when the tape is re-winding, fast-forwarding, or otherwise moving at a non-playback speed.

Timecode VITC & LTC is the default, and recommended option. You should only have to switch to Timecode VITC or Timecode LTC if one of the timecode tracks is corrupted.

Input and Output Connection boxes Determines the connection by which the video signal is transferred. These boxes are locked to In Serial 4:2:2 and Out Serial 4:2:2.

Colour Space box Determines the YCrCb colour space conversion method. See [Inputting and Outputting with Headroom](#) on page 176.

Select:	To perform clip I/O with:
YCrCb->RGB	A standard YCrCb-RGB conversion process that clips superblack and superwhite luma (Y). Use this option for typical clip I/O processes with VTR devices.
YCrCb->RGB + Headroom	A YCrCb-RGB conversion process that preserves superblack and superwhite colour information. Use this option when inputting or outputting greyscale mattes or other clips where preserving extremes in the luma channel is required.
No Conversion	This is available when using dual link for RGB input and output. Video black and white levels on the SDI stream are mapped to black and white values in RGB on the framestore. See Inputting and Outputting with Headroom on page 176. Use this option in conjunction with 4:2:2 input and output connections to input and output 4:4:4 video in two passes (4:2:2 and 0:2:2). Third-party sparks® (in Smoke®, Inferno®, Flame®) are required to split and merge the 4:2:2 and 0:2:2 clips.
No Conversion + Headroom	Also available when using dual link for RGB input and output. This mode uses all levels available and preserves all but a few RGB values. See Inputting and Outputting with Headroom on page 176. Use this option with the 4:4:4 input and output connections to input clips from and output clips to a Telecine.

Output Sync box Determines the output sync reference source. The reference signal may originate from several different sources. Select the source you are using from this box according to the following table.

Source type	Available on:	Description:
House	All systems	A centralized analogue reference signal, originating from a sync generator, sent to the genlock port on the video board or VBOB.
Digital 1 and Digital 2	Most HP® 8400s and all HP 8600s and 9400s	Same as Digital, except you can choose between two inputs: Digital 1 or Digital 2. On the HP 8400 with the AJA SD (OEM-LH) video board, only Digital 1 is available.
Standalone	All systems	The reference signal generated internally by the Backdraft Conform workstation.

PreRoll field Indicates the pre-roll, in frames.

PostRoll field Indicates the post-roll, in frames.

Video Input Delay field Indicates the video delay on input, in frames. If this value is incorrect, the result clip when you click Frame Grab in the Input Clip menu does not match the frame you see in the preview window.

Video Output Delay field Indicates the video delay on output, in frames. If this value is incorrect, the clip you output does not get recorded to the proper place on the tape.

Audio Input Delay field Indicates the video delay on input, in frames.

Audio Output Delay field Indicates the video delay on output, in frames.

Stop VTR on EXIT button When enabled, sends a stop command to the VTR when you exit the Input Clip, Output Clip, Auto-Capture, or Archiving menu. For example, if the VTR is playing a clip, or if it is cueing to an in point, the transport operation in-progress is interrupted.

Cue Up box Determines the speed of the cueing process.

Select:	To cue up the VTR:
Cue Up VTR	Using the internal cueing algorithm of the VTR.
Cue Up Fast Forward	Using Backdraft Conform. Use this option if Cue Up VTR is too slow for far cue points, such as on the betacam SP.

Error Retry field Indicates the number of times Backdraft Conform retries failed input or output processes.

2:3 Removal/Insertion button Enables automatic, real-time 2:3 removal on output and insertion on input. This is only available when the VTR is set to 29.97i or 59.94i.

Edit Sync Creation button Automatically create edit sync groups for clips with audio channels on input. See [Creating Edit Sync Groups for Multiple Video Tracks](#) on page 903.

Proxy box Determines proxy management when inputting clips.

Select:	To generate:
Proxy in Post	Proxies as a post-processing step
Proxy on Capture	Proxies during capture

Generating proxy during capture is the quickest method. Depending on hardware configuration of your system, capture may be performed in real time with playback. Some extra required processing, however, may prevent the graphics board from updating the image window and broadcast monitor in real time, so you may not be able to view the clip being played as it is captured.

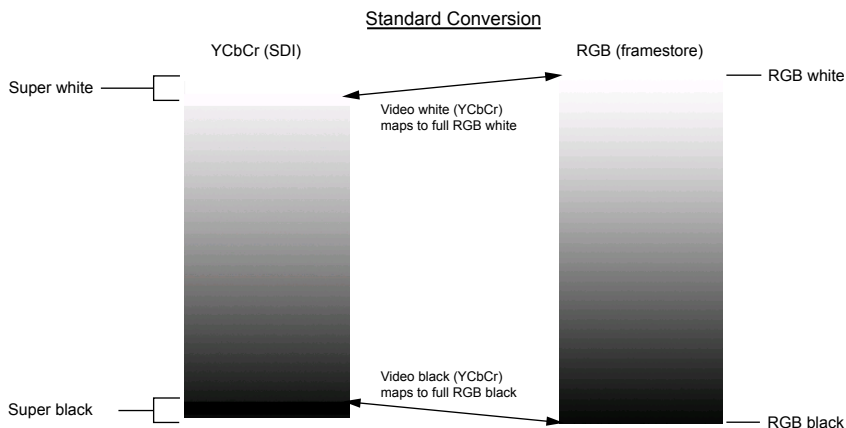
Monitor box Set this to Monitor VTR or Monitor Output. In Monitor VTR mode, the signal coming back from the VTR is displayed, and video may be appear to be late compared to the audio. In Monitor Output mode, the signal being output to tape is displayed, and the video and audio should be in sync.

Inputting and Outputting with Headroom

With 4:2:2 serial digital interface (SDI) input and output connections, the colour components of video signals are Y (luma), Cb (blue colour difference), and Cr (red colour difference). For standard video signals in 10 bits, black has a luma value of 64 and white has a luma value of 940. When performing standard captures to RGB values on Backdraft Conform systems, black YCbCr (64,512,512) maps to RGB (0,0,0) and white YCbCr (940,512,512) maps to RGB (1023,1023,1023). SDI values 0 to 3 and 1020 to 1023 are reserved values for synchronization purposes.

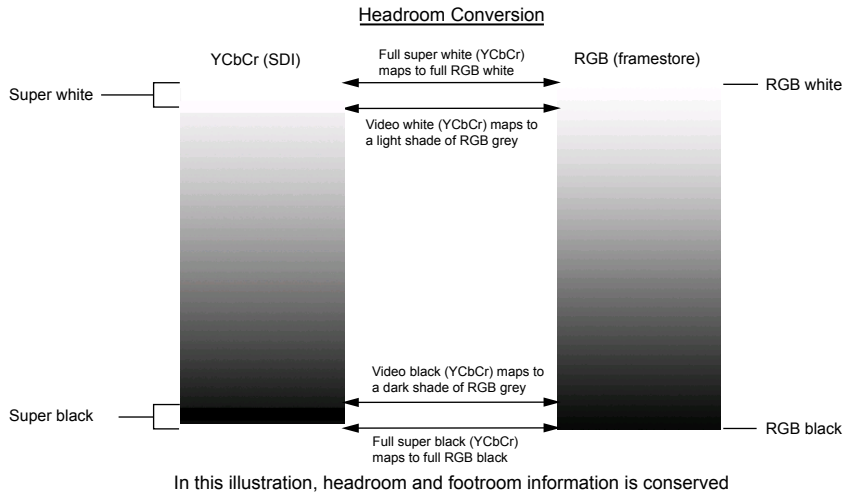
Some cameras record shadow details below the video luma black value of 64 and white detail above the video luma white value of 940. These details are called super blacks and super whites. These are also referred to as “headroom” and “footroom.” Under normal circumstances, headroom is not converted

during capture, and the super black and super white details are lost, as described in the following illustration:



In this illustration, headroom and footroom information is lost.

Using the YCbCr<->RGB with headroom colour space option during input on Backdraft Conform systems, it is possible to capture these super black and super white values. In this case, video black YCbCr (64,512,512) maps to RGB (64,64,64) in 10 bits, and video white YCbCr (940,512,512) maps to RGB (940,940,940). YCbCr Luma values between 4 and 64 and between 940 and 1019 are converted to RGB on capture. While this gives you the advantage of being able to capture super black and super white values, it also means that video black will not map to full black in RGB, and video white will not map to full white in RGB. The following image illustrates this:



For 4:4:4 RGB standard input and output, a similar explanation applies. On capture using the No Conversion setting, RGB 4:4:4 SDI video black at value (64,64,64) maps to RGB (0,0,0), and RGB 4:4:4 SDI video white at value (940,940,940) maps to RGB (1023,1023,1023).

With the No Conversion with Headroom option, the maximum possible SDI value range is used. RGB 4:4:4 SDI values ranging from (4,4,4) to (1019,1019,1019) map to the same RGB range on capture.

Although the preceding descriptions relate to capture from SDI to the framestore, the reverse applies when outputting from the framestore to SDI.

To enable colour space conversion on clip input:

- 1 In the Input Clip menu, click Engineering.
The Engineering menu appears.



(a) Input Connection box (b) Colour Space box

- 2 From the Input Connection box, select the input connection.
- 3 From the Colour Space box, select YCbCr->RGB+Headroom.

- 4 Capture the material.

Material is captured with headroom and footroom.

To enable colour space conversion on clip output:

- 1 Open the clip library with the clip(s) you want to output.
- 2 Click Output Clip and prepare output clip settings. See [Outputting Clips To a VTR](#) on page 141.
- 3 In the Output Clip menu, click Engineering.
- 4 In the Engineering menu, select the output connection from the Output Connection box.
- 5 From the Colour Space box, select YCbCr->RGB+Headroom.
- 6 Output the material.

Material is output with headroom and footroom.

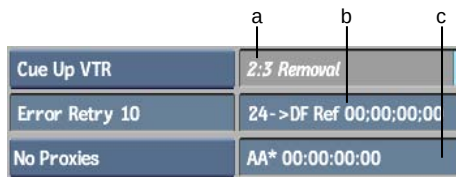
Capturing 60i Material with 2:3 Pulldown Removal

Using the Input Clip menu, you can capture 30 fps film-based material and convert it to 24 fps material in real-time as you capture. The procedure for enabling automatic 2:3 removal differs depending on whether your tape uses non-drop or drop 60i timecode.

To capture 60i material with 2:3 pulldown removal:

- 1 Set up your capture as described in [Inputting Clips From a VTR](#) on page 134.
- 2 In the Input Clip menu, click Eng.

The Engineering menu appears. It contains options for removing 2:3 pulldown in real time while capturing.



(a) 2:3 Removal button (b) 24->DF Reference field (c) AA Reference field

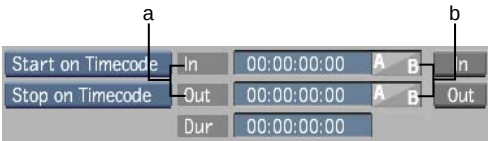
- 3 Enable 2:3 Removal.
- 4 In the AA Reference field, enter a timecode that corresponds with an AA frame on the tape that is currently in the VTR.

TIP To determine an AA frame, frame-step (**right arrow**) the tape and look closely at each frame. In 2:3 pulldown, two jitter frames with field artefacts are followed by three normal frames. The second frame after the two jitter frames is an AA frame.

- 5 When you capture material from a tape that uses 30 fps drop-frame timecode with 2:3 removal enabled, a slight discrepancy between timecodes is introduced due to the reference timecode used to determine the 30 drop frame to 24 timecode conversion. To optimize correspondence between the timecodes, enter the timecode in the 24 >DF Reference field that matches the start reel timecode for the tape.

TIP The start clip timecode can be deduced from the hour-mark of the timecode used by your clips. For example, 1;00;00;00 drop-frame would require a 1;00;00;00 value in the 24p>DF reference field to get a clip starting at 01;00;00+00.

- 6 Make sure the project's field dominance is set to field1. If the project's field dominance is set to field 2, you must switch the field dominance back to field 1. See [Changing the Scan Mode of a Project](#) on page 1158.
- 7 Click EXIT to return to the Input Clip menu.
- 8 Using the In and Out timecode fields, set the in and out points for the capture session.



(a) In and Out timecode fields (b) 2:3 In and Out pulldown display

With the in and out timecodes set, the corresponding 2:3 pulldown frame is indicated in the In and Out 2:3 pulldown display. Use the 2:3 Pulldown display to determine the 24 fps result in and out frames.

2:3 Pulldown Frame	24 fps Result Frame
In/Out AA	In/Out A

2:3 Pulldown Frame	24 fps Result Frame
In/Out BB	In/Out B
In/Out DD	In/Out D
In BC	In C
In CD	In D
Out CD	Out C

- 9 Click Process to capture the material with 2:3 pulldown removal.

For more information on 2:3 pulldown removal, see [Pulldown](#) on page 1133.

Configuring Dual-Serial Link I/O on Linux Workstations

Backdraft Conform supports dual-serial link input and output connections for 4:4:4 clip I/O on Linux workstations. Configure the type of I/O connection (single- or dual-link serial) using the Input Connection and Output Connection boxes in the Engineering menu. See [Setting Video Input and Output Engineering Menu Controls](#) on page 172. When you select an input or output connection for clip I/O, you usually also select the colour space conversion method using the Colour Space box on the Engineering menu. The conversion methods that appear in this box depend on the type of I/O connection used. The following table shows the colour space conversion methods that are available for single-link and for dual-link I/O connections on Linux workstations.

Colour Space Conversion Method	Supported for Single-Link Serial (4:2:2) I/O	Supported for Dual-Link Serial (4:4:4) I/O
YCbCR -> RGB	Yes	No
YCbCR -> RGB + Headroom	Yes	No
No Conversion	No	Yes
No Conversion + Headroom	No	Yes

Clip Output Using Real-Time Deliverables

7

Topics in this chapter:

- [About Real-Time Deliverables](#) on page 183
- [Hardware Requirements for Real-Time Deliverables](#) on page 184
- [Real-Time Deliverables Use Cases](#) on page 186
- [Accessing the Deliverables Menu](#) on page 188
- [Previewing and Processing Material for Real-Time Output](#) on page 190
- [Outputting Deliverables](#) on page 192
- [Managing Deliverables](#) on page 194
- [Real-Time Deliverables Timing Specifications](#) on page 201

About Real-Time Deliverables

The Real-Time Deliverables mastering solution allows you to perform certain types of operations on material during clip output without having to first render the clips. For example, you can output from a master source format to many output formats directly to tape without rendering. Using the concept of the Deliverable—a virtual clip containing real-time operations and linked to its original source clip—you can create and manage multiple real-time output formats from one clip.

Supported operations include:

- Resize
- Pan and Scan
- Application of 3D and 1D LUTs
- Frame rate change with deceleration or acceleration with 2:3 insertion
- Audio timewarp
- Letterbox overlay

The Real-Time Deliverables feature supports source material up to 2K (10-bit) depending on the hardware setup. Good performance may be achieved beyond 2K (10-bit), but is not guaranteed. Soft effects are not supported for real-time output, unless processed before output. Embedded audio is also not supported.

Real-Time Deliverables sections explain important concepts and workflows for how to manage, preview, and output real-time operations, and references other sections of the user guide for more details, where appropriate.

Make sure to follow the hardware requirements described in [Hardware Requirements for Real-Time Deliverables](#) on page 184.

What Is a Deliverable?

The settings created in the Deliverables menu are saved as a Deliverable, which is central to the Real-Time Deliverables workflow.

A Deliverable is a virtual clip that is associated with the source clip from that point on, in the library or on the EditDesk. A clip can have multiple Deliverables, and each Deliverable that you create is itself treated like a clip—a modified version of the original clip. As with clips, you can enter the Output Clip menu and output a Deliverable to tape. See [Managing Deliverables](#) on page 194.

Hardware Requirements for Real-Time Deliverables

To follow the Real-Time Deliverables procedures, you must be using an NVIDIA Quadro FX 5600 SDI graphics card. The configuration for using this card is described in the *Hardware Setup Guide* for your workstation.

When installing this release of the application for use with Real-Time Deliverables, it is important to use the settings in the new version of the *init.cfg* file. These settings specify the new hardware to be used as your preview device. For example:

```
VideoPreviewDevice 1920x1080@23976psf, nvidia, 1, 1920, 1080,  
23976psf, DTVsync
```

If there are settings in your previous *init.cfg* file that you want to keep, port them to the new version during installation.

To use Real-Time Deliverables, make sure the FX 5600 SDI card is selected in the Output Clip menu.

To select the FX 5600 SDI in the Output Clip menu:

- 1 Open the Output Clip menu as described in [Outputting Clips To a VTR](#) on page 141.
- 2 From the Graphics Card box, select GFX SDI.



When GFX SDI is selected, the FX 5600 SDI is used for video output.

When AJA_OEM2K is selected, the AJA OEM-2K is used for video output. The AJA OEM-2K does not support Real-Time Deliverables, and the corresponding options are not displayed when it is selected.

The AJA OEM-2K is always used for clip input, and the FX 5600 SDI (if it is installed) is always used for broadcast monitor display.

GFX SDI is not an available option in the Graphics Card box if:

- The FX 5600 SDI is not installed.
- The FX 5600 SDI is not set up or configured properly.

To install or configure an FX 5600 SDI, see one of the hardware guides previously cited in this topic.

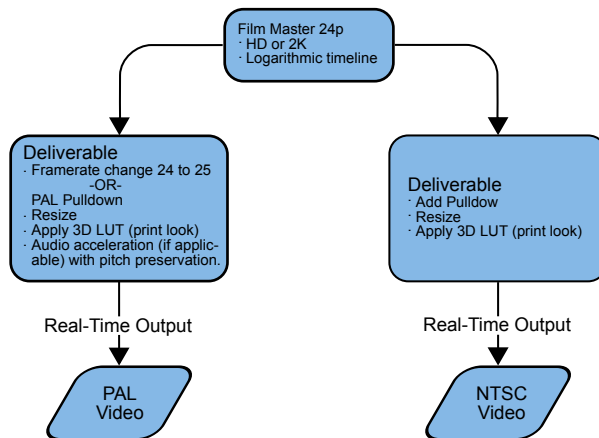
Real-Time Deliverables Use Cases

This section provides two examples of how Real-Time Deliverables can be applied.

Film Master 24p, HD, or 2K Logarithmic Timeline, to Video

An important case addressed by Real-Time Deliverables is when an organization wants to take a 24p film master with an HD or 2K logarithmic timeline, and create real-time output to PAL and NTSC video format.

Use Case 1 Film master 24p, HD or 2K logarithmic timeline, to Video



To output to PAL video, you would create a Deliverable that does the following:

- Increases the frame rate from 24 to 25, or uses PAL Pulldown
- Resizes the clip
- Applies a print-look 3D LUT
- Accelerates the audio while preserving the pitch, if necessary

To output to NTSC video, you would create a Deliverable that does the following:

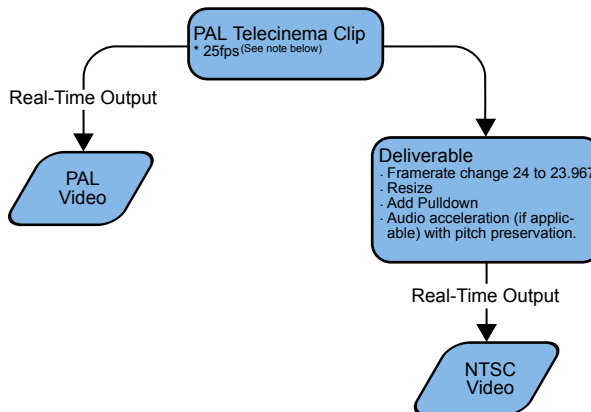
- Adds 2:3 pulldown
- Resizes the clip
- Applies a print-look 3D LUT

From the Clip Output menu, the clip is output to tape with no need to render the preceding settings.

PAL Telecinema to Video

In this example, NTSC and PAL video are output, but the source material is a PAL Telecinema clip. Because a PAL Telecinema clip is not field-based, the resulting video can be treated as progressive. Its video fields are spatially complementary.

Use Case 2 - PAL Telecinema to Video



Note: A PAL Telecinema clip is not field-based, so the resulting video can be treated as progressive. Video fields are spatially complimentary (correlated).

To output to PAL video, you would not need to create a Deliverable. You can output the clip directly to tape from the Output Clip menu.

To output to NTSC video, you would create a Deliverable that does the following:

- Decreases the frame rate from 25 to 23.967
- Resizes the clip
- Adds 2:3 pulldown
- Accelerates the audio while preserving the pitch, if necessary

From the Clip Output menu, the clip is output to tape with no need to render the preceding settings.

Accessing the Deliverables Menu

Use the Deliverables menu to manage Real-Time Deliverables, and to configure real-time operations such as resize, pulldown, and so on. Many of these settings can also be altered in the Output Clip menu.

To access the Deliverables menu:

- 1 Select the clip you want to work on and open the Player.
- 2 Click the Deliverables tab.



The Deliverables menu appears.



(a) Source clip information (b) Resize and frame rate controls (c) Audio controls (d) LUT controls (e) Letterbox controls (f) Deliverable controls (g) Deliverable box

Most of the controls in the Deliverables menu are common to various parts of the software, and their functions are explained in their respective sections. The following does not describe how to use the controls, but rather how to manage the results using Deliverables and output them to tape in real time. The settings you create in the Deliverables menu can be previewed in the Player and are applied in real time during clip output.

To configure real-time operations, see [Managing Deliverables](#) on page 194.

NOTE Settings in the Deliverables menu override clip settings from other modules. These settings are overridden, not discarded. For example, if a Deliverable has LUTs set, the LUTs from the source clip are not used.

Source clip information Displays information about the source clip before real-time operations are applied.

Resize controls Displays values set in the Resize editor, accessible with the Editor button. See [Resize](#) on page 1105 and [Pulldown](#) on page 1133. You can edit the values directly in the Deliverables menu. The available destination resolutions and timings depend on the format of the source material.

Audio controls Displays the audio speed. To preserve audio pitch, enable Preserve Pitch. See [About the Audio Timewarp Options](#) on page 1097.

LUT controls (3D and 1D) Enables or disables the use of LUTs. You can specify a 3D LUT to use, and access the LUT editor. See [Colour Management](#) on page 1165.

Letterbox controls Enables or disables a letterbox overlay. See [Outputting Clips With a Letterbox Overlay](#) on page 151.

Start TC field Set the start timecode of the Deliverable. The start timecode is used during output, it indicates where on the tape the clip is recorded.

Previewing and Processing Material for Real-Time Output

Preview Deliverables to verify your settings. If necessary, process source clips or Deliverables before outputting in real time.

Previewing Deliverables

The real-time operations you create in the Deliverables menu can be previewed in the Player.

To preview the result of a Deliverable in the Player:

- From the Playback Resolution box, select the Deliverable option.



With this option selected, your real-time settings are displayed during playback or when you jog or scrub through the clip. This option is available to the following players: Record Viewer, Fullscreen, and Triptych.

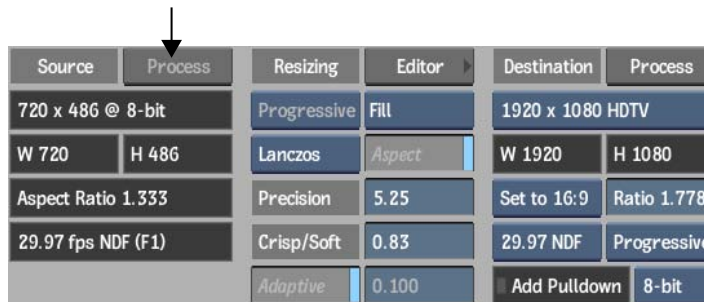
You can also preview real-time operations in the Clip Output menu. See [Outputting Deliverables](#) on page 192.

Processing Source Clips and Deliverables

The purpose of Real-Time Deliverables is to be able to output material without having to process first. However, there are exceptions where, before outputting, you must process:

- Source material that has an unrendered soft effect applied to it.
- A Deliverable whose settings place unusually high demands on hardware and cannot be output in real time.

If you open the Deliverables menu with a clip that has an unprocessed soft effect applied to it, you can configure Deliverable settings for it, but you cannot output the Deliverable until the effect is processed. To do so, click Process in the source clip information section of the Deliverables menu.



Clicking Process here is the same as clicking Process on the EditDesk. See [Processing Soft Effects](#) on page 314.

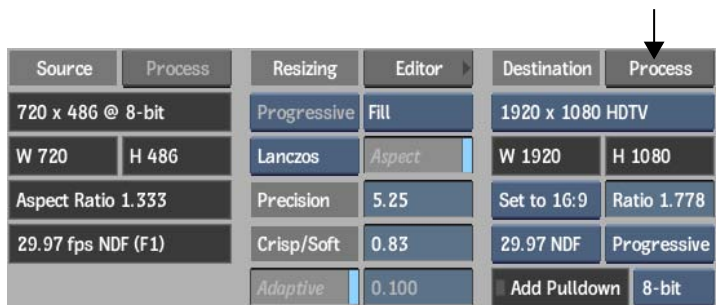
Once you set up your Deliverable, it is possible that your hardware cannot output the Deliverable to tape in real time. The status of the GPU Benchmark button helps you decide whether to process the Deliverable.

Status: Processing status:

Green You can output the Deliverable in real time, without first rendering.

Status: Processing status:	
Yellow	You should process the Deliverable before going to Output Clip, as real-time output might not be possible.
Red	Real-time output is not possible: you must process the Deliverable before going to Output Clip.

If the GPU Benchmark button indicates that real-time output is impossible, click Process in the resize and frame rate group of the Deliverables menu.



A new clip is created with “_<Deliverable Name>” appended to the clip name. Any settings from the Deliverables menu are burned into the clip. Because it is a new clip, it does not have any associated Deliverables associated. But the new clip uses the start timecode of the Deliverable. Enter the Output Clip menu with the clip and output it to tape.

Outputting Deliverables

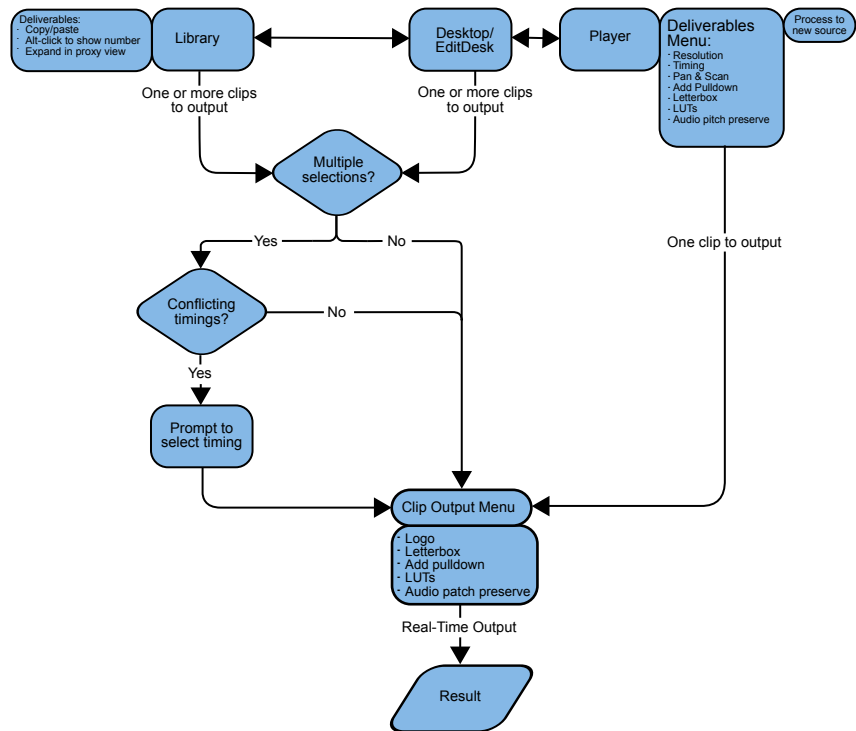
The workflow for outputting Deliverables is like the standard clip output workflow described in [Outputting Clips To a VTR](#) on page 141.

Each Deliverable that you create is treated like a clip. You can enter the Output Clip menu from the library with a Deliverable and output it to tape as you would any clip.

From the Deliverables menu, click the Output Clip button to enter the Output Clip menu with the current Deliverable.

If you enter the Output Clip menu from the library with multiple items (clips, Deliverables, or both), the resulting behaviour is the same as when outputting multiple clips. If there are conflicting timings, you are prompted to select the timing you want to use, and items that do not match this timing are discarded. See [Outputting Multiple Clips](#) on page 149.

If you select a clip in the library to bring it into the Output Clip menu, all its Deliverables are also selected. If there are conflicting timings, you are prompted to select the timing to use. This can result in the exclusion of the original clip.



Once in the Output Clip menu, you can alter Letterbox and LUT settings in the Deliverables tab, as well as preserve audio pitch. You can also add a logo in the Logo tab, although it does not require a Deliverable.

These changes are saved to the Deliverable. The next time you work with that Deliverable in the library or Player, the changes you made in the Output Clip menu are loaded.

NOTE When you select the Deliverables tab, you do not see the VTR feedback; instead you see the clip selected in the Output Clip list.

To create real-time settings for a clip and output to tape in real time:

- 1 From the Player, create a Deliverable. See [Accessing the Deliverables Menu](#) on page 188.

- 2 Do one of the following:
 - From the Deliverables menu, access the Output Clip menu
 - From the library or EditDesk, select the Deliverable or multiple clips and Deliverables, and access the Output Clip menu. If you selected multiple items and they have conflicting timings, you are prompted to select which timing you want to use.
- 3 In the Output Clip menu, make adjustments to real-time settings if necessary.
- 4 To preview real-time operations before outputting, use the Player controls in the Deliverables or Logo tabs. (In the Output tab, the Player controls display VTR material.)
- 5 Output the material to tape as described in [Outputting a Single Clip](#) on page 147 or [Outputting Multiple Clips](#) on page 149.

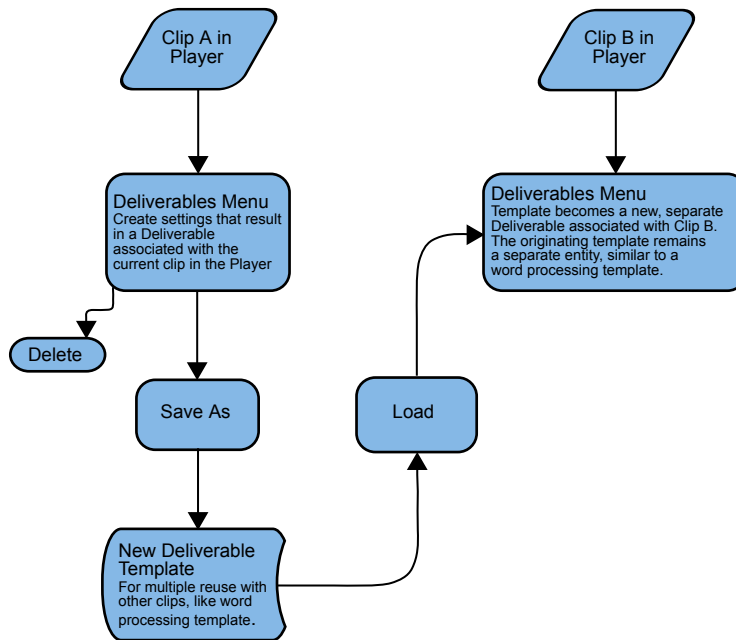
Managing Deliverables

A Deliverable results when you create real-time settings for a clip, in the Deliverables menu. Deliverables are virtual clips associated with the original clip. You can:

- Rename or delete a Deliverable.
- Create multiple Deliverables for one clip, so that you can output many different formats of that clip.
- Save a Deliverable as a reusable Deliverable template.
- Load a Deliverable template onto another clip to apply the settings of that Deliverable to the clip.
- View information about Deliverables in the EditDesk and library.
- Copy and paste deliverables between clips in the library.
- Transfer clips and their Deliverables to other systems.

NOTE Any change to the frame rate (timing) or resolution of the clip deletes all Deliverables attached to that clip.

The following illustrates how Deliverables can be used.



In the illustration, the Deliverable for Clip A is saved as a Deliverable template. Think of this template as an independent, reusable instance of the real-time settings that were created for Clip A (like how a word-processing template stores styles and formats).

When the template is applied to Clip B, it becomes a new Deliverable for clip B. This new Deliverable has the same real-time settings as Clip A, until you start changing it. For this operation to work, Clip A and B must have the same resolution, frame rate, and aspect ratio.

Creating and Modifying Deliverables

From the Deliverables menu, you can create, rename, and delete Deliverables.

To create a Deliverable:

- 1 Access the Deliverables menu, as described in [Accessing the Deliverables Menu](#) on page 188.
- 2 From the Deliverable box, select <New Deliverable>.
- 3 Type a name for the Deliverable and press **Enter**.

Once the Deliverable is created, set up real-time operations in the Deliverables menu. The operations you set up are automatically stored in the Deliverable you created.

You can create multiple Deliverables for a clip. If you create another Deliverable:

- The settings of the previous Deliverable are cleared from the Deliverables menu.
- The new Deliverable name is added to the list in the Deliverables box.

To rename a Deliverable:

- 1 With the Deliverable loaded in the Deliverables menu, click Name.
- 2 Type a new name for the Deliverable and press **Enter**.

To delete a Deliverable:

- 1 With the Deliverable loaded in the Deliverables menu, click Delete.
- 2 Click Confirm.

The Deliverable is deleted, and the previously-loaded Deliverable (if there was one) is reloaded.

Exporting and Loading Deliverables as Templates

Use the Save and Load buttons in the Deliverables menu to export a Deliverable as a template and load it on another clip.

You can only load a Deliverable on clips that have identical resolutions and timings with the original clip.

When you load a Deliverable template:

- Its settings are loaded to the Deliverables menu.
- A new Deliverable is appended to the list in the Deliverables box.

Viewing Deliverables in the EditDesk and Library

Clips with Deliverables are indicated by a “D” overlay on their proxies.

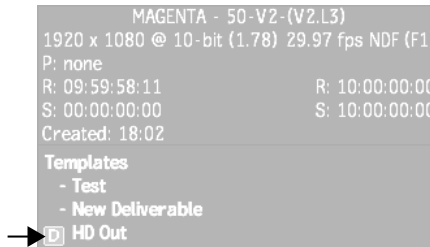


There are two types of “D” overlays, each indicating the selection in the Playback Resolution box:

- **Grey “D”** The Player displays the Deliverable. See [Previewing Deliverables](#) on page 190.
- **Black “D”** The Player displays Proxies or Full Res.

To open the Deliverables menu from the clip proxy on the EditDesk, double-click the “D” overlay.

To see quickly a list of Deliverables for a clip, **Alt**-click the clip proxy on the EditDesk.



The list of Deliverables is included in the clip information. A “D” appears beside the active Deliverable (the Deliverable most recently selected in the Deliverables menu).

In the library, to expand Deliverable proxies for a clip, do one of the following:

- Double-click the “D” overlay.
- Click Deliverables at the upper right of the screen, and select Show Deliverables.

Copying and Loading Deliverables from the Library

You can copy, load, save, and delete Deliverables from clips in the library. This is useful for rapidly assigning and removing Deliverables just before loading them to the EditDesk, or before accessing Output Clip.

To manage deliverables in the clip library:

- 1 Click Tools to display the Tools menu, and then select Deliverables.
- 2 In the clip library, select either a clip or a Deliverable.
- 3 Select an operation to perform.

Select:	To (with a clip selected):	To (with a Deliverable selected):
Load	Load a Deliverable to attach it to the selected clip.	N/A
Save	Save the Deliverable attached to the clip. If there is more than one Deliverable attached, select the one to save in the Deliverables selection box.	Save the selected Deliverable.
Delete	Delete the Deliverable attached to the clip. If there is more than one Deliverable attached, select the one to delete in the Deliverables selection box.	Delete the selected Deliverable.
Copy	Copy the Deliverable attached to the clip. If there is more than one Deliverable attached, select the one to copy in the Deliverables selection box.	Copy the selected Deliverable.
Paste	Paste the copied Deliverable to the selected clip.	N/A

Searching for Clips with Deliverables

You can search for clips with Deliverables on the EditDesk or in the clip library. The Search tool provides an easy way to find and manage Deliverables.

To search for clips with Deliverables on the EditDesk:

- 1 In the Source Area menu, click Search.



The Search controls appear.



(a) Search Criteria box (b) Argument option box

- 2 Select Deliverables from the Search Criteria box.
- 3 Use the Argument option box and field to supply the necessary arguments. Select one of the following options.

Select:	To search for:
Contains	Clips that contain deliverables.
Does Not Contain	Clips that do not contain deliverables.

- 4 Click Search.
If a match is found, the clip is selected.

To search for clips with deliverables in the clip library:

- 1 Click Search.
The Search menu appears.



(a) Search option box (b) Argument option box

- 2 Select Deliverables from the Search option box.
- 3 Use the Argument option box and field to supply the necessary arguments. Select one of the following options.

Select:	To:
Contains	Search for clips that contain deliverables.
Does Not Contain	Search for clips that do not contain deliverables.

- 4 Click Search.
A message appears in the message bar indicating if any matches were found and the matches are displayed in the library.

Transferring Deliverables to Other Systems

When a clip is transferred to another system using Wire, its Deliverables are moved as well.

If the other system does not have the hardware needed for Real-Time Deliverables, users of that system will see that the clip has Deliverables, but will not be able to edit or preview them. The Deliverables will be greyed out in the Output Clip menu.

Users on such systems will be able to work with the original clip and transfer it back to the original system, with its Deliverables intact. Any change to the frame rate (timing) or resolution of the clip deletes all Deliverables attached to that clip.

You cannot export Deliverables to other file formats. You cannot use Deliverables with EDLs.

Real-Time Deliverables Timing Specifications

When you set up a Deliverable to modify the timing of a clip during real-time output, the timing is changed according to the following tables.

NOTE In the following tables, N/A stands for *not applicable* and NC stands for *no change in timing*.

Destination timings 23.967psf through 25p:

Source	Destination							
	23.967psf	23.967p	24psf	24p	PAL	50i	25psf	25p
23.967psf	N/A	NC	Speed up	Speed up	Speed up to 25 or speed up to 24 + PAL Pulldown	Speed up	Speed up	Speed up
23.967p	NC	N/A	Speed up	Speed up	Speed up to 25 or speed up to 24 + PAL Pulldown	Speed up	Speed up	Speed up
24psf	Slow down	Slow down	N/A	NC	Speed up to 25 or apply PAL Pulldown	Speed up	Speed up	Speed up
24p	Slow down	Slow down	NC	N/A	Speed up to 25 or apply PAL Pulldown	Speed up	Speed up	Speed up
PAL	Slow down	Slow down	Slow down	Slow down	N/A	NC	NC	NC
50i	Slow down	Slow down	Slow down	Slow down	NC	N/A	NC	NC
25psf	Slow down	Slow down	Slow down	Slow down	NC	NC	N/A	NC
25p	Slow down	Slow down	Slow down	Slow down	NC	NC	NC	N/A

NOTE When going from 23.967 to PAL, you can choose between increasing the frame rate to 25 or increasing to 24 and adding PAL Pulldown. When going from 24 to PAL, you can choose between increasing the frame rate to 25 or adding PAL Pulldown.

Destination timings NTSC through 60p:

Source	Destination						
	NTSC	29.97p	30 psf	30p	60i	59.94p	60p
23.967psf	Add Pull-down	Not supported	Not supported	Not supported	Speed up to 24 + Add Pull-down	Not supported	Not supported
23.967p	Add Pull-down	Not supported	Not supported	Not supported	Speed up to 24 + Add Pull-down	Not supported	Not supported
24psf	Slow Down to 23.976 + Add Pull-down	Not supported	Not supported	Not supported	Add Pulldown	Not supported	Not supported
24p	Slow Down to 23.976 + Add Pull-down	Not supported	Not supported	Not supported	Add Pulldown	Not supported	Not supported
PAL	Slow Down to 23.976 + Add Pull-down	Not supported	Not supported	Not supported	Slow Down to 24 + Add Pull-down	Not supported	Not supported
50i	Slow Down to 23.976 + Add Pull-down	Not supported	Not supported	Not supported	Slow Down to 24 + Add Pull-down	Not supported	Not supported
25psf	Slow Down to 23.976 + Add Pull-down	Not supported	Not supported	Not supported	Slow Down to 24 + Add Pull-down	Not supported	Not supported
25p	Slow Down to 23.976 + Add Pull-down	Not supported	Not supported	Not supported	Slow Down to 24 + Add Pull-down	Not supported	Not supported
NTSC	N/A	NC	Speed up	Speed up	Speed up	Not supported	Not supported

Source		Destination					
	NTSC	29.97p	30 psf	30p	60i	59.94p	60p
29.97p	NC	N/A	Speed up	Speed up	Speed up	Not supported	Not supported
30 psf	Slow down	Slow down	N/A	NC	NC	Not supported	Not supported
30p	Slow down	Slow down	NC	N/A	NC	Not supported	Not supported
60i	Slow down	Slow down	NC	Field merge	N/A	Not supported	Not supported
59.94p	Not supported	Not supported	Not supported	Not supported	Not supported	N/A	Speed up
60p	Not supported	Not supported	Not supported	Not supported	Not supported	Slow down	N/A

A destination of 50p is not supported.

Clip Input/Output Using HSDL Devices

8

Topics in this chapter:

- [About HSDL Input and Output](#) on page 205
- [Setting Up Hardware for HSDL Input and Output](#) on page 206
- [Configuring Software for HSDL Input and Output](#) on page 207
- [Inputting Clips From an HSDL Device](#) on page 207
- [Outputting Clips To an HSDL Device](#) on page 208
- [Setting Video Input and Output Engineering Menu Options](#) on page 209

About HSDL Input and Output

HSDL (High Speed Data Link) is a software-based transport mechanism for moving data between applications. It encapsulates 2K film frames in a video format for transfer. Put another way, HSDL is essentially another video input/output timing, without audio. As a result, the need to read header information for each file is eliminated. Also, frames can pass through most HD devices, such as routers, transparently.

Using HSDL allows you to work on 2K frames in Backdraft Conform in collaboration with users on other HSDL-compliant workstations. With transfer rates ranging from 14.99 to 19.13 fps, HSDL I/O represents up to a five-fold

increase in transfer speed versus the Image Import/Export process, using existing infrastructure (assuming your facility is HD-ready). HSDL also enables remote control of the HSDL device connected to your workstation using an RS-422 cable.

Although images transfer as video signals, they are converted to raw RGB data once they arrive at their destination with no loss of information.

HSDL is compliant with the SMPTE 292M HD signal transport mechanisms.

Clip input and output using an HSDL device workflow:

- 1 Make sure all hardware devices involved in the HSDL I/O process are properly set up and configured. See [Setting Up Hardware for HSDL Input and Output](#) on page 206.
- 2 Edit the software initialisation configuration file to ensure the proper devices and settings are initialized on application start-up. See [Configuring Software for HSDL Input and Output](#) on page 207.
- 3 Do one of the following:
 - Input clips.
 - Output clips.
- 4 Carry out additional steps, depending on the HSDL I/O process that you are performing.
 - Monitor clips that are being input or output while processing, unless there is no hardware GVO path. See [Monitoring Video During Clip Input and Output Operations](#) on page 158.
 - Generate proxies and parity.
 - Set and modify Engineering menu options.

NOTE Most of these procedures are similar to the ones described in [Clip Input/Output Using a VTR](#) on page 131.

Setting Up Hardware for HSDL Input and Output

Connect the HSDL device using the same method for serial dual RGB 4:4:4 video I/O. To control the HSDL device remotely, connect the device using an RS-422 cable to the serial port on the workstation that corresponds to the port

defined in the software initialisation configuration file. See the *Autodesk Visual Effects and Finishing Configuration File Reference Guide*.

Configuring Software for HSDL Input and Output

Enable the HSDL keywords that correspond to the HSDL device you want to work with.

To enable HSDL keywords:

- 1 In a command shell, type **d1cfg** to open the software initialization configuration file in a text editor.
- 2 Scroll down to the VTR KEYWORD section.
Some HSDL devices are listed at the bottom.
- 3 Uncomment the keywords for the HSDL devices that you want to enable.
- 4 If necessary, edit the serial port definition in each line
(/dev/tty4d<port#>) to make sure it corresponds with the serial port that you want to use for RS-422 remote control of the HSDL device.
- 5 Save the file and exit.

You are now ready to start the application.

Inputting Clips From an HSDL Device

Input an HSDL stream of 2K frames as if you were inputting HD video. Use the tools in the Input Clip menu.

To input from an HSDL device:

- 1 From the EditDesk, enter the clip library into which you want to capture a clip.
- 2 Click Input Clip or press **F9**.



The Input Clip menu appears.

- 3 From the Device Name box, select the HSDL device.



TIP HSDL device options appear for each uncommented HSDL keyword in the software initialisation configuration file. See [Configuring Software for HSDL Input and Output](#) on page 207.

- 4 Input footage using the controls in the Input Clip menu. Make sure the following settings are entered:
 - 1.316 in the Aspect Ratio field
 - 10-bit Depth in the Bit Depth box
 - Progressive in the Scan Mode box



(a) Bit Depth box (b) Aspect Ratio field (c) Scan Mode box

Audio controls are disabled when using the Input Clip menu to input an HSDL stream. The image that appears is resized to fit the 1920x1080 preview area. This preview resizing does not affect the actual 2048x1556 size of the image being input.

Outputting Clips To an HSDL Device

Output an HSDL stream of 2K frames as if you were outputting HD video. Use the tools in the Output Clip menu.

To output to an HSDL device:

- 1 In the Clip Library menu, select one or more clips.
- 2 Click Output Clip.

The Output Clip menu appears.

- 3 From the Device Name box, select the HSDL device.

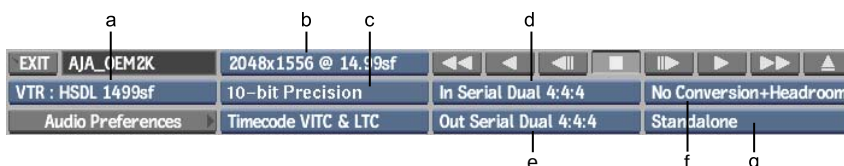


TIP HSDL device options appear for each uncommented HSDL keyword in the software initialisation configuration file. See [Configuring Software for HSDL Input and Output](#) on page 207.

- 4 Output the clips using the controls in the Output Clip menu.
Audio controls are disabled when using the Output Clip menu to output an HSDL stream. The image that appears is scaled to fit the 1920x1080 preview area. This preview resizing does not affect the actual 2048x1556 size of the image being output.

Setting Video Input and Output Engineering Menu Options

Default values in the Video I/O Engineering menu are defined by the uncommented HSDL keywords in the software initialisation configuration file. See [Configuring Software for HSDL Input and Output](#) on page 207.



(a) Device Name box (b) Video Timing box (c) Precision box (d) Input Connection box (e) Output Connection box (f) Colourspace box (g) Output Sync box

Engineering Option	Default Value
Video Timing	Can be one of several options, depending on the type of HSDL device used and your operating system. Typical HSDL timings include, but are not limited to, HSDL@14.99, HSDL@15, HSDL@19.13, and HSDL@19.15 fps.
Precision	10-bit Precision

Engineering Option	Default Value
Input Connection	Serial In Dual 4:4:4
Output Connection	Out Serial Dual 4:4:4
Colourspace Box	No Conversion+Headroom
Output Sync	Standalone

VTR Emulation

9

Topics in this chapter:

- [About VTR Emulation](#) on page 211
- [VTR Emulation Workflow](#) on page 212
- [Configuring Hardware for VTR Emulation](#) on page 212
- [Configuring Software for VTR Emulation](#) on page 213
- [Starting a Session with VTR Emulator](#) on page 214
- [Using VTR Emulation to Output Clips](#) on page 214
- [Using VTR Emulation to Capture Clips](#) on page 216

About VTR Emulation

You can use Backdraft Conform to emulate a VTR for both input and output in real time. When configured to emulate a VTR, Backdraft Conform can be controlled, using an RS-422 interface, by a third-party application or device allowing you to:

- Load a clip into the Output Clip menu, enable an emulator and then use another application or device capable of capturing from a VTR to capture the clip.
- Enable an emulator in the Input Clip menu and then use another application or device capable of outputting to a VTR to output clips to the Backdraft Conform workstation.

In all cases, you control the emulator from the application or device that treats Backdraft Conform as a VTR device.

VTR Emulation Workflow

A typical VTR emulation workflow involves the following steps:

- 1 Make sure the video and audio I/O cables, and RS-422 control cables are properly connected. See [Configuring Hardware for VTR Emulation](#) on page 212.
- 2 Uncomment and, if necessary, edit the appropriate keywords in the software initialisation configuration file. See [Configuring Software for VTR Emulation](#) on page 213.
- 3 Start the application and select the initial video timing option for your project. See [Starting a Session with VTR Emulator](#) on page 214.
- 4 Do one of the following:
 - Use VTR emulation to output clips. See [Using VTR Emulation to Output Clips](#) on page 214.
 - Use VTR emulation to capture clips. See [Using VTR Emulation to Capture Clips](#) on page 216.

Configuring Hardware for VTR Emulation

The following procedure contains the steps required to configure hardware for clip input and output procedures using VTR emulation.

To configure hardware for VTR emulation:

- 1 Connect the video I/O cables to the devices involved in the VTR emulation process (out-to-in/in-to-out). Make sure the connections support the video standard that you want to work with.

NOTE VTR emulation requires a Backdraft Conform workstation with a video board. The Video and Audio keywords for the corresponding device must be uncommented in the software initialisation configuration file.

- 2 Connect the audio I/O cables to the devices involved in the VTR emulation process (out-to-in/in-to-out).

- 3 Connect an RS-422 control cable to the serial ports between the devices in the VTR emulation process. Make sure the serial ports correspond to those defined by the Emulator keywords in the software initialisation configuration file. See [Configuring Software for VTR Emulation](#) on page 213.

NOTE The RS-422 cables for VTR emulation require custom pinouts. See the hardware installation guide.

- 4 Make sure the appropriate video and audio sync setup is in place.

Configuring Software for VTR Emulation

Once your hardware is configured for VTR emulation, uncomment the Emulator keywords in the software initialisation configuration file that correspond to the emulators that you want to enable.

To uncomment the appropriate Emulator keywords:

- 1 Log in to Backdraft Conform.
- 2 In a Linux terminal, type **dlcfg** to open the software initialisation configuration file in a text editor.
- 3 Scroll down to the EMULATOR KEYWORD section, and then remove the pound (#) sign to uncomment the entries that correspond to the emulation modes you want to work with.

NOTE You can perform video I/O using multiple video standards per session. To do so, you can uncomment emulators corresponding to different video timing values. Once in a project, you will be able to change the video timing without exiting your session.

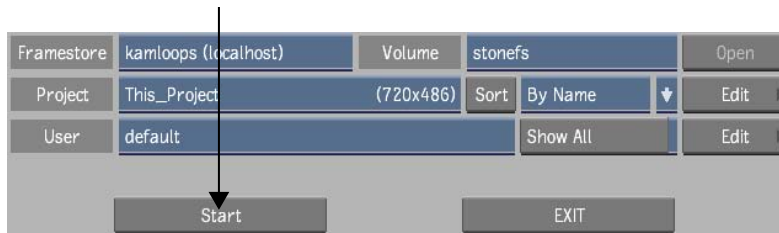
- 4 If necessary, edit the serial port definition in each line (/dev/tty4d<port#>) to make sure it corresponds to the serial port that you want to use for RS-422 remote control of the VTR emulator.
- 5 Save the file and exit the text editor.
You are now ready to start the application and enable an emulator.

Starting a Session with VTR Emulator

VTR emulation procedures are similar to procedures that you perform during clip input and output operations. When you create a project at the start-up, you select the initial video I/O timing for your project. All the clip I/O operations, including VTR emulation, are restricted to this timing until you change its value.

To start a session with VTR emulation:

- 1 Start the application and select a user from the User box.
- 2 From the Project box, select the existing project or create a new project and determine the video I/O option that corresponds to the format of the emulator that you want to work with. For example:
 - To emulate an NTSC VTR, select 720 x 486 NTSC
 - To emulate a PAL VTR, select 720 x 576 PAL
 - To emulate an HD 1280x720 VTR, select 1280x720 HD 720
 - To emulate an HD 1920x1080 VTR, select 1920x1080 HD 1080
 - To emulate an HSDL device, select 2048x1556 Super35 2K or 2048x1536 Super35 2K. (See [Clip Input/Output Using HSDL Devices](#) on page 205.)
- 3 Click Start.



Using VTR Emulation to Output Clips

When you load a clip into the Output Clip menu and select an emulator, the clip becomes a virtual source tape, the material that can be output to an external application or device with capture capabilities. The output process is controlled by the external application or device.

To use VTR emulation to output clips:

- 1 Open the clip library that contains the clip that you want to output.
- 2 Select the clip.
- 3 Click Output Clip.
The clip is loaded into the Output Clip menu.
- 4 Enable Emulator.



When Emulator is enabled, some VTR controls and Engineering options are deactivated.

- 5 From the Device Name box, select the emulator you want to use.



(a) Device Name box

- 6 To begin a clip output session using VTR emulation (thereby allowing the external application or device to control Backdraft Conform as a VTR), click Playback.



Backdraft Conform emulates a VTR, and the clip that you loaded into the Output Clip menu becomes a virtual tape. You can now switch to the external application or device to control and capture the clip.

- 7 If you want to enable a VTR emulator with a different video timing, from the Device Name box, select the VTR emulator that you want to use. Alternatively, open the Engineering menu to change the timing.

A message appears advising you to connect a valid signal to the reference input to launch the video preview corresponding to the format selected. Make sure your device is using the corresponding timing.

Using VTR Emulation to Capture Clips

When you select an emulator in the Input Clip menu, Backdraft Conform acts as a VTR to which video clips from other applications or devices can be recorded. In this case, your workstation's framestore is a virtual blank tape. Clips sent to the emulator from the external application or device appear in the current clip library. The capture process is controlled by the external application or device.

To use VTR emulation to capture clips:

- 1 Go to the clip library in which you want recorded clips to appear.
- 2 Click Input Clip.
- 3 Enable Emulator.



- 4 From the Device Name box, select the emulator you want to use.



(a) Device Name box

- 5 To begin a capture session using VTR emulation (thereby allowing the external application or device to control Backdraft Conform as a VTR), click Record.



Backdraft Conform emulates a VTR with a blank virtual tape. You can now switch to the external application or device to control and output clips.

- 6 If you want to enable a VTR emulator with a different video timing, from the Device Name box, select the VTR emulator that you want to use. Alternatively, open the Engineering menu to change the timing.
A message appears advising you to connect a valid signal to the reference input to launch the video preview corresponding to the format selected. Make sure your device is using the corresponding timing.

Importing Media Files

10

Topics in this chapter:

- [About Importing Media Files](#) on page 220
- [Supported File Formats](#) on page 220
- [About Soft-Import](#) on page 226
- [About Proxies](#) on page 227
- [About the Import Image Menu Options](#) on page 228
- [About the Proxy Import Settings](#) on page 239
- [Importing and Soft-Importing Image Files](#) on page 242
- [Importing DPX File Sequences for Data Conform](#) on page 245
- [Importing OpenEXR Files](#) on page 249
- [Importing RED Media Files](#) on page 252
- [Importing RGBA Files](#) on page 253
- [Importing Adobe Photoshop Files](#) on page 255
- [Importing and Soft-Importing Video Files](#) on page 257
- [Importing and Soft-Importing in the Background](#) on page 260
- [Importing and Soft-Importing Audio Files](#) on page 263
- [Deleting Media Files From the Filesystem Via Import Image](#) on page 265

About Importing Media Files

At various times during the post-production process, you may need to import files into Backdraft Conform from other applications. For instance, you may need to import:

- Scanned DPX files generated by a film scanner
- Backgrounds or mattes created in Adobe® Photoshop®, Combustion®, 3ds Max®, or other graphic design applications
- Various still image files (for example, TARGA®, JPEG, TIFF)
- QuickTime® video files
- MXF media files
- Audio files (for example, AIFF, MP3, WAV), including music from a CD

You can import and soft-import image, video, or audio files. You can add image files or video files to a render queue for batch importing.

You can also import multiple files using EDLs. See [Importing EDL Files](#) on page 621.

Supported File Formats

You can import and soft-import image files using a number of industry-standard file formats. Each file format uses a default file extension. You can use the default extensions as you import and soft-import images.

Supported Image File Formats

Backdraft Conform supports import and soft-import of the following still image file formats.

NOTE Photoshop files can only be imported. You cannot soft-import Photoshop files.

File Format	Default Extension	Bit Depth
Alias®	als	8 bits

File Format	Default Extension	Bit Depth
Cineon®	cin	10 bits
DPX	dpx	8, 10, or 12 bits
Jpeg	jpg	8 bits
OpenEXR	exr	8, 10, 12u, 12, 16 fp, or 32 fp bits
Photoshop	psd	8 bits
Pict (Macintosh)	pict	8 bits
Pixar	picio	8 bits
SGI®	sgi	8 or 16 bits
Softimage®	pic	8 bits
TARGA	tga	8 bits
Tdi/Maya®	iff	8 or 16 bits
Tiff	tif	8 or 16 bits
Wavefront®	rla	8 or 16 bits

Supported Audio File Formats

Backdraft Conform supports import and soft-import of the following audio file formats.

NOTE You can only soft-import the AIFF, AIFF-C, and WAVE audio file formats.

File Format	Default Extension	Bit Depth
AIFF-C	aifc	16, 24, or 32 (float)
AIFF	aiff	16 or 24
Nextsnd	au	16, 24, or 32 (float)

File Format	Default Extension	Bit Depth
MP3	mp3	16
WAVE	wav	16, 24, or 32 (float)
Broadcast Wave	wav	16, 24, or 32 (float)
Berkeley/IRCAM/CARL Sound (BISCF)	bsf	16
Audio Visual Research	avr	16

Supported QuickTime File Codecs

Backdraft Conform supports import of QuickTime files encoded with any of the following codecs.

NOTE QuickTime files exported from QuickTime Pro in Drop-Frame mode may be improperly truncated. This will result in the video and audio frames not matching when imported into Backdraft Conform.

NOTE QuickTime PhotoJPEG files can only be imported. You cannot soft-import QuickTime PhotoJPEG files.

Broadcast CODEC	CODEC Flag	Comment
Component Y'CbCr 10-bit 4:4:4	v410	10-bit Packed
Component Y'CbCr 10-bit 4:2:2	v210	10-bit Packed Blackmagic or AJA-Kona compatible
Component Y'CbCr 8-bit 4:4:4	v308	8-bit Planar
Component Y'CbCrA 8-bit 4:4:4:4	v408	8-bit Planar
Component Video	yuv2	8-bit Packed 4:2:2 Blackmagic or AJA-Kona compatible
8-bit Packed YUV 4:2:2	2vuy	
DV 25 NTSC	dvc	
DV 25 PAL	dvcv, dvpp	

Broadcast CODEC	CODEC Flag	Comment
DVCPRO 50 NTSC	dv5n	
DVCPRO 50 PAL	dv5p	
DVCPRO HD	dvh1	
DNxHD	avdn	36, 145, 220 (8 bits) 220x (10 bits)
IMX	mxn3, mxn4, mxn5	30, 40, 50
File CODEC	CODEC Flag	Comment
PhotoJPEG	RTJ0	RT PhotoJPEG compatible
MJPEG	MJPEG, mjpg, mjpa, mjpgb, JPEG, jpeg, dmb1, AVD]	JPEG compatible
PNG	png	Portable Network Graphic sequence (no alpha support)
PNGA	pngalpha	Portable Network Graphic sequence (with alpha support)
RGB Uncompressed	raw	No alpha support
RGBA Uncompressed	rawalpha	With alpha support
TGA	tga	TARGA
Web CODEC	CODEC Flag	Comment
MPEG-1	mpg1, MPG1, pim1, PIM1	
MPEG-4	mp4v; DivX®; DIV1; div1; MP4S;M4S2; m4s2; xvid; XVID; XviD; DX50; dx50; DIVX; MP4V	

Web CODEC	CODEC Flag	Comment
MSMpeg 4v3 (DivX)	DIV1, div1, MPG4, mpg4, DIV2, div2, MP42, mp42, DIV3, div3, DIV4, div4, DIV5, div5, DIV6, div6, MPG3, mpg3, MP43, mp43, AP41, ap41, MJPG	
Quicktime Planar RGB	8BPS	
Apple® Video	rpza	
Apple Graphics	smc	
Apple Animation	rle	With alpha support
Cinepak	cvid	
Audio CODEC	CODEC Flag	Comment
IMA 4:1	ima4	
Raw 8-bit audio	rawaudio	
Twos	twos	16-bit PCM (Big Endian)
Ulaw	ulaw	
Sowt	sowt	16-bit PCM (Little Endian)
A-law 2:1	alaw	
16-bit PCM	in16	
Linear PCM (QT 7)	lpcm	
Ogg Vorbis (qt4l compatible)	vorbis	
Ogg Vorbis (qtcomponents compatible)	vorbis_qt	
MPEG-2 Layer 2 Audio	mp2	

Audio CODEC	CODEC Flag	Comment
QDM2 Audio	qdm2	
Apple lossless	alac	
McRowsoft ADPCM	adpcm (ms)	
ADPCM ima WAV	ima adpcm (wav)	

Supported P2 MXF File Codecs

Backdraft Conform supports import of Panasonic P2 MXF files encoded with any of the following codecs.

P2 CODEC	CODEC Flag	Comment
AVC-Intra 50	AVC-I 50	Panasonic P2
AVC-Intra 100	AVC-I 100	Panasonic P2
DV 25	DV 25	
DVCPRO	DVCPRO	
DVCPRO 50	DVCPRO50	
DVCPRO HD	DVCPROHD	

Supported XDCAM MXF File Codecs

Backdraft Conform supports import of Sony® XDCAM MXF files encoded with any of the following codecs.

XDCAM CODEC	CODEC Flag	Comment
MPEG-2 IMX 30	IMX 30	XDCAM
MPEG-2 IMX 40	IMX 40	XDCAM

XDCAM CODEC	CODEC Flag	Comment
MPEG-2 IMX 50	IMX 50	XDCAM
MPEG-2 long-GOP	XDCAM HD	XDCAM HD

About Soft-Import

When you import media that resides on an external shared storage device, all the media is copied to Autodesk storage. Any changes that you make to this media are protected, and exclusive to this stored copy. However, it can take a long time to load large files and all of this stored media can take up a lot of space in Autodesk storage.

Soft-import provides a more efficient way to handle media. When you soft-import media, Backdraft Conform creates a link that references the media at its original location, so that no media is actually imported and duplicated in Autodesk storage. Later, when you move or delete soft-imported clips, you affect only the reference—not the actual media at the shared storage location. You can also soft-import media when importing files using an EDL or recapturing media. See [Importing EDL Files](#) on page 621 and [Recapturing Media](#) on page 710.

When soft-importing media, be aware that you have no control if another user modifies the original media files. All soft-imported clips in Autodesk storage that refer to the modified media files are updated to reflect the change. Ensure that all users accessing the same media are aware of these implications.

You can process (render) soft-imported media in any module. The resulting new clip is written to Autodesk storage. Since any links to the original media are now removed, changes to this media will no longer be updated on the shared storage. Also, if the media changes in the original external location, the changes are not reflected in your stored clip. This can be useful if you want to prevent other users with access to the shared storage from altering your clip.

Recognizing Soft-Imported Clips

Soft-imported clips in the clip library display an icon in the lower-right corner of the clip. The type of indicator depends on whether the clip is a hybrid clip or a completely soft-imported clip. A hybrid clip has some frames that are soft-imported and some that are not, or it may consist of multiple soft-imported sources of different formats.

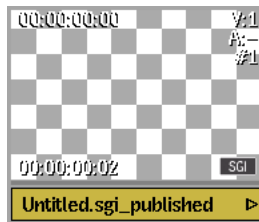
Alt-clicking the clip displays an overlay that includes the soft-imported source path.



(a) Soft-import icon (for a non-hybrid clip) (b) Soft-import icon (for a hybrid clip)

Image courtesy of Behavior Communications Inc.

Soft-imported clips that do not have associated media appear as white and grey checkered clips.



About Proxies

A proxy is a low-resolution copy of a high-resolution image. There can be one proxy for each frame in a clip. Proxies are used to provide real-time playback of processed results and to supply low-resolution clips so that composites can be quickly created. When soft-importing, use proxies when the connection speed to your media storage location is not fast enough to support real-time

streaming of the full-resolution media. Proxies can be generated, upon import or soft-import of high-resolution media, or imported for DPX or Cineon media.

You can specify how and when proxies are generated for clips in the project settings. See [Setting Proxy Management Options](#) on page 346. If you enabled proxies for the project or media resolution, then only the proxies reside in Autodesk storage.

When creating DPX or Cineon images, a film scanner generates full-resolution scans that are often complemented by lower resolution proxy scans. These proxy scans can also be used in Backdraft Conform. You can import the existing proxies or generate new proxies when recapturing or importing DPX or Cineon images.

Generated proxies take the longest to create but provide guaranteed performance since the proxies reside in Autodesk storage.

Imported proxies are already created, can be imported quickly, and have the same performance attributes as generated proxies.

About the Import Image Menu Options

The Import Image menu contains a large number of options that are available for importing graphic image files, film scans, or video files. The menu is divided into six functional groups:

- File Operations
- Clip Media
- Clip Metadata
- Processing
- File Attributes
- Library Operations

For descriptions of additional options in the Import Image menu, see [Browsing the File System](#) on page 68.

File Operations Group

Use these options to perform file input and processing operations.



(a) File Format box (b) File Extension field (c) Add To Queue box (d) Destination Library box

File Format box Select the file format of the images that you want to import. The application uses file metadata to detect its format automatically. Automatic file-type detection makes it easier and faster to set up import queues consisting of different file types. If you select Auto, then all files in the current directory are displayed in the Files list. An alternative way to achieve the same result is to select the file format and enable Show All in the Files list. However, with Auto selected, you can load or add to the import queue files of any format.

File Extension field Displays the default extension for the file type selected in the File Format box. If the files that you want to import do not use the default extension for the selected file format, they do not appear in the browser. You may enter an extension in the File Extension field to display files using this extension in the browser. To view all files in the current directory, leave the field blank.

Generate / Import Proxies button When enabled, allows background import or generation of proxies while importing or soft-importing images. See [Importing and Soft-Importing in the Background](#) on page 260. This button is active when Backburner™ is configured, Soft-Import Full Res or Proxy Import is enabled, and Proxies are turned on for your project.

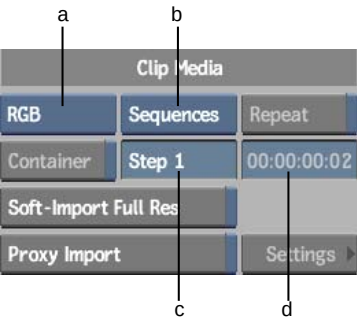
Add To Queue box Select a method to import images in the background. See [Importing and Soft-Importing in the Background](#) on page 260.

Select:	To:
Add to Queue	Add the job to the queue.
Add to Queue & Execute	Add the job to the queue and execute it automatically. If there are any jobs in progress, this job (and any others already added with the Add to Queue & Execute option) is triggered upon the completion of its predecessor.

Destination Library box Select the destination library for the imported file. This applies to background import operations only. You should select a clip library that you are not currently using to ensure the library is not locked (read-only). Otherwise, the background operation is suspended until the library is unlocked.

Clip Media Group

Use these options to select how clip media is handled on import.



(a) Channels box (b) Load Method box (c) Step Factor field (d) Repeat field

Channels box Select the channels that you want to import. If the image has an alpha channel, you can load it with the image as is or inverted.

Select:	To load:
RGB	The image with no alpha channel.
RGBA	The image and its alpha channel. Two clips are created: the first clip contains the RGB image, and the second clip contains the alpha channel image. If the image does not contain an alpha channel, a single clip is created.
RGBA Inverted	The image and its alpha channel (inverted). Two clips are created: the first clip contains the RGB image, and the second clip contains the greyscale inverted alpha channel image.

Load Method box Select the method used to load images, whether a clip, sequences, or frames.

Select:	To load:
One Clip	All selected images into a single clip.
Sequences	All selected sequences and individual images into separate clips. Note that selected images in a sequence are loaded as one clip.
Frames	All selected images into separate, one-frame clips.

Repeat button Enable when you want to repeat a single frame for a given duration. Regardless of the load option, you can set the number of times the frame is repeated by entering a value in the Repeat field.

Matte Container button When enabled, creates a matte container to store the image and its matte. Matte Container is active when Channels is set to RGBA or RGBA Inverted.

Step Factor field Specifies the number of frames that you want to skip when importing a selection of images (which may or may not be part of a sequence). For example, a step factor of two imports every second frame. A step factor of one imports all frames.

Repeat field Enter a value for the number of times that you want to repeat a single frame for a given clip. This field is active when the Repeat button is enabled.

Soft-Import Full Res button When enabled, images are soft-imported at full resolution. If your project settings include proxies, then proxies are generated also.

Proxy Import button When enabled, allows the available proxies, matching the criteria set in the Proxy Import settings, to be imported.

Settings button Displays the Proxy Import settings. Active when Proxy Import is enabled.

Clip Metadata Group

Use these options to select how clip metadata is handled on import.

The image shows a 'Clip Metadata' dialog box with the following fields and labels:

- a**: Tape Name box (dropdown menu)
- b**: Tape Name field (text input)
- c**: Timecode box (dropdown menu)
- d**: Timecode field (text input showing 'Start 00:00:00:00')
- e**: Keycode box (dropdown menu)
- f**: Keycode field (text input showing 'No KC')
- g**: Level field (dropdown menu showing 'Up 1 level')
- h**: Clip Name field (text input showing '29.97 NDF')
- i**: Framerate box (dropdown menu showing '16/S16 mm / 1perf')
- j**: Film Gauge box (dropdown menu)
- k**: Import Keycode Strategy box (dropdown menu showing 'Scan First File')

(a) Tape Name box (b) Tape Name field (c) Timecode box (d) Timecode field
(e) Keycode box (f) Keycode field (g) Level field (h) Clip Name field (i) Framerate box
(j) Film Gauge box (k) Import Keycode Strategy box

Tape Name box Select an option to determine how the tape name is set for the imported clips.

Select:	To:
Enter Tape	Activate the Tape Name field so that you can manually enter the tape name. When selecting multiple sequences for import, this tape name is used for all imported clips.
Tape From File Header	Read the tape name from the Input Device Name field (field 38) in the header of the file. The tape name detected for the currently selected sequence is displayed in the Tape Name field. If multiple sequences are selected in the Files list, the tape name corresponding to the uppermost selected sequence will be displayed.
Tape From Directory	Infer the tape name from the detected directory structure. A Level field appears below the Tape Name field. Use this to configure the relative file path to the directory from which the tape name can be inferred.

Tape Name field Displays the tape name of the imported clip. If Tape Name is set to Enter Tape, then this field becomes active, allowing you to enter a tape name.

Timecode box Select an option to specify how the timecode information for the clip is set.

Select:	To:
Enter Timecode	Manually enter a timecode in the Timecode field.

Select:	To:
File Header Timecode	Set the source timecode of the imported clip based on the timecode information in the image file header.
File Name Timecode	Use a numerical filename (for instance, <i>100000.dpx</i>) and translate it into timecode for the resulting clip (based on the selected frame code mode). This is useful when working with files from film scanners that do not have embedded timecode. Also, it is useful for reading the files generated by Lustre®.

Timecode field Displays the timecode of the imported clip. If the Timecode box is set to Enter Timecode, then this field becomes active, allowing you to enter a starting timecode value for the imported clip.

Keycode box Select an option to determine how keycode data is applied to the imported clip.

Select:	To:
Enter Keycode	Manually enter a keycode in the Keycode field.
File Header Keycode	Load a clip based on the keycode information embedded in the image file header.
No Keycode	Not use keycode.

Keycode field Displays the keycode of the imported clip. If the Keycode box is set to Enter Keycode, then this field becomes active, allowing you to enter a starting keycode value for the imported clip.

Level field Select an option to set the relative file path to the directory from which the tape name can be inferred. Although it is available for all file types, the Level field is specifically designed to work with the directory structures that are output by film scanners. A typical file structure would look like: *./<tape>/<resolution>/clip.#####.dpx*. In this case, selecting *Up 2 Levels* in the Level field identifies the directory that corresponds to the tape name (*./<tape>*). The Level field is active when Tape Name is set to Tape From Directory.

Clip Name field Displays the name of the current clip. By clicking the field you activate it so that you can create or modify a clip name.

Framerate box Select the frame rate of the imported clip. If you are importing a DPX file, select File FCM to detect and use any existing framerate information in the DPX file to create the clip.

Film Gauge box Select a film gauge for the keycode.

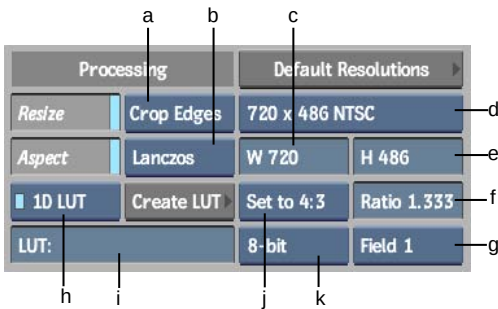
Import Keycode Strategy box Select an import strategy for handling keycode. The Import Keycode Strategy box is active only when Load Method is set to Sequences and Keycode is set to DPX Keycode.

Select:	To:
Scan First File	Scan the keycode from only the header of the first file in a DPX sequence.
Scan First/Last Files	Scan the keycode from only the header of the first and last files in a DPX sequence.
Scan Every File	Scan the keycode from the header of every file in a DPX sequence.

Processing Group

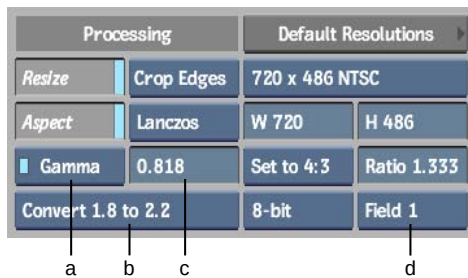
Use these options to change resolution, aspect ratio, bit depth, and field dominance. See [Resizing Clips on Import, Export, or in a Clip Library](#) on page 1106.

If Resize is disabled, you can force an aspect ratio for all the images selected for import, or use the Default Resolutions list to determine the aspect ratio for each individual image in the selection. See [Setting Default Image Resolution Characteristics on Import](#) on page 1128.



(a) Fit Method box (b) Resize Filter box (c) Frame Width field (d) Resolution Presets box (e) Frame Height field (f) Aspect Ratio field (g) Scan Mode box (h) Colour Correction Type box (i) LUT Name field (j) Aspect Ratio Presets box (k) Frame Depth box

When importing QuickTime files, you can also change the gamma settings of images originating from Apple Macintosh computers.



(a) Colour Correction Type box (b) Gamma Presets box (c) Gamma Correction field (d) Scan Mode box

Resize button When enabled, displays the Resize options that can affect one or more clips on import. If disabled, the Aspect Ratio Presets box and the Aspect Ratio field are still available. Resize options are not active when you soft-import media.

Aspect button When enabled, allows you to use non-square pixel formats. This button is active only when Fit Method is set to Crop Edges or Letterbox.

Fit Method box Select the fit method that is applied to the clips. Fit Method is active only when Resize is enabled.

Select:	To:
Pan	Fit the source image to the smaller destination frame by cropping and using the Pan Start X and Pan Start Y fields.
Centre/Crop	Fit the source image, centred, over the destination frame. If the source is larger than the destination, it is cropped. If the source is smaller than the destination, it is surrounded by a black border.
Crop Edges	Fit one edge of the source into the destination frame without stretching or squashing the frame. Excess parts of the source frame after resizing are cropped. If the source—after the one edge is resized—is wider than the destination, its overhanging left and right edges are cropped. If the source is taller than the destination, the upper and lower edges are cropped.
Fill	Fit the source, width and height, into the destination frame. If the source and destination frames do not have the same aspect ratio, the image can become distorted.

Select:	To:
Letterbox	Fit the source to the destination frame without squashing or stretching it, and without cropping the source. If the source is wider than the destination, black bars fill the top and bottom of the destination frame. If the source is narrower than the destination, black bars fill the right and left sides of the frame. In all cases, the entire source frame is contained within the destination frame.

Pan Start X field Enter the offset for horizontal position. Pan Start X is active only when Fit Method is set to Pan.

Pan Start Y field Enter the offset for vertical position. Pan Start Y is active only when Fit Method is set to Pan.

Resize Filter box Select the filter option to determine the quality of the interpolated resize result. Defining a filter method in the Resize menu will override the default setting specified in the Preferences menu. The Resize Filter box is active only if Fit Method is set to Crop Edges, Fill, or Letterbox.

Select:	To get:
Impulse	Quick, low-quality results.
Triangle	Moderate results with little processing overhead.
Mitchell	Best results when resizing a clip to a higher resolution.
Bicubic	Very good results for resizing soft-looking images. Use to sharpen the image.
Quadratic	Good results for resizing simple images with straight edges. Similar to Gaussian but with more blurring. Use to soften the image.
Gaussian	Excellent results when resizing a clip with no patterns and a lot of straight edges to a lower resolution. Useful for softening some detail.
Shannon	Excellent results when resizing a clip to a lower resolution. Very similar to Lanczos, but results are a little softer.
Lanczos	Best results when resizing a clip containing a variety of patterns and elements to a lower resolution. It is the most complex with the longest processing time.

Default Resolutions button Displays the Default Resolutions list. See [Default Resolutions List](#) on page 1129.

Frame Width field Displays the frame width of the selected resolution preset. If Resolution Presets is set to Custom, then this field is active, allowing you to enter the frame width value that you want to use.

Resolution Presets box Select one of many standard resolutions, as well as a Custom option that you can use to specify non-standard resolutions.

Frame Height field Displays the frame height of the selected resolution preset. If Resolution Presets is set to Custom, then this field is active, allowing you to enter the frame height value that you want to use.

Create LUT button Create a custom LUT. See [Applying a LUT on Import or Export](#) on page 1181. Create LUT is active only if Use LUT is enabled.

LUT Name field Displays the name of the currently used LUT file. When enabled, a browser appears containing the LUTs currently residing in the project ~/lut directory. These include the samples provided with Backdraft Conform, as well as any LUTs you may have saved or exported to this directory. LUT Name is active only when you enable the Use LUT button.

Aspect Ratio Presets box Select a standard frame aspect ratio. Select the Set to w:h option to set the clip to use square pixels. Select Custom to define a custom frame aspect ratio in the Aspect Ratio field.

Frame Depth box Select from one of five frame depth options: 8-bit, 10-bit, 12-bit, 12-bit u, or 16-bit fp. Frame Depth is active only when Resize is enabled.

Aspect Ratio field Displays the aspect ratio of the imported clip. When Aspect Ratio Presets is set to Custom, this field becomes active so that you can enter a custom frame aspect ratio.

Scan Mode box Select an option to set the order in which the fields of interlaced material is scanned.

Select:	To:
Progressive	Scan a frame-based clip with no interlacing.
Field 1	Scan Field 1 first, followed by Field 2.
Field 2	Scan Field 2 first, followed by Field 1.
File Header	Read the field dominance from the file.

Colour Correction Type box Select the type of colour correction to use. Selecting 1D LUT or 3D LUT activates Create LUT and LUT Name and uses a Lookup Table on import. Selecting Gamma activates the Gamma Presets box

and the Gamma Correction field. Click the LED to switch between On (blue) and Off (gray).

Gamma Presets box Select a gamma correction preset.

Gamma Correction field Displays the gamma correction value to be applied. Editable.

File Attributes Group

The File Attributes group displays the attributes that are available for a file, when its filename is selected in the file browser. These attributes may include any of the following: file type, pixel width, pixel height, colour model, timecode, keycode, aspect ratio, bit depth, and codec.

File Attributes		
Type:		Colour:
W 0	H 0	TC: 00:00:00:00
Aspect Ratio:		KC: No KC
Bit Depth:		Codec:

The diagram shows a 'File Attributes' window with a grid of fields. Labels a-f point to: (a) 'W 0' (Pixel Width), (b) 'Type:' (File Type), (c) 'H 0' (Pixel Height), (d) 'Colour:' (Colour Model), (e) 'TC: 00:00:00:00' (Timecode), and (f) 'KC: No KC' (Keycode).

(a) Pixel Width (b) File Type (c) Pixel Height (d) Colour Model (e) Timecode (f) Keycode

Movie Attributes Group

The Movie Attributes group displays the attributes that are available for a movie file. They appear when a QuickTime or MXF file is selected in the browser.

A QuickTime or MXF video file can be encoded with any of a number of different codecs. During import, the codec flag and other detected metadata for a supported movie (such as timecode, aspect ratio, and bit depth) appear in the Movie Attributes group. Note that some codecs that are not supported may appear in the codec field. A message appears if the movie cannot be imported.

QuickTime Attributes		Video	Audio
320x240	P	YUV	2 Channels
Start	00:00:00:00	1.333333	48000
End	00:00:34:00	8-bit	16
Duration	00:00:34:00	mjpg	twos

MXF Attributes		Video	Audio
720x576	F2	YUV	0 Channels
Start	00:00:00:00	1.333333	0
End	00:00:03:24	8-bit	0
Duration	00:00:03:24	DVCPR050	

Library Operations Options

Use these options to select what and how files are displayed for import.

Titles

Name/Size/Date

Generate Proxy

Bookmarks

Add

/hosts/innsbruck/disku

Directory

Home

⬆

Scan Subdirectories

Generate Proxy button Click to generate thumbnail proxies in the Clip Library view.

Scan Subdirectories button Enable to display all of the image sequences that are detected in the nested subdirectories of a directory structure.

About the Proxy Import Settings

Use the Proxy Import settings to configure where the proxy scans are found for the selected Cineon or DPX full-resolution scans. The Proxy Import settings

appear when, in the Clip Media Group, you enable the Proxy Import button and click Settings. The options are divided into three functional groups:

- Full Resolution Root Path Group
- Proxy Root Path Group
- Proxy Search Criteria Group

Full Resolution Root Path Group

Use these options to determine the directory location of the full-resolution scans.



(a) Full Resolution Root Path field

Set Current button Sets the Full Resolution Root Path field to the path displayed in the browser.

Clear button Clears the Full Resolution Root Path field.

Full Resolution Root Path field Displays the path location of the selected full resolution images. This is set using the browser and the Set Current button.

Proxy Root Path Group

Use these options to determine the directory location of the proxy scans.



(a) Proxy Path Selection box (b) Proxy Root Path field

Proxy Path Selection box Choose how the proxy path is determined. When set to Same as Full Res, the path is taken from the Full Resolution Root Path field. When set to Other Mount Point, the Proxy Root Path can be determined using the browser.

Set Current button Sets the Proxy Root Path field to the path displayed in the browser. Active when Proxy Path Selection is set to Other Mount Point.

Clear button Clears the Proxy Root Path field. Active when Proxy Path Selection is set to Other Mount Point.

Proxy Root Path field Displays the path location of the selected proxy images. This is set using the browser and the Set Current button.

Proxy Search Criteria Group

Use these options to specify the search criteria for finding proxies, including the relative directory location and file name.

The screenshot shows a window titled "Proxy Search Criteria". Inside, there are two main sections. The first section has a label "Directory Location" and two buttons: "Relative to Full Res Files" (which is selected) and "Up 1 level Down 1 level". The second section has a label "File Name Match" and one button: "Same as Full Res". At the bottom of the window, there is a "Proxy Scan" section with an "Active" checkbox and a "Reset All" button. Three labels with arrows point to specific elements: 'a' points to the "Directory Location" label, 'b' points to the "File Name Match" label, and 'c' points to the "Relative to Full Res Files" button.

(a) Directory Location box (b) File Name Match box (c) Relative Directory Level field

Directory Location box Select whether the proxies can be found in a directory location that mirrors that of the full-resolution scans or in another directory location that is relative using the Relative Directory Level field.

Relative Directory Level field Drag left or right or click to enter the level difference between the directory location of the proxy scans, relative to the directory location of the full-resolution scans. Active when Directory Location is set to Relative to Full Res Files.

File Name Match box Select whether the proxy file names use the same name as the full-resolution files or if they use names that are appended with a prefix/suffix, in which case the File Name Search field appears.

File Name Search field Enter a prefix/suffix that differentiates the proxy file name from the full-resolution scan file name. Use any characters that are legal

in Unix file names. Use the asterisk (*) as a placeholder for the current full-resolution scan file name.

Proxy Scan Active button Enable to start the proxy scan using the proxy search criteria entered.

Reset All button Restores all proxy import settings to default.

Importing and Soft-Importing Image Files

Import images created in other applications, such as 3ds Max, as well as images previously exported, using the Export Image menu. You can also import images from CD-ROM, floppy disk, or another platform (for example, a Macintosh or PC).

By default, clips are imported at source resolution. However, you can use the Resize option to modify imported file resolution. In this case, the default size becomes the project resolution, which you can then modify.

When you import clips containing multiple frames, the frames are saved as separate image files, each of which is assigned a sequentially-numbered filename. In the file browser, these image files appear under a single collapsible heading, which allows you to select all images in a sequence at once.

To import or soft-import an image file:

- 1 In a clip library, click Import Image.
- 2 In the File Format box, select the format of the media that you want to import, or select Auto to automatically detect the format of a file when you select it. See [File Operations Group](#) on page 228.



TIP If you select a file format and the files that you want to import do not use the default extension, they do not appear in the browser. Enter the extension of the files in the Ext: field and they will appear in the browser. To view all files in the current directory, enter a blank extension.

- 3 Select the destination for the imported file using the Destination Library box.
- 4 Browse to the directory containing the media that you want to import. You can set a number of display and search options to help you find what you need. See [Browsing the File System](#) on page 68.

NOTE By default, the file browser points to the images directory for the project.

- 5 Optional: Enable the Scan Subdirectories button to display all the subdirectories and their contents.
- 6 Select the images that you want to import.
- 7 Enable Soft-Import Full Res if you want to import a reference to the media, but you do not want to store the media on the local storage.



NOTE Certain options are disabled if you choose to soft-import the media.

- 8 Set any Clip Media properties. You can choose to import an image with its alpha channel. See [Importing RGBA Files](#) on page 253. You can import an image as frames, sequences, or a clip. You can repeat frames or step through frames. See [Clip Media Group](#) on page 230.
- 9 Set the tape name for the imported clips and adjust any other Clip Metadata properties. You can infer the tape name from a directory name, read the tape name from a file header, or enter the tape name manually. You can also read timecode and keycode information from the clip. See [Clip Metadata Group](#) on page 231.

Clip Metadata		
Tape From File Header	File Header Timecode	File Header Keycode
	Start 00:00:00:00	No KC
Up 1 level	29.97 NDF	16/S16 mm / 1perf
Name:	Scan First File	

- 10 Optional: Use the Resize options to modify the imported file resolution. See [Setting Default Image Resolution Characteristics on Import](#) on page 1128.

Processing		Default Resolutions	
Resize	Crop Edges	720 x 486 NTSC	
Aspect	Lanczos	W 720	H 486
1D LUT	Create LUT	Set to 4:3	Ratio 1.333
LUT:	8-bit	Field 1	

- 11 Specify a LUT to remap specific pixel values when you import. See [Colour Management](#) on page 1165.

Processing		Default Resolutions	
Resize	Crop Edges	720 x 486 NTSC	
Aspect	Lanczos	W 720	H 486
1D LUT	Create LUT	Set to 4:3	Ratio 1.333
LUT:	8-bit	Field 1	

- 12 Click Load.

If the width of the image that you are importing or soft-importing is a not multiple of 4 for 8-bit images, or 2 for 10-, 12-, or 16-bit images, you will be prompted to confirm that you want to pad its width to the next highest multiple. Click Confirm to proceed. If the image is part of a sequence, click Confirm All to automatically apply the padding to all images in the sequence.

The images are imported to the clip library.

NOTE Soft-imported media is labelled with the file type in the lower-right corner. See [Recognizing Soft-Imported Clips](#) on page 226.

Importing DPX File Sequences for Data Conform

The following workflow is designed specifically to accommodate importing or soft-importing DPX sequences generated from a film scanner. This allows you to import DPX sequences originating from different film reels in a single step. You can efficiently batch-capture file-based media in preparation for data conform from an EDL. The imported clips all have the correct source keycode, timecode, and tape name, making it easy to load your EDL and assemble the timeline for conforming and finishing.

To import DPX file sequences for data conform:

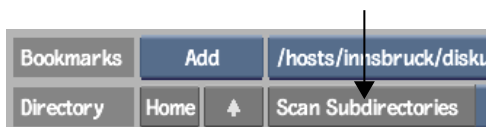
- 1 From the clip library, click Import Image.
- 2 In the Import Image menu, browse to the top-level directory that contains all the subdirectories and image sequences that you want to display.
Typically, all DPX sequences generated by a film scanner reside in a top-level *<project>* directory, sorted into subdirectories corresponding to tape name, resolution, and sometimes clip name, as follows:
./<project>/<tape>/<resolution>/.#####.dpx*
- 3 From the File Format box, select the DPX image type.
You can select any single, supported image type. The default type for image files is DPX because this is a DI standard that embeds source metadata in the file header.



- 4 Optional: Enable Filter and enter the appropriate criteria to focus your search.

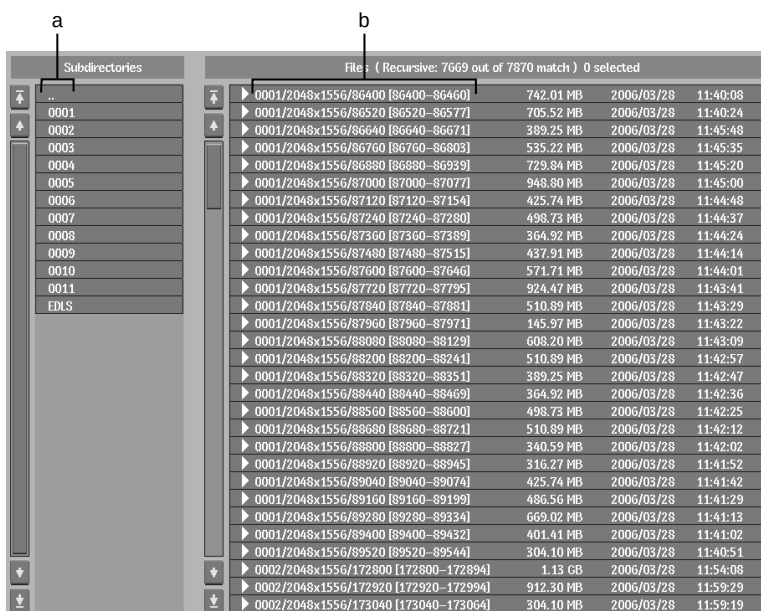
The criteria is checked against the entire path. For example, if you enter *2048*, the filter will list only those sequences that reside under a directory path containing the string “2048”. In this case, only 2K sequences are displayed while everything else, such as 1K proxies or thumbnails, is filtered out.

5 Enable Scan Subdirectories.



The directory scan begins. This may take some time to complete, depending on the size and quantity of subdirectories and files.

When the scan is complete, the Files list displays all detected files with the directory path relative to the top-level directory. The list is sorted alphanumerically by path and filename.



(a) Subdirectories in the scanned directory (b) All nested subdirectories with full path

TIP For long filenames that may be clipped in the browser, hold down the **Alt** key while hovering over the filename. This displays the full filename in a floating window.

The results of the scan remain until you browse upwards to another directory, in which case the Scan Subdirectories option gets disabled.

- 6 Select the images that you want to import.
- 7 From the File Timecode box, select File Header Timecode.
This will set the source timecode of the imported clip based on the timecode information in the DPX image file header.
- 8 From the Keycode box, select File Header Keycode.
This option allows DPX files that contain keycode data to be imported with their keycode data intact.

NOTE For 35mm / 3 perf and 35mm /4 perf keycode, both perforation and frame offset modes can be read from the DPX files. For all other film gauges, only frame offset mode can be read.

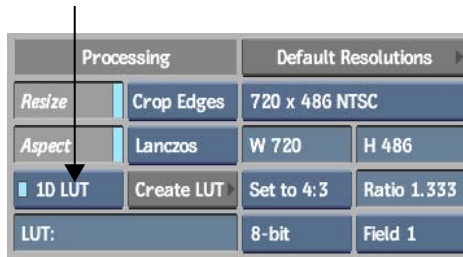
- 9 From the Framerate box, select File FCM.
This option allows you to detect and use any existing framerate information in the DPX file to create the clip.
- 10 From the Film Gauge box, select the gauge corresponding to the source film from which the images originated.
This value is necessary because keycode values are assigned to each frame of the sequence differently, depending on the film gauge.
- 11 Set the tape name for the imported clips.
You can either infer the tape name from a directory name or read the tape name from a DPX file header. Do one of the following:
 - To infer the tape name from a directory name, from the Tape Name option box, select Tape From Directory, then use the Level field to configure the relative file path to the directory from which the tape name can be inferred.
This is designed to work with the directory structures that are output by film scanners. For example: `./<tape>/<resolution>/clip.#####.dpx`. In this case, selecting *Up 2 Levels* in the Level field identifies the directory that corresponds to the tape name.

- To read the tape name from the DPX file header, from the Tape Name box, select Tape From File Header.

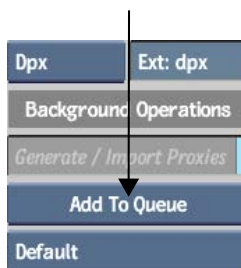
The tape name is read from the Input Device Name field (field 38) in the header of the DPX file and is displayed in the Tape Name field. There is currently no industry standard for embedding the tape name in the DPX header. Some film scanners, such as the ARRISCAN, write the tape name associated with a film frame into field 38 of the DPX header. Other scanners, for example, Imagica or Filmlight, allow field 38 to be user-definable, although the default value is not the tape name.

NOTE Before using the DPX Tape name feature, consult with your film scanner operator to ensure compatibility.

- 12 Specify a LUT to remap specific pixel values when you import the DPX images. See [Colour Management](#) on page 1165.



- 13 Optional: Perform any resizing operations.
When you disable the Resize button during import operations, the aspect ratio of the clip reverts to default. See [Processing Group](#) on page 234.
- 14 Enable Soft-Import Full Res if you want to import a reference to the media, but you do not want to store the media on the local storage.
- 15 Optional: Select a queueing option from the Add To Queue box.



If you are soft-importing the clips, you can generate proxies in the background. This gives you the ability to assemble the timeline while proxy generation is taking place. See [Importing and Soft-Importing in the Background](#) on page 260.

16 Click Load.

After you have imported or soft-imported all the sequences, you can import the corresponding EDLs to assemble a clip with unlinked media, then relink the clip to the DPX files in the reel.

Importing OpenEXR Files

When importing OpenEXR files into Backdraft Conform, select the import method based on the type of data contained within: multiple channels or high dynamic range images.

OpenEXR files are designed to support multiple resolutions and additional channels, making them appealing for compositing. Since OpenEXR can store arbitrary channels (such as specular, diffuse, alpha, RGB, normals, etc) in one file, it takes away the need to store this information in separate files. However, to support all channels in Backdraft Conform, they need to be converted to separate RGB clips upon import. These RGB files can then be modified and combined to reconstitute the final clip.

If you are importing such OpenEXR files, you can use WiretapCentral to set up OpenEXR transcoding jobs. These jobs output RGB image sequences to a location that is accessible to Backdraft Conform.

When importing multiple OpenEXR channels in Wiretap Central, you can only import OpenEXR files in 16-bit floating point format.

OpenEXR files can also store high dynamic range images. Because of the high dynamic range, these images need to be handled in a specific way. You can import a 16-bit floating-point format OpenEXR image file and view it in Backdraft Conform the same as any other type of image file. But, in order to perform any image processing or compositing on the OpenEXR image file, you must convert it to a 12-bit, 10-bit, or 8-bit linear format on Autodesk storage.

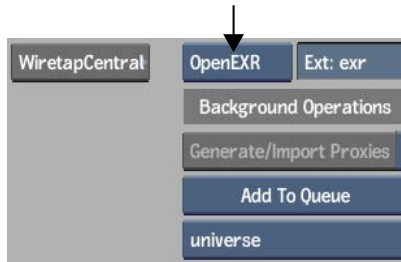
There are two ways that you can convert OpenEXR images:

- You can convert OpenEXR image files using the LUT Editor, and have control over which areas of the image that you want to highlight or preserve. See [Colour Management](#) on page 1165.

- Alternatively, you can select the Resize option and set the Bit Depth to 8-, 10-, or 12-bit to affect a linear resizing on the OpenEXR image file. Note that with this method you have no control over which areas get highlighted or preserved.

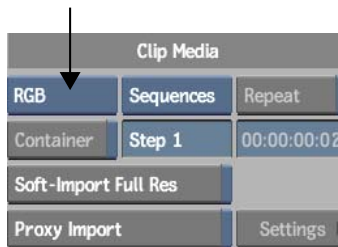
To import an OpenEXR image file:

- 1 From the clip library, click Import Image.
- 2 From the File Format box, select the OpenEXR image type.



The WiretapCentral button appears.

- 3 From the Channels box, select which channels you intend to import.



If you select MultiChannel, the Load button is grayed out and you must use WiretapCentral to import your files.

- 4 If you are importing multiple channel OpenEXR files, then click the WiretapCentral button.

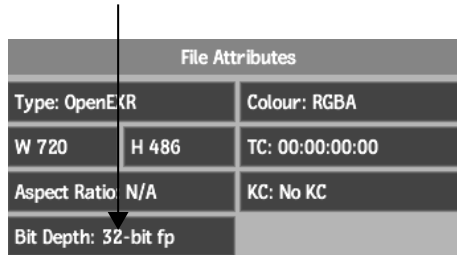
Wiretap Central opens in a browser window. Use it to decode your OpenEXR files to a format that is readable in Backdraft Conform.

See the Wiretap Central User Guide.

- 5 Browse to the directory containing the media that you want to import. You can set a number of display and search options to help you find what you need. See [Browsing the File System](#) on page 68.

NOTE By default, the file browser points to the images directory for the project.

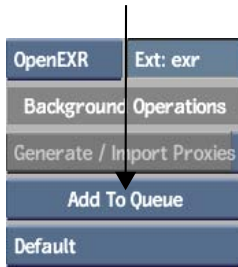
- 6 Optional: Enable the Scan Subdirectories button to display all the subdirectories and their contents.
- 7 Select the image that you want to import.
- 8 In the File attributes area, ensure that the Bit Depth used in the OpenEXR image file is displayed.



- 9 Optional: Specify a previously-created LUT.



- 10 Optional: Perform any resizing operations.
Adjusting the Bit Depth to anything other than 16-bit fp will cause a linear resizing to occur on the OpenEXR file, negating any of its dynamic qualities.
- 11 Enable Soft-Import Full Res if you want to import a reference to the media, but you do not want to store the media on the local storage.
- 12 Optional: Select a queueing option from the Add To Queue box.



If you are soft-importing the clips, you can generate proxies in the background. This gives you the ability to assemble the timeline while proxy generation is taking place. See [Importing and Soft-Importing in the Background](#) on page 260.

- 13 Click Load.

After you have imported the OpenEXR image, you can view it in its native resolution and bit depth.

- 14 To perform any image processing or compositing, you will need to convert it using the LUT Editor. See [Colour Management](#) on page 1165.

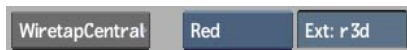
Importing RED Media Files

RED digital cameras record RAW media that is compressed using a proprietary codec. These RED media files require a computational-intensive debayering process to transcode to a file format that can be read by Backdraft Conform.

If you are importing RED media files, you can use WiretapCentral to set up RED media transcoding jobs. These jobs output RGB image sequences to a location that is accessible to Backdraft Conform.

To import a RED media file:

- 1 From the clip library, click Import Image.
- 2 From the File Format box, select the RED image type.



The WiretapCentral button appears and the Load button is greyed out.

- 3 Click the WiretapCentral button.

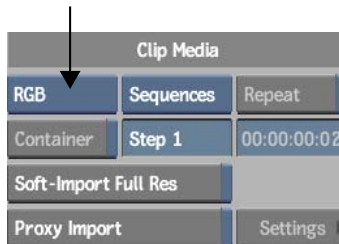
Wiretap Central opens in a browser window. Use it to decode your RED media to a format that is readable in Backdraft Conform.
See the Wiretap Central User Guide.

Importing RGBA Files

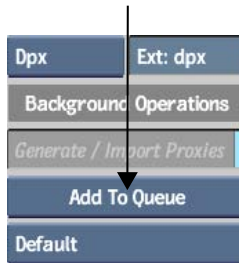
When you import an RGBA file into Backdraft Conform, you can import the RGB image and the alpha channel as separate clips. The alpha channel can be imported as is or inverted. You can also import the RGB image and alpha channel and place them in a matte container.

To import or soft-import an RGBA file:

- 1 From the clip library, click Import Image.
- 2 In the Import Image menu, browse to the directory containing the media with the alpha channel and select the files.
- 3 From the Channels box, select one of the following:
 - RGBA to import the image and the alpha as is, as separate clips.
 - RGBA Inverted to import the image and the alpha inverted, as separate clips.



- 4 Enable Soft-Import Full Res if you want to import a reference to the media, but you do not want to store the media on the local storage.
- 5 Optional: Select a queueing option from the Add To Queue box.



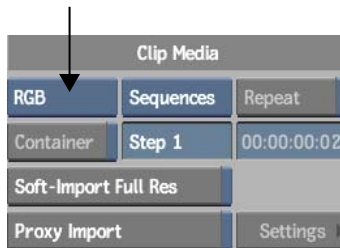
If you are soft-importing the clips, you can generate proxies in the background. This gives you the ability to assemble the timeline while proxy generation is taking place. See [Importing and Soft-Importing in the Background](#) on page 260.

- 6 Click Load.

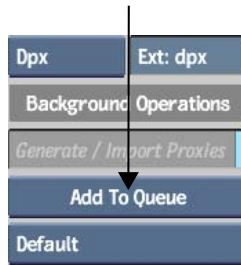
The RGB image and the alpha channel are loaded separately to the clip library.

To import or soft-import an RGBA file into a matte container:

- 1 From the clip library, click Import Image.
- 2 Browse to the directory containing the media with the alpha channel and select the files.
- 3 From the Channels box, select RGBA or RGBA Inverted.



- 4 Enable Container to create a matte container.
- 5 Enable Soft-Import Full Res if you want to import a reference to the media, but you do not want to store the media on the local storage.
- 6 Optional: Select a queueing option from the Add To Queue box.



If you are soft-importing the clips, you can generate proxies in the background. This gives you the ability to assemble the timeline while proxy generation is taking place. See [Importing and Soft-Importing in the Background](#) on page 260.

7 Click Load.

The RGB image and the alpha channel are loaded into the clip library and are merged into a single clip inside a matte container.

8 In the clip library, select the clip and click Load.

The file is loaded to the clip library and the words Matte Container are appended to the end of the filename.

Importing Adobe Photoshop Files

You can import Adobe Photoshop format files into your project without having to convert them. Photoshop files are usually created with multiple layers, each with its own image, matte, or blending effect. You can use the imported file's layers and effects, or you can import the file as a flat image so it appears as a single layer or frame.

Photoshop files have the following characteristics when imported:

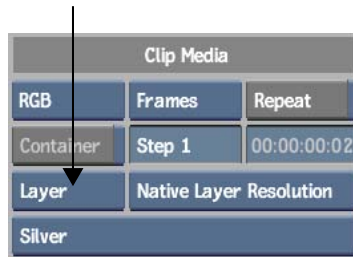
- Converted to 8 bits
- Progressively scanned
- Do not use a LUT
- Cannot be resized
- Cannot be soft-imported
- Cannot be imported in the background

To import a PSD file:

- 1 From the clip library, click Import Image.
- 2 From the File Format box, select Photoshop.

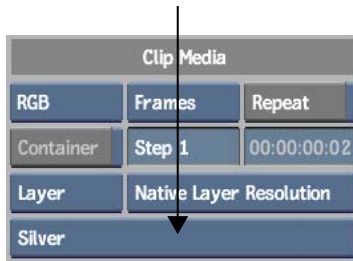


- 3 Select a Photoshop file in the browser.
- 4 Select an import option from the Photoshop Import Mode box.

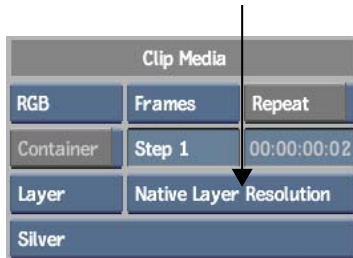


Select:	To:
Flat	Import all the layers in the Photoshop file as a single-frame clip.
All	Import all the layers in the Photoshop file as single frames in a front+matte sequence.
Layer	Import a single layer from a Photoshop file. You can choose the layer from the Select Layer box. The layer names are identical to those defined in the Photoshop file. If you selected RGBA in the Channels box, the file is imported as two clips (front and matte). If you selected RGB, the file is imported as a single clip (front).

- 5 If you selected Layer, then select the layer in the Photoshop file that you want to import from the Source Layer box.



- 6 If you selected All or Layer, then you must also select a resolution for the imported Photoshop file from the Photoshop Import Resolution box.



Select:	To:
Native Layer Resolution	Import the layers at their original resolution.
Background Resolution	Import the layers at the project's background resolution. Layers will be padded (black) and offset.

- 7 Click Load.

The Photoshop image and its selected layers are imported as frames in the clip library at the defined resolution.

Importing and Soft-Importing Video Files

Use the Import Image menu to import or soft-import one or more QuickTime movies or MXF media files to the current clip library. Both video and audio tracks are supported.

Audio files that are not 48 KHz are automatically resampled to 48 KHz on import. For video files that contain an alpha channel, you can maintain the alpha channel in the imported clip for use in compositing.

Before importing any P2 MXF content, ensure that the P2 recording devices that are used are set to record clip metadata in Type 2. This allows important metadata, such as timecode and the User Clip Name, to be assigned properly in the MXF file.

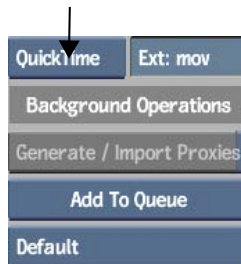
Note that you cannot import or soft-import P2 MXF content that contain 2:3 or 2:3:3:2 pulldown, or variable framerates (such as from Varicam cameras).

You can scan and import P2 MXF clips whose directory names are either all uppercase or all lowercase.

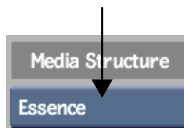
NOTE To import files created using unsupported video file formats or codecs, you can use Cleaner® XL to encode the files into a supported format. For example, use Cleaner XL to import video as a sequence of compatible still images. See the guide, *Using Cleaner XL with Autodesk Visual Effects and Finishing Applications*.

To import or soft-import a QuickTime movie or MXF media file:

- 1 From the clip library, click Import Image.
- 2 From the File Format box, select the format of the clip that you want to import.

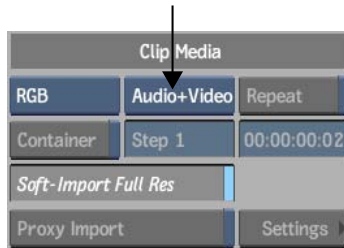


- 3 If you chose MXF, then select an option from the MXF Options box. Select P2 or XDCAM to import the timeline and all of the associated video and audio files (which are embedded in the timeline). Select Essence to import only specific audio or video files.



You can also import the entire MXF content and include only the audio files or only the video files. This allows you to preserve the clip timeline

while having the option of leaving out unwanted media. From the Clip Media group, select an option from the Media Stream box.



- 4 Browse to the directory containing the files that you want to import. If you are importing MXF content, then browse to the root directory containing the contents of the P2 card or Professional Disc.
- 5 Enable Scan Subdirectories to display all the subdirectories and their contents.
For MXF content, the available clip names appear in the browser.
- 6 Select the files.
- 7 Enable Soft-Import Full Res if you want to import a reference to the media, but you do not want to store the media on the local storage.



NOTE Certain options are disabled if you choose to soft-import the media.

- 8 Set the tape name for the imported clips and adjust any other Clip Metadata properties.
For QuickTime files, you can read the tape name and timecode from the file header, or enter the tape name and timecode manually. See [Clip Metadata Group](#) on page 231.

Clip Metadata		
Tape From File Header	File Header Timecode	Enter Keycode
	Start 00:00:00:00	No KC
Up 1 level	29.97 NDF	16/S16 mm / 1perf
Name:		Scan First File

NOTE A clip that is imported using an unsupported frame rate is converted to the frame rate specified for the current project. This causes the clip to appear out of sync with its audio. A comment specifying the original frame rate is added to the clip notes, providing the ratio needed if you choose to re-time the video.

- 9 If you are importing QuickTime files originating from a Mac[®] computer, apply gamma correction to bring the brightness of the image in line with the rest of your project. From the Colour Correction Type box, select Gamma, then from the Gamma Presets box, select Convert 1.8 to 2.2.

Processing		Default Resolutions	
Resize	Crop Edges	720 x 486 NTSC	
Aspect	Lanczos	W 720	H 486
Gamma	0.818	Set to 4:3	Ratio 1.333
Convert 1.8 to 2.2	8-bit	Field 1	

- 10 In the Movie attributes area, ensure that the codecs used in the video file are displayed.
- 11 Click Load.
The media files are imported to the clip library.

Importing and Soft-Importing in the Background

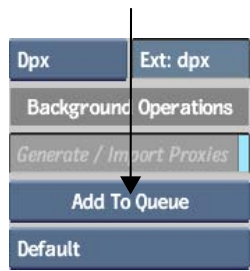
You can import one or more image or video files in the background while you perform other tasks. When soft-importing one or more image or video files, you can generate the proxies in the background.

To perform any of these tasks on several files at once, you can select them and then process them as a batch. You can assign different clip options to each file that you add to the queue. You can also import and export files simultaneously. Background tasks continue to completion even after you exit the application.

When importing files as a background process, you import them to a Destination clip library. The Destination library needs to be unlocked (you must not be currently browsing in it) for the operation to complete. If this library is locked, the new clip cannot be written to it. In this case, it gets placed temporarily in a generated library until the Destination library becomes available.

To import in the background:

- 1 From the clip library, click Import Image.
- 2 Select an option from the Add to Queue box.



This action will add the job to the Background Import/Export Queue.

Select:	To:
Add to Queue	Add the job to the queue.
Add to Queue & Execute	Add the job to the queue and execute it automatically. If there are any jobs in progress, this job (and any others already added to the queue with the Add to Queue & Execute option) will be triggered upon the completion of its predecessor.

The progress of the import or export job is indicated in the queue.

Status:	Indicates:
Pending	Job has been added to the queue but not executed.

Status:	Indicates:
Queued	Job has been initialised.
Running	Job is being performed.
Done	Job has been executed.

- 3 Continue building the Background Import/Export Queue:
 - If you are adding import jobs to the queue, you can continue using the file browser to locate other files that you want to import.
 - If you are adding export jobs to the queue, click Exit Export Image to return to the clip library, select the next clip to be exported, and repeat this procedure.
- 4 To manage the Background Import/Export Queue, see [Managing the Background Import/Export Queue](#) on page 311.

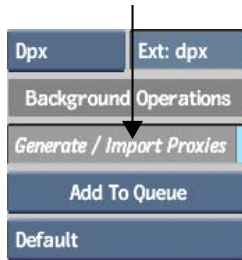
To generate proxies in the background:

- 1 From the clip library, click Import Image.
- 2 Enable Soft-Import Full Res.



The Generate / Import Proxies button becomes active.

- 3 Click Generate / Import Proxies.



The soft-import process occurs in the foreground, while the proxy generation process occurs in the background.

- 4 To manage the Background Import/Export Queue, see [Managing the Background Import/Export Queue](#) on page 311.

Importing and Soft-Importing Audio Files

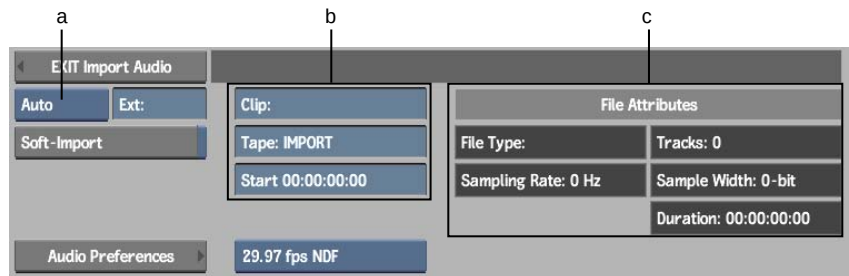
You can import or soft-import one or more audio files to the current clip library using the Import Audio menu. If your system has a CD-ROM drive, you can import music from a CD as MP3, WAV, or AIFF files.

The native audio sample rate for all Backdraft Conform projects is 48 kHz. Audio at a different sample rate that you import is automatically resampled to 48 kHz. Audio files that are soft-imported must be 48kHz.

To import an audio file:

- 1 Open the clip library to which you want to import the audio file and click Import Audio.

The Import Audio menu appears.



(a) File Format box (b) File Attributes area (c) Clip Properties area

- 2 From the Audio File Format box, select either the file extension of the file that you want to import, or Auto to automatically detect the file type. See the description of the File Format box in [About the Import Image Menu Options](#) on page 228 for information about the Auto option.

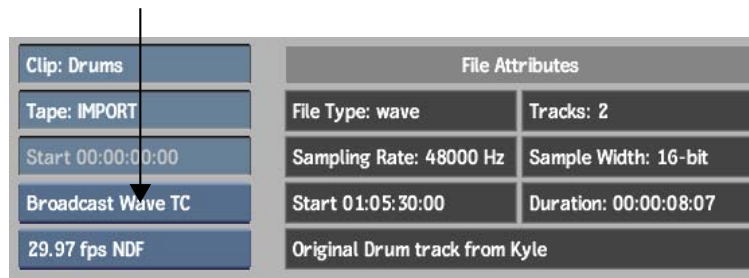
If you selected a file extension, the file browser displays audio files in the current directory with that file extension.

NOTE To browse the contents of a CD-ROM, type /CDROM in the Directory Name field.

- 3 Browse to the directory containing the audio files that you want to import, and then select the files.

If you select a single file, the audio file information appears below the browser.

- 4 If you are importing Broadcast Wave audio files, from the Wave TC box, select Broadcast Wave TC.



- 5 Enable Soft-Import if you want to import a reference to the media, but do not want to store the media on the Autodesk storage.

Changes to the media will update automatically. You do not have to re-soft-import the media.

- 6 Enter the clip properties for the imported audio files. See [About the Import Image Menu Options](#) on page 228.

NOTE Certain options are disabled if you choose to soft-import the media.

- 7 Click Load.

When the import is finished, audio clips appear in the current clip library as black proxies. Soft-imported audio clips are labelled with the file type in the lower-right corner.



NOTE If the Waveforms Enabled and Build on Input/Import options are enabled in the Audio Preferences menu, waveforms are built during the import.

To import music from a CD:

- 1 Insert a CD into your computer's CD-ROM drive.
- 2 Open the clip library to which you want to import the audio file and click Import Audio.
- 3 To detect the CD-ROM drive, enable CD ROM in the Import Audio File menu.



- 4 From the File Format box, select AIFF, WAV, or MP3.
- 5 Browse to the CD-ROM drive, and select the tracks that you want to load.
The songs on the CD may be listed numerically, such as *track1.aiff*, *track2.aiff*, etc.
- 6 Click Load.
The selected audio tracks are imported.

Deleting Media Files From the Filesystem Via Import Image

You can use the file browser in the Import Image menu to remove image files, including soft-imported image files, from the filesystem.

To remove media files:

- 1 From the clip library, click Import Image.
- 2 Display the directory containing the files that you want to remove.
- 3 Select the files.
- 4 Click Remove, then click Confirm.

NOTE If you remove soft-imported files, the source media is not deleted; only the reference to the clip is deleted.

Exporting Media Files

11

Topics in this chapter:

- [About Exporting Media Files](#) on page 267
- [Supported File Formats](#) on page 268
- [About the Export Image Menu Options](#) on page 271
- [Exporting Image Files](#) on page 279
- [Exporting RGBA Image Files](#) on page 281
- [Exporting DPX Files](#) on page 281
- [Exporting Video Files](#) on page 284
- [Working with Codec Profiles](#) on page 287
- [Exporting Image Files in the Background](#) on page 291
- [Exporting Audio Files](#) on page 292
- [Exporting Media to Cleaner XL for Encoding](#) on page 295
- [Deleting Media Files From the Filesystem Via Export Image](#) on page 299

About Exporting Media Files

At various times during the post-production process, you may need to export media files from Backdraft Conform. You can export still images (for example, TARGA, JPEG, TIFF), QuickTime video files, and audio files (for example, AIFF, MP3, WAV) from your Backdraft Conform project.

You can export files one at a time, or add them to a queue for background export. There may also be occasions where you need to create still images from your clips, for example, for promotional material. Or, you may need to create video files for inclusion on a Web site. You can export graphic and audio files either in the foreground or background. You can export video files only in the background.

Supported File Formats

You can export image files using a number of industry-standard file formats. Each file format is exported using a default file extension.

Supported Image File Formats

Backdraft Conform supports export of the following still image file formats.

File Format	Default File Extension	Bit Depth
Alias	als	8 bits
Cineon	cin	10 bits
DPX	dpx	8, 10, or 12 bits
DPX RGBA	dpx	8 bits
Jpeg	jpg	8 bits
OpenEXR	exr	16 fp bits
Pict (Macintosh)	pict	8 bits
Pixar	picio	8 bits
SGI	sgi	8 or 16 bits
Softimage	pic	8 bits
TARGA	tga	8 bits
Tdi/Maya	iff	8 or 16 bits

File Format	Default File Extension	Bit Depth
Tiff	tif	8 or 16 bits
Wavefront	rla	8 or 16 bits

Supported Audio File Formats

Backdraft Conform supports export of the following audio file formats.

File Format	Default File Extension	Bit Depth (for Export)
AIFF-C	aifc	16, 24, or 32 (float)
AIFF	aiff	16 or 24
Nextsnd	au	16, 24, or 32 (float)
MP3	mp3	na
Broadcast Wave	wav	16, 24, or 32 (float)
Berkeley/IRCAM/CARL Sound (BISCF)	bsf	16
Audio Visual Research	avr	16

Supported QuickTime File Codecs

Backdraft Conform supports export of QuickTime files encoded with any of the following codecs.

NOTE When exporting DNxHD files in interlaced mode, DNxHD recognizes only Field 1.

Broadcast CODEC	CODEC Flag	Comment
10-bit Packed YUV 4:4:4	v410	Lossy codec. Avoid using for intermediates.

Broadcast CODEC	CODEC Flag	Comment
10-bit Packed YUV 4:2:2	v210	Lossy codec. Avoid using for intermediates. Blackmagic or AJA-Kona 10-bit compatible
8-bit Planar YUV 4:4:4	v308	Lossy codec. Avoid using for intermediates.
8-bit Packed YUV 4:2:2	yuv2	Lossy codec. Avoid using for intermediates. Blackmagic or AJA-Kona 8-bit compatible.
8-bit Packed YUV 4:2:2	2vuy	Lossy codec. Avoid using for intermediates. Blackmagic or AJA-Kona 8-bit compatible.
DV 25 NTSC	dvc	
DV 25 PAL	dvcp, dvpp	
DVCPRO 50 NTSC	dv5n	Panasonic standard
DVCPRO 50 PAL	dv5p	Panasonic standard
DNxHD	avdn	36, 145, 220 (8 bits) 220x (10 bits)
File CODEC	CODEC Flag	Comment
MPEG-4	mp4v	Progressive only
PhotoJPEG	rtjpeg	RT PhotoJPEG compatible
Motion JPEG-A	mjpa	JPEG compatible, progressive only
PNG	png	Portable Network Graphic sequence (no alpha support)
PNGA	pngalpha	Portable Network Graphic sequence (with alpha support)
RGB Uncompressed	raw	No alpha support
RGBA Uncompressed	rawalpha	With alpha support

Audio CODEC	CODEC Flag	Comment
IMA 4:1	ima4	
Twos	twos	16-bit PCM (Big Endian)
Ulaw	ulaw	
Sowt	sowt	16-bit PCM (Little Endian)
A-law 2:1	alaw	
24-bit PCM	in24	
Linear PCM (QT 7)	lpcm	
32-bit float	fl32	
MPEG-2 Layer 2 Audio	mp2	

About the Export Image Menu Options

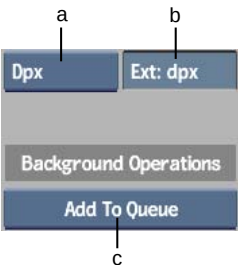
The Export Image menu contains a large variety of options that can be used when exporting image or video files. The menu is divided into seven functional groups:

- File Operations
- Export Options
- Quality
- Resizing
- Transfer Characteristics
- Proxies
- Export Video Options

For descriptions of additional options in the Export Image menu, see [Browsing the File System](#) on page 68.

File Operations Group

Use the options in the File Operations group to select the File Format of the exported image and to set background output operations.



(a) File Format box (b) File Extension field (c) Background Export box

File Format box Select the image format that you want to export.

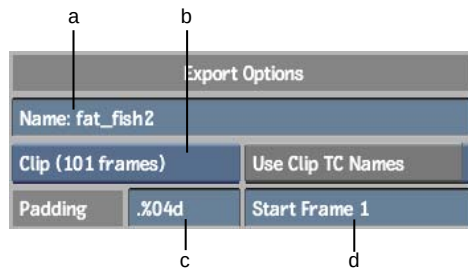
File Extension field Displays the default extension for the file type selected in the File Format box. By clicking it you activate the field, allowing you to enter a different extension for the exported file.

Background Export box Select a method to export images in the background. See [Exporting Image Files in the Background](#) on page 291.

Select:	To:
Add to Queue	Add the job to the queue.
Add to Queue & Execute	Add the job to the queue and execute it automatically. If there are any jobs in progress, this job (and any others already added with the Add to Queue & Execute option) will be triggered upon the completion of its predecessor.

Export Options Group

When you export a clip, you have a number of options for naming and numbering the sequence of image files that are generated. Image files can be numbered sequentially so that the order of frames in the clip can be maintained if you later import the clip. You can also specify the start number in a sequence of images.



(a) Clip Name field (b) Frame/Clip box (c) Padding Format field (d) Start Frame Number field

Clip Name field Displays the name of the current clip. By clicking the field you activate it so that you can modify or enter a clip name.

Frame/Clip box Select whether you are exporting a single frame or a clip.

Select:	To:
Single Frame	Export a clip composed of one frame. If the clip has more than one frame, only the first frame is exported.
Clip	Export a clip composed of several frames. The number of frames in the clip is displayed.

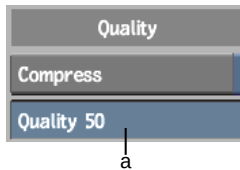
Use Clip TC Names button Enable to set the start number of the exported sequence of numbered image filenames based on the timecode read from the clip file.

Padding Format field Edit the padding format string that adds leading zeros before the number in the exported filename. This ensures that the images are listed and stored in the correct order. The default padding format scheme is `%04d`, where the “0” indicates that leading zeros will be appended to the filename for each frame, when there are fewer than four digits in the sequence number, and the “4d” indicates that four digits will be maintained. You could use 3, 5, or any other number instead. However, four digits are sufficient for most clips, as they provides correct numbering in clips up to 9999 frames long.

Start Frame Number field Enter the start number to be used in the exported sequence of numbered image files. This field is not active when Use Clip TC Names is enabled.

Quality Group

Depending on the file format you are exporting, you may have the option of applying image compression to the exported frames to create smaller files. When compressing files, keep in mind that as you increase the compression, you decrease the quality of the image.



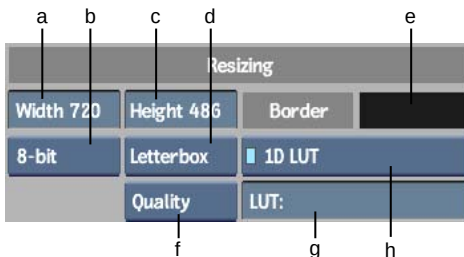
(a) JPEG Quality field

Compress button Enable to apply compression to the exported file, resulting in smaller file size (and lower image quality). This button is active when File Format is set to OpenEXR, SGI, or Tiff. The compression type used for OpenEXR files is RLE (lossless).

JPEG Quality field Specifies the degree of quality versus compression. A value of 0 gives the lowest quality (and highest compression), while a value of 100 gives the best quality (but applies no compression). This button is active only when File Format is set to JPEG.

Resizing Group

You can change the size, aspect ratio, bit depth, image quality, and border colour when exporting images.



(a) Frame Width field (b) Bit Depth box (c) Frame Height field (d) Fit Method box (e) Border Colour pot (f) Resize Filter box (g) LUT Name field (h) Colour Correction Type box

Frame Width field Displays the frame width of the selected clip. By clicking it you activate the field, allowing you to enter the frame width value that you want to use on export.

Frame Height field Displays the frame height of the selected clip. By clicking it you activate the field, allowing you to enter the frame height value that you want to use on export.

Border Colour pot Displays the colour that is used for the border. When you click the colour field, the colour picker appears. From the colour picker you can select the colour to be used for the border when the aspect of the image is resized on export.

Bit Depth box Select a bit depth to be used on export. Some file formats support multiple bit depths. Bit Depth is active only when Resize is enabled.

Fit Method box Select a fit method option to be applied to the exported clip.

Select:	To:
Centre/Crop	Fit the source image, centred, over the destination frame. If the source is larger than the destination, it is cropped. If the source is smaller than the destination, it is surrounded by a black border.
Crop Edges	Fit one edge of the source into the destination frame without stretching or squashing the frame. Excess parts of the source frame after resizing are cropped. If the source—after the one edge is resized—is wider than the destination, its overhanging left and right edges are cropped. If the source is taller than the destination, the upper and lower edges are cropped.
Fill	Fit the source, width, and height, into the destination frame. If the source and destination frames do not have the same aspect ratio, the image can become distorted.
Letterbox	Fit the source to the destination frame without squashing or stretching it, and without cropping the source. If the source is wider than the destination, black bars fill the top and bottom of the destination frame. If the source is narrower than the destination, black bars fill the right and left sides of the frame. In all cases, the entire source frame is contained within the destination frame.
Pan	Apply X and Y offsets (with 0,0 pinning the lower-left corners of each frame) to place the source over the destination frame. If the source is larger than the destination, or lies off the edges of the destination frame

Select:	To:
	due to offsets, it is cropped. Empty space in the frame is filled with black.

Resize Filter box Select the filter option to determine the quality of the interpolated resize result. The Resize Filter box is active only if Fit Method is set to Crop Edges, Fill, or Letterbox.

Select:	To get:
Impulse	Quick, low-quality results.
Triangle	Moderate results with little processing overhead.
Mitchell	Best results when resizing a clip to a higher resolution.
Bicubic	Very good results for resizing soft-looking images. Use to sharpen the image.
Quadratic	Good results for resizing simple images with straight edges. Similar to Gaussian but with more blurring. Use to soften the image.
Gaussian	Excellent results when resizing a clip with no patterns and a lot of straight edges to a lower resolution. Useful for softening some detail.
Shannon	Excellent results when resizing a clip to a lower resolution. Very similar to Lanczos, but results are a little softer.
Lanczos	Best results when resizing a clip containing a variety of patterns and elements to a lower resolution. It is the most complex with the longest processing time.

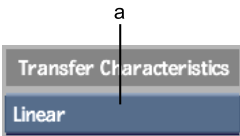
Colour Correction Type box Select what type of colour correction to use. Selecting 1D LUT or 3D LUT activates LUT Name and uses a Lookup Table on export. Selecting Gamma activates the Gamma Presets box and the Gamma Correction field. Click LED to switch between On (blue) and Off (gray).

LUT Name field Displays the name of the currently used LUT file. When clicked, a browser appears containing the LUTs currently residing in the project `~/lut` directory. These include the samples provided with Backdraft Conform, as well as any LUTs you may have saved or exported to this directory. LUT Name is active only when you enable the Colour Correction Type box.

DPX Transfer Characteristics Group

When exporting DPX files, you can choose a DPX Transfer Characteristic. A DPX Transfer Characteristic is information that is stored in the DPX image file header. It identifies the attributes associated with a particular film or video format, such as resolution, frame rate, and colour space.

Setting a Transfer Characteristic in no way changes the image information stored in the DPX file. The Transfer Characteristic simply indicates the attributes of the DPX file to another device or application. Some devices or applications may take advantage of this information to improve workflow. For example, selecting Logarithmic can allow a film recorder to adjust its parameters to print film-originated DPX files with the correct densities.



(a) Transfer Characteristics box

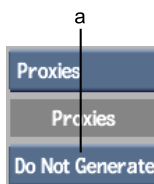
Transfer Characteristics box Select a DPX Transfer Characteristic to identify the attributes associated with a particular film or video format, such as resolution, frame rate, and colour space. Transfer Characteristics is only active when File Format is set to DPX.

Select:	For:
Z depth homogenous, Z depth linear, PAL, NTSC, CCIR 601 (525), CCIR 601 (625), CCIR 709-1, SMPTE 240M	Images that you want to identify as one of these types. Although the SMPTE 268M standard defines these DPX Transfer Characteristics, it does not provide usage specifications for them. As a result, these Transfer Characteristics are not generally used in the industry.
Unspecified	Images where the format is not specified.
Logarithmic	Negative film scanners recording status M densities.
Linear	Video images which have built-in gamma correction. This refers to images having a true linear quantization scheme (such as CG-originated material).

Select:	For:
Printing Density	Negative film scans which use the SMPTE Printing Density settings. SMPTE Printing Densities use status M density measurements with a higher gain in the red component.

Proxies Group

You can generate proxies when you export a clip. You can see the proxies when viewing the image files in the file browser using Proxies mode. If a proxy has not been generated for an image file, the proxy appears grey.



(a) Proxy Generation box

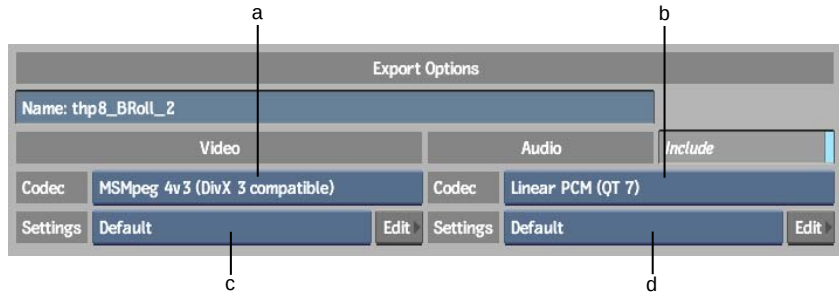
Proxy Generation box Select an option to determine how to generate proxies when you export a clip.

Select:	To:
Do not Generate	Not generate a proxy for the exported clip.
One Per Clip	Generate one proxy for the exported clip.
One Per Frame	Generate a proxy for every frame of the exported clip.

Export Video Options

Export Video options are active only when you are exporting a QuickTime video. You can export video files of almost any size. You can apply different compression rates to create files with a suitable trade-off between image quality and file size.

The Export Image menu changes slightly to accommodate the Export Video options.



(a) Video Codec box (b) Audio Codec box (c) Video Codec Presets box (d) Audio Codec Presets box

Video Codec box Select a video compression codec when exporting QuickTime files.

Audio Codec box Select an audio compression codec when exporting QuickTime files.

Video Codec Presets box Select a previously defined video compression codec profile when exporting QuickTime files.

Audio Codec Presets box Select a previously defined audio compression codec profile when exporting QuickTime files.

Exporting Image Files

You can export a clip or a single frame a clip library to the filesystem or a storage device. After you have exported a clip, you can use it on other platforms (for example, Macintosh or Windows®).

When you export a clip to the filesystem, each frame in the clip is saved as a separate image file. The images are assigned sequential numbers that are appended to the filename.

The procedures for exporting image files from the clip library are presented here.

To export an image file:

- 1 Open the clip library containing the clip that you want to export.
 - 2 Select the clip.
 - 3 Click Export Image.
- The Export Image menu appears.

- 4 In the file browser, browse to the directory where you want to export the clip.
- 5 From the File Format box, select the export file format.

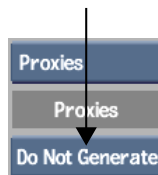


- 6 Optional: Change the default file extension.
- 7 To change the name of the exported image file, enter a name in the Name field.



NOTE To avoid filename compatibility issues upon export, underscores will be substituted in your filename in place of any of the following characters: `# ~ @ \$ % ^ & * () [] { } < > \ | / ! ? , ; : ' "

- 8 In the Frame/Clip box, specify whether you are exporting a single frame or a clip.
- 9 Adjust any other parameters for file numbering, compression settings, resizing options, or to use a predefined LUT. See [Export Options Group](#) on page 272, [Quality Group](#) on page 274, or [Resizing Group](#) on page 274.
- 10 To generate thumbnail proxies for the file browser, select an option from the Proxy Generation box. See [Proxies Group](#) on page 278.



11 Click Export.

The files are generated and saved in the specified location.

When the export is finished, you are returned to the clip library.

Exporting RGBA Image Files

You can export two clips (a Front clip and a Matte clip) as a single file with an embedded alpha channel. This exported file can then be used as a layer in other compositing or editing applications.

To export an RGBA file:

1 Open the clip library containing the clip that you want to export.

2 Select the Front clip.

3 While holding down the **Ctrl** key, select the Matte clip (this is to be exported as the alpha channel).

4 Click Export Image.

The Export Image menu appears.

5 In the File Format box, select a file type that supports an alpha channel (such as Targa).

6 Set the path and filename for the exported file.

NOTE To avoid filename compatibility issues upon export, underscores will be substituted in your filename in place of any of the following characters: `# ~ @ \$ % ^ & \* ( ) [ ] { } < > \ ! / ? , ; : ' " `

7 Set any additional export options. See [About the Export Image Menu Options](#) on page 271.

8 Click Export.

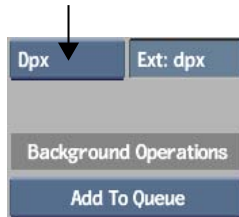
An RGBA file is created from the front clip and the matte clip.

Exporting DPX Files

You can export DPX files while taking advantage of all their inherent properties, such as LUTs and DPX Transfer Characteristics.

To export a DPX file:

- 1 Open the clip library containing the clip that you want to export.
- 2 Select the clip that you want to export and click Export Image.
The Export Image menu appears.
- 3 In the file browser, browse to the directory to which you want to export the clip.
- 4 From the File Format box, select DPX.



- 5 To change the name of the exported DPX file, enter a name in the Name field.



NOTE To avoid filename compatibility issues upon export, underscores will be substituted in your filename in place of any of the following characters: `# ~ @ \$ % ^ & \* ( ) [ ] { } < > \ | / ! ? , ; : ' "`.

- 6 Specify whether you are exporting a single frame or a clip in the Frame/Clip box.
- 7 Enable Use Clip TC Names, if you would like to use the timecode contained in your clip to number the exported files.
- 8 Adjust any other file numbering parameters. See [Export Options Group](#) on page 272.
- 9 From the Bit Depth box, select a bit depth value.



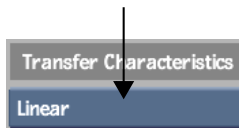
DPX files can be exported as 8-bit, 10-bit, or 12-bit clips.

- 10 To use a predefined LUT, load it using the Colour Correction Type box.



See [Applying a LUT on Import or Export](#) on page 1181.

- 11 Adjust any other parameters for resizing options. See [Resizing Group](#) on page 274.
- 12 Select a DPX Transfer Characteristic.



This is used to identify the attributes associated with a particular film or video format, such as resolution, frame rate, and colour space. The commonly used options are listed here. See [DPX Transfer Characteristics Group](#) on page 277.

Select:	For:
Unspecified	Images where the format is not specified.
Logarithmic	Negative film scanners recording status M densities.
Linear	Video images which have built-in gamma correction. This refers to images having a true linear quantization scheme (such as CG-originated material).

Select:	For:
Printing Density	Negative film scans which use the SMPTE Printing Density settings. SMPTE Printing Densities use status M density measurements with a higher gain in the red component.

- 13 To generate thumbnail proxies for the file browser, select an option from the Proxy Generation box. See [Proxies Group](#) on page 278.
- 14 Click Export.
The DPX files are generated and saved in the specified location.
When the export is finished, you are returned to the clip library.

Exporting Video Files

You can encode clips into QuickTime. You can export files of almost any size and, depending on the QuickTime file format, you can apply variable compression rates to create video files with a suitable trade-off between image quality and file size.

If your video clip contains audio that extends before or after the video portion, ensure that the Consider Audio Head/Tail button is enabled. See [Audio Preferences](#) on page 538.

You can export QuickTime video files by adding them to the render queue and rendering them as a background process. When you export video files, the following frame size requirements must be met.

For this file type:	Frame size must be a multiple of:
QuickTime	4 (width only) for most compression schemes

NOTE If you enter an incorrect frame size in the Width or Height field in the calculator, the closest correct value below that which you entered is used.

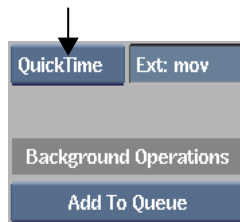
When exporting QuickTime MPEG-4 files, ensure that you export the clip in Progressive mode, rather than Interlaced mode. QuickTime MPEG-4 clips exported in Interlace mode are not supported properly on Mac computers.

You can also use Cleaner XL to export video file formats. The advantage of using Cleaner XL rather than native video export is that it offers a much broader range of export formats and compression options. Its export process

also runs on a separate computer, which is dedicated to the encoding process. See [Exporting Media to Cleaner XL for Encoding](#) on page 295.

To export a video file:

- 1 Open the clip library containing the clip that you want to export.
- 2 Select the clip.
- 3 Click Export Image.
The Export Image menu appears.
- 4 In the file browser, browse to the directory where you want to export the clip.
- 5 From the File Format box, select QuickTime.



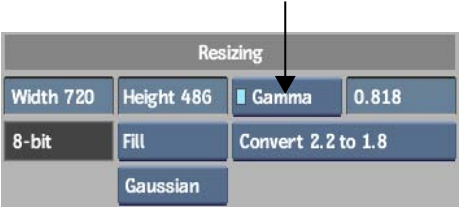
- 6 Optional: Change the default file extension.
- 7 To change the name of the exported image file, enter a name in the Name field.



NOTE To avoid filename compatibility issues upon export, underscores will be substituted in your filename in place of any of the following characters: `# ~ @ \$ % ^ & * () [] { } < > \ | / ! ? , ; : ' "

- 8 Select a video codec. If you are using DVCPProHD resolutions, note that the available progressive framerates (not fields) are listed for each.

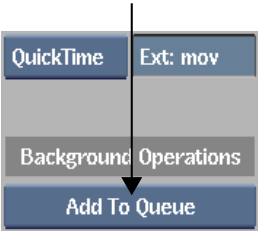
- 9 Select a predefined codec profile for the selected video codec. See [Working with Codec Profiles](#) on page 287.
- 10 If an audio track is available, enable Include and select an audio codec. AudioDesk settings are always applied to the exported audio track.
- 11 Select a predefined codec profile for the selected audio codec. See [Working with Codec Profiles](#) on page 287.
- 12 In the Frame/Clip box, specify whether you are exporting a single frame or an entire clip.
- 13 To resize the exported video, use the resizing options, such as Width, Height, and Fit Method. See [Resizing Group](#) on page 274.
- 14 To apply gamma correction or to use a predefined LUT, load it using the Colour Correction Type box.



When exporting files to a Mac, use Convert 2.2 to 1.8 for gamma correction.

See [Applying a LUT on Import or Export](#) on page 1181.

- 15 Select an option from the Add to Queue box.

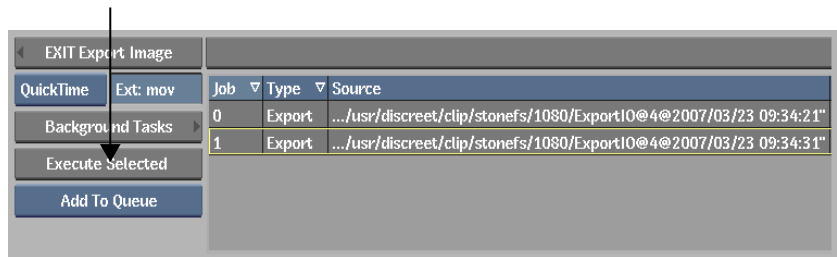


Select:	To:
Add to Queue	Add the job to the queue.
Add to Queue & Execute	Add the job to the queue and execute it automatically. If there are any jobs in progress, this job (and any others

Select:	To:
	already added to the queue with the Add to Queue & Execute option) is triggered upon the completion of its predecessor.

Selecting an option from the Add to Queue box adds the export job to the Background Import/Export Queue. Video files can only be exported as a background process.

- 16 Swipe left or right to display the Import/Export Queue menu.
- 17 Select the files in the export queue that you want to export, and then click Execute Selected.



The selected clips are exported. When the export is finished, you are returned to the clip library.

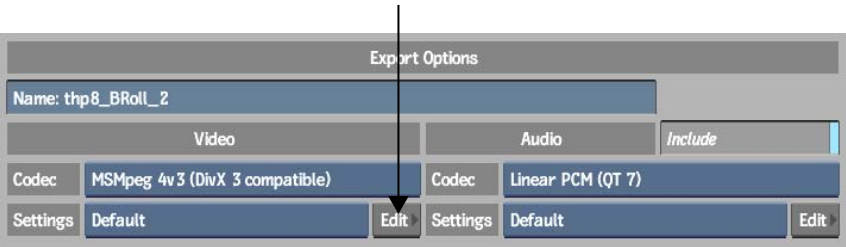
Working with Codec Profiles

You can create a custom profile for a particular codec to use for specific jobs. Using the Codec Profile Editor, you can customize parameters, such as compression settings, and create a library of different codec settings that you can use anytime. Depending on the codec, the settings of some parameters may be dependent on others. In some instances, a particular field may, therefore, revert to its original setting. The codec profiles appear only for the codec for which the profile was created. You can also delete any codec profile, or load codec profiles created in another application.

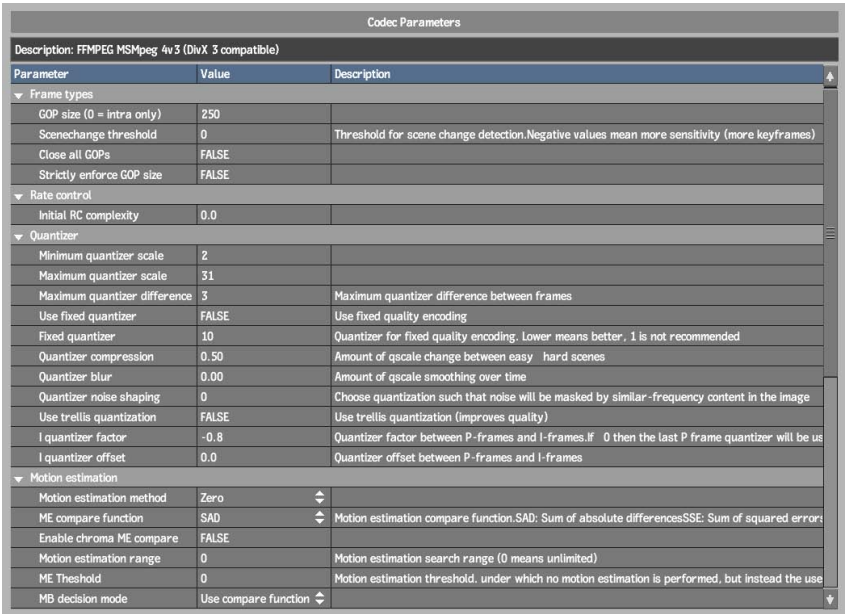
To edit or create a new codec profile:

- 1 Open the Export Image menu and, from the File Format box, select QuickTime.

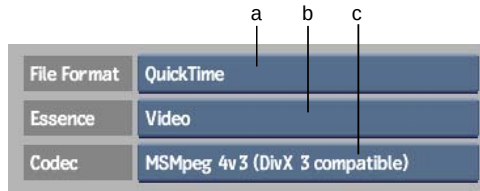
- 2 Click the Edit button for the video codec or audio codec that you want to modify.



The Codec Profile Editor appears.

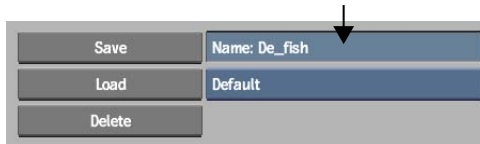


- 3 If needed, select a different codec, switch between audio and video codecs, or edit a codec profile that you previously created.



(a) File Format box (b) Essence box (c) Codec box

- 4 In the Codec Parameters list, make any changes that you need to the parameters for your specified codec.
- 5 When your modifications are done, enter a new name in the Name field, and then click Save.

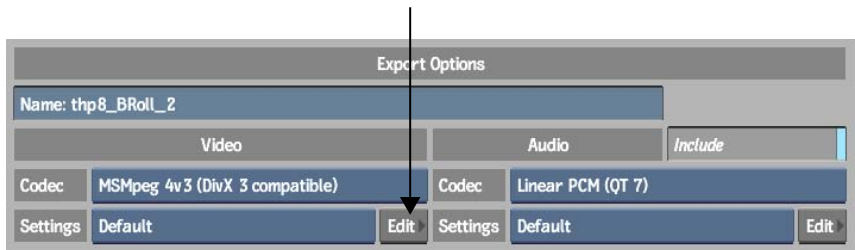


Your new codec profile is saved. It appears in the list of available codec profiles when you select the codec for which the profile was created.

- 6 Click Exit Movie Presets to go back to the Export Image menu.

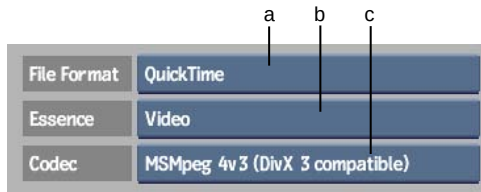
To delete an existing codec profile:

- 1 Open the Export Image menu and, from the File Format box, select QuickTime.
- 2 Click the Edit button for the video codec profile or audio codec profile that you want to delete.



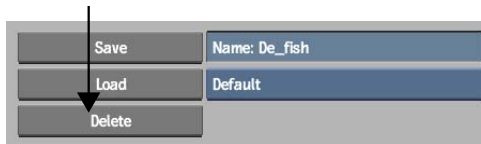
The Codec Profile Editor appears.

- 3 If needed, select a different codec, switch between audio and video codecs, or select a different codec profile to delete.



(a) File Format box (b) Essence box (c) Codec box

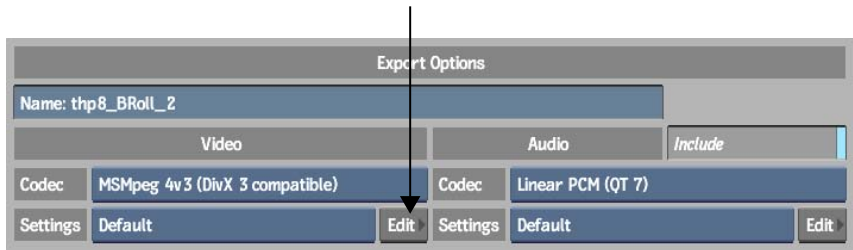
- 4 Click Delete.



The selected codec profile is removed, and no longer appears in the list of available codec profiles.

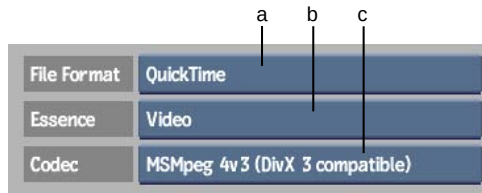
To load a profile:

- 1 Open the Export Image menu and, from the File Format box, select QuickTime.
- 2 Click the Edit button for the video codec or audio codec for which you want to load a profile.



The Codec Profile Editor appears.

- 3 If needed, select a different codec or switch between audio and video codecs.



(a) File Format box (b) Essence box (c) Codec box

- 4 Ensure that the Name field is clear, and click Load.



The browser opens in the *codecpfiles* directory.

- 5 Browse to the directory containing the codec profiles that you want to load, and then click Load.

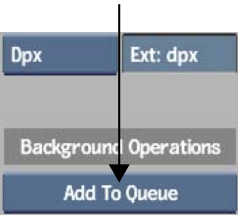
The new codec profiles now appear in the list of available codec profiles for the selected codec.

Exporting Image Files in the Background

You can export one or more image files in the background while you perform other tasks. You can export several files at once by selecting them and then processing them as a batch. You can assign different clip options to each file that you add to the queue.

To export in the background:

- 1 Open the clip library containing the clip that you want to export.
- 2 Select the clip.
- 3 From the Destination Library box, select a clip library.
- 4 From the Add to Queue box, select a background export option.



Select:	To:
Add to Queue	Add the job to the queue.
Add to Queue & Execute	Add the job to the queue and execute it automatically. If there are any jobs in progress, this job (and any others already added to the queue with the Add to Queue & Execute option) is triggered upon the completion of its predecessor.

This adds the export job to the Background Import/Export Queue. The progress of the export job is indicated in the queue.

Status:	Indicates:
Pending	Job has been added to the queue but not executed.
Queued	Job has been initialised.
Running	Job is being performed.
Done	Job has been executed.

- 5 If you are adding more export jobs to the queue, click Exit Export Image to return to the clip library, select the next clip to be exported, and repeat this procedure.
- 6 To manage the Background Import/Export Queue, see [Managing the Background Import/Export Queue](#) on page 311.

Exporting Audio Files

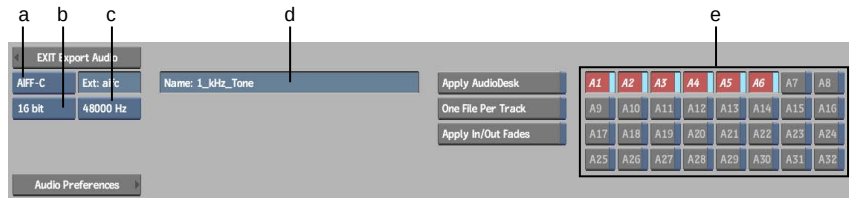
You can export audio from the current clip library to the filesystem as a multichannel audio file. This can be an audio-only clip or a video clip with

audio. When you export audio, any uncommitted material is temporarily hard-committed (processed) and included in the exported file.

To export an audio file from a clip library:

- 1 Open the clip library containing the audio that you want to export.
- 2 Select the clip that contains the audio that you want to export.
- 3 Click Export Audio.

The Export Audio File menu appears.



(a) File Format box (b) Audio Bit-depth box (c) Sample Rate box (d) Name field
(e) Track Selection area

- 4 Use the browser to find the directory where you want to save the audio file.
- 5 From the File Format box, select an audio file format.
- 6 From the Sample Rate box, select the sample rate.
- 7 Set the audio bit-depth using the Audio Bit-depth box.
The available choices are: 16 bit, 24 bit, or 32 bit (float), depending on the file format selected. The default is 16 bits.
- 8 Enter a name for the file in the Name field and press **Enter**.

NOTE To avoid filename compatibility issues upon export, underscores will be substituted in your filename in place of any of the following characters: ` # ~ @ \$ % ^ & * () [] { } < > \ | / ! ? , ; : ' "

- 9 If you are exporting MP3 files, set any of the available MP3 export options to be used for encoding.

Name: Hawks_SioMo	
Compression Options	
Average Bitrate	128 kbps
High Quality (slow)	Min 64 kbps
High VBR Quality	Max 320 kbps

a
b
c
d
e
f

(a) VBR Quality box (b) Quality box (c) Bitrate Encoding Type box (d) Maximum Average Bitrate box (e) Minimum Average Bitrate box (f) Bitrate box

Bitrate Encoding Type box Select the type of bitrate encoding. Constant Bitrate encoding uses a single fixed bitrate for the entire file. Variable Bitrate encoding is a two-pass process of analyzing and then compressing movies to an optimal data rate. Average Bitrate encoding is similar to Variable Bitrate encoding except that it works within a set minimum and maximum bitrate.

Quality box Select the quality of the encoding algorithm. This affects the speed of the encoding.

VBR Quality box Select the number of bits used in the encoding as a factor of quality level. This affects the encoded file size.

Bitrate box Select a bitrate value.

Minimum Average Bitrate box Select the minimum bitrate to be used when Average Bitrate encoding is selected.

Maximum Average Bitrate box Select the maximum bitrate to be used when Average Bitrate encoding is selected.

- 10 If you are exporting a Broadcast Wave file, ensure that the timecode for the audio file does not start at a negative value (before 00:00:00:00).

Broadcast Wave files do not support negative timecode values. If the timecode for your audio begins before 00:00:00:00 you will need to confirm that export can proceed starting only from 00:00:00:00. The section of audio in the negative timecode area will not be exported.

- 11 Optional: Enable Apply AudioDesk.

If you enable this option, the selected clip's AudioDesk settings are applied to the exported file. For instance, if you mix multiple tracks in an audio clip to stereo, you get two audio tracks (left and right panned) in the exported file. This process is equivalent to an audio mix down.

- 12 Optional: Enable One File Per Track.

When you enable this option, one file of the specified type is exported for each audio track. Each audio track is given a distinct filename (for example, *Clip_track1.aiff*, *Clip_track2.aiff*, and so on).

13 Optional: Enable Apply In/Out Fades.

If you enable this option, a short fade is added at the start and end of the audio clip. The length of the in/out fades can be set in the Audio Preferences panel via the Auto Fade slider. The length is from 0 to 10ms.

14 Enable the audio tracks that you want to export in the Track Selection area.

15 Click Export.

The audio file is exported to the specified directory.

Exporting Media to Cleaner XL for Encoding

You can export clips containing images, video, and audio to be encoded by Cleaner XL into one of a variety of formats, using the Export Image menu. You can export clips containing soft-imported segments as well.

NOTE The Cleaner encoding option is available only if a Cleaner XL render node has been installed on your Autodesk® Backburner® Distributed Queueing System (the network rendering system). This would have been installed and configured by your systems administrator. See the *Using Cleaner XL with Autodesk Visual Effects and Finishing Applications* guide.

Note the following considerations when encoding with Cleaner XL:

- You can export clips with or without audio, as well as clips containing audio only, from the Export Image menu. The Cleaner option is not available from the Export Audio menu.
- Cleaner XL can only encode 8-bit clips. Clips of a greater bit depth are automatically resized to 8 bits upon export.
- You cannot export clips with a matte or encode RGBA files when exporting to Cleaner XL.
- You cannot export a range from a clip to Cleaner XL.

To encode media from Backdraft Conform with Cleaner XL:

- 1** Open the clip library containing the clip that you want to export.

- 2 Select the clip. You can select a clip with or without audio, or a clip containing audio only.

- 3 Click Export Image.

The Export Image menu and file browser appear.

- 4 From the File Format Box, select Cleaner.

NOTE If you selected an audio clip to export, then Format will be automatically set to Cleaner.

The Cleaner Export menu appears.

The screenshot shows the 'EXIT Export Image' dialog box. It has a 'Cleaner' button and an 'Ext:' field. The 'Export Options' section contains five fields: 'Name: fat_fish2' (labeled 'a'), 'Profile:' (labeled 'b'), 'Path: C:\Cleaner_Encodes' (labeled 'd'), 'E-mail Notification' (labeled 'c'), and 'E-mail:' (labeled 'e'). There is also a 'Background Operations' section with an 'Add To Queue' button.

(a) Name field (b) Output Profile field (c) Output Profile Description field
(d) Destination Path field (e) E-mail Notification field

- 5 If necessary, click the Name field to activate it, and edit the name for the exported clip.

NOTE To avoid filename compatibility issues upon export, underscores will be substituted in your filename in place of any of the following characters: ` # ~ @ \$ % ^ & * () [] { } < > \ | / ! ? , ; : ' "

- 6 Confirm that the Destination Path field contains the correct path where the output job will be saved on the Cleaner XL render node. Normally, you do not need to change this. This information should have been entered by your systems administrator when Cleaner XL was installed. If the Destination Path field is not properly configured, your jobs will not be encoded. For more information, see the *Using Cleaner XL with Autodesk Visual Effects and Finishing Applications Guide*.

- 7 Click the Output Profile field.

The file browser appears displaying directories containing output profiles.

You can select an output profile, which indicates what format to encode to and related parameters. For example, you can output a QuickTime movie in NTSC for streaming to DSL.



Output profiles are divided by output file format, with audio only profiles in their own directory.

- 8 Click a directory containing the format to which you want to encode.

Depending on the format you select, output profiles may be further subdivided by category. The *Handheld* directory contains all the profiles for handheld devices, such as Palm® and Kinoma®. The audio directory is further subdivided by output file format, such as MP3, QuickTime, and Windows Media®. All other directories are subdivided by output format, such as Film, NTSC, or PAL, and by aspect ratio, such as 4:3 or 16:9.



(a) QuickTime Output Profiles divided by output format and aspect ratio

- 9 If necessary, select a subdirectory containing the output format to which you want to encode.

Output profiles appear in the file browser.

Files (12 matches) 0 selected				
↑	QT6_NTSC_16x9_download_full_screen	12.33 KB	2006/08/08	13:35:10
↑	QT6_NTSC_16x9_download_large	12.31 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_download_medium	12.35 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_download_small	12.32 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_streaming_1.5Mbit_Intranet	12.36 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_streaming_112k_ISDN	12.37 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_streaming_1Mbit_LAN_T1	12.36 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_streaming_256k_DSL	12.37 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_streaming_384k_DSL	12.37 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_streaming_512k_DSL	12.37 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_streaming_56k_modem	12.35 KB	2006/08/08	13:35:10
	QT6_NTSC_16x9_streaming_768k_DSL	12.37 KB	2006/08/08	13:35:10

(a) QuickTime Output Profiles for NTSC, with a 16x9 aspect ratio

- 10 Select an output profile.

You are returned to the Cleaner Export menu.

The name of the output profile you chose appears in the Output Profile field, and its description appears in the Output Profile Description field.

Export Options	
Name: fat_fish2	Path: C:\Cleaner_Encodes
Profile: QT6 NTSC 16x9 streaming 512k DSL	E-mail Notification ☐ E-mail:
QuickTime 6 for DSL or cable modem connection, hosted on a streaming media server, in widescreen (16:9) mode.	

(a) Output Profile field (b) Output Profile Description

- 11 Optional: Enable E-mail Notification and enter a valid e-mail address.

When the job is done, a notification message is sent to this address.

- 12 Click Send Job.

The job is sent to the Cleaner XL render node where it is encoded, using the parameters in the output profile that you selected, and saved in the destination folder on that render node.

TIP When encoding media files using Cleaner XL, the entire job is encoded on the same render node. When encoding a single job, no load balancing is done and additional render nodes on the Autodesk Backburner Distributed Queueing System do not increase efficiency. If you are encoding more than one job at a time, additional jobs are routed to available render nodes. This may affect your choice of output profiles, as larger output files may take a long time to encode.

Deleting Media Files From the Filesystem Via Export Image

You can use the file browser in the Export Image menu to remove image files, including soft-imported image files, from the filesystem.

To remove media files:

- 1 Open the Export Image menu.
- 2 Display the directory containing the files that you want to remove.
- 3 Select the files.
- 4 Click Remove, then click confirm.

NOTE If you remove soft-imported files, the source media is not deleted; only the reference to the clip is deleted.

Topics in this chapter:

- [About Processing and Publishing](#) on page 301
- [Types of Publishing](#) on page 302
- [Accessing the Publish Menu](#) on page 303
- [About the Publish Menu Options](#) on page 303
- [Naming Published Files](#) on page 308
- [Publishing a Clip Using the Publish Tool](#) on page 308
- [Publishing in the Background](#) on page 310
- [Managing the Background Import/Export Queue](#) on page 311
- [Processing Soft Effects](#) on page 314
- [Processing Clips and Proxies](#) on page 315
- [Processing in Modules](#) on page 318
- [Writing Media to the Framestore Using the Stonifise Tool](#) on page 319
- [Using the Stonifise Tool in the Background](#) on page 320
- [Consolidating Clips in the Clip Library](#) on page 322
- [Committing Soft Clips, History, or Audio in the Clip Library](#) on page 323
- [Compacting Clips](#) on page 324

About Processing and Publishing

Processing is a convenient means of ensuring real-time playback when creating complex effects. Publishing allows you to share media with other applications

and users. Before using the process and publish features, it is important to understand some underlying concepts and principles.

In the context of processing and publishing, you are dealing with media and clips.

The term *media* refers to images, video, or audio that can reside either on the Autodesk storage device or outside, on the shared storage.

The term *clip* refers to a collection of media-specific metadata that is native to Autodesk products and that, unlike media, cannot be stored in the shared storage. This includes any soft effects, timewarps, or dissolves that are applied to the existing media, but not yet processed.

A clip residing in Autodesk storage can reference media that is stored outside the framestore. This type of clip is referred to as a *soft-imported clip*.

A *processed clip* consists of new media that incorporates whatever soft effects, timewarps, and dissolves that you applied. Processing renders the effects and writes new images to storage. In situations where you are not achieving real-time playback, you can selectively process elements in the timeline (or the whole timeline) to restore it. Soft effects remain editable after processing; that is, the processing does not remove the “soft” part of the effect.

A *published clip* consists of media that resides outside of Autodesk storage (in a shared storage device or area) and a soft-imported clip that references that media. The original clip from which you published the media is not linked to the published media or soft-imported clip. Publishing a clip is like a regular export operation.

If you have a Burn™ license, you can take advantage of the remote rendering system to process clips containing soft effects, timewarps, and dissolves.

You can save time by applying effects to proxies, and then processing only the proxies rather than the full-resolution images. You can refine an effect using proxies and process the full-resolution images when you are finished.

You can also write media to the framestore with the Stonifise tool to make your version inaccessible in the shared storage area. This tool converts the soft-imported clips into regular clips that no longer reside on the shared storage but are written to Autodesk storage.

Types of Publishing

You can perform three types of publishing: Simple, Complex, or Flatten. You select the type of publishing you want to perform from the Type Group in the Publishing Menu. See [Type Group](#) on page 304.

Simple Publish Hard commits (renders) all effects and transitions and creates a continuous file sequence in the destination folder.

Complex Publish Creates a file sequence for each segment of the clip and copies the source media to the destination folder. Soft effects and transitions are not committed for the clip or for the sequence of files.

Select Complex Publish when you want to share source media with another application for dust busting or colour correction, for example. When the source files are saved by the other application, the published clip is updated with the new media to which you can apply effects and transitions.

NOTE Proxies are not updated automatically when the published clips are updated. Regenerate the proxies to view the updates.

Flatten Publish Flattens the media into a single video layer. All effects such as wipes and timewarps are committed. Dissolves and cuts are not committed. An EDL file is published at the destination directory, named *<clip_name>.edl*. The EDL is a modified CMX 3600 EDL containing DLEDL flags. The EDL includes information for all the segments in a clip, including the head and tail information for dissolve and cut events and DLEDM comments. To render dissolves and transitions, use the EDL.

Accessing the Publish Menu

Access the Publish menu from the clip library.

To access the Publish menu:

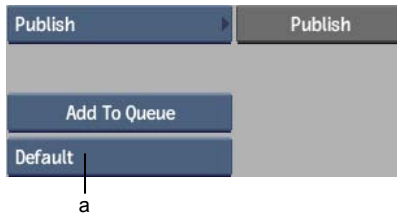
- 1 In the clip library, click Tools.
- 2 From the Tools box, select Publish.
The Publish options appear.

About the Publish Menu Options

Use the options in the Publish menu to specify the attributes for the published file.

File Operations Group

Use the File Operation options to publish your media.



(a) Destination Library option box

Publish button Writes media to shared storage.

Add To Queue box Select a method to publish in the background. See [Publishing in the Background](#) on page 310.

Select:	To:
Add To Queue	Add the job to the queue.
Add To Queue & Execute	Add the job to the queue and execute it automatically. If there are any jobs in progress, this job (and any others already added with the Add to Queue & Execute option) is triggered upon the completion of its predecessor.

Destination Library option box Select the library where the clips are published.

Type Group

Use the Type Group options to control the output of the Publish tool.



(a) Publish Type option box (b) EDL button

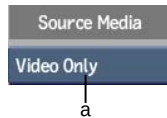
Publish Type option box Select the type of publishing. See [Types of Publishing](#) on page 302.

EDL button Enable to publish only an EDL file, or EDL and media. This allows you to regenerate the EDL file of a clip that has been published and

later modified without republishing all the media. The EDL button is available only when Publish Type is set to Flatten.

Source Media Group

Use the Source Media Group options to control whether you want to publish video or audio.

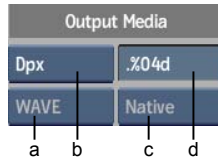


(a) Media Type option box

Media Type option box Select the media type to publish. Video Only is enabled when you publish a flattened clip.

Output Media Group

Use the Output Media options to control the format of the published media.



(a) Audio File Format option box (b) Image File Format option box (c) Audio Sample Bit Depth option box (d) File Name Padding field

Image File Format option box Select the type of video file to publish.

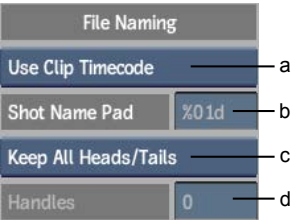
File Name Padding field Edit the padding format string that adds leading zeros before the number in the published file name. Use file name padding to ensure the images are listed and stored in the correct order. The default padding format scheme is %04d, where the “0” indicates that leading zeros are added to the filename for each frame when there are fewer than four digits in the sequence number. The “4d” indicates that four digits are maintained. Choose a value according to the duration of your clips before publishing.

Audio File Format option box Select a format for the published audio file. The Audio File Format box is enabled when Media Type is set to Video/Audio or Audio Only.

Audio Sample Bit Depth option box Select an audio sample bit depth. The Audio Sample Bit Depth box is enabled when Media Type is set to Video/Audio or Audio Only.

File Naming Group

Use the File Naming options to control the naming of published media.



(a) File Name option box (b) Shot Name Padding field (c) Handles option box (d) Handles field

File Name option box Select how the name of the published clip is created.

Select:	To:
Use None	Use only a number to name the published files.
Use Both	Use timecode, clip name, and shot name to name the published files.
Use Clip Timecode	Use only the timecode’s corresponding frame count to name the published files.
Use Clip Name	Use the name of the clip and the shot to name the published files.

Shot Name Padding field Edit the padding format string that adds leading zeros before the shot number in the published filename. The default padding format scheme is %01d, where the “0” indicates that leading zeros are added to the filename for each frame, and the “1d” indicates that one digit is maintained. You can add the shot name to the published file when you have a Complex or Flatten Publish Type and you select Clip Name or Both from the File Name option box.

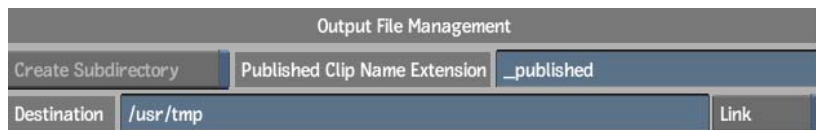
Handles option box Select an option for handling head and tail frames.

Select:	To:
Keep All Heads/Tails	Include all heads and tails of every element in the published clip.
Consolidate	Limit heads and tails to a specific number of frames. When selected, the Handles field becomes active.
No Heads/Tails	Include no heads or tails in the published clip.

Handles field Enter a value for the number of head and tail frames added to the published clip. The Handles field is active when you select Consolidate from the Handles option box.

Output File Management Group

Use the Output File Management options to control the destination of published media.



Output File Management

Create Subdirectory Published Clip Name Extension

Destination Link

Create Subdirectory button Enable to create subdirectories in the following format: */basedirectory/clipname/tapename/resolution*. The Create Subdirectory button is available when Publish Type is set to Complex or Flatten.

Published Clip Name Extension field The value in this field is appended to the name of the published clip in the library. The default is *_published*.

Destination field Enter the destination path of the file, which is usually the location of the shared storage. By default, the destination path is */usr/tmp*.

Link button Enable to link the published clips to the original file, located on the same filesystem. A link at the filesystem level is created to the media already on the destination filesystem, which saves space because the media is not duplicated.

When you publish media from one filesystem to another, the media is copied even if the Link option is enabled. If you are publishing some media from the same filesystem and some from a different filesystem with the Link option enabled, any media that is on the same filesystem is linked to the original media. Media that is on a different filesystem is duplicated.

Naming Published Files

The Publish Type and File Naming options you select determine how exported files are named.

The following tables show how a published clip is named based on the options you select. The example is based on a simple, single-layer, 2-shot timeline.

Simple Publish with File Naming Option:	Generated File Name:
Use None	<nnnn>.dpx
Use Both	<clipname>.<timecode>.dpx
Use Clip Timecode	<timecode>.dpx
Use Clip Name	<clipname>.<nnnn>.dpx
Complex Publish with File Naming Option:	Generated File Name:
Use Both	<clipname>_shot<0001,0002>.<shot_timecode>s<1,2>.dpx
Use Clip Timecode	<timecode>s<1,2>.dpx
Use Clip Name	<clipname>_s<0001,0002>.<nnnn>.dpx
Flatten Publish with File Naming Option:	Generated File Name:
Use Both	<clipname>_shot<0001,0002>.<shot_timecode>s<1,2>.dpx
Use Clip Timecode	<timecode>s<1,2>.dpx
Use Clip Name	<clipname>_s<0001,0002>.<nnnn>.dpx

Publishing a Clip Using the Publish Tool

Publish a clip so that you can collaborate with others on the same media.

When you publish a clip, the media is written to the destination on the shared storage. Another clip is generated that soft-imports the newly created media on the shared storage.

You see changes in the published clip when other users in other applications change the published media. For example, if a user uses a paint program to modify the content of one of the files in the shared storage and replaces the file with the modifications, you see these changes in your clip. If you are using proxies, regenerate the proxies to see the changes made in other applications. See [Regenerating Proxies](#) on page 357.

If you change the clip in Backdraft Conform, users outside of Backdraft Conform are not be able to see these changes. Republish the clip for users to see changes you make.

NOTE If published media contains source files that are deleted or moved, the frames of the missing files are replaced with a checkerboard.

To publish a clip:

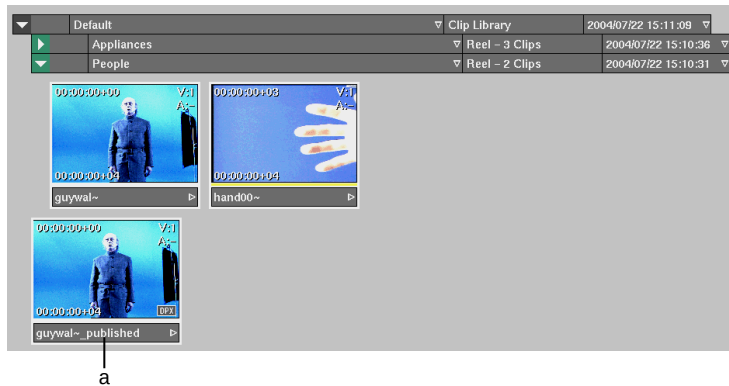
- 1 Access the Publish menu from the clip library. See [Accessing the Publish Menu](#) on page 303.
- 2 In the clip library, select the clips that you want to publish.
- 3 From the Publish Type box, select the publish type.
- 4 Set any other Publish options using the corresponding controls. See [About the Publish Menu Options](#) on page 303.
- 5 In the Destination field, enter the location for the published files.
- 6 From the Destination Library box, select a library for the published clip.

NOTE If your clips are not rendered, do not press **Alt+Tab** after you click Publish. Your application uses the output of your graphics card to render the final image file. If there are any other application windows on top of your Backdraft Conform window, undesired artefacts may appear in your rendered image files.

- 7 Click Publish.

A new clip is published in the clip library, which references the published image sequence. This clip is also identified by a soft-imported icon in the lower-right corner, indicating that its media resides outside the framestore.

Each frame of the clip is published to the destination directory. See [Naming Published Files](#) on page 308.



(a) Published clip

Images courtesy of Behavior Communications Inc.

NOTE A published clip does not have history.

Publishing in the Background

You can perform some file management tasks, such as publish, import, export, and Stonifise, in the background while you perform other tasks with your application.

To publish in the background:

- 1 Access the Publish menu from the clip library. See [Accessing the Publish Menu](#) on page 303.
- 2 In the clip library, select the clips that you want to publish.
- 3 From the Publish Type box, select the publish type.
- 4 Set any other Publish options using the corresponding controls. See [About the Publish Menu Options](#) on page 303.
- 5 In the Destination field, enter the shared storage directory.
- 6 From the Destination Library box, select a destination library.

NOTE If your clips are not rendered, do not press **Alt+Tab** after you click Publish. Your application uses the output of your graphics card to render the final image file. If there are any other application windows on top of your Backdraft Conform window, undesired artefacts may appear in your rendered image files.

- 7 From the Add to Queue box, select an option.

Select:	To:
Add To Queue	Add the job to the queue.
Add To Queue & Execute	Add the job to the queue and execute it automatically. If there are any jobs in progress, this job (and any others already added to the queue with the Add to Queue & Execute option) is triggered upon the completion of its predecessor.

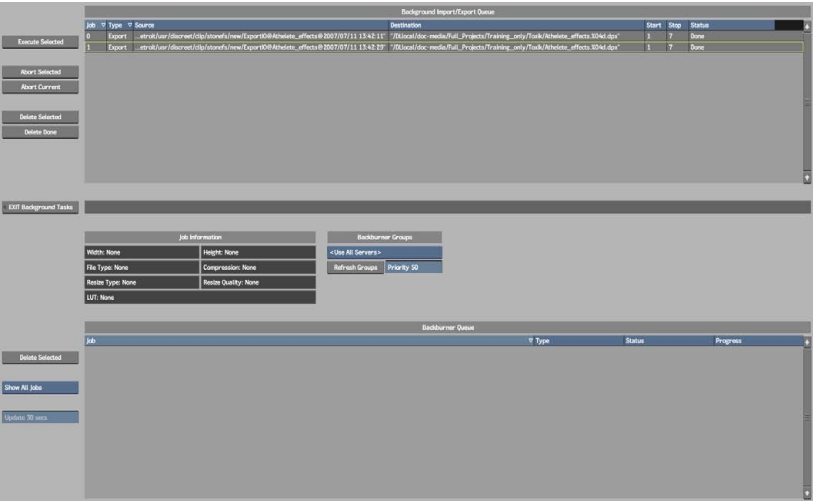
- 8 If you are adding more publish jobs to the queue, you can continue using the file browser to locate other files that you want to publish.
- 9 To manage the Background Import/Export Queue, see [Managing the Background Import/Export Queue](#) on page 311.

Managing the Background Import/Export Queue

Use the Background Import/Export Queue to manage import, export, proxy generation, and publish jobs. You can also simultaneously generate proxies, and import, export, and publish any number of jobs.

To manage the Background Import/Export Queue:

- 1 In the Import or Export menu, swipe right and click Background Tasks (or press **Ctrl+0**).
The Background Import/Export Queue appears.



NOTE To change the order of the items in the Background Import/Export Queue, click the label of the column that you want to sort by.

- 2 Select a job in the queue to display the Job Information.

The progress of the job is indicated in the queue.

Status:	Indicates:
Pending	Job has been added to the queue but not executed.
Queued	Job has been initialised.
Running	Job is being performed.
Done	Job has been executed.

- 3 To remove jobs from the Background Import/Export Queue, do one of the following.

Click:	To remove:
Delete Selected	The currently highlighted job from the Import/Export Queue.
Delete Done	Completed jobs from the Import/Export Queue.

- 4 To abort jobs in the middle of processing, do one of the following.

Click:	To abort:
Abort Selected	The currently highlighted background job. The next selected job in the queue is executed.
Abort Current	All jobs currently being executed.

NOTE Any frames already processed are retained. For example, if the Status column reads 20 of 44 when you click Abort, you will have 20 of the 44 frames of the clip.

- 5 To begin processing jobs, select one or several jobs in the Background Import/Export Queue and click Execute Selected. To select several jobs, **Ctrl**-click or click-drag in the queue.

NOTE You can also click Execute Selected in the Import Image or Export Image menu.

- 6 Click EXIT Background Tasks (or press **Ctrl+0** again) to go back to the Import Image or Export Image menu.

You can exit the Import Image or Export Image menu and work anywhere in Backdraft Conform. To check the status of, or modify, your background jobs, press **Ctrl+0** from any menu. The Background Status menu appears, showing the progress of the import or export job. Press **Ctrl+0** again to return to the menu where you were working.

NOTE You can perform any command in the Background Status menu. However, to select items to import or export, you must access the menu from the Import Image or Export Image menu.

To import and export files simultaneously in the background:

- 1 Add jobs using the Import Image and Export Image menus.
- 2 Select the jobs you want to process.
- 3 Click Execute Selected.
All selected jobs in the Background Import/Export Queue are executed.

Processing Soft Effects

Processing is a convenient means of ensuring real-time playback when creating complex effects. If you are not achieving real-time playback, you can selectively process elements in the timeline (or the whole timeline) to restore it. Unlike committing, the effects remain editable after processing. If you have a Burn license, you can Burn clips containing soft effects, timewarps, and dissolves and process them on a remote rendering system.

Processing renders the effect and writes new images to storage. When you play back the processed element, it is the new images that are presented in the Player. However, the information used to create the new image is retained by Backdraft Conform; that is, the processing does not remove the “soft” part of the effect. The effect remains fully editable.

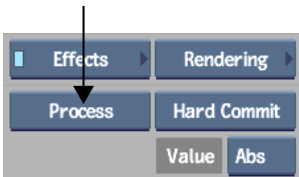
When working with proxies, you can save time by processing just the proxies rather than the full-resolution images. This can be helpful, for example, when working with a client in-house. You can refine an effect as desired using proxies and process the full-resolution images once you are both satisfied.

TIP When viewing the processed proxies, enable Proxy view in the Player options.

Clips can be output to tape directly from the EditDesk (**Shift + F9**). If you have been processing proxies only, Backdraft Conform attempts to render the full-resolution images, and output them. If the high-resolution media is unavailable, the process will fail. This will be the case if you performed a Proxy Only capture and the high-resolution clip is missing.

To process soft effects:

- 1 Select the elements with the soft effects that you want to process.
- 2 Select a processing option from the Timeline Process box. To trigger the selected option quickly, press the hotkey (\).



Select:	To:
Force Proxy	Force the processing of a proxy on a soft effect that needs to be re-freshed.

Select:	To:
Process Proxy	Process proxies only, not the corresponding high-resolution images. An amber outline appears on the timeline segment to indicate the state of the processing.
Process	Process the selected elements. This is the standard option.
Process & Lock	Process an element and lock it. This prevents elements from being recognized by the system as no longer valid.
Force Process	Force a process on a soft effect that needs to be refreshed. Use this to force a process on a locked element, or when Backdraft Conform fails to recognize that a processed clip is no longer valid. For example, if you change a layer in a complex vertical edit, you may need to force a process to update all the layers in the stack.

If Burn is present, the following additional options are available.

Select:	To process:
Burn	Selected elements using Burn.
Force Burn	Selected elements, including locked effects, using Burn.
Burn Proxy	Proxies only for selected elements using Burn.
Force Burn Proxy	Proxies only for selected elements, including locked effects, using Burn.

The selected elements are processed. Once rendered, a solid black bar appears across the top of the element.

- 3 To abort a process, click an empty area of the user interface. A dotted black bar appears across the unrendered portion of the element. When you process the element again, rendering begins at the unrendered portion. Frames already processed can be played in real time.

Processing Clips and Proxies

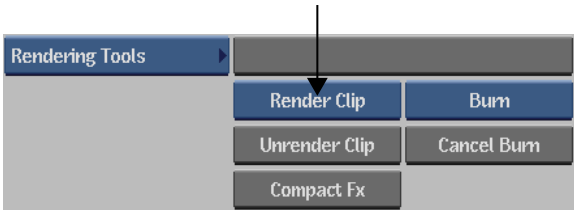
You can process clips in the clip library. If you have a Burn license, you can burn clips containing soft effects and transitions from the clip library to a remote rendering system. You can also choose to only process proxies rather

than full-resolution versions of the selected clips when rendering both locally and remotely with Burn.

You can unrender clips containing soft effects and transitions. This is useful when you want to temporarily free up space on the framestore. For example, if you are working with clips from one project, you can unrender the clips from another project. Additionally, unrendering clips can be useful before archiving. The unrendered version of the clip requires less space so you can archive the media more quickly.

To process clips in the clip library:

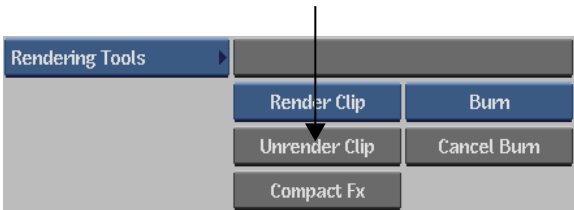
- 1 In the clip library, select the clips that you want to process.
- 2 Click Tools to display the Tools menu, then choose Rendering Tools.
- 3 Select a rendering option.



Select:	To:
Render Clip	Process the entire clips.
Proxy Render	Process only the proxies of the clips.

To unrender clips in the clip library:

- 1 In the clip library, select the clips that you want to unrender.
- 2 Click Tools to display the Tools menu, then choose Rendering Tools.
- 3 Click Unrender Clip.



To burn clips or proxies in the clip library:

- 1 In the clip library, select the clips that you want to burn.
- 2 Click Tools to display the Tools menu, then choose Rendering Tools.
- 3 Select a Burn option and confirm the operation.



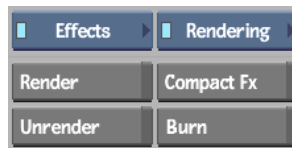
Select:	To:
Burn	Burn the entire clips.
Burn Proxy	Burn only the proxies of the clips.

The clip or proxy is processed with Burn. The rendered clip or proxy appears in the clip library when the processing is complete.

To process clips from the A/V Tools menu:

- 1 From the EditDesk, select the clips that you want to process.
- 2 From the A/V Tools box, select Rendering.

The Rendering tools appear.



- 3 Apply the Rendering tools to clips on the EditDesk, as follows.

Render Process a clip located in the Source or Record Area. You can either process proxies or the full clip resolution. The default proxy resolution is set in the Project settings.

Unrender Unrenders a clip located in the Source or Record Area.

Compact Fx Removes the intermediate results of soft effects from a clip located in the Source or Record Area.

Burn Allows you to process any clips located in the Source or Record Area using Burn. All unrendered segments will be processed.

Processing in Modules

You can process or, if you have a Burn license, burn new renders in a number of modules. The resulting clips are placed on the EditDesk. You can also process or burn multiple clips from the same module, and manage these tasks in the background.

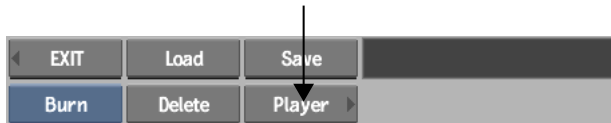
To process or burn in a module:

- 1 In a module, once you are ready to process your clip, from the Process Options box, select either Process or Burn (if available).

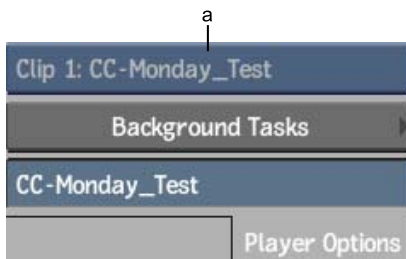


In some modules, the Process Options box contains more choices. For example: Process, Matte, Both, Burn, Burn Matte, and Burn Both.

The Player button appears in the module.



- 2 Click Player to access the module Player and see the result. The module Player options appear.



(a) Clip List box

NOTE These options are not available in the Triptych Player.

- 3 Use the Clip List box to monitor all the clips rendered from the same module.
Each entry in the list is preceded with a "Clip #" to distinguish between clips with the same name. A clip is displayed in the Player when it is selected in the list. The clip list gets flushed when you exit the module.
- 4 To manage the tasks being burned or processed, click Background Tasks. See [Managing the Background Import/Export Queue](#) on page 311.

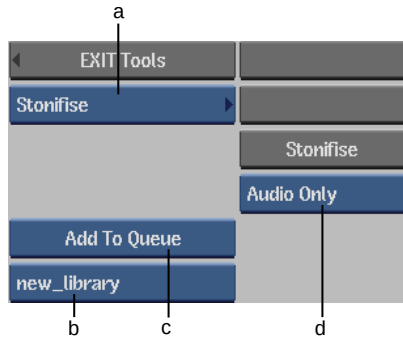
Writing Media to the Framestore Using the Stonifise Tool

Writing media to the framestore is useful when you want to ensure that others cannot alter your work, or when you require real-time playback. This is especially useful for soft-imported media, which normally resides on an open, shared storage location.

You can write media to the framestore as a background process. See [Using the Stonifise Tool in the Background](#) on page 320.

To write media to the framestore:

- 1 In the clip library, select the clip that you want to write to the framestore.
- 2 Click Tools.
- 3 From the Tools box, select Stonifise.
The Stonifise options appear.



(a) Tools box (b) Destination Library box (c) Add To Queue box (d) Media Type box

- 4 From the Media Type box, select the option corresponding to your needs.

Select:	To:
Audio/Video	Write both audio and video media to the framestore.
Audio Only	Write only audio media to the framestore.
Video Only	Write only video media to the framestore.

- 5 Click Stonifise.

Copies of the selected clips are written to the framestore. The clips that you selected remain soft-imported. The original media is still available but is now a separate entity from the clip written to the framestore. If more than one instance of the same clip was soft-imported, only the media of the selected clips is written to the framestore.

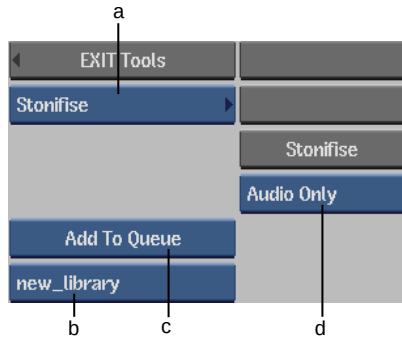
Using the Stonifise Tool in the Background

You can write media to the framestore as a background process.

To write media to the framestore:

- 1 In the clip library, select the clip that you want to write to the framestore.
- 2 Click Tools.
- 3 From the Tools box, select Stonifise.

The Stonifise options appear.



(a) Tools box (b) Destination Library box (c) Add To Queue box (d) Media Type box

- 4 From the Media Type box, select the option corresponding to your needs.

Select:	To:
Audio/Video	Write both audio and video media to the framestore.
Audio Only	Write only audio media to the framestore.
Video Only	Write only video media to the framestore.

- 5 From the Add to Queue box, select an option.

NOTE You can only write a single clip at a time to the framestore using the Stonifise tool in the background. To write multiple clips to the framestore in a single pass, you must perform the operation in the foreground.

Select:	To:
Add to Queue	Add the job to the queue.
Add to Queue & Execute	Add the job to the queue and execute it automatically. If there are any jobs in progress, this job (and any others already added to the queue with the Add to Queue & Execute option) will be triggered upon the completion of its predecessor.

The progress of the export job is indicated in the queue.

Status:	Indicates:
Pending	Job has been added to the queue but not executed.
Queued	Job has been initialised.
Running	Job is being performed.
Done	Job has been executed.

- 6 To manage the Background Import/Export Queue, see [Managing the Background Import/Export Queue](#) on page 311.

Consolidating Clips in the Clip Library

If you want to limit the number of head and tail frames on a clip, you can consolidate the audio and/or video on the clip. When several soft effects exist on a clip, the intermediate renders of these effects are kept. This procedure deletes media and frees up space on the framestore.

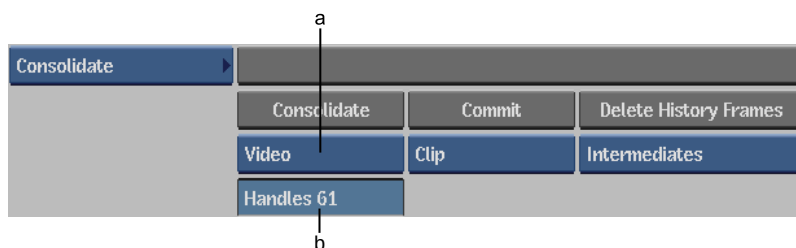
To consolidate clips, use the Consolidate controls in the Tools menu.

You can also use the Consolidate menu to delete intermediate and source history frames. See [Deleting Intermediates](#) on page 495.

To consolidate the audio and/or video on a clip:

- 1 Select a single clip or hold **Ctrl** and select multiple clips in the clip library.
- 2 Click Tools.
- 3 From the Tools menu, click Consolidate.

The Consolidate controls appear.



(a) Consolidate option box (b) Handles field

- 4 Select Audio, Video, or All Tracks from the Consolidate option box to determine which tracks will be affected by the consolidate operation.
- 5 In the Handles field, set the maximum number of head and tail frames that you want to retain after consolidating the clip.
- 6 Click Consolidate and confirm the operation.

Committing Soft Clips, History, or Audio in the Clip Library

Use the Commit command to commit a soft clip, the history of the clip, or the audio of the clip. When you commit a soft clip, its soft properties are removed. Any history and audio of the clip is also committed. As well, head and tail frames are removed. If an element such as a timewarp has not been rendered, it will be rendered automatically before the commit. Commit a soft clip when you archive the clip or when you have completed the edit.

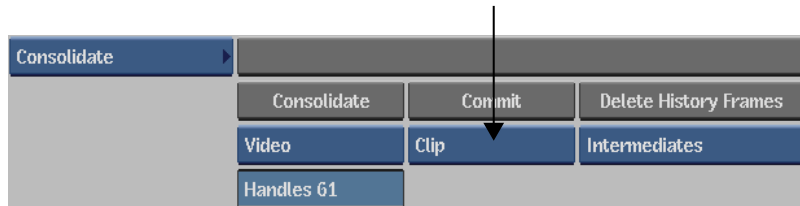
When you commit the history of the clip, you maintain the soft properties of the clip. Commit clip history when you no longer need to make tweaks to the modules in the clip history process tree.

Commit the audio when you do not want to affect the video of the clip but want to commit the audio tracks.

NOTE You cannot undo any commit operations in the clip library.

To commit soft clips, history, or audio:

- 1 Click Tools.
- 2 From the Tools menu, click Consolidate.
- 3 Make a selection from the Commit Type box.



Select:	To:
Clip	Convert a soft clip to a source clip. If the clip has history or audio, these are also committed.
History	Commit the history of the clip but maintain the soft properties of the clip.
Audio	Commit the audio tracks.

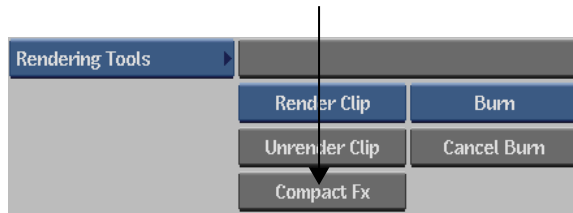
- 4 Click Commit.
- 5 Click Confirm.

Compacting Clips

When several effects on the same segment of a clip are processed, all renders are kept, and the renders are stored on the framestore. You can remove the intermediate renders on a clip by compacting it. This procedure deletes media and frees up space on the framestore.

To compact a clip:

- 1 Select a single clip or hold **Ctrl** and select multiple clips in the clip library.
- 2 Click Tools.
- 3 From the Tools menu, click Rendering Tools.
- 4 From the Rendering Tools menu, click Compact Fx and confirm the operation.



The intermediate processes are removed from the selected clips.

Part 4: Managing Projects and Media

Part 4 includes these chapters:

- [Compatibility](#) on page 329
- [Managing Projects and Users](#) on page 335
- [Clip Libraries](#) on page 369
- [Archiving](#) on page 421



Image courtesy of Rushes Post Production

Topics in this chapter:

- [Upgrade Compatibility](#) on page 329
- [Upgrading Projects to Version 2010](#) on page 330
- [Transferring Clip Libraries to 2010 Projects](#) on page 331
- [Archive Compatibility](#) on page 332
- [Compatibility with Other Visual Effects and Finishing Products](#) on page 333

Upgrade Compatibility

Consult the following table for information on resource compatibility when upgrading to Backdraft Conform 2010.

Pre-2010:	In version 2010:
Projects and Clip Libraries	Are read-only. Framestores from pre-2010 are identified as incompatible in the network library. ■ If the original project is on the same system, create a project in 2010 and then copy the clip libraries from the old project to the new project. See Copying Clips from Other Projects on page 415. ■ If you have many projects to upgrade, use the project upgrade script. See Upgrading Projects to Version 2010 on page 330.

Pre-2010:	In version 2010:
	■ If the original project is on another system that has 2007, 2008, or 2009 installed, transfer the clip libraries to a project on the 2010 system. See Transferring Clip Libraries to 2010 Projects on page 331. Alternatively, you can archive the project from an older version and restore the archive in the latest version. See Restoring Entries from an Archive on page 465.
	NOTE You can only delete projects and clip libraries with the version that created them.
Archives	Are read-only. See Archive Compatibility on page 332.
Users	Are incompatible. Create a user in the latest version. See Creating User Profiles on page 360.
Setups	Are compatible (including most Sparks® setups).

Upgrading Projects to Version 2010

You can automatically upgrade your projects from a previous version of your Visual Effects and Finishing application to the most recently installed version using the *copyProjects* command-line tool.

Using this tool instead of manually re-creating your projects is the recommended approach, as it reduces the time needed to migrate multiple projects, and prevents human error.

NOTE The *copyProjects* tool does not copy any media. It only re-creates projects and copies their settings and setups to the current version. You still have to transfer your media using the network library. See [Copying Local and Remote Clip Libraries to Your Current Project](#) on page 410.

WARNING The *copyProjects* tool copies projects to the most recently installed version of a Visual Effects and Finishing application. Make sure you do not install an older application version before you run *copyProjects* for your 2010 application.

To copy projects using the *copyProjects* tool:

- 1 Open a terminal and log in as root.

- 2 Run the *copyProjects* script.

NOTE The tool requires no command-line arguments.

The tool detects all projects from previous versions, and returns the following message:

```
Projects will be copied to version <version_number>
Do you wish to continue?
```

If the version returned by the tool is 2010, answer Yes and continue this procedure. Otherwise perform the steps in the next procedure to change your default Wiretap server to version 2010.

- 3 Confirm the projects you want to copy.
The tool creates a copy of each project for the current release. The string *_copy* is appended to the end of the new project name.
- 4 Use the network library to transfer media into the copied projects.

To change the default Wiretap server:

- 1 Stop Stone and Wire by typing:
/etc/init.d/stone+wire stop
- 2 Unlink the Wiretap startup script by typing:
unlink /usr/discreet/sw/sw_wiretapd
- 3 Link the Wiretap startup script to the 2010 version by typing:
**ln -s /usr/discreet/wiretap/2010/iffesWiretapServer
/usr/discreet/sw/sw_wiretapd**
- 4 Start Stone and Wire by typing:
/etc/init.d/stone+wire start
- 5 Run the *copyProjects* script again.

Transferring Clip Libraries to 2010 Projects

To access clip libraries from version 2007, 2008, or 2009 projects, you must transfer the clip libraries to a project created in version 2010.

You can install version 2010 on the 2007, 2008, or 2009 system and use Wire to transfer the clip libraries from 2007, 2008, or 2009 projects to a version

2010 project. See [Copying Local and Remote Clip Libraries to Your Current Project](#) on page 410.

For a Linux system running a 2007, 2008, or 2009 release where you do not wish to install 2010, or for IRIX® systems, you can also use the following procedure to transfer media from 2007, 2008, or 2009 to 2010.

To transfer clip libraries from version 2007, 2008, or 2009 projects to a 2010 project:

- 1 Use Backdraft® Conform 2007 or any 2008 or 2009 application to create a project and a clip library on the 2010 system. See [Creating a Project](#) on page 340. The project and library is formatted for 2007, 2008, or 2009.
- 2 Use the 2007, 2008, or 2009 application to move clips from the 2007, 2008, or 2009 system over the network into the previously created project on the 2010 system. You can use Background Wire to help free up the resources of the 2007, 2008, or 2009 workstation. See [Copying Local and Remote Clip Libraries to Your Current Project](#) on page 410.
- 3 Create a new project on the version 2010 system. If you have many projects, use the *copyProjects* script. See [Upgrading Projects to Version 2010](#) on page 330.
- 4 Use the 2010 application to open the library created in step 1 (the library is read-only).
- 5 Use Dual View to drag the clips into the 2010 project and library.
- 6 Use the 2007, 2008, or 2009 application to remove the project created in step 1. 2010 applications cannot remove projects created with previous versions because they are read-only.

TIP If you have 2007, 2008, or 2009 installed on your 2010 system, you can access the 2007, 2008, or 2009 system remotely to transfer the media using Wire without interrupting a session on that station. See [Copying Local and Remote Clip Libraries to Your Current Project](#) on page 410.

Archive Compatibility

Archives created using any 2010 Autodesk Visual Effects and Finishing application are fully compatible with all other 2010 applications.

2010 archives cannot be restored to earlier versions of Visual Effects and Finishing applications.

Archives created using earlier versions of Visual Effects and Finishing applications are read-only when restored to 2010. That is, you can restore an older archive to a 2010 application, but you cannot append material to the archive (you must create a new archive).

There are some differences in how 2010 Visual Effects and Finishing applications restore archives. The following table summarizes these differences.

Archive Type	Behaviour when restoring to Inferno, Flame, and Flint	Behaviour when restoring to Smoke and Backdraft Conform
Selection (Part of a Project)	Archives can be restored to the Desktop or to the clip library.	Archives can only be restored to the clip library.
Whole Project	The Desktop is restored as a reel in a new library.	The EditDesk is restored as a reel in a new library.

Compatibility with Other Visual Effects and Finishing Products

If your workstation or network of workstations are running the same version of Autodesk Visual Effects and Finishing products, media and resource compatibility is almost complete.

You can view and render clips created in any current Autodesk Visual Effects and Finishing product. However, if a clip was created using features exclusive to a particular product, you can only edit those features in the product in which it was created.

Similarly, if you load setups that contain settings that are not available in your product, the values appear, but they are not editable.

Managing Projects and Users

14

Topics in this chapter:

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- [Selecting a Project and User on Start-up](#) on page 339
- [Creating a Project](#) on page 340
- [Modifying a Project](#) on page 352
- [Deleting a Project](#) on page 353
- [Managing Proxies](#) on page 355
- [Auto-Connecting Clip Libraries Belonging to Other Projects](#) on page 359
- [Creating User Profiles](#) on page 360
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- [Deleting a User](#) on page 363
- [Resetting a User](#) on page 364
- [Loading Different Projects and Users during a Work Session](#) on page 365
- [About Multi-Format Projects](#) on page 367
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About Projects and Users

Create projects and users to define your working environment in Backdraft Conform. Projects define the display environment and provide a home directory where you keep setups and other resources. Also, clip libraries, where clips are stored, are associated with projects.

Typically, you create a project for each job you work on. A project provides an organizational framework in which you can define graphics display parameters, manage media in clip libraries, and save and load file-based resources such as setups, EDLs, and LUTs.

For each person working on your system, you can also create a user. A user is a profile that maintains preferences such as user interface settings, pen and tablet preferences, as well as a personalized set of hotkeys.

Projects

In Backdraft Conform, a project is a job-based working environment that provides:

- An EditDesk and the means of creating clip libraries for media management
- Proxy management settings to store low-resolution proxies for high-resolution clips
- A display environment for playing back clips
- A filesystem environment (home directory) for managing resources such as LUTs, EDLs, and setups

You can edit a project's settings through the course of your job. A project is associated with a default resolution that incorporates frame width and height, aspect ratio, scan mode, and bit depth. Although the default resolution in no way restricts you from working with other resolutions, it does define default settings such as:

- The default resolution for the processing of coloured frames (for example, black frames, colour bars, and colour noise)
- The default destination resolution for all resize settings

When you set a default resolution, you usually select a project configuration template file that corresponds to that resolution. For example, if you set your project's default resolution to NTSC, the *ntsc.cfg* project configuration template

is usually used to create the configuration file for your project. The project configuration file sets environment display parameters such as monitor refresh rate and default timecode for clips.

This chapter describes how to select a default resolution and select a project configuration template. Remember, however, that all the parameters associated with a project's default resolution in no way restrict you from working with other resolutions. To learn about creating a project for use with clips of different resolutions, see [Working with Multi-Format Input and Output](#) on page 161.

Projects also provide a home directory on the system disk that contains sample setups and LUTs. These sample resources are situated in subdirectories for each module. Through the course of your project, you can save setups, EDLs, custom LUTs, and any other file-based resources in these directories. Because these directories are the default path for saving and loading resources such as effects setups, keeping files here accelerates your work.

Accessing Projects on Remote Framestores

You can access an Autodesk Visual Effects and Finishing project on a remote framestore from Backdraft Conform. This is useful if you want to prepare a project already created in an Visual Effects and Finishing application for finishing but do not want to tie up system resources.

You can only access a remote framestore on start-up. If you try to access a remote project that is already open in another application, you will not have access to the project's EditDesk, only to the project's clip library. This way you do not run the risk of overwriting someone's work or losing your own.

Although the clip library will be read-only, you can navigate to other clip libraries belonging to the project and perform clip management operations.

NOTE It is important to understand that this functionality is not intended to allow collaborative and concurrent access to a central project from several remote workstations. A project remains tied to the workstation it is created on, and is meant for single-user access.

Sharing Projects between Autodesk Products

You can open projects created in Backdraft Conform in other Autodesk Visual Effects and Finishing applications installed on your workstation. All projects for these products are stored in a single directory — `/usr/discreet/project`. The Project box in the start-up screen and the Project Management section of the Preferences menu list all projects that are compatible with the current version.

The project that appears in the list on start-up is the most recently opened by any of these products.

When you load projects that were created using Flame or Inferno, clips stored on the effects Desktop that have not been saved to a clip library are not available to Backdraft Conform. Clips stored on the EditDesk in Smoke, however, do appear because Backdraft Conform also uses the EditDesk.

Users

A user is a profile that provides:

- EditDesk display preferences
- Module preferences
- Hotkey assignments for user interface controls
- A filesystem environment (home directory) for managing preferences

User preferences are automatically saved with the corresponding user profile and are independent of projects. You do not have to explicitly save them if you load another user or exit Backdraft Conform. By managing your user profiles, you can:

- Save EditDesk preferences such as user interface, as well as clip information display options. See [Setting Preferences](#) on page 503.
- Customize pen and tablet preferences such as pressure sensitivity and tablet margins. See [User Interface Preferences](#) on page 512.
- Modify default hotkeys and create new ones using the Hotkey Editor. See [Managing Hotkeys](#) on page 551.
- Customize grids and guides for the Player and image window. See [Working with Grids and Guides](#) on page 104.

You may have preferences that you want to set up for different kinds of work in the same module. An easy way to keep several sets of preferences for a module is to save module preferences to your user's home directory. You can then load them at any time. You can even copy these preference resource files to a networked location or to a portable medium and load them on other systems. You can also load the module preferences of another user at any time. See [Saving, Loading, and Deleting Items](#) on page 484.

Selecting a Project and User on Start-up

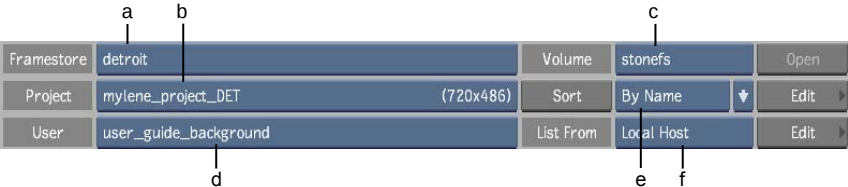
When you start Backdraft Conform, the Project Management menu appears. Use the Project Management menu to select a project and user for the current session, to create projects and users, or to manage existing projects and users.

You can work with projects on the current framestore or on a remote framestore. If multiple volumes are available, you can select which one to use. For information on creating volumes, see the *Autodesk Stone and Wire Filesystem and Networking Guide*.

To select a project and user on start-up:

- 1 Start the Backdraft Conform application.

The Project Management menu appears, displaying the framestore, project, and user from the previous session.



(a) Framestore box (b) Project box (c) Volume box (d) User box (e) Sort Order box (f) Host box

NOTE If this is the first time you are starting Backdraft Conform, there are no existing projects or users.

- 2 Do one of the following:
 - To open a project on the current framestore, select a project from the Project box.
 - To open a project on a remote framestore, select the framestore from the Framestore box. If the framestore has more than one volume, select a volume from the Volume box. Click Open, and then select a project from the Project box.

NOTE If you have a long list of projects, you can use the Sort Order box and arrow to sort the projects by frame resolution, name, or creation date, in descending or ascending order.

If you have not yet created a project for the current job, see [Creating a Project](#) on page 340.

- 3 Select a user from the User box. If you opened a project on a remote framestore, you can use the Host box to select a user on the remote framestore or on your local framestore.

If you have not yet created a user, see [Creating User Profiles](#) on page 360.

- 4 Click Start.

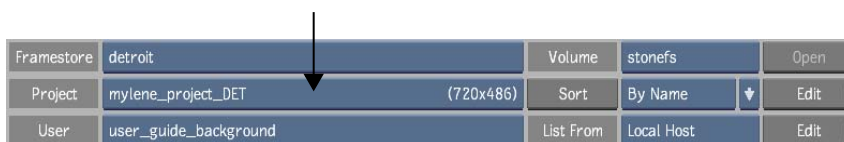
The project's EditDesk appears. If you try to access a Smoke project that is already open on a remote framestore, an error message appears and you are asked to confirm whether you want to go into that project's clip library.

Creating a Project

You can create a project on start-up from the Project Management menu or during a session from the Preferences menu.

To create a project:

- 1 Do one of the following:
 - If you are creating a project on start-up, select <create new project> from the Project box. (If you are starting Backdraft Conform for the first time, <create new project> is the only option.)
To create a project on a remote framestore, select the framestore from the Framestore box. If the framestore has more than one volume, select a volume from the Volume box. Click Open, and then select <create new project> from the Project box.



- If you are creating a project in the middle of a session (you are already in Backdraft Conform), click Preferences and then select <create new project> from the Project box in the Project Management section of the Preferences menu.

Project Management					
Host	detroit (localhost)			Volume	stonefs
Project	digital	(3072x2048)	Sort	By Name	Load Edit
User	Martin		List From	Local Host	Load Edit

The Create Project menu appears.

Create Project	Name	
	Description	Created: Wed Jun 20 13:51:11 2007
	Setup Directory	[Untitled]
	Setup Mode	New Setups
Reset	Cfg Template	ntsc.cfg

(a) Create Project button (b) Name field (c) Description field

- In the Name field, enter a name for the new project. Names can be up to 120 characters long.
- In the Description field, enter a description of the project.

TIP By default, the creation date is displayed in this field. Click the field to activate the text cursor, press **Esc** to clear the contents of the field, and then type the description that you want to use.

- Set the home directory for the project. See [Setting a Project's Home Directory](#) on page 342.
- Set the default resolution for the project. See [Setting the Default Resolution](#) on page 344.
- Set proxy management options for the project. See [Setting Proxy Management Options](#) on page 346.
- Set the scan mode for the project. See [Changing the Scan Mode of a Project](#) on page 1158.
- Select the graphics processing bit depth for the project, if applicable. See [Setting the Graphics Processing Bit Depth](#) on page 350.
- Select a project configuration template for the project. See [Selecting the Project Configuration Template](#) on page 351.

- 10 To reset project settings, click Reset. You can edit a project's settings at any time.
- 11 When you are satisfied with project settings, click Create Project.
The project is created, and you are returned to the Project Management or Preferences menu.

TIP To exit the Create Project menu at any time without creating a project, click Exit Project.

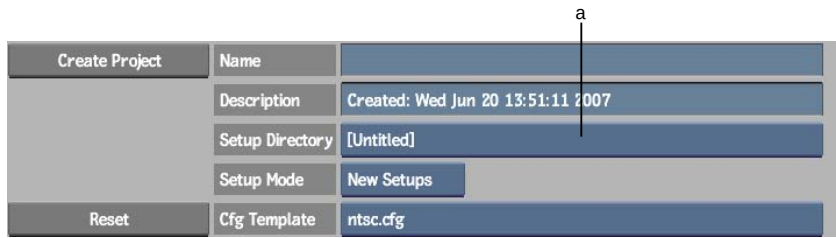
Setting a Project's Home Directory

When you create a project, a project home directory is created on the system disk in the `/usr/discreet/project/` directory. File-based resources such as effects setups, EDLs, and LUTs are usually managed in a set of subdirectories in this home directory, by module.

For example, when you save a LUT, the file browser opens, by default, to a subdirectory of the project home directory for storing LUTs. You are not obliged to save LUTs in this directory, but doing so can help you better manage the resources you need by saving them to a consistent location. Similarly, when you load a LUT, the file browser opens, by default, to the same directory. For details on saving and loading resource such as LUTs, preferences, and setups, see [Saving Setups and Preferences](#) on page 481.

You are not restricted to these directories when you load or save setups. You can use the file browser to locate a different directory, or use project shortcuts to browse the setup directories of other projects on the same system.

When you create a project, the project's home directory path appears in the Setup Directory box.



(a) Setup Directory box

You have two options, however, that override the default home directory:

- You can share the project home directory with an existing project, allowing you to share setups between the two projects.
- You can create a custom path for the project home directory.

You can also copy the setups of another project into the subdirectories of the project you are creating.

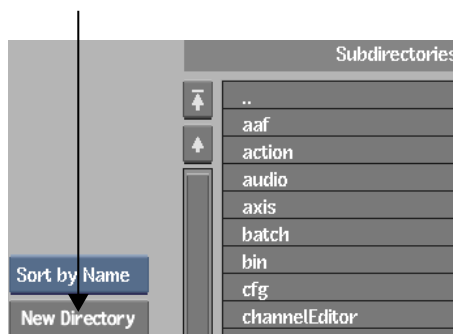
NOTE You can copy setups from a project created in a previous versions of Autodesk products to the new project — old projects are listed in the Copy From project list. However, you cannot share them.

To share the project home directory with an existing project:

- From the Setup Directory box, select the existing project's home directory that you want to share.
Any setups already saved to the existing project are made available to the new project.

To create a custom path for the project's home directory:

- 1 From the Setup Directory box, select <new>.
- 2 In the file browser that appears, navigate to the directory where you want the project home directory created.
- 3 Make sure that the permissions in this directory are set so Backdraft Conform (or the account into which you are logged in and from which you launched Backdraft Conform) has read/write privileges.
- 4 Click New Directory.



- 5 In the keyboard that appears, type the name of the project home directory in which you want Backdraft Conform to create setup subdirectories and press **Enter**. It is recommended to give this directory the same name as the project.

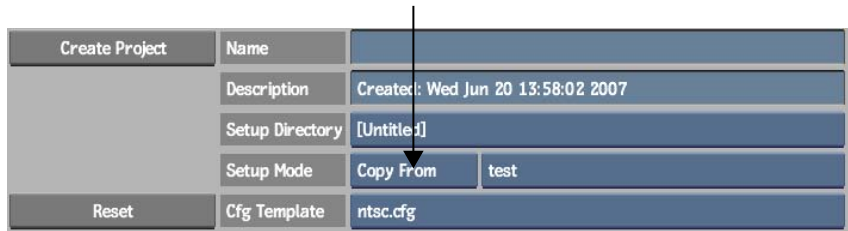
If the directory is not created, you may not have the access privileges to create directories in the current location.

- 6 Click Set Directory.

The new directory name appears in the Setup Directory box of the Create Project menu.

To copy setups from an existing project:

- 1 From the Setup Mode box, select Copy From.



Create Project	Name		
	Description	Created: Wed Jun 20 13:58:02 2007	
	Setup Directory	[Untitled]	
	Setup Mode	Copy From	test
	Reset	Cfg Template	ntsc.cfg

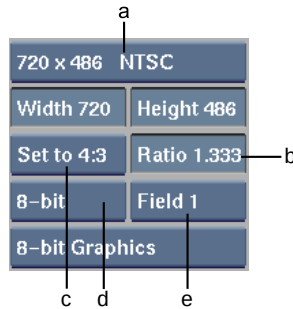
- 2 From the Projects box that appears to the right of the Setup Mode box, select the existing project from which you want to copy the setups.

Setting the Default Resolution

Setting the default resolution of a project involves selecting frame resolution, aspect ratio, bit depth, and scan mode.

To set the default resolution of the project:

- 1 From the Resolution Presets box, select an option.



(a) Resolution Presets box (b) Aspect Ratio field (c) Aspect Ratio Presets box
(d) Bit Depth box (e) Scan Mode box

Alternatively you can set a custom resolution for the project by entering values in the Width and Height fields.

TIP When you select a resolution preset or enter a custom resolution, the Frames Free field is updated, indicating how many frames of the current resolution can be stored on the current framestore volume.

Although Backdraft Conform supports mixed resolutions in each project, very large resolutions can only be manipulated on systems configured with at least 3.5 GB RAM. Exceeding this image size is possible but not recommended.

See the *Autodesk Visual Effects and Finishing Software Installation Guide* for minimum RAM recommendations for your workstation. If your system performs sluggishly when working with higher resolution images, consider installing more RAM.

Other resolution restrictions are as follows:

- At 8 bits, image width must be a multiple of four.
- At 10 bits or 12 bits, image width must be a multiple of two.
- The minimum image height is 24 pixels.

- 2 From the Aspect Ratio Presets box, select an option.

Select: **To:**

Set to w:h	Set the frame aspect ratio to match its width:height ratio. This option should be selected for square pixel formats. These formats include most film formats.

Select:	To:
Set to 16:9	Set the frame aspect ratio to 16:9 (1.777). This option is used with most HD video formats, but occasionally with NTSC and PAL.
Set to 4:3	Set the frame aspect ratio to 4:3 (1.333). This option is often used with NTSC and PAL.

Alternatively you can set a custom aspect ratio by entering the decimal value for the ratio in the Aspect Ratio field. For example, enter 2.35 to set an environment for working with anamorphic film resolution images.

TIP When you select a Resolution preset, the aspect ratio is often updated with the setting that corresponds to the selected resolution.

- 3 Select a bit depth option from the Bit Depth box.
If you select 12-bit, each pixel occupies 36 bits on the framestore and requires processing to pack and unpack images as they move between memory and disk.
If you select 12-bit u (for 12-bit unpacked), each pixel occupies 48 bits on the framestore. Storage requirements are greater, but no processing is required as images move between memory and disk.
- 4 From the Scan Mode box, select Field 1, Field 2, or Progressive.
Backdraft Conform supports clips with differing scan modes. This parameter sets the default project scan mode, which appears in various menus (for example, Resize) and is applied to newly processed clips. This setting affects interlaced display on a broadcast monitor and field-based render processes.

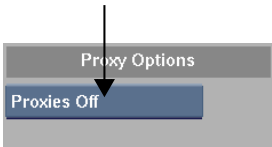
Setting Proxy Management Options

Proxies are low-resolution copies of high-resolution images, one for each frame. Set proxy management options to specify how and when proxies are generated for clips used in the project.

To set proxy management options:

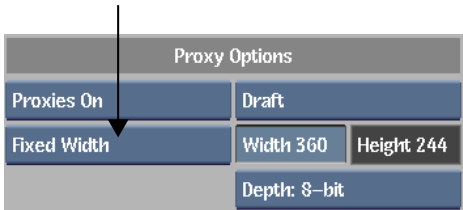
- 1 From the Proxy Management option box, select an option.

TIP To change proxy management options for a current project, you must access the Project Management menu from the Preferences menu.



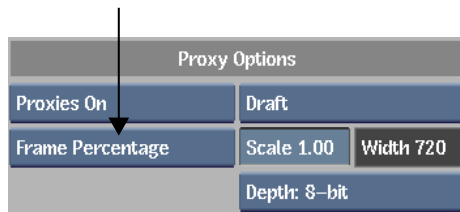
Select:	To store:
Proxies Off	No proxies, no matter what resolution clips you work with.
Proxies On	Proxies for all clips larger than the proxy width you set for all proxies.
Conditional	Proxies only for clips that meet conditional criteria, for example, clips that exceed a width of 1000 pixels.

- 2 If you selected Proxies On or Conditional, specify the proxy size by doing one of the following:
- Select Fixed Width from the Proxy Size box and then enter a value in the Proxy Width field beside the Proxy Size box. For example, enter 720 to create and store proxies 720 pixels wide. Proxy height is determined by the clip's aspect ratio, relative to the proxy width that you set.



TIP When the proxy and full resolution clip have the same bit depth, proxies are not stored for clips that are the same width as the proxy width. For example, if you set proxy width to 720, your project will not store proxies for NTSC clips (720x486). If the bit depth of the full resolution clip is greater than that of the proxy, proxies are stored for clips with the same width as the proxy.

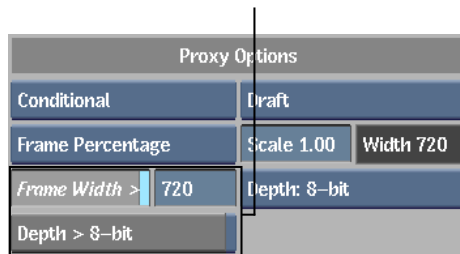
- Select Frame Percentage from the Proxy Size box and then enter a value in the Scale field. For example, enter 0.50 to create and store proxies that are 50% of the clip resolution.



The screenshot shows the 'Proxy Options' dialog box. The 'Proxies On' button is highlighted with a black arrow. The 'Draft' button is also visible. The 'Frame Percentage' button is selected, and the 'Scale' field is set to '1.00' and the 'Width' field is set to '720'. The 'Depth' field is set to '8-bit'.

Proxies always have the same aspect ratio as the full-resolution clip. The width of proxies for clips with the default resolution corresponding to the scale value you set is displayed in the Width field.

- 3 If you selected Proxies Conditional, set your conditional criteria.



The screenshot shows the 'Proxy Options' dialog box. The 'Conditional' button is selected. The 'Draft' button is also visible. The 'Frame Percentage' button is selected, and the 'Scale' field is set to '1.00' and the 'Width' field is set to '720'. The 'Depth' field is set to '8-bit'. The 'Frame Width >' field is set to '720' and the 'Depth > 8-bit' field is also visible.

- To store proxies for all clips of a certain width and greater, enable Frame Width > and then enter a value in the adjacent field. For example, enter 1000 to store proxies for all clips wider than 1000 pixels.
- To store proxies only for 10-bit, 12-bit, or 12-bit unpacked clips, enable Depth > 8-bit.

NOTE These two settings are not mutually exclusive. For example, if you enter a value of 1000 in the Frame Width field and enable Depth > 8-bit, a 12-bit clip with a width of 720 will get proxies as long as the project proxy width is less than 720.

- 4 From the Proxy Quality box, set the quality of the proxy image for viewing purposes.



Proxy quality affects processing and proxy generation duration since lower qualities are faster to calculate. However, the quality does not affect the amount of framestore space required for proxies.

Select:	To specify:
Draft	The lowest possible quality. This is the quality used when proxies are generated automatically following video I/O.
Coarse	The next highest quality after Draft.
Medium	The next highest quality after Coarse.
Quality	The next highest quality after Medium.
Bicubic	The highest possible quality.

- 5 From the Proxy Bit Depth box, select the bit depth for proxies.



Select:	To set:
Depth: 8-bit	The proxy bit depth to 8 bits.
Depth: Full Res	The proxy bit depth to be the same bit depth as that of the clip.

Setting the Graphics Processing Bit Depth

Depending on your system, you can specify the bit depth for images that are processed using the frame buffer in the graphics card. The bit depth affects the quality of the resulting clip. Images can be processed with 8-bit or 16-bit FP precision.

As a rule, if you are working with mixed resolutions and some clips are higher than 8-bit, you should select 16-bit FP graphics display. Even if you work only with 8-bit images, you can get better processed results with 16-bit FP graphics processing when transparencies, blending, and gradients are part of your effect. 16-bit FP graphics processing produces better results but takes longer.

Projects from previous versions of the application with a graphics bit depth higher than 8-bit are mapped to 16-bit FP.

Also, if your output is ultimately an 8-bit format, having the best possible quality immediately prior to output produces the best results.

To set the graphics processing bit depth:

- Select an option from the Graphics Processing box.

720 x 486	NTSC
Width 720	Height 486
Set to 4:3	Ratio 1.333
8-bit	Field 1
8-bit Graphics	

Selecting the Project Configuration Template

Each project has an associated project configuration file. When you load a project, its project configuration file is parsed. Information in the project configuration file determines project environment settings such as graphics monitor refresh rate, default timecode for clips, and default framerate for clip playback.

A project's configuration file is created based on a project configuration file template. The template specifies project settings typically associated with the project's default resolution.

When you select a resolution preset (see [Setting the Default Resolution](#) on page 344), a project configuration template appears in the Configuration Template box.

Create Project	Name		
	Description	Created: Wed Jun 20 13:58:02 2007	
	Setup Directory	[Untitled]	
	Setup Mode	Copy From	test
Reset	Cfg Template	ntsc.cfg	

a

(a) Configuration Template box

This template corresponds to the selected resolution preset. However, you can select another option from the Configuration Template box, which lists all templates supported by the current workstation. Custom template names end in *_custom.cfg*.

The project configuration file primarily defines the display environment, and in no way restricts you from working with clips of another resolution. Furthermore, you can modify a project at any time.

For more information on project configuration file templates, refer to the *Autodesk Visual Effects and Finishing Configuration File Reference Guide*.

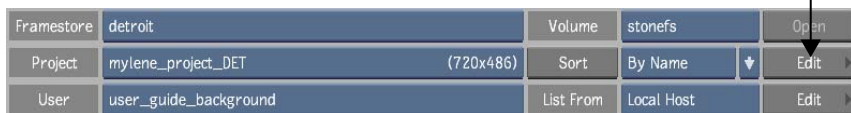
Modifying a Project

You can modify any project that appears in the Project box on start-up or during a session as long as it is not currently in use.

If you want to modify proxy management options, you can only modify the currently loaded project and only in mid-session (from the Preferences menu). The currently loaded project is indicated in the Project box in the Preferences menu by a light blue LED to the left of its name.

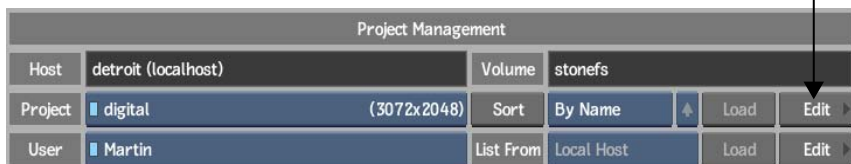
To modify a project:

- 1 Do one of the following:
 - If you are modifying a project on start-up, select the project you want to edit from the Project box and then click Edit. If the project exists on a remote framestore, select the framestore and volume (if applicable) and click Open. Then select the project and click Edit.



Framestore	detroit	Volume	stonefs	Open
Project	mylene_project_DET (720x486)	Sort	By Name	Edit
User	user_guide_background	List From	Local Host	Edit

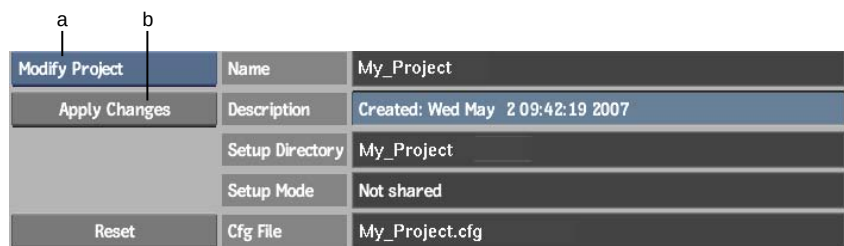
- If you are modifying a project in the middle of a session (you are already in Backdraft Conform), click Preferences, select the project you want to modify from the Project box in the Project Management section of the Preferences menu, and then click Edit.



Project Management					
Host	detroit (localhost)	Volume	stonefs		
Project	digital (3072x2048)	Sort	By Name	Load	Edit
User	Martin	List From	Local Host	Load	Edit

NOTE If you have a long list of projects to sort through, you can use the Sort Order box and arrow to sort the projects by frame resolution, name, or creation date, in descending or ascending order.

The Project menu appears.



(a) Project Edit box (b) Apply Changes button

- 2 Modify the project parameters as required. See:
 - [Setting the Default Resolution](#) on page 344
 - [Setting Proxy Management Options](#) on page 346
 - [Setting the Graphics Processing Bit Depth](#) on page 350
- 3 When you are satisfied with your modifications, make sure Modify Project is selected from the Project Edit box, click Apply Changes, and confirm. You are returned to the Project Management or Preferences menu.

TIP To restore the project's current settings at any time, click Reset.

Deleting a Project

Projects are associated with setups and clips. You can delete a project, its setups, or its clips. When you delete a project, all its clips are deleted. Its setups are also deleted as long as they are not shared with a project already in use.

NOTE You can delete the setups and clips of any project. However, you cannot delete a project that is currently loaded or in use by a remote framestore.

To delete a project, its setups, or its clips:

- 1 If you are deleting a project, make sure it is not the currently loaded project—load a different project if needed. The currently loaded project is indicated in the Project box by a light blue LED to the left of its name.
- 2 Display the Project menu by doing one of the following:
 - On start-up, select the project you want to delete from the Project box and then click Edit. If the project exists on a remote framestore, select the framestore and volume (if applicable) and click Open. Then select the project and click Edit.

Framestore	detroit	Volume	stonefs	Open
Project	mylene_project_DET (720x486)	Sort	By Name	Edit
User	user_guide_background	List From	Local Host	Edit

- If you are modifying a project in the middle of a session (in Backdraft Conform), click Preferences, select the project you want to delete from the Project box in the Project Management section of the Preferences menu, and then click Edit.

Project Management					
Host	detroit (localhost)	Volume	stonefs		
Project	digital (3072x2048)	Sort	By Name	Load	Edit
User	Martin	List From	Local Host	Load	Edit

- 3 In the Project menu that appears, select an option from the Project Edit box.

Modify Project	Name	This_Project
Apply Changes	Description	Created: Wed Jun 27 16:39:10 2007
	Setup Directory	This_Project
	Setup Mode	Not shared
Reset	Cfg File	This_Project.cfg

Select:	To delete:
Delete Setups	All the setups, but keep the project and the clips.

Select:	To delete:
Delete Clips	All the clips, but keep the project and the setups.
Delete Project	A project entirely.

WARNING When you delete a project's setups, the setups for all projects that share the same setups are also deleted as long as the projects are not in use. The Setup Mode box indicates whether or not setups are shared.

4 Complete the deletion:

- If you selected Delete Setups, click Delete Setups and confirm.
- If you selected Delete Clips, click Delete Clips and confirm.
- If you selected Delete Project, click Delete Project, confirm, and then confirm a second time.

You are returned to the Preferences menu.

TIP To exit the Project menu without deleting the project, click Exit Project.

Managing Proxies

Proxies are low-resolution copies of high-resolution images, one for each frame. Proxies are used to provide:

- Real-time playback of processed results (where the full-resolution clips are too big to play back in real time).
- A fast work environment for a project when using proxies without the original media. You can capture proxies only or remove media from clip metadata while retaining proxies. The original media is recaptured and relinked to the clip metadata prior to output.

Proxies can be regenerated at any time, and you can even extract proxies from a clip. Extracting proxies is a quick way to deliver a review version of a high-resolution clip.

Proxy Playback

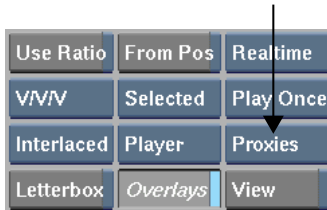
A proxy is stored for every processed clip, provided proxy management options are enabled and the clip meets any conditional proxy generation criteria (see [Setting Proxy Management Options](#) on page 346). Because high-resolution images cannot always be played back in real-time, you can set the Player to play back proxies. Image quality is reduced, but real-time playback ensures you get a more accurate playback context.

To enable proxy playback:

- 1 Load a high-resolution clip with proxies in the Player.

TIP Alt-click clips on the EditDesk or in the clip library to verify whether or not a clip has proxies, and what the proxy resolution is.

- 2 From the Player Resolution box, select Proxies.



NOTE If the label lettering in the Player Resolution box is grey, the clip does not have proxies associated with it. See [Setting Proxy Management Options](#) on page 346.

Proxy Processing

If you are creating a composite of high-resolution images, you can enable proxy processing options. In this case, you work with proxies to create your composite, thereby demanding less of Backdraft Conform in terms of memory management and intermediate processing (such as previewing results in-progress). You can also process proxies for soft effects on the timeline.

When you are satisfied with your result, switch to full-resolution processing, fine-tune settings to account for changes introduced by the higher resolution

clips, and then process the result. This workflow can greatly accelerate your work.

- For information on proxy processing of soft effects, see [Processing Clips and Proxies](#) on page 315.

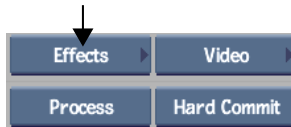
Regenerating Proxies

If the current project is set to store proxies, you can regenerate proxies at any time. Regenerate proxies if you want to change the proxy quality.

Do not regenerate proxies if your project contains clips unlinked with the Unlink Hires option, and you are working on proxies only. After regeneration, these clips will be left with clip metadata that has neither the original media nor proxies linked to it. If this occurs you will not be able to continue working on the clips unless you recapture and relink the media.

To regenerate proxies:

- 1 In the EditDesk menu, make sure the current option in the Menu Priority box is disabled, or select and enable Effects.



- 2 Select and enable Video in the A/V Tools box that appears.

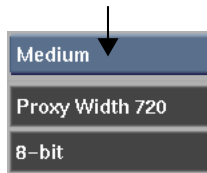


- 3 Enable Proxy Regen in the Video Tools menu.



- 4 Select a proxy quality from the Filter box. Proxy quality affects processing and proxy generation duration since lower qualities are faster to calculate.

However, the quality does not affect the amount of framestore space required for proxies.



Select:	To specify:
Draft	Generate proxies in the least amount of processing time, at the expense of proxy quality. This is the default setting for proxy generation following video I/O.
Coarse	Get better results than Draft, in more processing time.
Medium	Get better results than Coarse, in more processing time.
Quality	Get the best results, in more processing time than Medium.
Bicubic	Often get good results, usually faster than Quality. Results are likely not as good as Quality, but acceptable.
Lanczos	Usually get the best results, often with better performance than Bicubic.

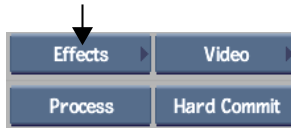
- 5 Select the clip to regenerate its proxies.

Extracting Proxies

You can extract proxies from high-resolution clips to create a new clip. Extracting proxies can be a quick way to produce a low-resolution version of a high-resolution clip for intermediate review. The advantage of extracting a proxy rather than, for example, resizing the high-resolution clip, is that the process is instantaneous and there are no increases to storage requirements because the media has already been generated.

To extract proxies:

- 1 In the EditDesk menu, make sure the current option in the Menu Priority box is disabled or select and enable Effects.



- 2 Select and enable Video from the A/V Tools box.



- 3 Enable Proxy Extract in the Video Tools menu.



- 4 Select a clip.
- 5 Select a destination.

Auto-Connecting Clip Libraries Belonging to Other Projects

Although projects are associated with their own clip libraries and clips, you can use Backdraft Conform to share clip libraries and clips belonging to other projects on the local system, or over the Wire network. Shared libraries can be set up on a session-to-session basis, or you can auto-connect shared libraries so that they automatically appear in the clip library box of the current project on start-up. See [Selecting Clip Libraries in Local or Remote Projects](#) on page 414.

Creating User Profiles

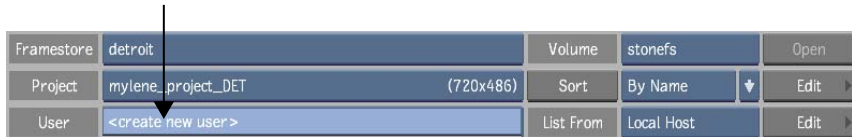
Create a user profile to manage your preferences. When you create a user, you have the option of copying preferences from an existing user. If the user whose preferences you want to copy was created on the same version of the application, you can copy all preferences. If the user was created on an older version of the application, you can only copy hotkey preferences.

Users do not persist when upgrading from one version of Backdraft Conform to another. You need to create new users for the new version. Also, users are not shared between Autodesk Visual Effects and Finishing products.

You can create a user on start-up from the Project Management menu, or during a session from the Preferences menu. By default, a user's preferences are created in the directory */usr/dscreet/user/editing/<user name>*.

To create a user profile:

- 1 Do one of the following:
 - If you are creating a user on start-up, select <create new user> from the User box in the Project Management menu.



- If you are creating a user in the middle of a session, select <create new user> from the User box in the Preferences menu.



The Create User menu appears.

The screenshot shows a 'Create User' dialog box with the following fields and labels:

Create User	Name				
	Pref Directory	Local Host	/usr/discreet/user/effects/Untitled		
Reset	Creation Mode	Files	Host	Version	User
	Copy From	All	detroit	Current	ug_FM_usr

Labels and their corresponding fields:

- (a) Name field
- (b) Preferences Directory Host box
- (c) Preferences Directory field
- (d) Creation Mode box
- (e) User Profile Copy From options

(a) Name field (b) Preferences Directory Host box (c) Preferences Directory field
(d) Creation Mode box (e) User Profile Copy From options

TIP To reset all user settings to their default values, click Reset at any time.

- 2 Enter a name for the user in the Name field.
- 3 The user's default home directory appears in the Preferences Directory field. If you logged in to a remote system, select whether to save the preferences in the default home directory of the remote or local user by selecting an option from the Preferences Directory Host box.
- 4 Do one of the following:
 - To create a user without copying existing preferences, select New Prefs in the Creation Mode box and then click Create User.
 - To copy the preferences of an existing user, select Copy From in the Creation Mode box, and then select the options for the user profile that you want to copy. Click Create User.

NOTE If you are copying a user profile from a different version of the application, you can only copy hotkey preferences.

The user is created, and you are returned to the Project Management or Preferences menu.

- 5 To load the user into the current work session, click Load from the Preferences menu. From the Project Management menu, click Start.

Modifying a User

You can modify the name of an existing user. You cannot change the preferences directory or sharing mode of a user.

To modify a user's name:

1 Do one of the following:

- If you are modifying a user on start-up, select the user you want to edit from the User box and then click Edit.

Framestore	detroit	Volume	stonefs	Open
Project	mylene_project_DET (720x486)	Sort	By Name	↓ Edit ▶
User	user_guide_background	List From	Local Host	Edit ▶

- If you are modifying a user in the middle of a session, click Preferences in the EditDesk menu, select the user you want to modify from the User box, and then click Edit.

Project Management					
Host	detroit (localhost)	Volume	stonefs		
Project	digital (3072x2048)	Sort	By Name	↑ Load	Edit ▶
User	Martin	List From	Local Host	Load	Edit ▶

The Modify User menu appears.

Modify User	Name	David
Modify User	Pref Directory	/usr/discreet/user/editing/David
	Sharing Mode	Not shared
Reset		

(a) User Edit box (b) Name field

2 To change the name of the user, enter a new name in the Name field.

NOTE To restore the user's current settings at any time, click Reset. To exit the User menu without modifying the user, click Exit User.

3 Once you are satisfied with your modifications, make sure Modify User is selected from the User Edit box, click Modify User, and confirm.

You are returned to the Project Management or Preferences menu.

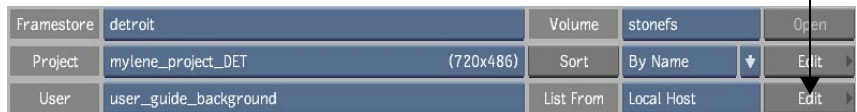
Deleting a User

You can delete a user when you no longer need the associated preferences. You can delete users from previous versions.

NOTE You cannot delete the currently loaded user. The currently loaded user is indicated in the User box in the Preferences menu by a light blue LED to the left of its name.

To delete a user:

- 1 Display the User menu by doing one of the following:
 - On start-up, select the user you want to delete from the User box and then click Edit.



- In the middle of a session, click Preferences in the EditDesk menu, select the user you want to delete from the User box, and then click Edit.



- 2 Select Delete User from the User Edit box.

Delete User	Name	Martin
Modify User	Pref Directory	/usr/discreet/user/editing/David
	Sharing Mode	Not shared
Reset		

If you delete a user that has shared preferences, the preferences directory is not deleted from the filesystem. The preferences directory is deleted only if no other user shares the preferences.

TIP To exit the User menu without deleting the user, click Exit User.

- 3 Click Delete User and confirm.
You are returned to the Project Management or Preferences menu.

Resetting a User

You can reset the hotkeys and preferences of a user. This can be a useful step when troubleshooting user corruption issues.

NOTE You cannot reset the currently loaded user. The currently loaded user is indicated in the User box in the Preferences menu by a light blue LED to the left of its name.

To reset a user:

- 1 Display the User menu by doing one of the following:
 - On start-up, select the user you want to delete from the User box and then click Edit.

Framestore	detroit	Volume	stonefs	Open
Project	mylene_project_DET (720x486)	Sort	By Name	↓ Edit
User	user_guide_background	List From	Local Host	Edit

- In the middle of a session, click Preferences in the EditDesk menu, select the user you want to delete from the User box, and then click Edit.

Project Management						
Host	detroit (localhost)			Volume	stonefs	
Project	digital (3072x2048)			Sort	By Name	Load Edit
User	Martin			List From	Local Host	Load Edit

- 2 Select Reset User Settings from the User Edit box.

Reset User Settings	Name	Martin
Reset User	Pref Directory	/usr/discreet/user/effects/Martin

TIP To exit the User menu without resetting the user, click Exit User.

- 3 Click Reset User and confirm.
You are returned to the Project Management or Preferences menu.

Loading Different Projects and Users during a Work Session

During a work session, you can load other projects and users.

Loading a Different Project

During a work session, you can load any another project. Doing so changes the display environment according to the configuration of the project you choose to load. If you are on a remote framestore, you cannot load a project that is already in use.

To load another project:

- 1 In the EditDesk menu, click Preferences.
The Preferences menu appears.



(a) Project box (b) Load button

- From the Project box, select the project you want to load.

TIP The currently loaded project is indicated by a light blue LED to the left of its name.

- Click Load.

The graphics monitor switches to the new display settings, and after a few moments, the new project is loaded.

Loading a Different User

During a work session, you can load any other user.

To load another user:

- In the EditDesk menu, click Preferences.

The Preferences menu appears.



(a) User box (b) Load button

- From the User box, select the user you want to load.

TIP The currently loaded user is indicated by a light blue LED to the left of its name.

3 Click Load.

NOTE Any changes to preferences made in the current session are saved when you load another user.

About Multi-Format Projects

You can work with clips of any resolution in your project. You can process images of differing resolutions in Backdraft Conform. The video I/O procedures that you use to input and output clips to and from Backdraft Conform using a VTR, as well as capture and assemble EDLs, are not restricted to your project's default resolution. You can input and output clips of another video resolution to and from your project. See [Working with Multi-Format Input and Output](#) on page 161.

Working with Remote Framestores

You can use a remote (network-accessed) framestore to store clips with Backdraft Conform. This allows you to use Backdraft Conform without local storage.

This functionality is not intended to allow collaborative and concurrent access to a central project from several remote workstations. A project remains tied to the workstation it is created on, and is meant for single-user access.

The remote framestore used is specified at startup. See [Start-up Options](#) on page 610.

Topics in this chapter:

- [About Clip Libraries](#) on page 369
- [Creating Clip Libraries](#) on page 371
- [Opening Clip Libraries](#) on page 371
- [Using the Dual Library View](#) on page 376
- [Saving to Clip Libraries](#) on page 377
- [Viewing Entries in Clip Libraries](#) on page 379
- [Selecting Entries](#) on page 396
- [Searching for Clips](#) on page 399
- [Organizing Clips](#) on page 401
- [Loading Clips to the EditDesk](#) on page 407
- [Copying Local and Remote Clip Libraries to Your Current Project](#) on page 410
- [Troubleshooting Lock Files](#) on page 417

About Clip Libraries

Use clip libraries to store and organize the clips in your project. You can save individual clips, Source Areas, Record Areas, EditDesks, or EditDesk Libraries to a clip library. You can also load any clip, Source Area, Record Area, or EditDesk from a clip library for use in the current work session. You can delete saved items you no longer need from a clip library.

For each project, a clip library named *Default* is created. You can use the Default clip library or create your own. You can create one or multiple clip libraries per project. For example, create one clip library to save the clips used for a commercial spot and another to save all the clips used in an animated text roll. Each clip library you create is stored in the current project. Clip libraries support clips of any resolution.

Clip libraries can be displayed in two modes, SingleView and Dual View. Single view is the default view and displays the contents of one clip library. Dual View displays the contents of two clip libraries, each in its own panel. Dual View allows you to use drag and drop functionality to copy and move clips, reels, and projects.

You can access clip libraries in other projects (either local or remote). To access projects on remote machines, you must have Wire. See [Copying Local and Remote Clip Libraries to Your Current Project](#) on page 410. You can also access clip libraries on a standard filesystem. See [Importing and Soft-Importing Image Files](#) on page 242.

Clip metadata is stored in clip libraries on your computer's hard disk in `/usr/discreet/clip/ <volume name>/<project name>`. The actual frames are stored either on the framestore or on the standard filesystem. Media that is soft-imported is not written to the framestore.

Clip metadata comprises various characteristics on the clip, including:

- A clip ID that is used by setups to retrieve associated clips and to optimize archiving processes
- Frame IDs that refer to the frames on the framestore or standard filesystem
- Timecode, keycode, and video or audio track numbers
- Audio tracks, if they have been linked to the clip
- Other metadata such as aspect ratio and scan mode

Each frame consists of:

- The image, which is composed of pixels
- A frame ID

You can load the same clip from a clip library multiple times onto the EditDesk. This repetition of the original frames does not take up space on the framestore because what you actually load are references to the original frames. Information about current framestore usage is provided in the message bar.

You can also load a clip from the standard filesystem. This clip does not occupy space on your framestore until you write the clip to the filesystem.

Creating Clip Libraries

You can organize projects by creating clip libraries and using them to store related clips, Source Areas, Record Areas, and EditEditDesks together. It is recommended that you use several small clip libraries instead of one large one. This helps to keep your projects organized, allows for more efficient transfers of data, and streamlines clip library performance.

NOTE For optimum performance, ensure that the `MaxLibrarySize` token in the `init.cfg` configuration file is set properly. Refer to the *Autodesk Visual Effects and Finishing Configuration File Reference Guide*.

Use the Clip Library box on the EditDesk to create clip libraries.

To create a clip library:

- 1 Select <new> from the Clip Library box.



The keyboard appears.

- 2 Enter a name for the new clip library. Use only alphanumeric characters, single spaces, and underscores. Click Enter on the on-screen keyboard (or press **Enter**).

The clip library is created and appears in the Clip Library box.

TIP You can also create clip libraries using the Clip Library box in the current clip library.

Opening Clip Libraries

Open a clip library from the EditDesk or from the current library. You can open any library belonging to the current project. If you accessed libraries

through the network panel, you can also open libraries belonging to other projects.

The Clip Library box lists all available libraries. The library displayed on the box label is the currently selected library. You can open the current library or select another library from the Clip Library box.

To open a clip library from the EditDesk:

- In the EditDesk menu, do one of the following:
 - To open the currently selected library, click the Clip Library box.
 - To open another library, select it from the Clip Library box and then click the Clip Library box.



NOTE If the list of clip libraries is too long to display all libraries, move the cursor on the scroll arrow at the top or bottom of the list.

The clip library appears.

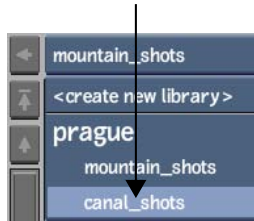


(a) Clips in library canal_shots

To load clips from the library, see [Loading Clips to the EditDesk](#) on page 407. To exit the library without loading any clips, click the EXIT Library button.

To change the current library:

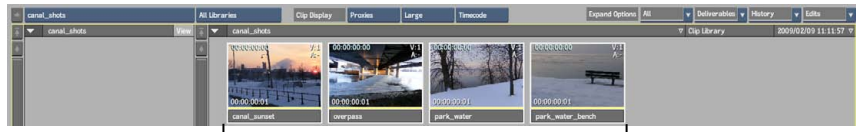
- From the Clip Library box in the current library, select the library that you want to open.



NOTE If the list of clip libraries is too long to display all libraries, move the cursor on the scroll arrow at the top or bottom of the list.

The clip library appears to the right of the Clip Library box.

NOTE You may have to expand a reel to view its clips. See [Viewing Entries in Clip Libraries](#) on page 379.



a

(a) Clips in canal_shots library

To load clips from the library, see [Loading Clips to the EditDesk](#) on page 407. To exit the library without loading any clips, click the EXIT Library button.

Available Libraries

You can open libraries that are read-write as well as those that are read-only. You can load clips from either type of library. However, you can save clips only to a read-write library.

To do any type of clip library management, you must have read-write access to the library.

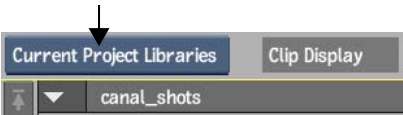
The list of available libraries appear in the Clip Library box. This list may become very long, especially if you accessed libraries belonging to other projects (through the network panel). You can select whether you want network-accessed libraries to appear in the Clip Library box.

You can also make hidden libraries available (for example, **_cache** and **._Backup**), which are by default not visible.

If you have a Flare system that is connected remotely to your Backdraft Conform system, you can enable read-write access to Flare libraries with the R/W button.

To control the libraries displayed in the Clip Library box:

- From the clip library, select an option from the Show Library box.

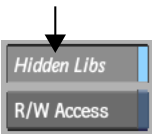


Select:	To display:
All Libraries	All libraries belonging to all projects, including those accessed through the network panel.
Current Project Libraries	All libraries belonging to the current project. Note that if the current library is accessed through the network panel, this option is greyed out.

NOTE If you are in Dual View, each view has its own Show Library box. You can select any option for either view.

To display hidden libraries in the Clip Library box:

- Enable Hidden Libs.

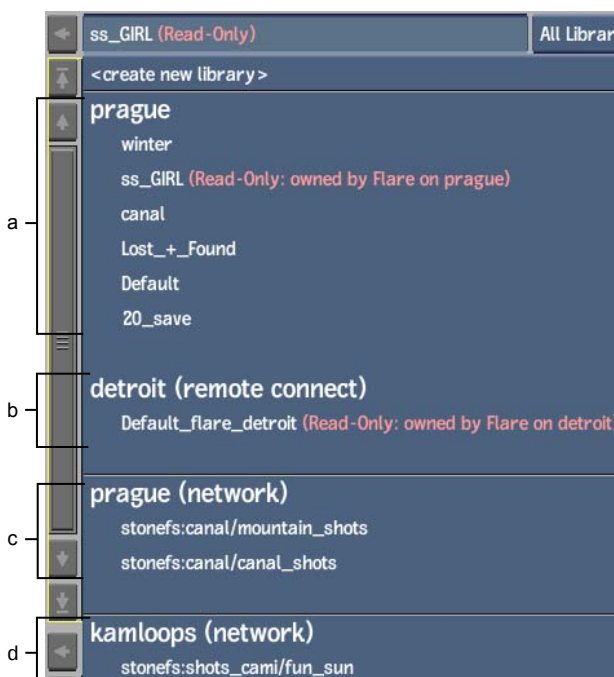


Order of Available Libraries

To make it easier to identify where libraries are located and whether they belong to the current project, libraries appear in the following order in the Clip Library box:

- First, libraries that you own and that belong to the current project appear.
- Secondly, libraries that you do not own and that belong to the current project appear.
- Thirdly, libraries belonging to other projects on the system to which you are connected appear.
- Lastly, libraries belonging to other projects on other systems appear.

All read-only libraries provide more information about their status in the Clip Library box and in the Library status bar.



(a) Current project libraries owned by Backdraft Conform (b) Current project libraries not owned by Backdraft Conform (c) Network library of another project on the system to which Backdraft Conform is connected (d) Network library of another project on another system

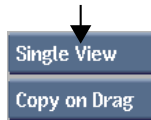
Using the Dual Library View

The Dual Library View allows you to open, view, and work with two separate clip libraries at the same time. With Dual View you can:

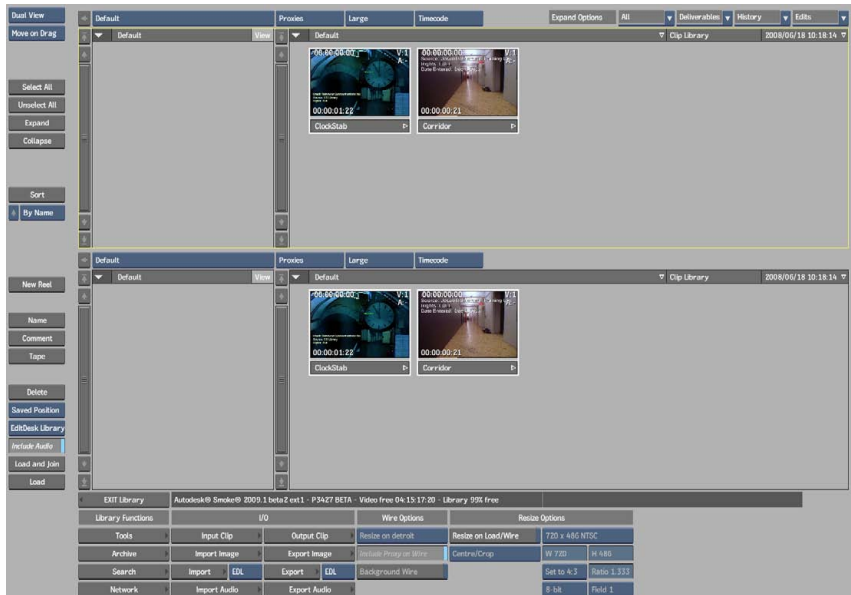
- Copy and move clips between libraries.
- Copy and move clips between local or remote projects while maintaining the project's structure.
- Copy clip libraries between workstations.

To display the Dual Library View:

- 1 Open a clip library.
- 2 Click the Library View Mode button located at the top-left portion of the screen.



The Dual Library View appears.



When working in Dual Library View, you make a library active by clicking it. The active library is surrounded by a yellow box.

NOTE When switching between views, the currently selected library remains active. For example, the active library in Dual View will appear when you switch to Single View.

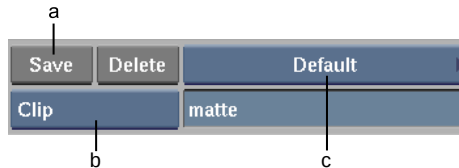
Saving to Clip Libraries

You can save the following items from the EditDesk to the current clip library:

- An individual clip or multiple clips
- The Source Area
- The entire EditDesk
- The EditDesk Library

To save an item to a clip library:

- 1 Display the EditDesk menu.



(a) Save button (b) Item box (c) Clip Library box

- 2 Select the type of item you want to save from the Item box.
- 3 From the Clip Library box, select the clip library in which you want to save the item.
- 4 Click Save.
 - When saving the Source Area, Record Area, or EditDesk, the on-screen keyboard appears.
 - When saving clips, a red selection cursor appears. Click the upper-left corner of the clip you want to save. The on-screen keyboard appears.

- When you save an unmodified source clip to the library, if there is a comment applied to the video element, this comment is visible in the library. The video element comment can be entered on the EditDesk, or in the EDL Import module.

5 Type a name for the item. If it has a name, accept the name or modify it.

6 Click Enter on the on-screen keyboard (or press **Enter**).

A message appears indicating that the item was saved successfully, and the saved item appears as an entry in the current clip library.

If you enter a name that already exists in the current clip library, a warning appears indicating the name is already in use. You have three choices.

Select:	To:
Add	Create the new entry, giving you two entries with the same name.
Replace	Replace the entry in the clip library with the entry being saved.
Rename	Enter a different name in the keyboard for the entry being saved.

NOTE A Record Area can have the same name as a Source Area.

Shortcut for Saving Clips

You can save one clip or multiple clips to a clip library from the EditDesk by dragging the clips over the clip library name on the EditDesk.

To save a clip:

- 1 Select the destination clip library from the Clip Library box.
- 2 Select a clip on the EditDesk.

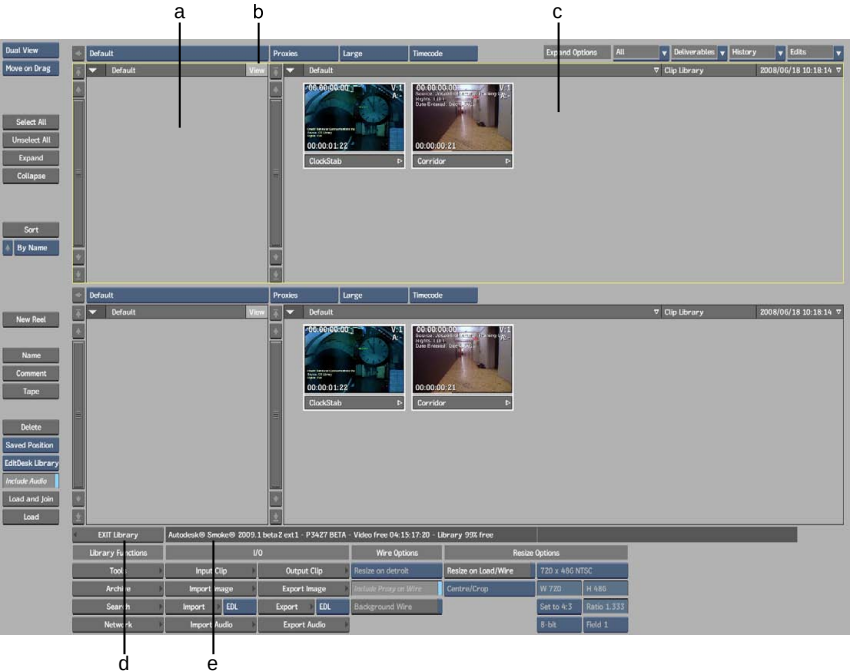
TIP Hold **Ctrl** to select multiple clips or drag a selection box around them.

- 3 Drag the selected clip(s) over the name of the destination clip library on the Clip Library box.

The clips are saved to the destination library.

Viewing Entries in Clip Libraries

The contents of clip libraries can be displayed in two panels: the Reels panel on the left, which displays the reels in the library, and the Clips panel on the right, which displays the clips associated with the selected reel.



(a) Reels panel (b) View Reels control (c) Clips panel (d) Exit Library button (e) Message bar

You can display proxies (pictures) of the clips, or you can choose to display just the titles of the clips. You can scroll entries in a clip library and expand, collapse, and sort entries. You can also rename the tape, and add comments.

You can view clip information by pressing **Alt** and placing the mouse cursor over a clip entry. The clip name, resolution, aspect ratio, proxy status, and number of deliverables appear in the message bar.

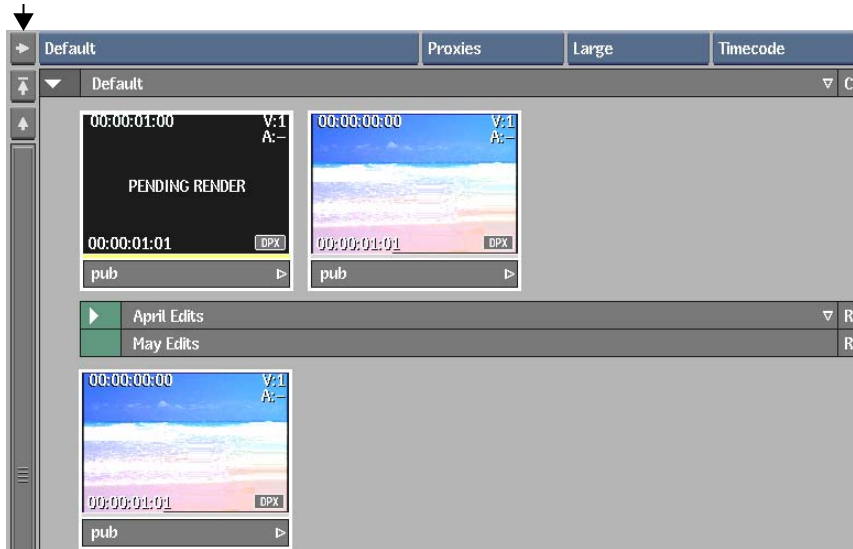
Clips that have a resolution that differs from the project default resolution are identified by a blue timecode or frame number display. When a clip contains segments of different resolutions, a “MIXRES” label appears on the clip proxy.

Expanding and Collapsing the Reels Panel

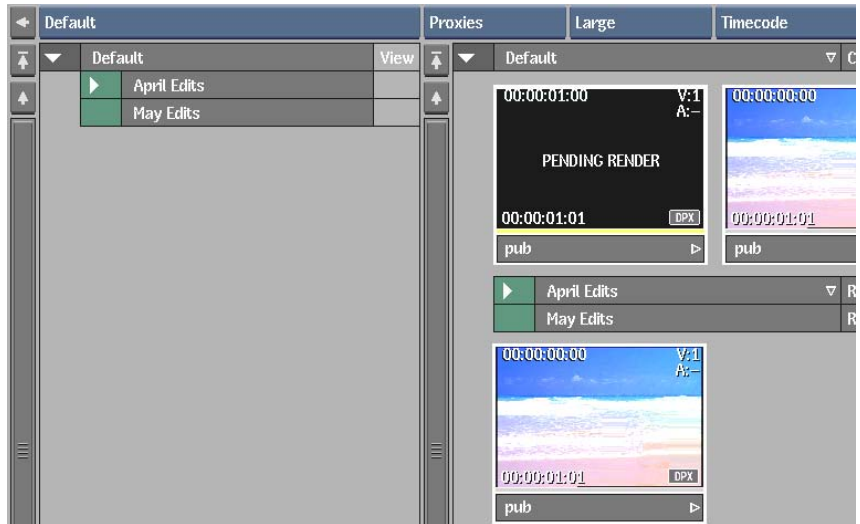
The Reels panel of the clip library window displays the reels associated with a library. You may find it useful to display the Reels panel if you have many reels in your library. You use the Expand and Collapse arrows to expand and collapse the Reels panel.

To expand and collapse the Reels panel:

- 1 With the Reels panel collapsed, click the Expand arrow.



The Reels panel appears displaying all of the reels in the library. When you double-click on a reel, the clips associated with it appear in the Clips panel to the right of the reel.



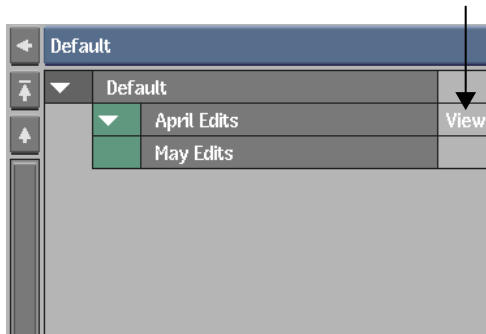
- 2 With the reels section expanded, click the Collapse arrow.
The Reels panel collapses and all of the reels and clips in the library are displayed.

Viewing the Contents of a Specific Reel

You can view the contents of specific reels in the library.

To view the contents of a specific reel:

- 1 Display the Reels panel.
- 2 Click the View Reels control.
The contents of the reel you selected are displayed.



NOTE To display the contents of numerous reels, use **SHIFT**-click to select them.

Scrolling a Clip Library

Scroll the contents of the current clip library using the scroll bar. You can also press the **up arrow** or **down arrow** key to scroll. The scroll bar buttons are described as follows.

Click:	To:
	Scroll up a page.
	Scroll up by one entry.
	Scroll down by one entry.
	Scroll down a page.

Changing the View Mode

You can view clip libraries in either Single, or Dual View mode. The libraries' contents can be viewed in Proxies, Titles, or List View mode. Switch modes by selecting a view from the View Mode box or by pressing **P** (Proxies), **T** (Titles), or **L** (List View).

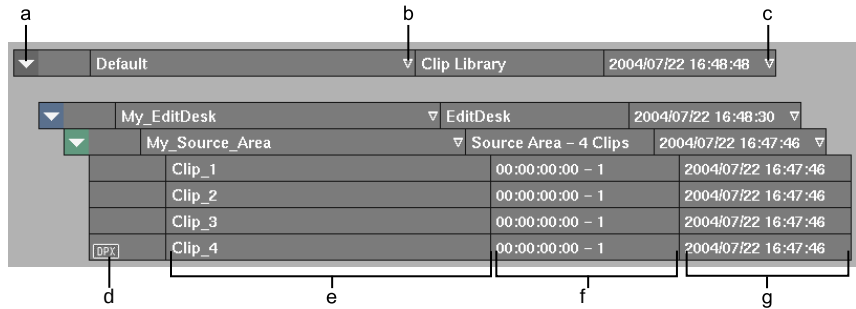
Viewing Clips in Titles Mode

Use Titles mode to view all the entries in a clip library by name.

To view titles:

- Do one of the following:
 - From the View Mode box, select Titles.
 - Press T.

In Titles mode, entries are presented as a series of horizontal bars.



(a) Collapse arrow (b) Name Sort arrow (c) Date Sort arrow (d) Soft-import indicator
(e) Name (f) Description (g) Creation Date field

The bars consist of the following arrow buttons and fields.

Expand or Collapse arrow Click the Expand or Collapse arrow to expand or collapse entries. See [Expanding and Collapsing Entries in Titles and Proxies Mode](#) on page 389.

The colour of the box surrounding the arrow indicates the type of entry. The colour of the arrow indicates whether contained entries are selected. See [Entry Colours](#) on page 390.

Name field Contains the entry's name. If a name is not specified when an entry is saved, this field is labelled *<untitled>*. See [Renaming Entries](#) on page 405.

Name Sort arrow Click to alphabetically sort entries by name. See [Sorting Entries in Titles and Proxies Mode](#) on page 388.

Description field Contains a brief description of the entry. For example, a Source Area entry is described as "Source Area - *n* Clips" where *n* is the number of clips in the Source Area entry.

Creation Date field Provides the date and time the entry was created.

Date Sort arrow Click to sort entries by creation date. See [Sorting Entries in Titles and Proxies Mode](#) on page 388.

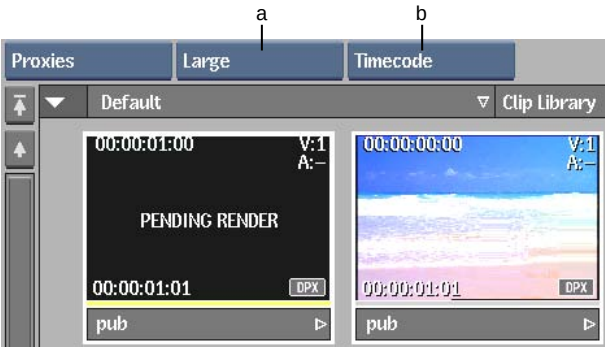
Viewing Proxies

Use Proxies mode to view the clips in a clip library as proxy images. Clips only appear in Proxies mode if the entry that contains them is expanded. All other entries are listed as titles.

To view proxies:

- 1 Do one of the following:
 - From the View Mode box, select Proxies.
 - Press **P**.

The Proxy Size box and Information box appear.



(a) Proxy Size box (b) Information box

- 2 From the Proxy Size box, set the size of the proxies to large, medium, or small.
- 3 From the Information box, select one of the following options.

Select:	To:
No Display	Disable the display of information on clips.
TC + Res	Display current timecode, duration, clip dimensions, bit depth, and aspect ratio.

Select:	To:
Frame + Res	Display current frame number, duration, clip dimensions, bit depth, and aspect ratio.
Timecode	Display current timecode and duration.
Frame	Display current frame number and duration.

NOTE Keycode is displayed for all options except No Display. See [Displaying Timecode and Keycode](#) on page 733.

Selected information is displayed on the proxy.



(a) Current timecode; keycode is also displayed if present (b) Number of video and audio tracks (c) Clip duration (d) Name bar (e) Soft-import indicator (for a clip that is not a hybrid) (f) Clip History indicator (g) Soft Edits indicator (h) Soft-import indicator (for a hybrid clip) (i) Deliverable indicator (j) Play button

Left image courtesy of Technicolor (formerly Toybox)

Clip History indicator Clips that have clip history have an indicator. See [About Clip History](#) on page 489.

Deliverable indicator Clips that have real-time settings have an indicator. See [Managing Deliverables](#) on page 194.

Soft-import indicator Clips that are soft-imported have an indicator. The type of indicator depends on whether the clip is a hybrid clip or a completely soft-imported clip. See [Recognizing Soft-Imported Clips](#) on page 226.

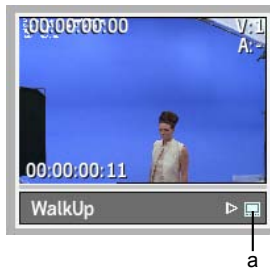
NOTE If you do not have read- and write-access to the clip, the resulting soft-imported clip will be black with a grey bar.

Soft Edits indicator Proxies for clips with soft edits (such as uncommitted cuts, dissolves, or splices) have a “[|” symbol.

Proxies for source clips are identified by a dark grey border (proxies for regular clips have a light grey border).

NOTE If a portion of a soft clip resides in another project, a black proxy appears with the text “Not Transferred”. You must load the clip to the local project to view it in the library.

In the Preferences menu, when the Show Selected Item option is selected in the Broadcast Monitor box, a monitor symbol appears on the clip.



(a) Monitor indicator
(active)

Monitor indicator Click the monitor indicator to send the clip to the broadcast monitor (the currently selected clip in the broadcast monitor displays a blue indicator).

To jog a proxy:

- Click the proxy in the jogging area and drag left or right.



(a) Jogging area (b) Position indicator (c) Play button

Image courtesy of Technicolor (formerly Toybox)

A yellow position indicator under the image shows the approximate position of the frame being shown.

To play a proxy:

- Do one of the following:
 - Click the Play button on the proxy name bar.
 - Place the cursor over a proxy and press the play forward (**V**) or backward (**C**) hotkey.

The cursor changes to a green arrow and the clip plays from the current frame to the end.

To navigate to in and out points:

- 1 Select the clip. See [Selecting Entries](#) on page 396.
- 2 Do one of the following:
 - Press **Shift+A** to go to the in point.
 - Press **Shift+S** to go to the out point.

Viewing Clips in List View Mode

Use List View mode to view the clips in a clip library in a list.

List View provides most of the same functionality as Titles or Proxies mode—you can select, load, delete, and name entries. However, you cannot perform drag and drop operations, such as moving or copying entries, in List View.

To view List View mode:

- Do one of the following:
 - From the View Mode box, select List View.
 - Press **L**.

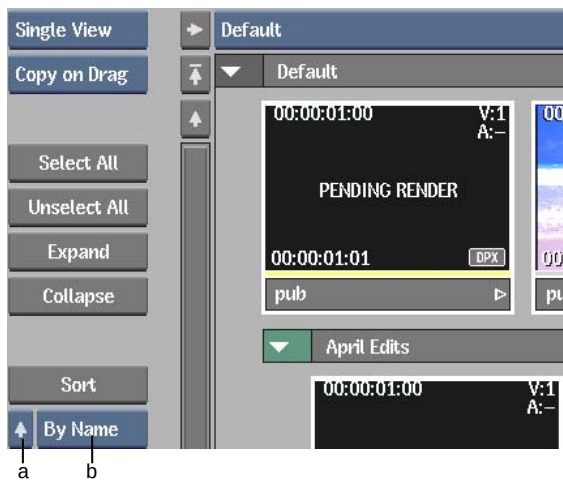
See [Listing Clip Information](#) on page 391.

Sorting Entries in Titles and Proxies Mode

You can sort entries in clip libraries in Titles and Proxies mode using the Sort button or the Name and Date Sort arrows. Sorted entries of the same type are grouped together. For example, clips are grouped together and Source and Record Areas are grouped together. You can sort all entries or top-level entries only. See [Sorting Clips in List View](#) on page 393.

To sort entries using the Sort button:

- 1 From the Sort box, specify whether you want to sort the entries by name or by date.



(a) Sort arrow (b) Sort box

Select:	To:
By Name	List entries of the same type in alphabetical order. Entries that begin with upper-case letters are grouped alphabetically before entries with lower-case letters.
By Date	List entries of the same type according to the date they were created. The most recent entry appears first.

- 2 Click the Sort arrow to determine whether the sort will be ascending or descending.
- 3 Click Sort.

All top-level Record Areas, Source Areas, EditDesks, reels, and clips are sorted.

- 4 To sort all entries, hold **Ctrl** and click Sort.

To sort using the Name Sort and Date Sort arrows:

- Do one of the following:
 - To sort top-level entries alphabetically by name, click the Name Sort arrow.
 - To sort top-level entries by creation date, click the Date Sort arrow.
 - To sort all entries, **Ctrl**-click the Name Sort or Date Sort arrow.



(a) Name Sort arrow (b) Date Sort arrow

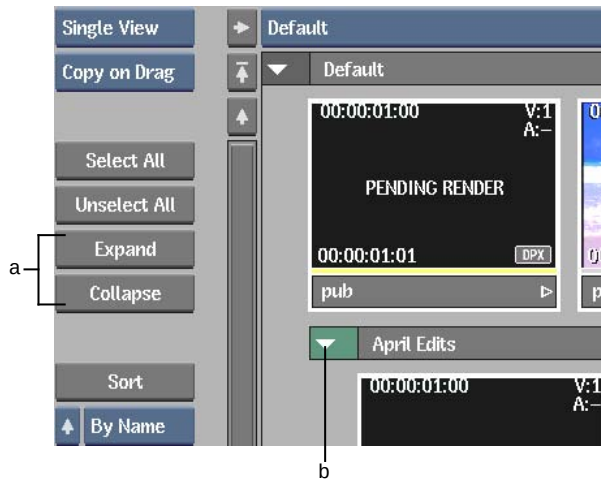
Expanding and Collapsing Entries in Titles and Proxies Mode

You can expand and collapse clip libraries, EditDesks, folders, Source and Record Areas, and reels in the clip library. Clip libraries can contain EditDesks, Source Areas, Record Areas, or clips saved independently to the library. Both EditDesks and folders contain Source Areas and Record Areas; Source Area and Record areas contain clips; reels contain both clips and soft effects.

When you view clip libraries in Titles or Proxies mode, the hierarchical structure is represented using indentation and Expand/Collapse arrows.

Use the Expand and Collapse buttons or the Expand and Collapse arrows to expand and collapse entries in the clip library. You can also use the hotkeys **E** (expand) and **Shift+E** (collapse) for selected entries. An EditDesk, Source Area, Record Area, and a clip can all appear at the second level of indentation (that is, the level after the clip library level). If you save a Source Area alone, the Source Area entry appears at the second level in the clip library. Similarly, if you save an individual clip, it appears at the second level.

Click the Expand button to expand all selected parent entries. Click the Collapse button to collapse all selected parent entries.



(a) Expand & Collapse buttons (b) Collapse arrow

Click the Expand and Collapse arrows to the left of a parent entry to expand or collapse it. When an entry is collapsed, the Expand arrow points to the right; when it is expanded, the Collapse arrow points down.

To expand or collapse all contained entries, **Ctrl**-click the arrow.

Entry Colours

Each type of entry uses a different colour in the box at the left of the entry. This box also contains the Expand or Collapse arrow.

This colour:	Represents:
Dark Grey	Clip libraries.
Blue	EditDesk and folders.
Green	Source Areas and reels.
Red	Record Areas.
Medium Grey	Clips.
Dark Grey	Clips.

Expanding and Collapsing the Contents of a Clip

You can expand or collapse selected clips with real-time settings, history, or soft edits from a clip library. You can also display or hide selected clips. Select options from the Expand Options group of dropdown lists or click a clip indicator to toggle the display of the associated deliverable, history, or source clip display for the clip.



In Proxies mode, the expanded portion of a clip is slightly smaller in order to distinguish it at a glance from other types of clips. In Titles View mode, these entries are indented.

To expand or collapse a clip:

- 1 Select the clip you want to expand or collapse.
- 2 Do one of the following:

Select an option from:	To:
All	Display all hidden clips or hide selected clips.
Deliverables	Display or hide the deliverables associated with the selected clips.
History	Display or hide the clip history associated with the selected clips.
Edits	Display or hide source clips associated with the selected clips.

NOTE Double-click a Deliverable, History or Soft Edits indicator on a clip to toggle its display/hide settings.

Listing Clip Information

List View mode displays entries in the clip library as a list of clips. The list gives information about each clip, such as start and end timecode and keycode, clip duration, archive flag, and tape name.

Clip Information in List View

The following information is provided in List View.

Column:	Displays:
Sel	The order in which clips were selected.
Soft-import	Soft-import indicator if the media was soft-imported.
D	Deliverable indicator for clips with real-time settings.
H	History indicator for clips containing history.
Location	Path of the parent entries in which the clip is located.
Clip Name	Name of the clip.
TC In	Start record timecode of the clip, or in point of the clip if one has been set. If Frame is selected in the Information box, the equivalent frame number is displayed.
TC Out	End record timecode of the clip, or out point of the clip if one has been set. If Frame is selected in the Information box, the equivalent frame number is displayed.
Duration	Duration of the clip, or the duration between in and out points, if they have been set, in timecode or frames.
Frames	Number of frames referenced by a clip.
KC In	Start keycode for the clip, or for the in point of the clip if one has been set.
KC Out	End keycode for the clip, or for the out point of the clip if one has been set.
Tape	Name of the associated tape. <N/A> indicates that the tape cannot be renamed. See Renaming a Clip's Tape in List View on page 395 and Editing an EDL on page 663.
V	Number of video tracks.
A	Number of audio tracks.
Width	Pixel width.

Column:	Displays:
Height	Pixel height.
Bts	Bit depth.
SM (Scan Mode)	Whether the clip is field 1 or 2 dominant or is progressive.
P (Proxies)	Whether a proxy exists for the clip.
U (Unlinked)	Whether the media associated with the clip — video (V), audio (A), video and audio (V/A), or high-resolution media (HR) — has been unlinked.
E	Number of editing elements of the clip.
Created	Creation date and time of the clip.
Archived	Date the last time the clip was saved to an archive tape.
Comment	Comment for the selected clip.

Information Box

When you select List View, the Information box appears. Use this box to display the clip length in frames or timecode. To display frames, select either Frame, Frame + Res, or No Display. To display timecode, select Timecode or Timecode + Res.

NOTE Keycode is displayed for all options except No Display. See [Displaying Timecode and Keycode](#) on page 733.



(a) Information box

Sorting Clips in List View

In List View, you can sort on any field. Simply click the label of any field to sort by that field. The sort field is highlighted and contains a sort arrow at the right end of the label.

Default			
Set	H	Location	Clip Name
7		April Edits	output11
		April Edits	
3	DPX	May Edits	Girl_published
		May Edits	
6			Audio Track
5	AIF		Audio_Track
4	DPX		Girl_published
2	DPX		Girl_published
1	DPX		Girl_published

(a) Clip field (b) Sort arrow

The sort can be either in ascending or descending order. The arrow points down for an ascending alphanumeric sort and up for a descending sort. To toggle between ascending and descending sort, click the field label a second time.

Secondary Sorts

When you perform a sort on any field other than the Clip field, you automatically get a secondary sort on the Clip field. This means that you can sort by one field—the primary sort—and get a sort of the clip names within the other field—the secondary sort. For example, if you sort by the Location field, you get a secondary sort by the clip name. Clips would then be sorted within their parent entries. Any field can act as a primary sort field, but only the Clip field can be the secondary sort field.

NOTE The default sort when you display List View is a primary sort on Location and a secondary sort on Clip.

To perform a secondary sort:

- 1 Click the Clip field for an ascending sort. Click it a second time for a descending sort.
- 2 Click the field within which you want clip names to be sorted.
A sort arrow appears on both the fields. The last field you clicked is highlighted, indicating this is the primary sort field.

Default						List View	
Set	H	Location	Clip Name	TC In	TC Out	Duration	
		May Edits					
		April Edits					
2	DPX		Girl_published	00:00:00:00	00:00:01:00	31	
1	DPX		Girl_published	00:00:00:00	00:00:01:00	31	
3	DPX	May Edits	Girl_published	00:00:00:00	00:00:01:00	31	
4	DPX		Girl_published	00:00:00:00	00:00:01:00	31	
7		April Edits	output 11	00:00:00+00	00:00:02+13	62	
6			Audio Track	00:00:00:00	00:00:29:29	900	
5	AIF		Audio_Track	00:00:00:00	00:00:29:29	900	

(a) Primary sort on Clip Name field (b) Secondary sort on Created field

List View is useful if you have clips with long clip names because you can resize any column to display more or less information. Place the cursor between any two columns in the column name area to display the column resize cursor. Drag the cursor to resize the column.

Renaming a Clip's Tape in List View

You can name or rename the tape of a captured clip or a source clip (such as a clip rendered in Backdraft Conform) in List View. This is useful when a manually captured clip has been given the wrong tape name.

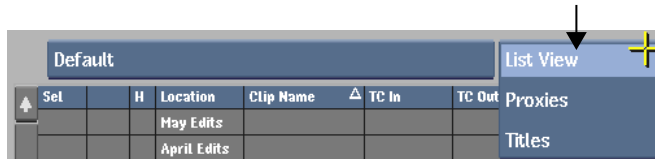
You cannot rename the tape for a clip in the clip library if <n/a> appears in the Tape column. The structure of the clip must resemble that of a captured clip so that it can be associated with the EDL. Use the following guidelines to determine whether you can assign the tape name to a particular clip.

Video clip with no audio The clip can be a captured clip or a pure source clip (a clip rendered in Backdraft Conform). Virtual source clips (for example, an uncommitted colour clip created with the Colour Source tool or a multitrack containing a virtual source) cannot be assigned a tape name.

Video clip with audio The start and end timecode of the audio and video must be the same. The video tracks must have the same source timecode and the same tape name. Also, if the video *or* audio has been rendered/mixed down, the clip cannot be assigned a tape name. However, if *both* video and audio have been rendered/mixed down, the clip can be assigned a tape name.

To name or rename the tape for one or more clips:

- 1 In the clip library, select List View from the View Mode box.



2 Select the clip(s). See [Selecting Entries](#) on page 396.

3 Click the Tape button and then click Confirm.

The on-screen keyboard appears; the Keyboard field contains the existing tape name.

4 Enter a name in the Keyboard field and press **Enter**.

NOTE The name can be up to 52 characters.

The name is applied to all selected clips. If there are clips in the selection that do not conform to the requirements for renaming the tape, they are not renamed. A message informs you of how many clips were renamed.

NOTE You can also rename the tape from Proxies or Titles view, but since there is no Tape field in these views, you cannot see the result.

Adding a Comment to a Clip

You can add a comment to a clip, for example, to remind you that the clip is part of a particular project.

To add a comment to a clip:

1 In the clip library, select List View from the View Mode box.

2 Click Comment to the left of the list.

The on-screen keyboard appears.

3 Type a comment and then press **Enter**.

The comment appears in the Comment column for the selected clip.

Selecting Entries

There are several methods for selecting and deselecting entries.

Select a single entry In Titles or List View mode, click anywhere on the entry except on the Expand/Collapse arrow and on Sort buttons of parent entries.

In Proxies mode, click anywhere on the proxy except in the jogging area or on the Play button.



(a) Jogging area (b) Play button

In Titles and List View mode, a selected entry is light grey. On proxies, the name bar is yellow. When you click a parent entry, the parent entry and all its child entries are selected.

When a parent entry contains some selected child entries, but not all of them, its Expand or Collapse arrow is yellow. When all of a parent entry's child entries are selected, its Expand or Collapse arrow is green.

Select all child entries of a parent entry Click the parent entry.

Add more entries to a selection **Ctrl**-click (or use the pen button) each entry you want to add.

NOTE If you **Ctrl**-click a collapsed parent entry, all child entries are selected. To select certain entries under the parent entry, expand the parent entry and then **Ctrl**-click the entries.

Deselect one or more entries **Ctrl**-click each entry (or use the pen button).

Select a range of entries Click the first entry in the range, then press **Shift** and click the last entry in the range. In List View, you can also drag the cursor over the range of entries.

Add a range of entries **Ctrl**-click the first entry in the range you want to add to your current selection. **Shift**-click the last entry in the range you want to add.

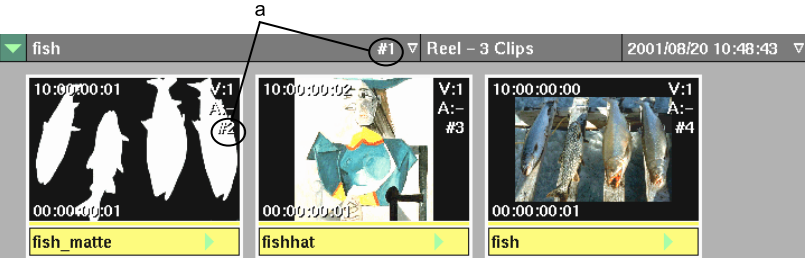
Select all entries in the clip library Click the Select All button in the Library Management menu. Alternatively, click the clip library entry.

Deselect all entries Click the Unselect All button in the Library Management menu. Alternatively, **Ctrl**-click (or use the pen button) anywhere in the solid grey area of the clip library.

Selection Order

When you select several EditDesks, Source Areas, Record Areas, and clips at once, the order in which they are selected is indicated by a number in the entry. The display of the selection order is useful when selecting multiple clips to perform a particular task. You can use the selection order numbers when joining multiple clips with Load and Join or changing the timecode of multiple clips with the Tools menu.

In Proxies and Titles modes, the selection order number is preceded by the number sign (#). In Proxies mode, the selection order number appears in the upper-right corner of the proxy below the video and audio track numbers, and to the left of the Name Sort arrow for EditDesk, Source Area, and Record Area entries.



(a) Selection Order number in Proxies mode

In Titles mode, the selection order number appears to the left of the Name Sort arrow.

fish	#1	Reel - 3 Clips	2001/08/20 10:48:43
fish_matte	#2	10:00:00:01 - 1	2001/08/20 10:45:16
fishhat	#3	10:00:00:02 - 1	2001/08/20 10:45:16
fish	#4	10:00:00:00 - 1	2001/08/20 10:45:15

(a) Selection Order number in Titles mode

In List View mode, the selection order number appears in the Sel column.

Selection Order	Location	Clip Name
1	DPX	COL_NOISE
1	DPX	kodak_girl
		The_Future_192_kbs.
2		YELLOW

(a) Selection Order number in List View mode

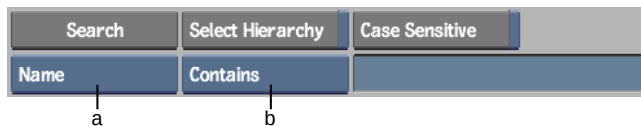
Searching for Clips

Use the Search menu to find a clip or a set of clips in the current clip library.

To search for a clip:

- 1 From the Clip Library menu, click Search.

The Search menu appears.



(a) Search option box (b) Argument option box

- 2 Select an option from the Search option box and use the Argument option box and field to supply the necessary arguments for that option.

Criteria Option	Specify	Possible Arguments
Name	A clip name	Is Equal To; Is Not Equal To; Contains; Does Not Contain; Is Less Than; Is Greater Than; Matches Pattern
Soft-import	n/a	Contains; Does Not Contain
Clip History	n/a	Contains; Does Not Contain; Intermediates; Intermediates+Src; Sources—When using Intermediates, Intermediates+Src, and Sources, select a result clip that has clip history. The clips that are found are the intermediates and/or source clips associated with the selected clip.

Criteria Option	Specify	Possible Arguments
Source TC	A source time-code	Is Equal To; Is Not Equal To; Is Less Than; Is Greater Than; Contains; Does Not Contain
Record TC	A record time-code	Is Equal To; Is Not Equal To; Is Less Than; Is Greater Than; Contains; Does Not Contain
Date	The date the clip was last modified	Is Equal To; Is Not Equal To; Is Earlier Than; Is Later Than
Clip Length	The length of time of a clip	Is Equal To; Is Not Equal To; Is Greater Than; Is Less Than
Audio	n/a	Contains; Does Not Contain
Resolution	The clip's size, depth, aspect, or scan format	Is Equal To; Is Not Equal To; Is Less Than; Is Greater Than; Is Less Or Equal; Is Greater Or Equal
Archive Date	A date and time the clip was archived	Is Equal To; Is Not Equal To; Is Earlier Than; Is Later Than; Whenever; Never
Tape	A tape name or number	Is Equal To; Is Not Equal To; Contains; Does Not Contain; Is Less Than; Is Greater Than; Matches Pattern
Comment	A comment made about the clip	Is Equal To; Is Not Equal To; Contains; Does Not Contain; Is Less Than; Is Greater Than; Matches Pattern
Deliverable	n/a	Contains; Does not contain

- 3 Optional: Enable Select Hierarchy if you want your search results to include the reel or EditDesk for the clips which match your criteria.

TIP The Select Hierarchy option is useful when you archive in two passes. For example, if you archive all video material to a video archiving device and then all non-standard resolution material to another device, the structure (reels and EditDesks) between archives is preserved.

- 4 Click Search to perform the search.

If a clip is found, the clip is automatically selected in the Search module. If a match is not found, the message “No matches” appears in the message bar.

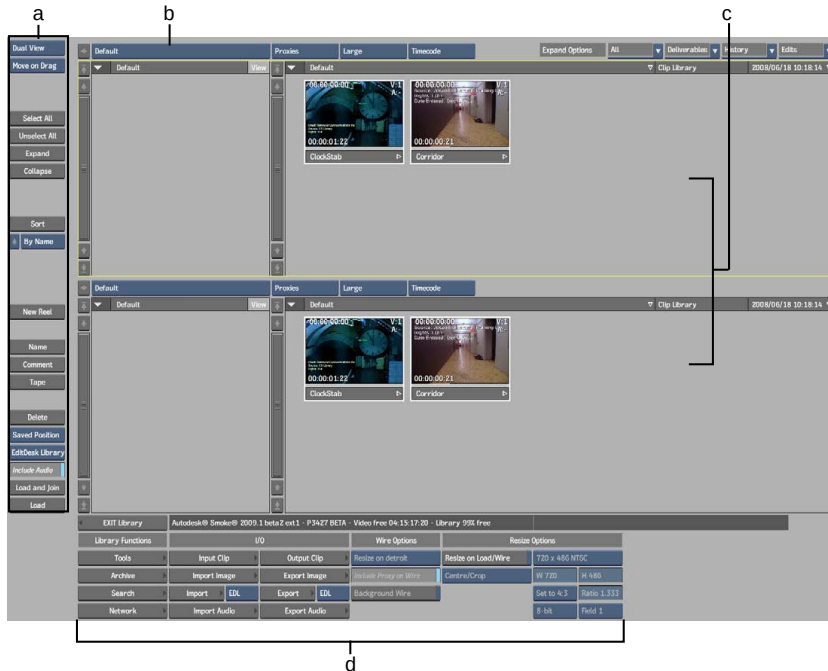
- 5 Click Load to load the selected clips to the EditDesk.

Organizing Clips

As clips accumulate in a clip library, you can organize them according to your needs. You can:

- Create new clip libraries. See [Creating Clip Libraries](#) on page 371.
- Create new library reels from a clip library and then move clips or other entries into the new reels.
- Sort the entire clip library, or selected entries, by name or by creation date. See [Sorting Entries in Titles and Proxies Mode](#) on page 388.
- Move entries within or between clip libraries.
- Copy entries.
- Name and rename entries.
- Delete clips and other entries that are no longer needed.
- Delete clip libraries that are no longer needed.

To organize clips, use the Library Management menu, the Dual View mode, the Clip Library box, and the Clip Library menu, as well as drag and drop functionality.



(a) Library Management menu (b) Clip Library box (c) Dual view (d) Clip Library menu

Adding Library Reels

You can add library reels to a clip library to use as containers when you organize clips. You can load a library reel into the Source or Record Area.

To add a new library reel to a clip library:

- 1 From the Clip Library box, select a clip library.
- 2 In the Library Management menu, click New Reel.
The on-screen keyboard appears.
- 3 Type a name for the new reel and press **Enter**.
The reel is added to the current clip library.

Moving Entries

You can move clip library entries within a clip library, or using the Dual Library View, between clip libraries. Entries are moved using drag and drop functionality in either Titles or Proxies mode. Drag and drop a single entry or multiple entries with the left mouse button or the pen.

You can move clips to a new location in the same parent entry or from one parent entry to another. For example, you can move clips from a Record Area entry to a Source Area entry.

To move an entry:

- 1 In the Library Management menu, click Move on Drag.

NOTE If you press F before you select the clip, this will create a copy of the clip rather than simply moving the clip (see the “To copy an entry:” procedure in [Copying Entries](#) on page 404).

- 2 Click the entry and drag it to a new location:
 - In Titles mode, click anywhere on the entry's title bar.
 - In Proxies mode, click anywhere on the proxy except in the jogging area or on the Play button.



(a) Jogging area (b) Play button

NOTE To move a clip to a location in the library currently not displayed, hold the selected clip over the scroll arrow buttons. Alternatively, with the clip selected, use the arrow keys to scroll to a new location in the clip library.

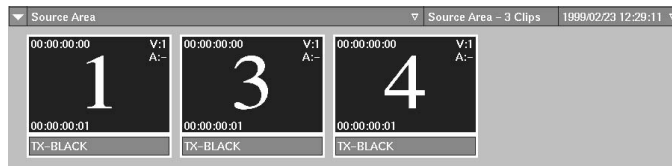
The cursor changes to a white or green four-headed arrow. When the cursor is green, the clip is in a location where you can successfully drop

it. When the cursor is white, you cannot drop it at the current location. You need to move it closer to the destination.

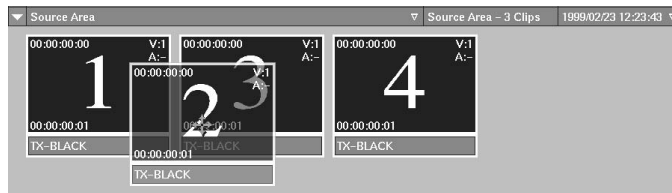
3 Release the cursor to drop the entry:

- In Titles mode, when you drop a clip onto another clip, the dropped clip is placed above the target clip.
- In Proxies mode, when you drop a clip onto another clip, the dropped clip is placed to the left of the target clip. This is illustrated in the following example.

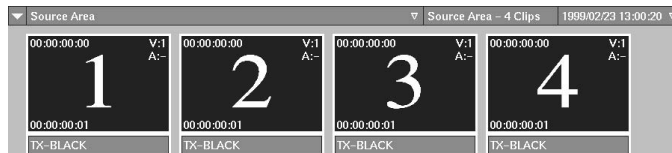
Before



Placing the clip



After: the clip is placed to the left of the clip that it is over when you drop it



Copying Entries

You can copy clip library entries within a clip library, or using the Dual Library View, between clip libraries. Entries are copied using drag and drop functionality in either Titles or Proxies mode.

To copy an entry:

- 1 In the Library Management menu, click Copy on Drag.
- 2 Position the cursor over the entry you want to copy. When copying a clip displayed as a proxy, position the cursor over any part of the proxy except the jogging area.

TIP To copy multiple entries, hold **Ctrl** and select the entries.

- 3 Drag the cursor away from the original entry.
The original remains in the clip library and a copy appears under the cursor.
- 4 Drag the copy to the desired location and release the mouse button. If you have problems dropping the copy, see [Moving Entries](#) on page 403.

Renaming Entries

You can rename an entry a Record Area, a Source Area, an EditDesk, or the clip library itself.

To rename an entry:

- 1 In a clip library, select the entry you want to rename.
- 2 In the Library Management menu, click Name.
The on-screen keyboard appears.
- 3 Type a name for the entry and press **Enter**.

Deleting Entries from a Clip Library

Use the Delete button to delete EditDesks, Source Areas, Record Areas, or clip entries from either a local or remote clip library.

Alternatively, you can delete an entry gesturally.

If there are copies of a clip in the clip library, or if the clip is used in other projects that have the media stored on the same volume, the media for the clip is stored only once on the framestore, and each copy of the clip references that media. In these cases, when you delete a copy of the clip, the media is

not deleted from the framestore. The media is only deleted when no other clip is referencing it.

When you delete a soft-imported clip from Autodesk storage, the media that is associated with the soft-imported clip in the shared storage area is not deleted. Conversely, if you delete media in the shared storage area, it is permanently deleted. This means that if you have a soft-imported clip in Autodesk storage that refers to media that is deleted in the shared storage area, your soft-imported clip will no longer contain media and will display as a checkerboard pattern. See [Importing and Soft-Importing Image Files](#) on page 242.

To delete selected entries:

- 1 From the Clip Library box, select the clip library from which you want to delete entries.
- 2 In the clip library, select the entries you want to delete.

TIP If you want to select multiple entries not in a row, hold **Ctrl** while you select them. To select a range of entries, hold **Shift**. See [Selecting Entries](#) on page 396.

WARNING The following step permanently deletes the selected entries from the clip library. There is no undo function.

- 3 Click Delete, then click Confirm.
The selected entries are deleted from the clip library.

To delete an entry gesturally:

- 1 From a clip library, drag an entry to the bottom of the screen. When the green recycling cursor appears, drop the entry by releasing the pen or mouse button.

TIP You can also delete multiple entries at once with a drag and drop operation.

- 2 Click Confirm.

Deleting Clip Libraries

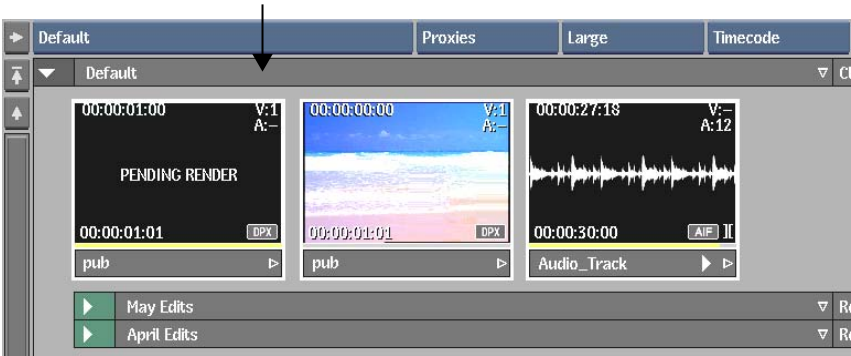
You can delete either a local or remote clip library using the Delete button in the Library Management menu.

If the media associated with the clips in the library you are deleting is referenced by any clips located in other libraries, it is not deleted from the framestore. The media is only deleted when there are no other clips referencing it.

NOTE You cannot delete a clip library if it is the only one in the project. You cannot delete a library if you have read-only privileges.

To delete a clip library:

- 1 From the Clip Library box, select the clip library you want to delete.
- 2 In the clip library, select the clip library entry. The clip library entry is the first entry. See [Selecting Entries](#) on page 396.



WARNING The following step permanently deletes the clip library. There is no undo function.

- 3 Click Delete, then click Confirm.
The clip library and all its entries are deleted from the framestore.

Loading Clips to the EditDesk

You can load entries from a clip library to the Source Area, Record Area, EditDesk, or EditDesk Library. If a clip contains audio, you can load it with

its audio tracks or as video only. You can load clips from clip libraries in the current project or in other local projects. If you have Wire, you can load clips from remote projects. See [Copying Local and Remote Clip Libraries to Your Current Project](#) on page 410.

To load entries from a clip library:

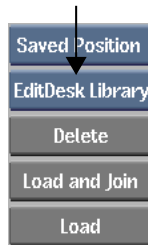
- 1 From the Clip Library box in the current clip library, select the clip library containing the entries you want to load.

The current clip library appears. You can change the current clip library at any time using the Clip Library box.

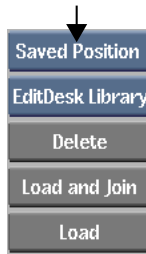
- 2 Select the entries you want to load. See [Selecting Entries](#) on page 396.

TIP You can load entire library reels or selected source clips within soft edits. You may have to expand some parent entries to find the entries you are looking for.

- 3 Select the destination for the selected clips using the Destination box. For details on how clips are loaded to different destinations, see [EditDesk Library](#) on page 46.



- 4 If you are loading multiple clips onto the EditDesk, Source Area, or EditDesk Library, use the Position box to specify how you want the clips to be arranged in the Source Area.



Select:	To:
Saved Position	Place the clips in the same position they were in when last saved.
Stack	Stack the clips in the lower-left corner of the Source Area.
Tile	Tile the clips starting from the lower-left corner of the Source Area.
Cascade	Place the clips in a cascade formation in the lower-left corner of the Source Area.

- 5 To resize the clips before loading them to the EditDesk, enable Resize and set resizing parameters. See [Resizing Clips on Import, Export, or in a Clip Library](#) on page 1106.
- 6 If the clip contains audio tracks and you only want to load the video, disable Include Audio.
- 7 Do one of the following:
 - Click Load to load selected entries as individual clips.
 - Click Load and Join to join selected entries sequentially, according to the order in which the clips were selected. If you selected clips with differing resolutions, the clips whose resolution differs from the first selected clip are resized to the resolution of the first clip. The name for the joined source is the prefix “JOIN-” followed by the name of the first selected clip.

The EditDesk reappears with the selected entries loaded into the Source Area, Record Area or EditDesk Library.

NOTE When you add comments to unmodified source clips in the library, these comments will appear as the video element comment when the clip is loaded onto the EditDesk. The comment also appears on all audio tracks of the source clip, even if there is no video track.

Loading and Resizing Clips

When you load clips to the EditDesk, you can change their resolution, bit depth, aspect ratio, and positioning using the Resize tool in the Clip Library menu. You can resize clips from clip libraries in the current project or from clip libraries in other projects.

To load and resize clips:

- 1 Enable Resize in the Clip Library menu.
- 2 Use the Resize options in the Resize menu to resize your clips. See [Resizing Clips on Import, Export, or in a Clip Library](#) on page 1106.
- 3 Click Load.

The EditDesk appears with the selected entries resized and loaded.

Copying Local and Remote Clip Libraries to Your Current Project

You can access the clip libraries residing in local or remote projects in order to share clips. When you want to use clips belonging to another project, copy and save them to a library belonging to the current project.

Use the network library to select the clip libraries that you want to access (that is, the clip libraries you want to appear in the Clip Library box on the EditDesk). You can access the clip libraries of any project on any local volume (such as stonefs and stonefs1), and, if you have Wire, you can access projects on remote framestores. All available framestores are listed in the network library in alphabetical order, following the host machine.

When you load clips from another project, the clip metadata is always copied to the current project. The media itself is not copied if it is located on the same volume as the current project. In this case the media is shared between the two projects. Media is only copied when you are loading from:

- Another volume on the same framestore or from another framestore.
- A project created in an older version of an Autodesk product for which the clip format is incompatible. See [Upgrade Compatibility](#) on page 329.

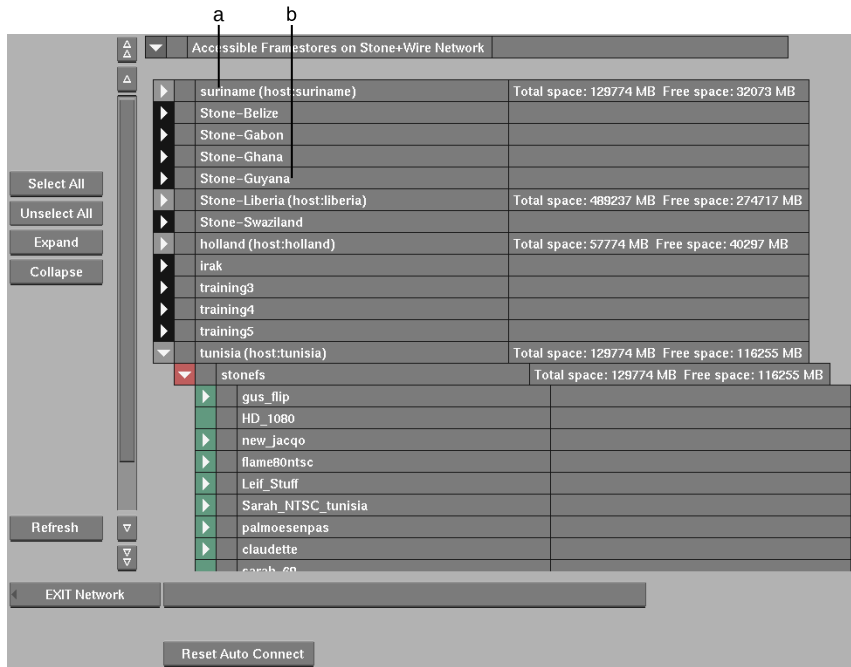
WARNING If a remote framestore is shut down while you are accessing it, you will lose access to the libraries on the remote framestore and your system may freeze. Clips loaded from the remote framestore are unaffected when the remote framestore is shut down.

To access the network library:

- 1 In the EditDesk menu, click the Clip Library box.
- 2 In the Clip Library menu, click Network.



The network library appears.



(a) Local system (b) Remote system

The local system is listed at the top of the network library. Remote systems follow in alphabetical order.

The network library controls are described as follows.

Select All and Unselect All buttons Click Select All to select all entries in the network library. Click Unselect All to unselect all entries.

Expand and Collapse buttons Click Expand to expand selected entries. Click Collapse to collapse selected entries. When you click the Expand button beside a framestore entry, the host machine is shown in parenthesis.

TIP You can also click the Expand and Collapse arrows at the left of an entry to expand and collapse it.

Refresh button Updates the list of systems by probing all systems in the list to see if they are still accessible, and selected systems only to check if clip libraries have been added or deleted from other workstations.

NOTE Systems are automatically refreshed when you expand an entry.

Reset Auto Connect button Disconnects all entries set for auto-connection.

Network Library Structure

The network library has a similar structure to a clip library. For example, the hierarchical relationship among groups of available remote systems, projects, and clip libraries is represented using indentation. All available framestores are listed alphabetically with the exception of the local framestore, which appears first.

Network Library Entries

The network library can contain the following entries.

Entry:	Contains:
Framestore (local or remote)	An entry for each volume on the framestore. When you expand a framestore entry in the network library, all its volumes are queried and the name of the host machine appears in parenthesis to the right of the framestore name.
Volume	An entry for each project in the volume.
Project	An entry for each clip library in the project.
Clip Library	No child entries.

The colour of the box at the far left of the entry indicates the type of entry.

The colour:	Represents:
Black	Framestore.
Light Grey	Accessed framestore.
Red	Framestore volumes.
Green	Projects.
Dark Grey	Clip libraries.

Selecting Clip Libraries in Local or Remote Projects

To make a clip library in a local or remote project accessible, select it in the network library. You can make local or remote clip libraries available for the current work session only, or each time you load the application.

To select a clip library in a local or remote project:

- 1 Display the Network Library menu.
- 2 Click Refresh.
All accessible projects are searched for on local and remote framestores.
- 3 Expand entries as needed to see the available projects or clip libraries. To view all entries, click Select All, then Expand. Next, click Unselect All and make individual selections.
All accessible remote clip libraries appear.
- 4 Select the clip libraries you want to access. The procedure for selecting entries is the same as that used in clip libraries. See [Selecting Entries](#) on page 396.
Selected entries are light grey.

TIP Select a framestore entry to access all libraries on the remote system; select a project entry to access all libraries in that project.

- 5 To automatically reconnect to a framestore, volume, project, or clip library when you restart the application, click the grey box to the left of the entry.
The letters AC appear in the box, indicating the entry is set to be reconnected. All entries belonging to the entry are also set. When you restart the application and load the project, the specified entries are connected and the associated clip libraries are available in the Clip Library box.

NOTE A green AC indicates that the entry and all subentries are set for auto-connection; a yellow AC indicates that some but not all subentries are set for auto-connection.

- 6 If you want to stop automatically reconnecting to the clip libraries associated with an entry, click the grey box next to the entry again. To disconnect all entries set for auto-connection, click Reset Auto Connect.
The AC indicator disappears.

- 7 Exit the Network Library menu.

All the clip libraries you selected in the network library are listed in the Clip Library box along with the project's clip libraries. All clip libraries set for auto-connection will be available when you restart the application.

Disabling Auto-Connect from Outside the Application

Occasionally, a problem with a remote system that is auto-connected to your project can prevent Backdraft Conform from loading. When this happens, the local system will freeze as you try to launch it and a message will appear in the shell indicating which remote system is unreachable. If this occurs, you can kill the application and then temporarily disable auto-connect using the following procedure.

To temporarily disable auto-connect:

- In a command shell, where you plan to launch the application, type:

```
setenv DL_NETWORK_NO_AUTO_REIMPORT
```

When you launch the application, the current configuration of auto-connected remote systems is not loaded.

NOTE The next time you launch the application without using this environment variable, the auto-connected remote system is once again loaded.

Copying Clips from Other Projects

You can copy clips to your project from other projects on the same system or from projects on other systems. When you copy clips from projects on other systems you use Wire.

As you copy clips from other projects on other systems, you can:

- Copy proxies from the source project into the destination project. Proxies can be copied if both the source and the destination projects have the same proxy settings. This relieves the destination system of having to generate proxies. In most cases, transferring proxies using Wire is significantly faster than generating them.
- Resize the clips on the source or destination system.

- Perform all tasks in the background so that you can continue to work in your application while the clips are copied.
Background Wire transfers are managed by Backburner. Before you can transfer clips in the background, edit the *manager.hostfile* located in `/usr/discreet/backburner/cfg`. You must also edit the Backburner hostname, priority, and group keywords in the *init.cfg* file. Refer to the *Autodesk Visual Effects and Finishing Configuration File Reference Guide* for details on editing the *init.cfg* file.

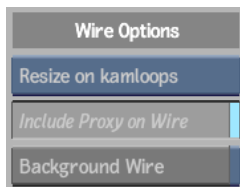
To copy clips from projects on the same system:

- 1 Open the clip library in Dual Library View.
- 2 In one view, navigate to the project that contains the clips you want to copy.
- 3 In the other view, open the clip library where you want to copy the clips to.
- 4 Drag and drop the clips you want to copy into the destination project.
The clips are copied to the destination system.

To copy clips from projects on other systems:

- 1 Open the clip library in Dual Library View.
- 2 In one view, navigate to the remote framestore and display the clips that you want to copy.
- 3 In the other view, open the clip library where you want to copy the clips to.

In the Wire Options area, several buttons become active, depending on your setup.



- 4 If you have Backburner set up, decide if you want to perform tasks in the background.
 - To perform tasks in the background so that you can continue working in the application, enable the Background Wire button.

- To perform tasks in the foreground, disable the Background Wire button.
- 5 Decide if you want to perform the resize on the destination or source system.
 - To perform the resize on the source system, disable the Resize button.
 - To perform the resize on the destination system, enable Resize.
- 6 Decide how you will handle proxies. Do one of the following:
 - To transfer proxies using Wire, enable the Include Proxy on Wire button.
 - To generate proxies on the destination system, disable the Include Proxy on Wire button.
- 7 Drag and drop the clips you want to copy into the destination project. The clips are copied to the destination system.

If you chose to copy your clips as a background task, you can monitor the progress of your transfer. Press **Ctrl+O**. The Background I/O window appears. You can also use Backburner Web or Windows monitor to track the progress.

Aborting a Wire Transfer

To abort a transfer of video or audio clips using Wire, click the mouse button or tap the pen on the tablet and click Confirm.

WARNING If you interrupt a load or save operation with the abort command, clips that have already been transferred remain transferred; clips that have not been transferred are not.

Troubleshooting Lock Files

When a process accesses a file, it attempts to get a lock on the file so that it can have Write, as well as Read, access. (A process can be your Visual Effects and Finishing application or a remote application transferring media over Wire.) When a file is locked by one process, no other process can write to that file, which ensures that files do not get corrupted or accidentally overwritten by multiple users.

When a process finishes working on a file, it releases the lock so that other processes can get Write access. However, if the process is unable to release the file because of a problem, that lock file will remain and will prohibit other processes from getting a lock, even if the process is not using the file.

If you can't get Write access to a file, use the following procedure to locate the lock file and check to see if the file is legitimately locked. If the file is not locked by an active process, you can delete the lock file so that another process can get Write access.

To evaluate lock files:

- 1 Open the clip directory */usr/discreet/clip* and locate the lock files:

```
find . -name '*-lock'
```

The command returns results similar to the following example:

```
./burnBat/SNA.clib-lock
```

```
./wiretap/Default.clib-lock
```

This example indicates that there are two lock files.

- 2 Determine what processes have locked the files. Type:

```
ls -l ./burnBat/SNA.clib-lock
```

This command returns results similar to the following:

```
lrwxrwxrwx 1 root users 19 Jun 15 09:14 ./burnBat/SNA.clib-lock ->  
172.16.129.53:16488
```

In this example, the IP address of the machine that is running the process and the ID of the process are provided at the end of the line. In this example, the IP address is 172.16.129.53 and the process ID is 16488.

- 3 To determine if that process is still running, log in to the machine where the process was running. Then use the ID to determine if the process is running. Type:

```
ps -e | grep <process_ID>
```

Using the process ID from the previous example, this command would look like:

```
ps -e | grep 16488
```

This command has two possible results:

- If the command returns nothing, it indicates that the process is not running and the lock file is not necessary.

After you have determined that no process has locked a file, you can delete the lock file.

- If the command returns a process name, you know that a process is running and has locked the file. You can't delete the lock file without jeopardizing someone else's work.

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- [Choosing a Medium for Archiving](#) on page 422
- [Supplementing Archives with System Drive Backups](#) on page 424
- [Archiving and Restoring Mixed Resolution Projects](#) on page 426
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- [Estimating Archive Size](#) on page 433
- [Creating a VTR Archive](#) on page 436
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About Archiving

Archiving in Backdraft Conform provides an efficient way to save your media and project setups on external storage devices or in a filesystem. This frees up space for new projects. It is also a convenient way to store your projects offline in a fully restorable form, both long- and short-term.

Archive complete projects including project settings, configuration files, setups, and libraries (all the items that are stored in the project directory). In addition to archiving complete projects, you can archive clip libraries and individual elements of clip libraries.

Choosing a Medium for Archiving

Choosing a medium or device for your archiving needs largely depends on your technical resources and overall needs. There are certain advantages and disadvantages to using each medium/device.

There are three basic types of archiving devices/media supported in Backdraft Conform: VTRs, tape drives, and file systems.

VTRs

Using a VTR to archive your material is an inexpensive and accessible way of storing archives. VTRs are easy to patch and tapes can store large amounts of media, and VTR archives are viewable outside of Autodesk Visual Effects and Finishing applications.

However, VTR archives do have limitations. As a long-term archiving medium, VTR tapes are subject to physical deterioration and format obsolescence. Also, the following clips cannot be archived to a VTR:

- Clips with a colour depth higher than 10-bit.

- Clips referencing media, either directly or through clip history, with a resolution that does not match that of the VTR.

You can use the following VTRs for archiving your material in Backdraft Conform:

- Uncompressed SD VTRs such as D-1 or lightly compressed SD VTRs such as Digital Betacam
- Uncompressed HD VTRs or lightly compressed HD VTRs such as Sony HDCAM SR or Panasonic HD D5
- Compressed HD VTRs such as Sony HDCAM (using "HDCAM" rather than "VTR" as the archive device type)

Tape Drives

Using a tape device for archiving purposes allows for fast archiving and restoring. Tape drives are inexpensive and readily available. Tape provides fast and reliable read and write performance. And, contrary to VTR archives, tape archives can be of any bit depth.

However, data archives (tape archives) can only be restored to a Visual Effects and Finishing workstation and are unreadable by other applications. Also, magnetic tape is a delicate media and is greatly affected by environmental conditions that cause its deterioration. The procedure of archiving to a tape device is similar to archiving to file.

Visual Effects and Finishing workstations only support DTF2 fibre channel tape devices connected to ports 1 or 4 of a four-port fibre channel adapter.

NOTE When archiving with the Sony DTF2, use firmware version 1.41.

Other fibre channel devices that may work are those for which the vendor confirms that:

- The device driver is compliant with standard UNIX tape device calls.
- The specific version of your operating system and kernel is supported.

While Autodesk Media & Entertainment makes no certification statement about any device, the following SCSI devices have been tested and found to be reliable when connected using an ATTO Fibre Channel to SCSI Bridge 2390:

- Quantum LT03
- Quantum DLT8000
- Quantum DLT7000
- Sony AIT3 SDX-D700C
- Sony AIT2

The initialization file (*init.cfg*) for your Visual Effects and Finishing application contains examples of the ClipMgtDevice Tape keyword to help you set up the appropriate block size value for your tape device and define a text label to identify the device in the Archiving module. Please refer to the documentation from your archiving device vendor for guidelines on the actual block size to use.

File Systems

Using a file system to archive your material provides the quickest method of archiving and restoring your material, and offers full support for mixed-resolution projects. However, archiving large projects may require a significant amount of local or networked storage hardware. As the storage hardware features and capabilities evolve, using external USB 2.0/FireWire®(IEEE 1394) hard drives offers a cheap alternative for archiving smaller projects or projects that require portability. These devices can be formatted as ext2, ext3, or Mac® file systems. NTFS is not supported. External USB 2.0/FireWire devices can be used.

Supplementing Archives with System Drive Backups

The recommended backup strategy for your Visual Effects and Finishing workstation is to archive project media and setups to a Video device, or as a data file that can be saved to a remote file server or storage device. Do this as often as necessary to protect your media from unlikely storage or system failure.

The archiving approach, however, does not protect the data contained on your workstation's system drive, nor does any other tool provided by Autodesk

Media & Entertainment. The system drive does not contain any media data, but it does include important project management data. In the event of hardware failure without a system drive backup, you will need to recreate this project data for each archive you restore. This can be a time-consuming and frustrating process, and is a significant issue in large SAN environments, where large quantities of media files are referenced from a shared standard FS volume. In such environments, consider using the data backup method of your choice to save key system drive information. This will facilitate restoration of multiple project archives.

Even with a system drive backup, you will still need to reinstall your Visual Effects and Finishing application and restore archived projects in the event of a system drive failure.

There are several methods and commercial tools available for backing up system drives. Choose the method and tool that is right for you. Autodesk does not recommend any particular method or tool, and only presents the directories of note that you should consider backing up. Depending on your requirements and available tools, you may decide to back up your full system drive or only the following critical files or directories.

File/directory	Purpose	Consequence of failure if system drive is not backed up
/usr/discreet/clip	Contains all clip metadata.	Metadata will have to be recreated for each valid archive that is restored.
/usr/discreet/project	Contains full project structures, including settings such as names, resolutions, user information, and so on.	Project settings will have to be recreated for each valid archive that is restored.
/usr/discreet/sw/swdb	Contains the standard FS links database.	Media on a shared SAN volume will have to be re-imported.
/usr/discreet/sw	Contains all Stone® and Wire software and configuration files, including the preceding directory, swdb.	Storage and Wire settings will have to be reconfigured after installation.
/usr/discreet	Contains your Visual Effects and Finishing software, as well as all other directories described in this table.	See consequences for all previous items. Back up this directory if you want to be sure to restore all critical data, and do not mind including

File/directory	Purpose	Consequence of failure if system drive is not backed up
		some superfluous files (such as old unused versions of the application.)

WARNING In addition to backing up the preceding directories, you must also regularly archive your material. In other words, even if you back up the preceding critical directories, you will not be able to restore your projects unless you previously archived them. Without project archives, all media and projects will be lost in the event of a system drive failure.

The backup strategy suggested here only covers files that are critical to your Visual Effects and Finishing application. For information on backing up the Linux operating system, see your Redhat documentation, or contact Redhat technical support.

To backup critical Visual Effects and Finishing files from your system drive:

- 1 Close your Effects and Finishing application.
- 2 Stop Stone and Wire. Type:

```
# /etc/init.d/stone+wire stop
```
- 3 Back up some or all of the directories listed in the preceding table using the method and tool of your choice.
- 4 Start Stone and Wire. Type:

```
# /etc/init.d/stone+wire start
```

Archiving and Restoring Mixed Resolution Projects

Generally, archiving to data tape or filesystem is easier for archiving mixed-resolution projects, as clips of any resolution can be archived on the same medium. It is also possible to archive multiple-resolution projects to a VTR. This operation, however, may require multiple tapes with different timing corresponding to each segment resolution. Alternatively, you can use the Unlink tool to unlink media from clips of any resolution, archive unlinked clips, and then relink the media at restore time. See [Unlinking Media from Clips in the Clip Library](#) on page 696.

NOTE Before starting to archive a mixed-resolution project to a VTR, make sure you have enough tapes matching each resolution used in your project.

Archiving Clips Containing Sources with Different Bit Depths

If you want to archive a clip that contains sources with different bit depths, archive the clip to file or data tape. To archive the clip to a VTR, you must convert all sources to the same bit depth (less than 12).

8- and 10-bit VTR Archiving

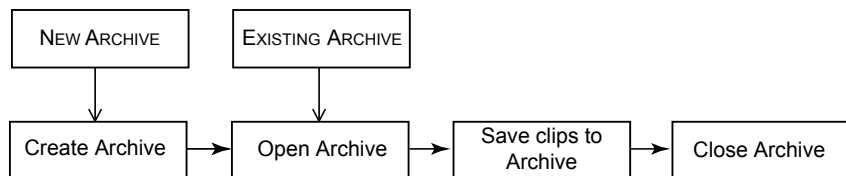
A VTR archive can contain 8- or 10-bit clips—although all clips in the archive must have the same bit depth. When archiving 8-bit material to 8- or 10-bit VTRs, the clip metadata remains in an 8-bit format.

You can archive 10-bit material to 8- or 10-bit VTRs. However, when archiving 10-bit material to an 8-bit VTR, you reduce the quality of the archived material. A warning message appears notifying you of the downgrade. 10-bit clips archived to 8-bit format are flagged as such in the archive. Similarly, when archiving 12-bit material to 8- and 10-bit VTRs, a warning message appears, and the 12-bit clips are flagged in the archive. You cannot restore downgraded clips to their original bit depth.

Before archiving to any device in Backdraft Conform, you can perform archive size estimation. See [Estimating Archive Size](#) on page 433. Before proceeding, make sure you have enough tapes ready. You can perform size estimation before archiving to a filesystem to make sure you have enough space on disk.

Media Archiving Workflow

There are several ways to archive. Depending on the archiving device that you choose, the steps might differ slightly. The basic workflow is as follows.



To archive a project:

- 1 Make sure all hardware devices involved in the archiving process are properly configured. See [Configuring Hardware](#) on page 428.

- 2 Make sure keywords related to the archiving process are properly configured. See [Configuring Software](#) on page 430.
- 3 Access the Archive menu. See [Accessing the Archive Menu](#) on page 431.
- 4 Create an archive. See [Creating a VTR Archive](#) on page 436.
- 5 Open the archive. See [Opening an Archive](#) on page 449.
- 6 Save clips to the archive. See [Saving to an Archive](#) on page 452.
- 7 Close the archive. See [Closing an Archive](#) on page 456.

Project Setup Archiving Workflow

You can archive project setups to the file system. This procedure requires no dedicated hardware—but only a filesystem destination for a *.tar* file. When you archive setups, your project home directory, including images and audio files in the *images* and *audio* directories, are saved.

To archive a project setup:

- 1 Make sure keywords related to the archiving process are properly configured. See [Configuring Software](#) on page 430.
- 2 Access the Setups Archive menu. See [Accessing the Archive Menu](#) on page 431.
- 3 Save setups to the archive. See [Saving to an Archive](#) on page 452, and [Archiving and Restoring Setups](#) on page 473.

Configuring Hardware

Many problems encountered during archiving processes are caused by improper hardware configuration. Before you proceed archiving your project, make sure you have performed all the initial steps to set up and configure your hardware.

Configuring a VTR for Archiving

Before you start archiving to a VTR, make sure that:

- Your VTR device is properly connected to video and audio sources and RS-422.

- The sync is properly set up.

Configuring Tape Devices for Archiving

When archiving to tape devices, you must perform certain steps to ensure smooth operation.

Setting the Block Size for a New Tape Archive

When you enter the Archive menu and format a new tape archive, the default block size matches the value in the Block Size field in the Format menu. Keep track of the block size value for each tape in case you need to reset the block size at a later time.

To verify the block size of your tape device:

- 1 In a command shell, log in as root.
- 2 Verify the block size of your tape device by typing:
mt -f /dev/st<archive device number> status

Example:

```
mt -f /dev/st0 status
```

This command provides feedback similar to the following:

SCSI 2 tape drive:

File number=0, block number=0, partition=0.

Tape block size 65536 bytes.

Density code 0x40 (DLT1 40 GB, or Ultrium).

Soft error count since last status=0

General status bits on (41010000):

BOT ONLINE IM_REP_EN

Determining the Device Number for the Archive Device

If you receive an error message when verifying the block size, you may not be using the correct archive device number. Look in the software initialization configuration file to determine the correct number.

To determine the archive device number:

- 1 In a terminal, type:
dlcfg
- 2 Look for the line that begins with the following:
`ClipMgtDeviceTape, /dev/st<archive device number>`
The archive device number should be listed on this line. If it is not, or appears to be incorrect, consult the administrator for your system.

Resetting the Block Size for an Existing Tape Archive

If you rebooted the machine or reformatted another archive with a different block size, you must reset the block size for your archive in the command shell.

To reset the block size of your tape:

- 1 In the command shell, log in as root.
- 2 Set the correct block size by typing:
mt -f /dev/st<archive device number> defblksiz
<block size of your tape device>

Example:

```
mt -f /dev/st0 defblksiz 4096
```

The block size for your tape is reset and you can continue to archive to this tape.

Configuring Software

Before you start Backdraft Conform to perform archiving, edit the software initialization configuration file to enable VTR, data tape, or file archive devices in the CLIPMGTDVICE keyword section. You must also enable any VTRs that you plan to use in the VTR keyword section.

The devices that you enable in the software initialization configuration file will be available in Backdraft Conform when you start the application. See the *Autodesk Visual Effects and Finishing Configuration File Reference Guide*.

To properly configure your software for archiving, follow the instructions in the following sections of the software initialization configuration file:

- VIDEO KEYWORD
- VTR KEYWORD
- CLIPMGTDDEVICE KEYWORD
- MAXLIBRARYSIZE KEYWORD
- ARCHIVELIBRARY KEYWORD
- SETUPARCHIVETAPE KEYWORD

Accessing the Archive Menu

You can use the Archive menu to:

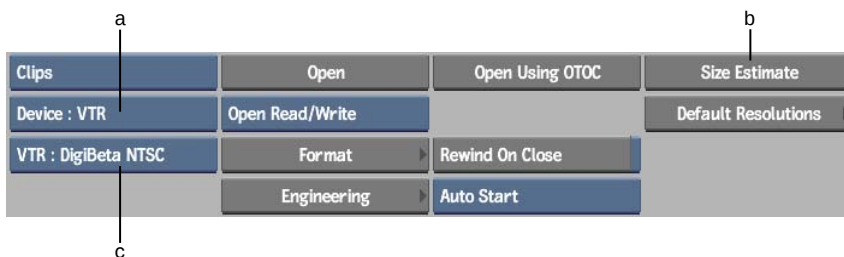
- Select an archiving device.
- Format an archive.
- Open an archive to save or restore clips or setups.

To access the Archive menu:

- 1 From the Clip Library box on the EditDesk, open a clip library.
- 2 In the Clip Library menu, click Archive.



The Archive menu appears.



(a) Archive Device box (b) Size Estimate button (c) Device Name box

Archive Device box Lists all available types of archive device. If the device type you want to use is not listed, uncomment the appropriate line in the software initialization configuration file in the CLIPMGTDVICE KEYWORD section. See the *Autodesk Visual Effects and Finishing Configuration File Reference Guide*.

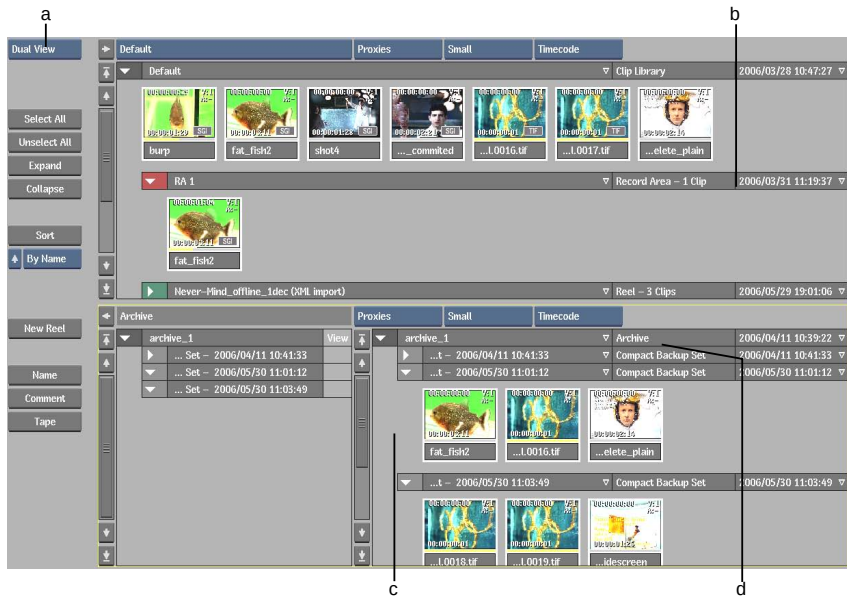
Device Name box Lists all archive devices of the type specified in the Archive Device box.

Size Estimate button Click to get an approximate size of entries to be archived. The resulting value appears in the Size Estimate field.

Size Estimate field Contains an estimated size value, in VTR time or the most appropriate file measurement units, of entries selected for archiving.

Archive Structure

The first entry of an archive is the archive itself. The archive entry is the parent entry for all other entries. Entries within the archive are structured in the same way as entries in a clip library. Indentation is used to indicate the parent and child relationship among the entries.



(a) Library View Mode button (b) Clip Library area (c) Archive area (d) Archive entry
Images courtesy of Technicolor (formerly Toybox) and Das Werk

Similar to a clip library, you can select, expand, and collapse entries in an archive. See [Viewing Entries in Clip Libraries](#) on page 379. Click the Library View Mode button to toggle between single and dual view. Dual view allows you to view your archive alongside any of your clip libraries. You cannot, however, move entries between clip libraries and archives, as you would between two clip libraries.

Estimating Archive Size

You can display an estimate of the media space needed to archive selected material. The size estimation display for archiving or restoring procedures shows the file size in bytes, megabytes, gigabytes, or terabytes, depending on the file size. The space required is displayed in units appropriate for the archiving device. For example, when archiving to a VTR, the archive size is estimated both in VTR time (hh:mm:ss:ff) and in the most appropriate file measurement units (megabytes, gigabytes, or terabytes). When archiving to file or a tape device, file size in VTR time is not displayed. The size estimate takes header information into account.

The space required to archive material varies by archiving device. The following factors also influence the amount of space required for an archive:

- Storing clip history with the archived clip increases the amount of required space.
- Including audio and metadata with your archive increases the amount of required space.
- Selecting Compact archives reduces the amount of required space compared to Normal archives.

There are two types of size estimation, differing in the level of detail. When you wish to get a rough estimate of the size of your material and space required for its archiving, you can perform the following procedure.

To estimate archive size:

- 1 From the Archive Device box, select the appropriate device.
- 2 From the Device Name box, select a VTR device.
- 3 From the clip library, select one clip or multiple clips.
- 4 Click Size Estimate.



Clips	Open	Open Using OTOC	Size Estimate
Device : VTR	Open Read/Write		Default Resolutions
VTR : DigiBeta NTSC	Format	Rewind On Close	
	Engineering	Auto Start	

The estimated size value appears in the Size Estimate field next to the button.

NOTE The VTR tape size estimate includes a reservation of one minute for both the header data and slates. 5400 frames (three NTSC minutes) are reserved for the header data and slates.

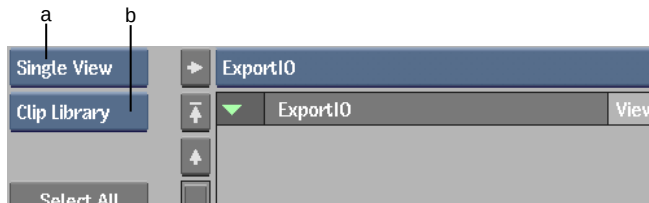
Once you open an archive or create a new one, you can use another archive size estimation method, which provides a variety of controls to perform a more accurate file size estimation procedure.

To estimate archive size from the EditDesk:

- 1 Open an existing archive or create an archive.
The Archive menu appears.

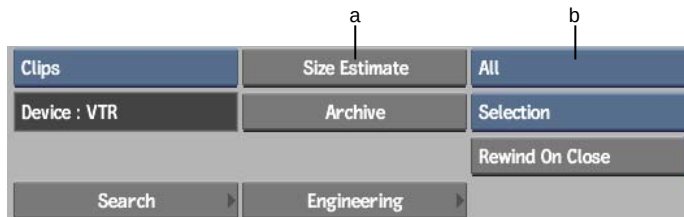


- 2 Select Dual View or Clip Library to view the clip library.



(a) Library View Mode button (b) Clip Library/Archive toggle button

- 3 In the clip library, select a clip or multiple clips (**Ctrl**+click). New controls appear in the Archive menu.



(a) Size Estimate button (b) Clip Element box

- 4 From the Clip Element box, select the required option.

Select:	To estimate the size of:
All	Metadata, audio, and video
Metadata	Metadata only (including history and settings)

Select:	To estimate the size of:
Audio	Audio only
Video	Video only

5 Click Size Estimate.

The resulting value appears in the Size Estimate field. If there is not enough space in your archive to save the selected entries, a message appears notifying you that you need multiple tapes.

Creating a VTR Archive

You can create a VTR archive for clips of any resolution supported by your video board and VTR device. To archive and restore at a particular resolution, you must specify the appropriate video timing, which sets the resolution and framerate for the video board. When you change projects without exiting Backdraft Conform, the video timing selected at start-up applies to the project you are switching to.

Archives must be written to tapes striped with non-drop-frame timecode. However, media with drop-frame timecode can be written to non-drop-frame timecode tapes, as long as the framerate of the timecodes match.

NOTE Archiving to tapes with drop-frame timecode is not supported.

Before You Begin

Perform the following preparatory steps:

- Prepare striped tapes for each resolution. The tapes must be striped continuous non-drop-frame timecode.
- If the tapes already have material on them, figure out the start timecode for the archive.
- Determine if your archive requires multiple tapes.
- Make sure your VTR is in TC (Timecode) timer mode.

Selecting a Device

Only those VTRs with a timing that matches the video timing are available for use in the Archiving menu. When you want to archive or restore clips of multiple resolutions in one project, enable the VTR lines in the VTR keyword of the configuration file for all the resolutions you use on the project. This way, each time you change the video timing for archiving, the compatible VTRs are available in the Archiving menu.

When you archive to a VTR, only clips with a resolution compatible with the selected VTR device are archived. If you select a set of clips of differing resolutions, only the compatible clips are archived. Clips that are not compatible are greyed out in the library.

HD Board 1080 Line Video Timings

If you are working with an HD board and you selected the 1920x1080 video timing option in the Video Timing box when you started your project, you should specify the exact 1080 line video timing (including framerate) that you are using in the 1080 Video Timing box in the Engineering menu. See [Setting Video Input and Output Engineering Menu Controls](#) on page 172.

NOTE If you selected “No VTR Selected” in the Video Timing box, you must specify the video timing using the 1080 Video Timing box.

Archiving to the HDCAM SR device

The HDCAM SR device supports 4:2:2 and 4:4:4 archiving. The options required in the Engineering menu are as follows.

Input and Output Connection	Colourspace
In Serial 4:2:2 / Out Serial 4:2:2	YCrCb-->RGB
In Serial Dual 4:4:4 / Out serial Dual 4:4:4	No Conversion

When you switch between 4:2:2 and 4:4:4 options, the Colourspace option changes automatically to ensure the proper settings.

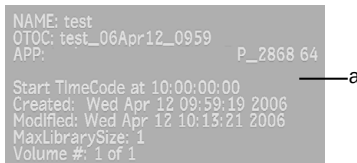
Archiving to a Tape Containing Material

You can create a VTR archive on a tape that already contains material or add material to an archive on a tape. For example, on a 60-minute tape, you could allocate 20 minutes to an archive by setting its start timecode at 01:00:00:00 and defining the length of the archive as 20 minutes in the Length field. See [Creating a VTR Archive](#) on page 436. You can then add any material, starting after 01:20:00:00.

Header Information Slate

All VTR archives contain a Header Info Slate, which is a single frame providing information about the archive. Located in the archive before the table of contents, the Header Info Slate provides information such as:

- Name of the archive
- Name of the OTOC
- Name of the workstation where the archive was created and name and version of the Autodesk application used for archive creation
- Start timecode
- Creation date and time
- Modification date and time
- Minimum size of the clip library buffer (in MB) required to restore the archive



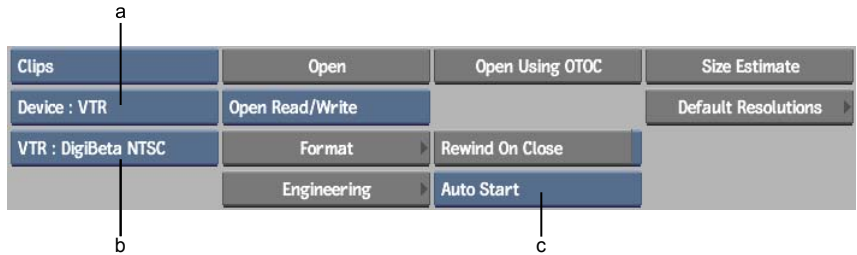
A screenshot of a Header Info Slate, which is a single frame providing information about the archive. The text is displayed in a monospaced font on a dark background. The information includes the archive name, OTOC name, application name and version, start timecode, creation and modification dates, maximum library size, and volume information. A small arrow labeled 'a' points to the 'APP:' field.

```
NAME: test
OTOC: test_06Apr12_0959
APP: P_2868 64
Start TimeCode at 10:00:00:00
Created: Wed Apr 12 09:59:19 2006
Modified: Wed Apr 12 10:13:21 2006
MaxLibrarySize: 1
Volume #: 1 of 1
```

(a) Header Info Slate example

To create a VTR archive:

- 1 Open the Archive menu.
- 2 In the Archive menu, select VTR from the Archive Device box.
The options for archiving to a VTR device appear.



(a) Archive Device box (b) Device Name box (c) Auto/Manual Start button

- 3 Select a VTR device from the Device Name box.
- 4 Insert a striped tape with continuous non-drop-frame timecode in the VTR.
- 5 Click Engineering and set Engineering options, then return to the Archive menu. See [Tips for Better VTR Archiving](#) on page 440.

NOTE When you open an archive in read/write mode, play delay and pre- and postroll values are verified and set in the auto test run before archiving begins. Therefore, you do not need to set these options.

- 6 If you want to set the start timecode for the archive, toggle the Auto/Manual Start button to Manual Start and enter a timecode.
The start timecode that appears by default is set in the software initialization configuration file.
- 7 If the tape already contains material, determine the start timecode for the archive by playing the tape in the Input Clip module. See [Using the VTR Transport Controls](#) on page 169.
- 8 Click Format.
The Format menu appears.

(a) Name field (b) Length field (c) Comment field

- 9 Enter the name for the archive entry and any additional comments in the Name and Comments fields.
- 10 Enter the available space after the Start Timecode in the Length field. Enter the length in minutes.

NOTE If you create the archive on a tape that already contains material, make sure you define the length of the archive as the space you want the archive to use, not the length of the tape.

- 11 Click Format and then Confirm to continue.

The new archive is created on the VTR tape and opens automatically. Save the contents of the current project, clip libraries, EditDesk, or reels. See [Saving to an Archive](#) on page 452.

TIP Write down the archive name and creation date on the tape label. This will help you to locate the appropriate table of contents file if you need to restore your archive.

Tips for Better VTR Archiving

Use the following tips to get better results when archiving to a VTR tape:

- Make sure the input from the computer to the VTR is connected properly. If it is not, yet the output from the VTR to the computer is correct, everything will appear normal when archiving and the monitor will show your material being saved. However, black or random noise is actually being saved to tape.
- Turn the video breakout box on *before* powering up the computer.

- On the video breakout box, make sure that your house sync is connected to the Sync Genlock and *not* to the Sync port in the GBRA/YUVA component. The sync should be connected to the Genlock input of the computer and be terminated with a 75-ohm terminator.
- Set the system reference of the VTR to External Analog.
- Track the VTR to get the best RF (Reference) value and error-rate level. If your VTR has an auto-tracking feature, disable it and track manually, or place it on “one shot.”
- Check the following Engineering menu settings:
 - Timecode type: Make sure the VITC & LTC timecodes are the same. If they are not, set timecode type to LTC.
 - Input format and sync: Make sure that input format and sync match the device.
 - Output format and sync: “House” is the recommended output sync.
 - The required Scan Mode option is F1.

See [Setting Video Input and Output Engineering Menu Controls](#) on page 172.

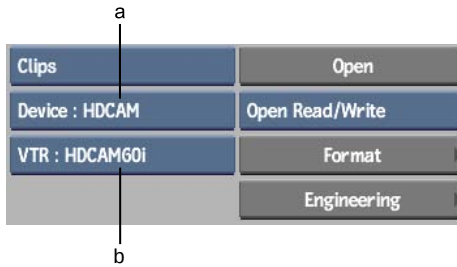
Creating an HDCAM Archive

You can create an HDCAM device archive. The material archived to HDCAM devices is compressed significantly. As a consequence of HDCAM compression, the quality of the material in the HDCAM archive may be reduced.

NOTE Archiving to tapes with drop-frame timecode is not supported.

To create an HDCAM archive:

- 1 In the Archive menu, select HDCAM from the Archive Device box.
The options for archiving to an HDCAM device appear.



(a) Archive Device box (b) Device Name box

- 2 From the Device Name box, select an HDCAM device.
- 3 Insert a striped tape with continuous non-drop-frame timecode in the VTR.
- 4 Click Engineering and set the Engineering options, then return to the Archive menu. See [Setting Video Input and Output Engineering Menu Controls](#) on page 172.

NOTE The recommended Timecode Source for archiving is LTC. Additionally, if you open an archive in read/write mode, play delay and pre- and post-roll values are verified and set in the auto test run before archiving begins. Therefore, you do not need to set these options.

- 5 If you want to set the start timecode for the archive, select the Manual Start option and enter a timecode.
The start timecode that appears by default is set in the software initialization configuration file.
- 6 If the tape already contains material, determine the start timecode for the archive by playing the tape in the Input Clip menu. See [Controlling a VTR](#) on page 168.
- 7 Click Format.
The Format menu appears.

Format	Name: My_Archive
	Comment:
	Length 34 mins
	Manual Start
	01:00:00:00

(a) Name field (b) Length field (c) Comment field

- 8 Enter the name for the archive entry and any additional comments in the Name and Comments fields.
- 9 Enter the available space after the Start Timecode in the Length field. Enter the length in minutes.

NOTE If you are creating the archive on a tape that already contains material, make sure you define the length of the archive as the space you want the archive to use, not the total length of the tape.

- 10 Click Format and then Confirm to continue.

The new archive is created on the HDCAM VTR tape and is opened. Save the contents of the current project, clip libraries, EditDesk, or reels. See [Saving to an Archive](#) on page 452.

TIP Write down the archive name and creation date on the tape label. This will help you select the appropriate table of contents file if you need to restore your archive.

Creating a Tape Archive

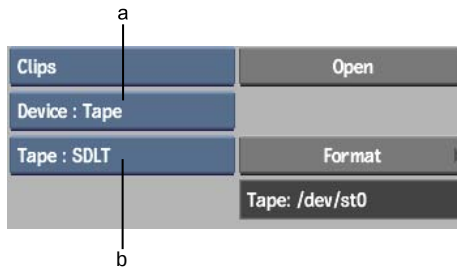
Before archiving to a tape device, make sure:

- The selected device is a fixed, block-size device.
- The tape device is declared in the CLIPMGTDVICE KEYWORD section of the software initialization configuration file.

- A tape is in the tape device. Some devices are unavailable for several minutes after a tape is inserted, so it is best to do this before opening the tape archive module.

To create a tape archive:

- 1 Open the Archive menu.
- 2 From the Archive Device box, select Tape as your archiving device. Options specific to the tape device appear.



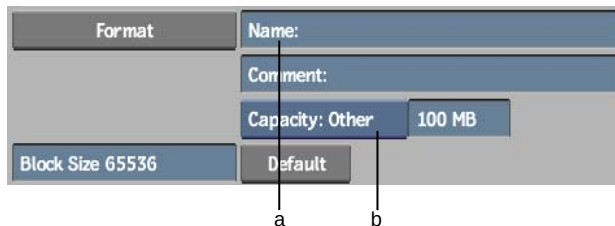
(a) Archive Device box (b) Device Name box

- 3 If necessary, select a tape device from the Device Name box.

NOTE Tape devices are detected automatically when you first enter the Archive menu.

- 4 Click Format.

The Format menu appears.



(a) Tape Archive Name field (b) Capacity box

- 5 Enter the name for the archive entry and any additional comments in the Name and Comment fields.

- 6 Select the capacity of the tape from the Capacity box.

The Capacity box displays tape sizes that correspond to tapes generally used by the selected device. If you cannot find the description of the tape, select Capacity: Other and use the adjacent field to enter the capacity of the tape in MB.

- 7 Select Default from the Block Size box to use the default value from the software initialization configuration file. Alternatively, specify an appropriate block size in the adjacent field.

- 8 Click Format and then Confirm to continue.

A new archive is created on the tape, and is opened. Save the current project, clip libraries, EditDesks, reels, soft edits, or individual clips. See [Saving to an Archive](#) on page 452.

NOTE Write down the archive name and creation date on the tape label. This will help you to select the appropriate OTOC if you need to restore the archive.

Creating a File Archive

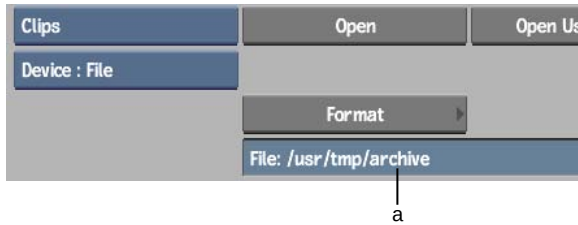
You can create a file archive on any supported filesystem. When you format the archive, Backdraft Conform determines the available space and creates a table of contents file where this information is recorded. When you reformat an archive, you lose all previously archived entries within it. The archive itself is in a separate file.

NOTE The table of contents and archive files are both given the name you specify when you create the file, but the archive file has the extension `.seg`.

To create a file archive:

- 1 In the Archive menu, select File from the Archive Device box.

By default, the File Path field shows the path of the archive file declared using the ClipMgtDevice File token in the software initialization configuration file.

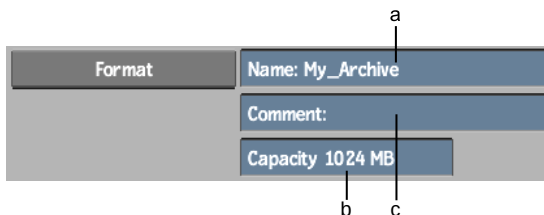


(a) File Path field

- 2 To use the default archive file “archive” in the */usr/tmp* directory, go to step 4. Make sure there is no previously archived material in it before formatting. To create an archive file or select an existing one, go to step 3.
- 3 To change the archive file path, click the File Path field. The file browser appears. Change the directory, and then either:
 - Use the keyboard to enter a name for a new archive file and click Enter.
 - Select an existing archive file.

The Archive menu appears and the name and path of the new or selected archive file appears in the File Path field.

- 4 Click Format.
- The Format menu appears.



(a) Name field (b) Capacity field (c) Comment field

- 5 Use the Name and Comment fields to enter a name for the archive entry and any additional comments. (Each archive file contains one archive entry within which all other archived entries are saved.)
- 6 Set the capacity of the file archive by entering a value in the Capacity field.

WARNING If you selected an existing archive, any material within it will be deleted when you reformat it in the following step.

- 7 Click Format.

The procedure for creating an archive on external USB and FireWire (IEEE 1394) storage devices is similar to creating a file archive. Before saving files to an archive, browse to the USB or FireWire device filesystem mount point.

Archiving Soft-Imported Clips

There are two ways to archive soft-imported clips:

- **Stone mode:** the media is automatically written to the archive and is no longer soft-imported. This ensures that material will not be overwritten accidentally in the shared storage when you restore the media. When you restore the media, the clips will reside on the local framestore (stonefs) as stonefs frames. To make these clips accessible from the shared storage again, you must publish them.
- **Linked mode:** Only the path to the media is archived. You can later restore the media in the original form as soft-imported frames, provided the media resides at the original paths saved with the archive. If the source clip is not found at restore time, it is displayed as a checkerboard pattern image.

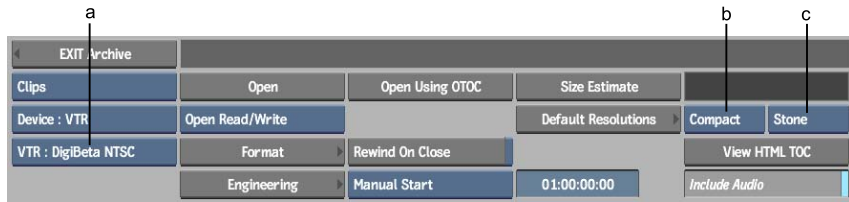
Archiving files using the linked option significantly reduces the amount of space required for your archived clips. It also alleviates bandwidth when archiving to a VTR. Using Linked mode, you can archive both video and audio files. An archived soft-imported clip has an attached soft-import icon corresponding to the file extension.

To archive a soft-imported clip:

- 1 From a clip library, select a soft-imported clip to be archived.

TIP You can use the Search feature to easily locate all the soft-imported clips in your library. See [Searching in an Archive](#) on page 463.

- 2 Create an archive or open an existing archive.



(a) Archive Device box (b) Backup Set box (c) Archiving Mode box

- 3 From the Archive Device box, select the device for archiving your entries.
- 4 Optional: Click Size Estimate to determine the size of material to be archived.
- 5 From the Archiving Mode box, select the archiving mode.

Select:	To:
Stone	Write clip to the framestore and archive the content of the media file.
Linked	Archive only the path to the media file.

- 6 From the Backup Set box, select the backup set.

Select:	To:
Compact	Maintain a highly organized archive and save space on the device.
Normal	Archive without using a backup set. Entries are archived directly to the table of contents. Source clips remain in play order on tape.

- 7 Click Archive.

Archiving to Multiple Tapes

If the items you select for archiving exceed the capacity of the archiving device (such as a VTR tape, data tape, or a filesystem), you can split the archive across multiple tapes, disks, or files. The splitting of archives is seamless and virtually transparent to the archiving process.

The procedure for creating a multiple tape archive (an archive that is too large for a single tape) is almost the same as for creating an archive on a single tape. If the entries selected for archiving exceed the capacity of the tape, a message

appears indicating that the archive requires multiple tapes. The archiving process begins for the first tape. When the first tape is full, you are prompted to insert a second tape. Insert and format this tape and continue with the archiving. This process continues for as many tapes as are required.

For instructions on how to open a multiple tape archive, see [Opening Multiple Tape Archives](#) on page 451.

Opening an Archive

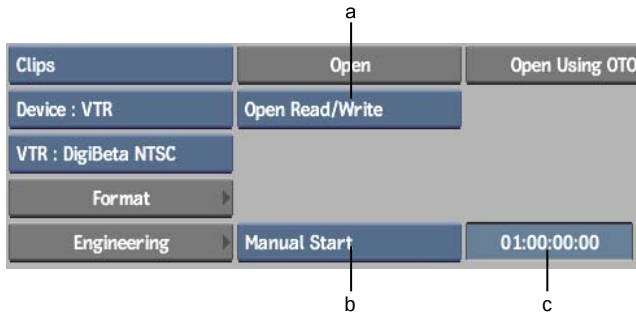
Once you create an archive, you can add entries to it at any time. For example, you can save entries to an archive after you create it, close it, and open the same archive later to add new entries.

Backdraft Conform creates an HTML/XML and ASCII table of contents for any archive that you open, including archives created in older versions of the application. To open an archive, use either the table of contents on the medium or the OTOC. Opening an archive with the OTOC is faster because the information is read from the hard drive of the computer rather than from the tape. You load entries from an archive using the OTOC. With VTR archives, you can also save and delete entries.

When you open a VTR archive in read/write mode, Backdraft Conform performs an auto-test. The auto-test involves checking whether it can write, read, and verify the integrity of the archived material. This auto-test also scans binary and play/record delay information to verify the quality and accuracy of the video signal.

To open a VTR archive:

- 1 In the Archive menu, select VTR from the Archive Device box.
- 2 Select the VTR device.
- 3 Insert the archive tape in the VTR.
- 4 Select the start timecode by doing one of the following:
 - Select Autostart if you selected this option when you created the archive (the archive rewinds the tape to find the start timecode).
 - Select Manual Start and enter the appropriate timecode if you selected this option when you created the archive.



(a) Open Mode box (b) Auto/Manual Start button (c) Timecode field

5 Do one of the following:

- To use the table of contents on the tape, click Open. Select Open Read/Write or Open Read Only from the Open Mode box.

NOTE When you try to open a VTR archive in read/write mode, Backdraft Conform automatically checks for machine errors (for example, dirty heads). If any problem is detected, the archive does not open. If the tape is write-protected, the archive opens in read-only mode.

- To use the OTOC, click the Open Using OTOC button and select the OTOC in the file browser. You are given the option to read slates from the tape. Answer 'Y' if you wish to see clip proxies.

To open a tape archive:

- 1 Make sure the tape is in the device.
- 2 In the Archive menu, select Tape from the Archive Device box.
- 3 Select the tape device.
- 4 Insert the archive tape in the tape device.
- 5 Do one of the following:
 - To use the table of contents on the tape, click Open.
 - To use the OTOC, click the Open Using OTOC button and select the online table of contents in the file browser. The OTOC does not contain slates, so archive proxies show up as black.

To open a file archive:

- 1 In the Archive menu, select File from the Archive Device box.
- 2 Select the file archive.
- 3 Do one of the following:
 - To use the table of contents in the archive, click Open.
 - To use the OTOC, click the Open Using OTOC button and select the OTOC in the file browser.

NOTE Use the OTOC if the archive table of contents is corrupted or if you want to use a shortcut. See [Recovering an Archive](#) on page 471.

Opening Multiple Tape Archives

When you are creating large archives, you may want to use multiple tapes to store one archive. By splitting the contents of one archive onto separate tapes, you can keep similar types of material together in the same archive.

You can open material on any tape in a multiple tape archive but you will always need the last tape in the multiple tape archive sequence. The last tape contains necessary header information for locating the material you want to restore.

TIP Keep tapes organized and labeled so that you can easily keep track of all the tapes in the same archive.

To open material from a multiple tape device or VTR archive:

- 1 Insert the last tape in the tape device or VTR.
- 2 Click Open.

Backdraft Conform reads the header information to ensure that the tape is actually the last tape in the sequence. If the incorrect tape is placed in the tape device or VTR, a corresponding error message appears.
- 3 Follow the instruction and then click Continue to proceed.

TIP Click Abort Loading at any time during this procedure to abort the restore procedure.

- 4 Select the backup set that you want to open.
- 5 If the material that you want to open is not on the last tape in the sequence, you are prompted to place the correct tape in the tape device or VTR.
- 6 Place the correct tape in the VTR or tape device and click Continue.
- 7 Click Close when you have finished restoring from the multiple tape sequence.

Saving to an Archive

To save clips to an archive, you must open the archive using the table of contents on the medium. For VTR archives, you can also save clips using the OTOC. You can save material to multiple files, device tapes, or VTR tapes.

Archiving Entries

You can archive entries from any local or shared clip library.

When you archive entries, there are two methods for organizing the entries: Normal and Compact. Both methods perform some optimization to save space in the archive. The Compact method creates a backup set, which acts like a container that holds the archived material. It appears in the archive as an entry called Backup Set, and all selected entries are within it. Each time you use Compact, a new backup set is created. When entries are archived using the Normal option, the entries appear directly in the archive.

Normal Archives

With Normal archives, if a frame appears more than once in a source clip, the frame is archived only once. This saves space on the archive and is most noticeable if your clips contain many still shots.

NOTE If the same frame appears in two source clips, the frame will be archived twice.

In a Normal archive, each source clip is archived individually, making restoring individual clips easier and faster and ensuring that frames are output to tape in play order. This makes clips viewable on a VTR archive.

Compact Archives

Compact archives optimize archiving. If a frame appears more than once in *any clip* being archived, the frame is archived only once. No image data for duplicate frames is archived. This saves a significant amount of space on the archive if your clips contain a lot of duplicate frames.

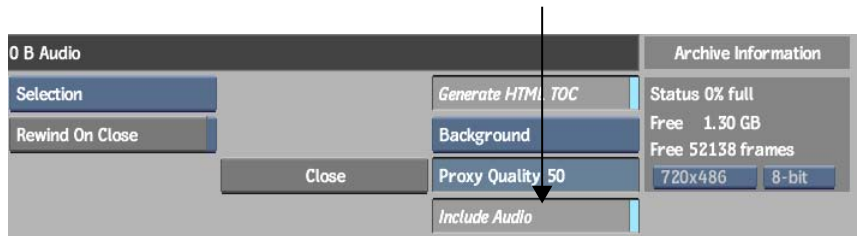
When you create a Compact archive, the archived material is stored in a backup set. You can expand the backup set in the archive library to view and select the clips. You can restore selected clips from a Compact backup set without having to restore the entire archive.

Compact archives are the recommended archive type for Autodesk® Smoke® and Backdraft Conform projects since they are usually archived as a whole.

NOTE When you open an archive, all entries appear exactly as they did when you selected them, even if entire clips were composed of duplicate frames and not archived. The optimization occurs on the tape, and references to all original clips are kept so that the clips can be restored.

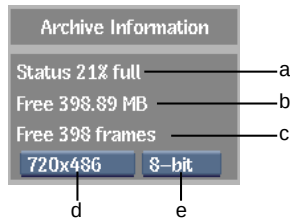
To archive entries from a clip library:

- 1 Open the archive. See [Opening an Archive](#) on page 449.
- 2 Enable Include Audio if you want audio data to be archived with the clips.



NOTE If you disable the Include Audio button when archiving, the audio track information and audio data will be lost when you restore the clips.

- 3 The Archive Information displays the percentage of space used on the medium and how much space is available for archiving, in both megabytes and frames.

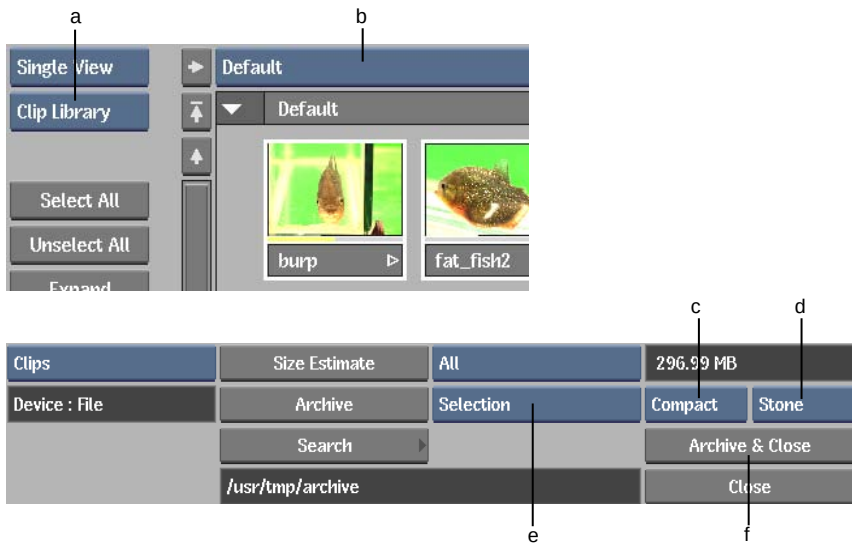


(a) Percentage of space used (b) Available space in MB (c) Available space in frames (d) Resolution box (e) Bit Depth box

- 4 If needed, change the resolution, bit depth, or both to see how many frames of the specified dimensions can be archived.

NOTE When archiving to a VTR, you can only archive clips of the resolution supported by the VTR, therefore the Resolution box is greyed out and displays the resolution of the currently selected VTR.

- 5 From the Library Type box, select Clip Library. The clip library appears.



(a) Library Type box (b) Clip Library box (c) Backup set box (d) Archiving Mode box (e) Entry Type box (f) Archive & Close button

Images courtesy of Technicolor (formerly Toybox) and Das Werk

6 From the Clip Library box, select the required clip library.

7 From the Backup Set box, select the backup set.

Select:	To:
Compact	Maintain a highly organized archive and save space on the device.
Normal	Archive without using a backup set. Entries are archived directly to the table of contents. Source clips remain in play order on tape.

8 If archiving soft-imported clips, select the archiving mode from the Archiving Mode box.

Select:	To:
Stone	Write the clip to the framestore and archive the content of the media file.
Linked	Archive only the path to the media file.

9 From the Entry Type box, select the entries that you want to archive.

Select:	To archive:
Project + Shared	Project EditDesk, setup directory, clip libraries, shared clip libraries, and metadata
Project	Project EditDesk, setup directory, clip libraries, and metadata
Project Libraries + Shared	Current project clip libraries and imported (shared) clip libraries
Project Libraries	Current project clip libraries
Selection	Selected entries

10 Do one of the following:

- Click Archive if you want to add additional items to the archive. Follow steps 6 to 10. When finished, click Close.
- Click Archive & Close to archive selected entries and close the archive immediately.

The selected entries are saved to the archive. If the archives do not fit in the first file, tape device, or VTR tape archive, perform the following steps.

NOTE To abort the archiving process at any time, click anywhere in the grey area of the screen.

- 11** If the selected material does not fit in the chosen file or tape archive, a message appears in the message bar advising you of the necessary steps. Follow the instructions and then click Confirm.

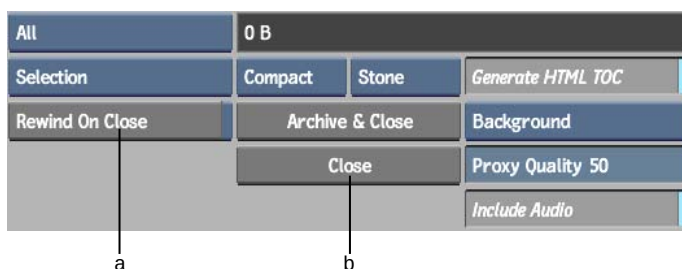
TIP To abort the process of a multiple VTR tape archive, click Abort Loading rather than Confirm.

- 12** When archiving to tape or VTR, insert the next tape.
Messages reflecting the process status are displayed in the message bar. When your intervention is required, follow the instructions.
Backdraft Conform automatically archives the material onto the tape and updates the header information to account for the material being split onto more than one tape. When this process is complete, the related message appears.
- 13** Insert Tape 2 in the tape device or VTR.
The procedure for archiving to Tape 2 is the same as for Tape 1. Follow steps 10 to 12.
- 14** Repeat steps 12-13 if you want to split your archive onto further tapes or files.
The corresponding message appears when all the selected material has been archived successfully.

Closing an Archive

When an archive is open, the Close button appears in the Archive menu. Click this button to update the table of contents, close the device, and eject the tape from the drive.

If you are archiving to a VTR, you can rewind to the beginning of the tape automatically when you exit the Archive menu. To do this, enable the Rewind On Close button.



(a) Rewind On Close button (b) Close button

NOTE If you attempt to exit the Archive menu, you are prompted to close the device. Click Confirm to close the device, or click elsewhere to cancel.

Managing Archives

In most cases you maintain an archive over the course of a project, appending clips, deleting clips, and restoring archived clips. Typically, the following procedures are performed:

- [Browsing an Archive](#) on page 457
- [Searching in an Archive](#) on page 463
- [Appending Entries to an Existing Archive](#) on page 464
- [Deleting Entries from an Archive](#) on page 465
- [Setting Preferences When Restoring Archives from Previous Versions](#) on page 468
- [Recovering an Archive](#) on page 471
- [Deleting Tables of Contents](#) on page 462

Browsing an Archive

Each archive includes a header file, which is located at the beginning of the archive and contains the metadata necessary for properly restoring the archive. When you create an archive, a table of contents is also created on the archiving device in case the header information becomes corrupted.

You can view the table of contents with the ASCII or HTML TOC:

- To view the contents of your archive, open the ASCII TOC file in a text editor. See [Using an ASCII TOC to View an Archive](#) on page 459.
- To view proxies displaying the contents of the archive, open the HTML TOC in a Web browser. See [Using an HTML TOC to View an Archive](#) on page 459.

Online Tables of Contents (OTOCs)

The table of contents lists the contents of the archive, as well as information such as the order in which clips are assembled on the archive, clip IDs, transitions, and timecodes. When you restore an archive with the table of contents, Backdraft Conform uses this information to restore the material.

A copy of the table of contents is saved in the filesystem. This copy is referred to as the Online Table of Contents (OTOC). You can open an archive in read-only mode using the OTOC. In read-only mode, you can load but not save or delete entries from the archive. With VTR archives, you can open an archive in read-write mode using the OTOC, and save and delete entries from the archive.

The OTOC is useful for:

- Recovering material in an archive when the table of contents on the medium is corrupted. See [Recovering an Archive](#) on page 471.
- Opening an archive quickly.

When an OTOC is created, Backdraft Conform creates an ASCII text copy of it (ATOC) as well as an HTML and XML copy. Use the ASCII and HTML copies to view the contents of an archive without opening it. For example, use them to view the contents of a VTR archive without connecting to the VTR. You can also use the XML TOC to easily populate a database with information about your archives.

The OTOC, ATOC, HTML, and XML TOCs are saved to the path specified in the ArchiveLibrary token in the software initialization configuration file. If the ArchiveLibrary token is disabled, they are saved to `/usr/discreet/archive`. You can also define the ArchiveLibrary token in the project configuration file by adding the line:

ArchiveLibrary <directory>

where <directory> is replaced by the location for storing your archives.

The OTOC is updated each time you close the archive.

See [Using an ASCII TOC to View an Archive](#) on page 459 and [Using an HTML TOC to View an Archive](#) on page 459.

Using an ASCII TOC to View an Archive

Open the ASCII version of the table of contents using *nedit* to view the contents of an archive without opening it. ASCII TOC filenames have the following format:

```
<archive name>_<creation date>.atoc
```

By default, the files are stored in the */archive* directory for your project. The contents of the ASCII files are labelled as follows.

Code	Meaning
P	Project
L	Clip library
D	EditDesk
R	Source Area or Record Area
C	Clip/soft-edit
E	Source clip

Using an HTML TOC to View an Archive

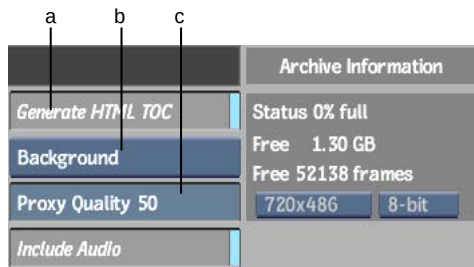
To view the contents of an archive without opening it, open the HTML version of the table of contents using a Web browser.

NOTE You can use a Web browser other than the default specified in the DEFAULT WEB BROWSER section of the software initialization configuration file. The browser name must be in the environment path to avoid errors. If you cannot open an OTOC, specify Firefox as the default Web browser in the software initialization configuration file.

The HTML TOC is conveniently organized, displaying JPEG proxies for the first and last frame of each clip in the archive.

To create an HTML TOC:

- 1 Open the archive. See [Opening an Archive](#) on page 449.



(a) Generate HTML TOC button (b) Proxy Generation box (c) Proxy Quality field

- 2 Enable Generate HTML TOC.
- 3 Determine how the JPEG proxies are generated by selecting an option from the Proxy Generation box.

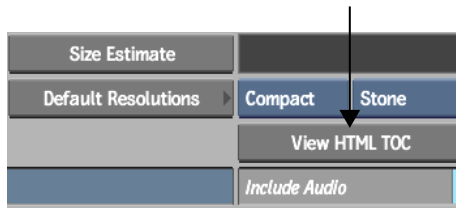
Select:	To:
Background	Generate the JPEG proxies while the archive is being created.
Foreground	Generate the JPEG proxies after the archive has been created.

- 4 Set the JPEG quality setting using the Proxy Quality field.
An HTML TOC, along with JPEG proxies, is updated each time you close the archive.

NOTE The HTML TOC is generated from the XML TOC based on the HTML templates installed in `/usr/discreet/<product home>/templates`.

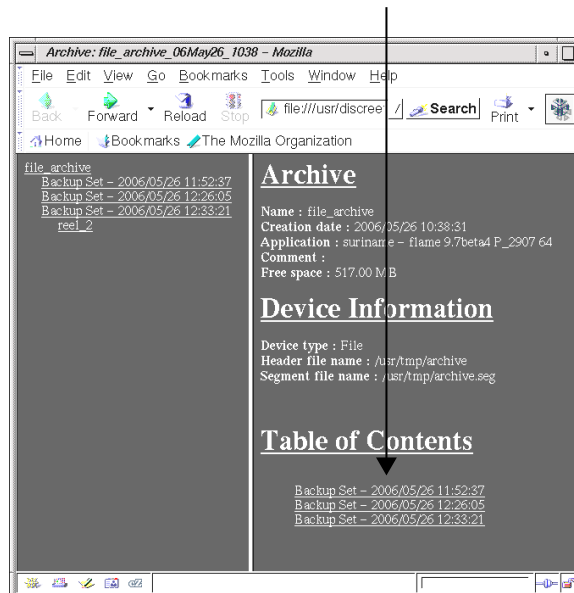
To view an HTML TOC:

- 1 Open the Archive menu.
- 2 Click View HTML TOC.



The file browser appears with the list of all HTML TOCs available.

- 3 From the list, select an HTML TOC to open and click Confirm.
A default Web browser opens and the available TOCs are listed under the “Table of Contents” heading.
- 4 Click the table of contents that you want to open.



The contents of the archive appear.

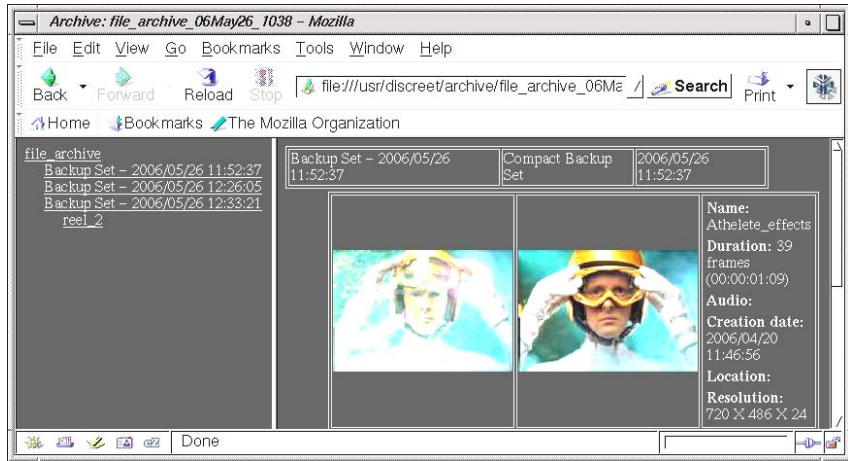


Image courtesy of Das Werk

Deleting Tables of Contents

To prevent the loss of important data, Backdraft Conform never overwrites the previously created tables of contents. If the archive becomes obsolete or if you are sure that older versions of an archive OTOCs are obsolete, you can delete tables of contents. The following name formats are used for the tables of contents.

Type	Format
Online (two files)	<archive name>_<creation date>.otoc <archive name>_<creation date>.otocx
ASCII	<archive name>_<creation date>.atoc
XML	<archive name>_<creation_date>.xml
HTML (two or more files)	<archive name>_<creation_date>.html <archive name>_<creation_date>/*

where <archive name> is the name that you type in the Name field when you create the archive.

You can use the **rm** command to delete a table of contents.

To delete tables of contents:

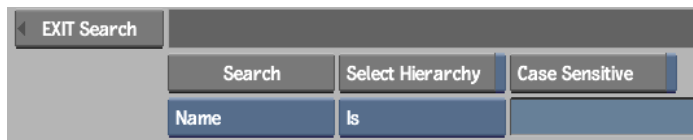
- 1 Make a backup copy of the tables of contents you want to delete, or use your usual method for backing up files.
- 2 Use the **cd** command to go to the directory where the tables of contents are stored. By default, it is the */usr/discreet/archive* directory.
- 3 Enter the command **rm** <archive name>.

Searching in an Archive

You can use the Search menu to perform clip searches in an archive.

To open the archive Search menu:

- 1 Open the archive. See [Opening an Archive](#) on page 449.
- 2 Click Search to display the Search menu.



The search tool can be useful, for example, when you need to identify clips of a certain resolution in an archive containing clips of multiple resolutions. You can do this by selecting the corresponding criterion (Resolution) and setting the required arguments in the related fields (Specific Width, Specific High, and Aspect Ratio) as shown in the following illustration.



(a) Search criteria specified in the Specific Width/Height fields and the Aspect Ratio box

The search controls and available options are similar to those found in a clip library. See [Searching for Clips](#) on page 399.

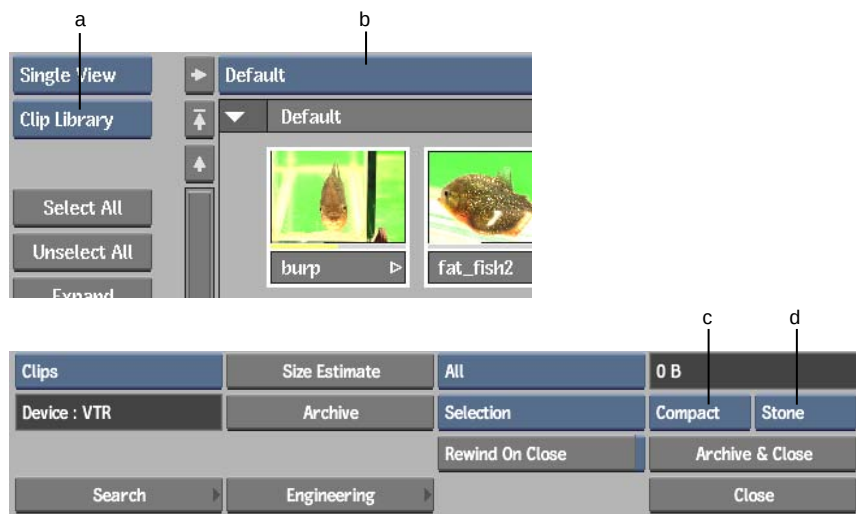
Appending Entries to an Existing Archive

You can add new material to an existing archive as long as there is space on the archiving medium. When opening an archive to add entries, use the table of contents on the archive. For VTR archives, use the OTOC to add entries.

NOTE If you want to open an archive using the OTOC on a machine other than the one on which it was created, copy the OTOC to the new machine.

To append entries to an existing archive:

- 1 Open the archive. See [Opening an Archive](#) on page 449.
- 2 From the Library Type box, select Clip Library.



(a) Library Type box (b) Clip Library box (c) Backup Set box (d) Archiving Mode box

Images courtesy of Technicolor (formerly Toybox) and Das Werk

- 3 From the Clip Library box, select the required library.
- 4 Follow steps 7 to 10 in the procedure “To archive entries from a clip library”.

Deleting Entries from an Archive

To ensure data integrity and prevent archive corruption, deleting entries from an archive is not allowed.

Restoring Entries from an Archive

The procedure for restoring entries from an archive is the same for all devices. When you restore material from an archive, the items that you select to restore are copied directly from the archive into the selected clip library. You can restore entries into any local clip library.

To avoid compatibility issues between Visual Effects and Finishing applications, when restoring a complete project archive, the project EditDesk is restored to the library and not to the EditDesk. Partition entries in archives created from earlier versions of the application are loaded into Backdraft Conform as project entries.

The MaxLibrarySize token in the software initialization configuration file specifies the maximum size (in MB) of clip libraries. Set the MaxLibrarySize token to allow the current clip library to accommodate the entries you are restoring from the archive. When you archive to a VTR, the clip library size required to restore the archive is recorded in the Header Info Slate. See the *Autodesk Visual Effects and Finishing Configuration File Reference Guide* for a description of the MaxLibrarySize keyword in the software initialization configuration file.

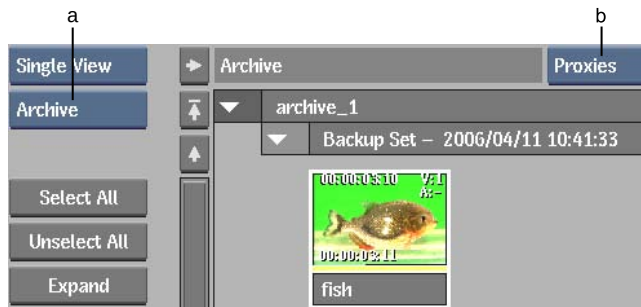
NOTE You can restore an individual clip from a Normal or Compact archive.

To restore entries from an archive:

- 1 Open the archive. See [Opening an Archive](#) on page 449.

TIP When you use the Open button to restore entries from an archive, Backdraft Conform reads the table of contents on the tape. To speed up the process, you can use the online table of contents by clicking the Open Using OTOC button.

The contents of the archive appear in single view.



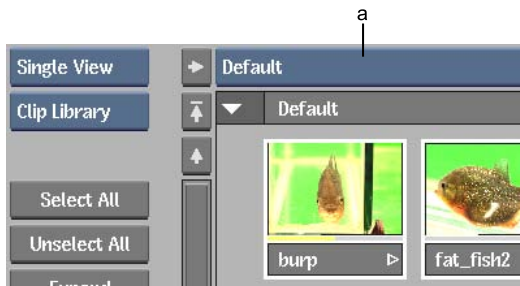
(a) Library Type box (b) Entry View Mode box

Images courtesy of Technicolor (formerly Toybox) and Das Werk

- 2 Select the entries that you want to restore.

TIP Use Proxies view mode to help you identify the clips you want to restore. Dragging on a proxy will display only the first and last frame in the clip or soft edit. You can also use the search function to look for clips with particular characteristics. See [Searching in an Archive](#) on page 463.

- 3 From the Library Type box, select Clip Library.
The clip library appears.

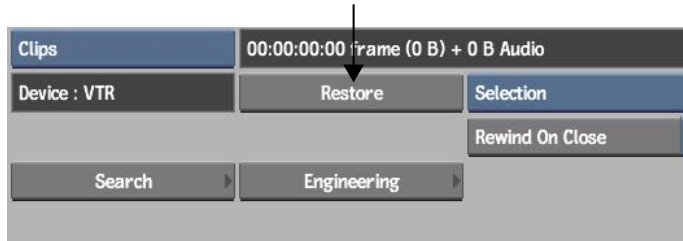


(a) Clip Library box

Images courtesy of Technicolor (formerly Toybox) and Das Werk

- 4 From the Clip Library box, select the clip library where you want to restore the archive entries or create a new clip library.

- 5 From the Library Type box, select Archive to open the archive.
- 6 From the Archive menu, click Restore.



The selected entries are restored to the clip library.

If you select a clip in an archive that matches a clip that already exists in the destination library or EditDesk reel, a message appears indicating that the clip will not be loaded from the archive. To load the skipped clips, restore them to another location where no matching clips exist.

As an alternative and more efficient way of restoring entries from an archive described in the previous procedure, you can use the dual library view.

To restore entries from an archive using dual library view:

- 1 Open an archive and from the Library View Mode box select Dual View. The archive appears in dual view alongside the clip library. You can now easily switch from archive to clip library by clicking in the corresponding area. Switching the input focus changes the available menu options.

NOTE You can not move or copy entries from and to archive and clip library in dual view.



(a) Library View Mode box

Images courtesy of Technicolor (formerly Toybox) and Das Werk

- 2 In the archive, select the clips that you want to restore.
- 3 Switch to the clip library and from the Clip Library box, select the destination clip library or create a new library where you want to restore your clips.
- 4 Switch focus to the archive area and from the archive menu, click Restore.

NOTE If you are restoring an archive created in pre-6.0 versions of Fire® or Smoke, the clips to be restored lack file metadata that are now part of the stone filesystem. The application automatically adds this metadata to clips during the restore process, but you may have to modify the configurations that assign metadata based on incoming formats. See [Setting Preferences When Restoring Archives from Previous Versions](#) on page 468.

Setting Preferences When Restoring Archives from Previous Versions

In versions earlier than 5.5, archives did not include all the metadata information that version 2010 needs to restore archives with the correct scan mode and aspect ratio. The Default Resolutions menu makes it possible to assign the scan mode and aspect ratio preferences to older archives. The information you need to assign depends on the software version in which the archive was created. Assign the information using the Default Resolutions

menu. Use the following table to determine which information you need to assign to your old archive.

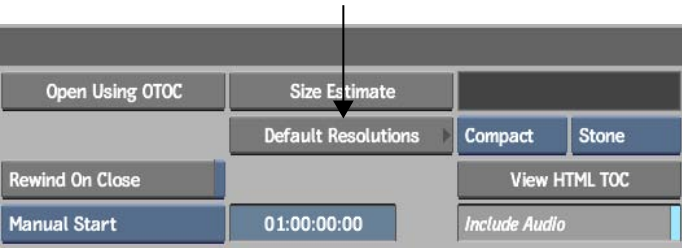
Archived clips prior to:	Information you must assign:
Smoke 6.0, Fire® 6.0, Inferno 5.5, Flame 8.5, Flint 8.5, and Backdraft 5.5	Scan mode
Smoke 5.2, Fire 5.2, Inferno 5.0, Flame 8.0, Flint 8.0, and Backdraft 5.0	Scan mode and aspect ratio

The parameters listed in the Default Resolutions menu act as default values for all listed resolutions. For example, if you want to change the default values for PAL clips, you must change the values for the PAL entry, which is the entry that has a width value of 720 and a height value of 576. If you are working with a PAL archive created in an earlier version, the aspect ratio would have automatically been set to 1.3333, but you may want to restore all your PAL archives with 16:9 aspect ratio. You can change this setting by changing the aspect ratio to 16:9 for the PAL entry.

NOTE You should only restore an old clip at one resolution. If you restore versions of the same clip at different resolutions, you may encounter problems with the clip.

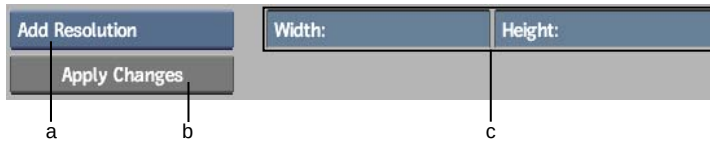
To add an archiving preference:

- 1 In the Archive menu, click Default Resolutions.



The Default Resolutions list and menu are displayed.

Width	Height	Aspect Ratio	Scan Mode	Frame Rate
640	480	1.333333	P	Undefined fps
720	486	1.333330	F1	29.97 fps
720	576	1.333333	F1	25 fps
1280	720	1.777778	P	59.94 fps
1828	1332	1.372372	P	24 fps



(a) Add Resolution box (b) Apply Changes button (c) Width and Height fields



(d) Aspect Ratio field (e) Aspect Ratio box (f) Scan Mode box (g) Framerate box

- 2 Enter values in the Width and Height fields.
- 3 Select a default aspect ratio value from the Aspect Ratio box or enter a custom value in the Aspect Ratio field. Specifying a unique aspect ratio causes the Aspect Ratio box to show Custom automatically.
- 4 From the Scan Mode box, select Progressive, Field 1, or Field 2 to determine how the lines of the contents of the archive are scanned.
- 5 From the Framerate box, select a framerate.
- 6 Click Add Resolution.
- 7 Click Apply Changes.

The new archive preference is added to the list.

To open an archive using a selected archive preference:

- 1 In the Archive menu, click Default Resolutions to display the Default Resolutions menu.
- 2 Add new preferences to correspond to a specific clip resolution contained in the archive that you plan to open.
- 3 Open the archive created in an earlier version.

TIP It is recommended that you open the archive with Open Read Only selected since you are opening an archive created in an earlier version. When you open in Read-Only mode, an auto test is not executed.

- 4 In the Archive menu, click Load.

- 5 Select the clips to be loaded from the archive.
- 6 If you want to see the preference that is applied to the clip, press **Alt** as you drag over the clip.
The applied preference appears in the message bar as you drag over the clip.
- 7 Continue restoring the archive.

To edit an existing preference:

- 1 In the Archive menu, click Default Resolutions.
- 2 In the Default Resolutions list, select the entry you want to modify.
- 3 Modify the values and press **Enter** after each change.
- 4 Select Edit Resolution.
- 5 Click Apply Changes.
The changes are applied to the selected preferences.

To delete an existing preference:

- 1 In the Archive menu, click Default Resolutions.
- 2 In the Default Resolutions list, select the entry you want to delete.
- 3 Select Remove Resolution.
- 4 Click Apply Changes.
The selected resolution is removed.

Recovering an Archive

If the table of contents of an archive on tape is corrupted, Backdraft Conform may not be able to read it. If this happens, open the archive using the OTOC.

Once you open the archive, you can restore the entire contents of the archive and save it to a new tape. Do this, for example, if the tape has been damaged.

For VTR archives, you can also overwrite the corrupted table of contents by saving a single frame to the archive. If the table of contents is successfully overwritten, you can open the archive using the Open button.

To restore the archive:

- 1 Open the archive. See [Opening an Archive](#) on page 449.
If the table of contents is corrupted, the following message appears:
CLIP MGT: Warning! Cannot read archive header.
Select online TOC?
- 2 Click Confirm to open the OTOC.
The file browser appears.
- 3 Select the OTOC for the archive you are trying to open and click Confirm.
- 4 If the archive is on a VTR, a prompt asks if you wish to retrieve the slates (proxies). Press Y to see proxies in the archive or N to have no proxy images.
After a moment, the archive appears.

NOTE When you open an archive with the OTOC, proxies only appear if the archive is on a VTR, and you answered Yes to the prompt. For all other types of archives, proxies appear as black images.

- 5 Select the entire contents of the archive. Make sure you have sufficient space on the framestore for the contents of the archive.
- 6 Click Restore.
- 7 When the restore is complete, click Close.
The restored clips appear in the selected clip library.
- 8 Re-archive the material onto a new tape as described in [Archiving Entries](#) on page 452.

To overwrite a corrupted table of contents (VTR only):

- 1 In the Archive menu, click Open. See [Opening an Archive](#) on page 449.
If the table of contents is corrupted, the following message appears:
CLIP MGT: Warning! Cannot read archive header.
Select online TOC?
- 2 Click Confirm to open the OTOC.
The file browser appears.
- 3 Select the OTOC for the archive you are trying to open and click Confirm.
A prompt asks if you wish to retrieve the slates (proxies).

- 4 Click Y to see proxies in the archive or N to have no proxy images.
After a moment, the archive appears.

NOTE When you open an archive using the OTOC, proxies appear only in a VTR archive, and if you selected Yes in the previous prompt. For all other types of archives, proxies appear as black images.

- 5 From the Library Type box, select a clip library.
- 6 Select a reel entry by **Alt**-clicking the reel and then click Archive.

NOTE When you select a reel, no media is appended to the archive but the header is still forced to update.

- 7 Click Close to close the archive.
- 8 Click Open to open the archive.

If the archive still does not open using the table of contents on the tape, restore the entire archive following the procedure in [Restoring Entries from an Archive](#) on page 465.

Archiving and Restoring Setups

When you archive a project setup, you create a file archive of all setup, resource, and media files in your home directory of your project. If your project is primarily one resolution with a few custom resolution plates, consider exporting them to the images directory. Archive the standard-resolution material to VTR. Of course, you cannot export files and conserve potentially valuable metadata.

You can archive and restore setups previously saved in any Backdraft Conform module. When you save setups as you work in different modules, they are saved by default in the current project. When you archive setups, they are archived in the current project. Before archiving setups, make sure you have:

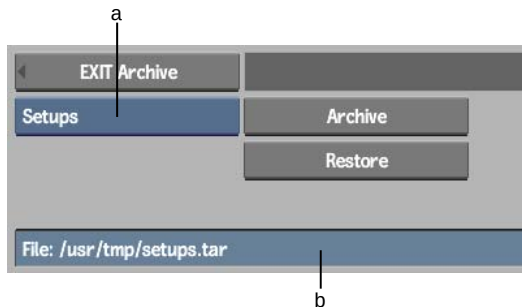
- Saved your setups. See [Saving Setups and Preferences](#) on page 481.
- Defined your project. See [Managing Projects and Users](#) on page 335.
- Achieved the desired effects in the modules.

NOTE You can archive setups to a file, to tape devices, or an external USB/FireWire Drive.

Archive setups using the Archive Setups menu.

To access the Archive Setups menu:

- 1 Click the Clip Library box on the EditDesk to display the Clip Library menu.
- 2 Open an archive to display the Archive menu.
- 3 In the Archive Type box, select Setups.
The Archive Setups menu appears.



(a) Archive Type box (b) Setup Archive Name field

To archive project setups:

- 1 The Setup Archive Name field contains the default path for the archive file, as specified in the SETUPARCHIVETAPE KEYWORD section of the software initialization configuration file. If you want to change the path, click the Setup Archive Name field; otherwise, go to step 4.
The file browser and on-screen keyboard appear.

NOTE Only one device can be specified at a time.

- 2 If needed, select another directory using the file browser.
- 3 Type a new filename using the on-screen keyboard, and click Enter.
The file browser closes and the Archive Setups menu reappears. The new path appears in the Setup Archive Name field.
- 4 Click Archive, then click Confirm.
An archive file for your current project setups is created. It includes all setups you saved in your modules.

- 5 Click EXIT Archive.

To restore project setups:

- 1 Display the Archive Setups menu.
- 2 The Setup Archive Name field displays the last saved archive. If you want to select a different archive, click the Setup Archive Name field; otherwise, go to step 4.
The file browser appears.
- 3 If needed, select another directory using the file browser.
- 4 Select the archive you want to restore by clicking on it.
The file browser closes and the Archive Setups menu reappears.
- 5 Click Restore, then click Confirm.
The archive file containing your project setups is restored into the current project. That is, all the setups you saved in your modules are loaded into the appropriate modules.

Optimizing Archiving Operations

Optimize archiving operations with the following guidelines.

Organizing Archives

Although the way you organize your archives is a matter of personal preference, the following guidelines may be helpful:

- After you have processed a clip, remove any material that you are no longer using before you create your archive.
- Try to keep your libraries clean at all times. Remove clips that are no longer being used or earlier unused versions of your work.
- Use a consistent and clear naming technique so that you can easily find your material when you want to create or open an archive.
- Consolidate and compact clips before archiving in order to save space. See [Consolidating Clips in the Clip Library](#) on page 322 and [Compacting Clips](#) on page 324.

Tips and Troubleshooting

The following tips may help avoid some common archiving problems:

- Do not attempt to archive material captured with Headroom as the Output mode. Such material cannot be archived.
- Check the scan mode of Backdraft Conform and make it consistent with your VTR and VCP settings. Use the F1 Scan mode in the Engineering menu. You cannot create an archive on a VTR when the Scan Mode option in the Engineering menu is set to F2.
- Ensure that you are using a non-drop-frame timecode tape. You cannot create an archive on a drop-frame timecode tape.
- With an Ampex DCT D1 deck, the VTR cues to the wrong timecode (the next ascending minute) when archiving. To work around this problem, select the Manual Start option and enter the desired timecode.
- Ensure that you have version 3.1.2 (or later) of the DST driver to use the DST tape drive with Backdraft Conform.

Forcing an Archive To a Single Tape

In some cases, an archive on a single tape may be accidentally tagged as a multi-tape archive. This results in the application prompt to insert a second tape when there is no need for it.

To fix this problem, use the following environment variables to identify archives that are not tagged correctly, and then to force the archive to register as a single tape:

DL_DUMP_ARCHIVE_TOC

DL_ARCH_FORCED_NB_VOLUMES

WARNING Autodesk recommends the following procedures only if you are a specialist. Otherwise, please contact Autodesk Media and Entertainment Customer Support for help at <http://www.autodesk.com/conform-support>.

To identify archives mistakenly tagged as multi-tape:

- 1 In a command shell, type **setenv DL_DUMP_ARCHIVE_TOC**.
- 2 Launch Backdraft Conform from the shell.

- 3 Open an archive from the Archive menu.
- 4 Examine the feedback in the shell: scroll down past the list of segments and look for “volume=<# of volumes for archive>”.
The number of volumes indicates how many tapes the application registers as being used for the archive. If the number of volumes is more than one and the archive is on a single tape (the line would read “volume=2”) proceed with the following steps.

To force an archive to a specific number of tapes:

- 1 If necessary, quit Backdraft Conform.
- 2 In command shell, type the following to force the archive to a single tape:
setenv DL_ARCH_FORCED_NB_VOLUMES 1
- 3 Relaunch Backdraft Conform from the same shell and proceed to restore the archive from tape.
Mistakenly changing the number of tapes for an archive results in corrupted clips. It can happen, for example, if the archive is spread over two tapes and you force it to one tape. However, the source material on the tape is not corrupted. If you have corrupted clips, try starting another session of Backdraft Conform without using the *DL_ARCH_FORCED_NB_VOLUMES* environment variable.

Part 5: Managing Your Work Environment

Part 5 includes these chapters:

- [Saving Setups and Preferences](#) on page 481
- [Clip History](#) on page 489
- [Setting Preferences](#) on page 503
- [Managing Hotkeys](#) on page 551
- [Installing Fonts](#) on page 561
- [Utilities](#) on page 567
- [Command Line Start-up and Exit Options](#) on page 609



Image courtesy of Absolute Post

Saving Setups and Preferences

17

Topics in this chapter:

- [About Setups and Preferences](#) on page 481
- [Accessing Directories](#) on page 482
- [Saving, Loading, and Deleting Items](#) on page 484
- [Setting the Default Preferences](#) on page 486

About Setups and Preferences

In the Resize module, you can save the changes made to a clip. You can also save LUTs and monitor calibration setups. While you work in Backdraft Conform, menu preferences are also saved as part of your user profile. You can retrieve and use setups and preferences in a later work session.

Setups

A setup is a file that contains a record of all changes you make to a clip in a particular module. This record includes references to clips used—not the clips themselves. Setups let you save your work separately from clips, so you can load and work on the setup at anytime or apply the setup to other clips.

By default, each type of setup is stored in a separate directory. For example, the *resize* directory stores resize setups.

You can also archive setups. See [Archiving and Restoring Setups](#) on page 473.

Preferences

Preferences are settings that let you customize the display or functioning of some module elements, hotkeys, the EditDesk, pen and tablet, and audio. You can save preferences to a file and retrieve them at a later time. Examples of preferences are grid and guide settings, default render mode settings, and default field dominance settings. Like setups, each type of preference is stored in a separate directory.

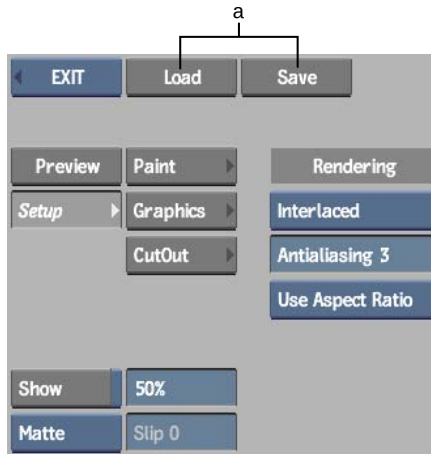
You set module preferences in the Setup menu of each module, hotkey preferences in the Hotkey Editor, and system-level preferences in the Preferences menu. System-level preferences (EditDesk, pen and tablet, and audio) are saved for each user when you exit Backdraft Conform, and are retained for future Backdraft Conform sessions. You must save module preferences if you wish them to be available for future sessions.

Accessing Directories

When you save a setup or preference in a directory, it is saved as a file in a directory in the filesystem. Each file and subdirectory in the filesystem has a path—a series of parent directory names separated by slashes (/)—that the operating system uses to locate the file or subdirectory. Each type of setup and preference has a different default directory, and therefore a different path.

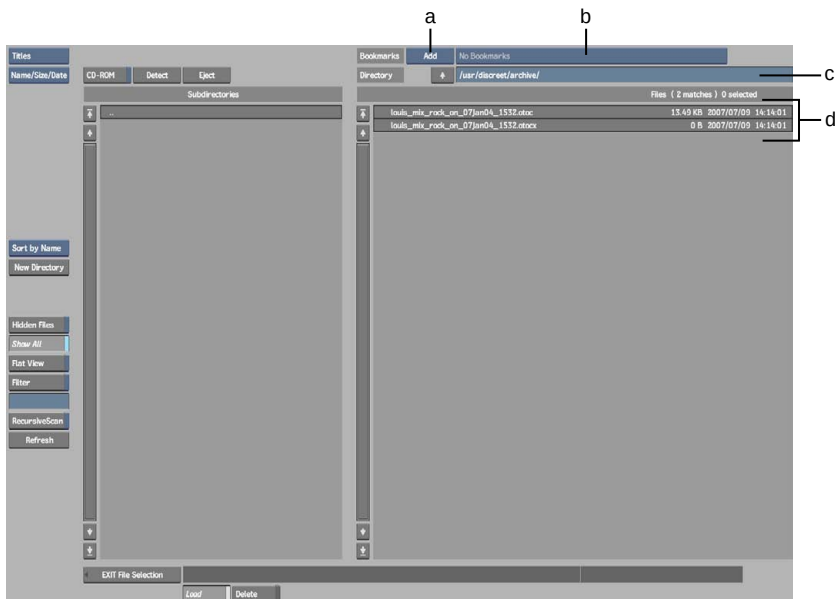
The default directory is accessed when you save or load setups and preferences. You specify the default location for your setup directories when you create your project, and the default location for your preference directories when you create a new user. The default path for setups is listed in the Environment Directory Pathnames section of the project configuration file.

All modules contain a Save button and a Load button for saving and loading setups and preferences, found in the module's main menu.



(a) Save and Load buttons

Use these buttons to save, load, and delete setups and preferences from the directories.



(a) Add/Delete Bookmarks box (b) Bookmarks list (c) Setups directory (d) Previously saved setups

TIP Select Add in the Add/Delete Bookmarks box to add a bookmark to a frequently referenced path. To later recall the bookmark, select the bookmark from the Bookmarks list.

When you open a directory, all the setups or preferences of the item type selected in the Load option box appear in the file browser. Use the file browser to select the setup or preference you want to save or load.

NOTE By default, only items of the current item type are displayed in the directory.

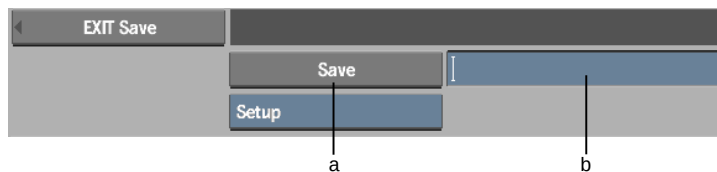
Saving, Loading, and Deleting Items

You can save, load, and delete setups and preferences from directories.

To save an item to a directory:

- 1 In a module, click Save.

The file browser appears in the upper part of the screen and the Save menu appears in the lower part.



(a) Save button (b) Filename field

- 2 In the Filename field, enter a name for the item you are saving and press **Enter**. When resaving an item, simply click Save.

The item is saved and you are returned to the previous menu.

NOTE If the directory already contains an item with the same name, a warning message appears in the message bar, as well as a Confirm button. Click the Confirm button (or press **Enter**) to overwrite the file, or click elsewhere to cancel the command. To bypass the Confirm button when resaving items, press **Alt+Enter**.

To load an item from a directory:

- 1 In of a module, click Load.

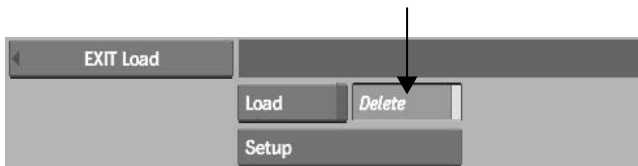


The file browser appears in the upper part of the screen, and the Load menu appears in the lower-left corner.

- 2 If the setup you want to load is located in a different directory, use the file browser to change directories. To load a setup from a different project, select the project from the Project box.
For information on using the file browser, see [Browsing the File System](#) on page 68.
- 3 Select the title (or proxy) of the item you want to load.
The item is loaded, and you are returned to the previous menu.

To delete an item from a directory:

- 1 In a module, click Load.
The file browser appears in the top part of the screen, and the Load menu appears in the lower-left corner.
- 2 If the setup you want to delete is located in a different directory, use the file browser to change directories. To delete a setup from a different project, select the project from the Project box.
- 3 Click Delete.



- 4 In the file browser, select the title (or proxy) of the item you want to delete.
A Confirm button appears in the menu.
- 5 Click Confirm or press **Enter** to confirm your selection.
The selected item is deleted from the directory and you are returned to the previous menu.

TIP To bypass the Confirm button when removing items, press **Alt** as you select an item to remove. To cancel the command, click elsewhere.

Deleting Multiple Items

To delete more than one item at a time, press **Ctrl+Alt** as you click the items you are deleting. Items are deleted with no Confirm message, and you remain in the Load menu. Click the Exit Load button to return to the previous menu.

Remaining in the File Browser

You can stay in the file browser by pressing and holding the **Ctrl** key when saving, loading, or removing items:

- When saving an item, press **Ctrl** as you click Save.
- When loading an item, press **Ctrl** as you click the item.
- When deleting items, press **Ctrl** as you click Confirm.

Setting the Default Preferences

In any module where preferences can be saved, you can save your preferences as the default so that they will be loaded each time you use the module. Each defined user can save default preferences. You can also return the default preferences to those that came with Backdraft Conform.

The preferences directory is set to `/usr/discreet/<home>/correct/pref`. All the factory preferences are automatically copied to the new user. To change the default preferences directory, select `<new>` from the Preferences Directory box and use the file browser to create or select a new directory. See [Modifying a User](#) on page 361.

To save your preferences as the default:

- 1 In a module where preferences can be saved, set the preferences the way you want.
- 2 Display the Save menu.

- 3 Select Defaults from the Save option box. If the Confirm prompt appears, confirm the save.
The defaults are saved and you are returned to the previous menu.

To reset the defaults to the factory setting:

- 1 Display the Load menu.
- 2 Select Factory Defaults from the Load option box and Confirm.
The factory defaults are loaded, and you are returned to the previous menu.

NOTE When you load the factory defaults, the current default preferences are saved to a backup file that you can reload from the user's preference directory if needed.

Topics in this chapter:

- [About Clip History](#) on page 489
- [Viewing Clip History](#) on page 491
- [Managing Clips with Clip History](#) on page 492
- [Saving and Archiving Clips with Clip History](#) on page 497
- [Compatibility between Autodesk Products](#) on page 497
- [Clip History Functionality](#) on page 498
- [Clip History Features Per Product](#) on page 499

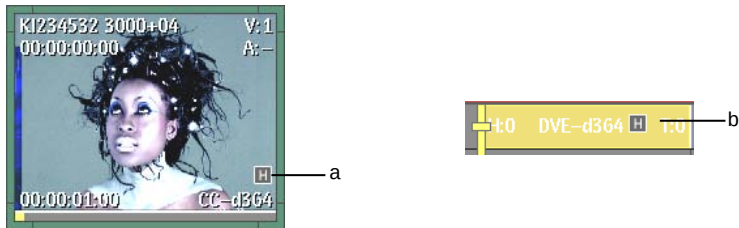
About Clip History

The Clip History feature tracks operations you have applied to a clip or element. It expands the clip, providing a view of your operations. To easily see all of a clip's operations, you can display the clip history as a list or schematic on the EditDesk.

Clips that have a clip history contain sources and intermediates. Sources are any of the original clips used to build an effect, for example, clips captured using an EDL. Sources are outlined in green in the clip history. Intermediates are clips that are created when building a clip that uses multiple effects or operations.

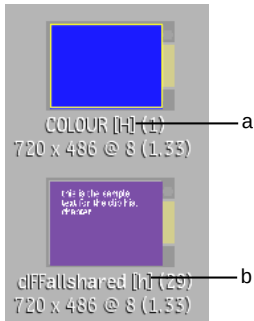
Clips with history are indicated by the letter “H”. Edited soft clips with at least one segment with history are denoted by “h”. The following EditDesk views indicate if a clip has history:

- Proxies
- List View
- Clip List View
- Record Timeline



(a) Clip with history (b) Timeline element with history

Image courtesy of The House



(a) Clip with history (b) Soft clip with history

NOTE For clip history to be created, you need to enable the Clip History preference in the Preferences menu.

Viewing Clip History

You can expand the clip history of a Source Area clip to view modules and soft effects that have been used to create a clip or element. However, you see a read-only clip history—you cannot adjust settings or modify the clip.

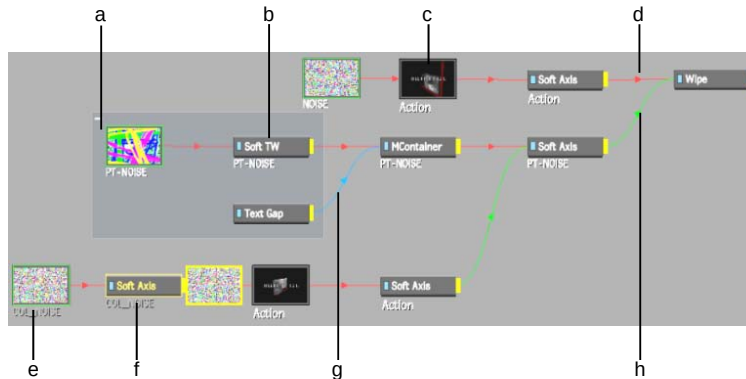
You can view the clip history from History or Large History view. History view takes up less space in the user interface. However, when you have a clip history that contains multiple sources and intermediates, you may not be able to see all of them in History view. To see more of the clip history, switch to Large History view. With either option selected, you can view clip history as a list or schematic.

To view the clip history of clips in the Source Area:

- 1 Select a clip with history in the Source Area.
- 2 Do one of the following:
 - Select either History (**Ctrl+F5**) or Large History (**Ctrl+Shift+F5**) from the View Modes box in the Record Area.
 - Double-click the H icon on the clip in the Source Area.
- 3 To switch between History and Large History view, hold **Ctrl** and swipe the bar below the Source Timeline Area.
- 4 Select Source Clip from the Source/Record History box.
The clip history appears in the Record Area. The clip history is read-only.
- 5 Select an option from the History View box.

Select:	To view:
Schematic view	Nodes that represent the operations performed on the clip.
List view	A list of the operations performed on the clip.

The clip history appears. The following illustration shows some significant components of clip history.



(a) Container (Collapsible) (b) Soft Effect element (c) Module element (d) Front
(e) Source clip (outlined in green) (f) Greyed out text of non-editable element
(g) Matte (h) Back

Managing Clips with Clip History

When creating clips with clip history, you can keep track of the intermediates used to build the final clips.

Sources are any of the original clips that you use to build an effect, for example, clips that you captured using an EDL. Sources are outlined in green in the clip history. Intermediates are clips that are created when building a clip that uses multiple effects or operations.

There are a number of tools you can use to keep track of the sources and intermediates used. Use the Search tool to find clips with history or clips that were used to create a clip with history. Use the Delete tool to delete intermediates for a selected clip with clip history. Use the Commit tool to commit a clip with history just as you would any other clip.

Searching for Clips with History

You can search for clips with history on the EditDesk or in the clip library. The Search tool provides an easy way to organize clip history sources and intermediates.

To search for clips with history on the EditDesk:

- 1 In the Source Area menu, click Search.



The Search controls appear.



(a) Search Criteria box (b) Argument option box

- 2 Select Clip History from the Search Criteria box.
- 3 Use the Argument option box and field to supply the necessary arguments. Select one of the following options.

Select:	To search for:
Contains	Clips that contain clip history.
Does Not Contain	Clips that do not contain clip history.
Sources	Sources that were used in a selected clip's history.
Intermediates	Intermediates that were used in a selected clip's history.
Intermediates + Src	Sources and intermediates that were used in a selected clip's history.

- 4 If you selected Intermediates, Intermediates + Src, or Sources from the Argument option box, select a result clip with clip history.

NOTE The clips that are found are the intermediates and/or source clips associated with the selected clip.

- 5 Click Search.
If a match is found, the clip is selected.

To search for clips with history in the clip library:

- 1 In the EditDesk menu, select the clip library you want to open, and then click the Clip Library box.



The current clip library appears.

- 2 In the Clip Library menu, click Search.

The Search menu appears.



(a) Search option box (b) Argument option box

- 3 Select Clip History from the Search option box.
- 4 Use the Argument option box and field to supply the necessary arguments. Select one of the following options.

Select:	To:
Contains	Search for clips that contain clip history.
Does Not Contain	Search for clips that do not contain clip history.
Sources	Search for sources that were used in a selected clip's history.
Intermediates	Search for intermediates that were used in a selected clip's history.
Intermediates + Src	Search for sources and intermediates that were used in a selected clip's history.

- 5 If you selected Intermediates, Intermediates+Src, or Sources from the Argument option box, select a result clip with clip history.

NOTE The clips that are found are the intermediates and/or source clips associated with the selected clip.

- 6 Click Search.

A message appears in the message bar indicating if any matches were found and the matches are displayed in the library.

Deleting Intermediates

When you want to free up disk space or shorten the time it takes to perform a wire transfer or archive clips that have clip history, you can delete or intermediates used to create the final processed clip. To delete intermediates that are used in multiple clips with clip history, you must delete them from all clips at the same time. You can do this from EditDesk a clip library.

NOTE If you modify a clip with clip history after you delete its intermediates in Backdraft Conform, the clip will be reprocessed from the source clips and the intermediates will be recreated.

To delete sources and intermediates in a clip library:

- 1 In the EditDesk menu, select the clip library you want to open, and then click the Clip Library box.



The current clip library appears.

- 2 In the clip library, select the clips that contain the intermediates or sources you want to delete. If you want to delete an intermediate that is used in multiple clips, select all the clips that contain it.
- 3 In the Clip Library menu, click Tools.
- 4 From the Tools menu, choose Consolidate.
The Consolidate controls appear.
- 5 Select an option from the Delete History option box corresponding to what you want to delete.

Select:	To:
Intermediates	Delete the intermediates used to create a selected clip.
Intermediates & Sources	Delete the intermediates and sources used to create a selected clip.

- 6 Click Delete History Frames, and then Confirm.

The intermediates for the selected clips are deleted as long as they are not being used for other unselected clips.

Committing a Clip with History

You can commit a clip with a history, or a clip segment with a history just as you would any other clip. When doing so, you delete the clip history without removing the clip or element's soft properties.

To commit a clip's history in a clip library:

- 1 In the EditDesk menu, select the clip library you want to open, and then click the Clip Library box.



The current clip library appears.

- 2 In the clip library, select the clips with clip history that you want to commit.
- 3 In the Clip Library menu, click Tools.
- 4 From the Tools menu, choose Consolidate.

The Consolidate controls appear.



(a) Commit Type box

- 5 Select History from the Commit Type box.
- 6 Click Commit, and then Confirm.

The selected clip's history is committed.

Saving and Archiving Clips with Clip History

All clips are saved with their histories and setups embedded into them. A saved clip history includes the following attributes and parameters, which are available when a clip is restored:

- References to input clips
- Module names
- Setups

In most cases, you only need to save and archive original sources and the result clip when you save and archive clips with clip history. However, if you use an Autodesk Visual Effects and Finishing product to create an intermediate using Motion Estimation, Modular Keyer, Compositor, Paint, the Warper, or the Stabilizer, you must save and archive the resulting intermediate because it is needed to expand clip history.

Any clips in a library that have clip history are automatically saved or archived along with their history. Clip history media is stored on the media storage volume and metadata is stored on the system drive. If, for any reason, you need to access the metadata files, you can find them in the following folders:

- `usr/discreet/clip/<framestore volume>/<project name>/history`
- `usr/discreet/clip/<framestore volume>/<project name>/effects_history`
- `usr/discreet/clip/<framestore volume>/<project name>/<library name>_history`

Compatibility between Autodesk Products

Because clip history provides a record of most operations performed during a project, project collaboration is facilitated. Multiple users can work on a single clip and then use the clip history to navigate through changes made to a clip.

For instance, an Inferno, Flame, or Flint user could create a clip that included a colour correction and text effects. A Smoke user could then open the clip in Smoke on the EditDesk or in the Batch module, expand the history, and go directly to colour correction or text changes to make further modifications, regardless of the order in which the effects were created. The Inferno, Flame,

or Flint user could also open the modified clip and use the clip history as a navigation tool in the same way.

The Clip History feature exists in Inferno 6.0, Flame 9.0, and Flint 9.0 or later, and in Smoke 7.0 and Backdraft Conform 7.0 or later. In Smoke and Backdraft Conform, you can view clip history that was created in Inferno, Flame, or Flint and vice versa. However, there are limitations to what you can access.

You cannot access certain modules created in Inferno, Flint, or Flame when you are in Smoke or Backdraft Conform. For example, if you view clip history in Smoke that contains a Compositor module (a module in Inferno, Flame, and Flint but not in Smoke), you cannot open the Compositor module from the Smoke clip history. Additionally, you cannot access any module in the history that precedes an unsupported module. Using the same example, if a cross-product-compatible module such as the Colour Corrector appeared in the clip history before the Compositor module, you would not be able to access the Colour Corrector module from the clip history in Smoke. You cannot change the order of modules, add modules, or delete modules in the clip history in Smoke and Backdraft Conform.

NOTE Backdraft Conform provides access to read-only clip history.

Clip History Functionality

When using clip history in an Autodesk Visual Effects and Finishing product, the following limitations apply:

- If you expand a clip with an Action module or node in Smoke, only features that are already available in Smoke are editable. If the clip is reopened in Inferno, Flame, or Flint, the features accessible in these products will be retained.
- If you have a Paint or Stabilizer element in your clip history, all modules that precede the Paint or Stabilizer module will not be editable. You can, however, modify the elements before the Paint or Stabilizer element by selecting the element immediately preceding the Paint or Stabilizer element in the history, and then pressing the **Match** hotkey to create a clip with the same history in the Source Area. You can then use the result clip from the match. The history is expandable and editable.
- The duration of a clip created in the Paint module is not retained. For example, enter the Paint module with None selected, and then in the Paint module create a scene that is 30 frames. Then go into a module such as

Action and make some changes. When you view the clip history and click the Paint module element, the clip will contain one frame only.

- When you enter a module from clip history, in and out points mark the duration in the source clip that was used in the clip history (unless the entire clip was used). If you then make a modification and process the result, only the duration of the clip marked by in and out points is rendered, unless you park the cursor before the in point. If the cursor is parked before the in point, media is added to the head frames, starting from the cursor position.
- Always apply soft effects or Batch FX after you work in modules if you want to edit the soft effects from the clip history. If you process a clip in a module after a soft effect has been added to the clip history, you can no longer modify the preceding clip history. The clip name is also greyed out to indicate that the preceding soft effects and modules are no longer editable. For example, if you add a timewarp to a clip and then go into the Colour Corrector module and process the clip, you will not be able to edit the timewarp in the History view. The timewarp will be greyed out in the clip history.
- When you process a clip or element starting at a frame other than the first, the leading unprocessed frames are padded with unrendered frames. Unrendered frames are put in the header of the clip, producing a soft clip with a specific number of heads. This is necessary in Inferno, Flame, and Flint so that when you expand clip history in Batch, the frame numbers match between all nodes in the Batch schematic. It is also necessary in Smoke so that you can trim the element and then access the clip history to render the missing media.

Clip History Features Per Product

The following tables summarize the modules that are accessible in the clip history by product. The features are listed in alphabetical order.

Clip History Accessibility

The following table summarizes the differences in module accessibility when a segment's history is expanded on the EditDesk in Smoke or Backdraft

Conform, and in Batch in Inferno, Flame, or Flint. Certain modules have limited accessibility. See [Clip History Functionality](#) on page 498.

Feature	Inferno and Flame	Flint	Smoke	Backdraft Conform
Action	Yes	Yes	Yes	No
Auto Matte	Yes	Yes	Yes	No
Average	Yes	Yes	Yes	No
Burn-In Letterbox	Yes	Yes	Yes	No
Colour Corrector	Yes	Yes	Yes	No
Colour Warper™	Yes	Yes	Yes	No
Combine	Yes	Yes	Yes	No
Compositor	Yes	Yes	No	No
Compound	Yes	Yes	Yes	No
Degrain	Yes	Yes	Yes	No
Difference	Yes	Yes	Yes	No
Distort	Yes	Yes	No	No
Filter	Yes	Yes	Yes	No
Flip	Yes	Yes	Yes	No
Keyer	Yes	Yes	Yes	No
Logic Ops	Yes	Yes	Yes	No
Modular Keyer	Yes	Yes	No	No
Negative	Yes	Yes	Yes	No
Optics	Yes	Yes	Yes	No
Paint	Yes	Yes	Yes	No
Posterise	Yes	Yes	Yes	No

Feature	Inferno and Flame	Flint	Smoke	Backdraft Conform
Quick Composite	Yes	Yes	No	No
Regrain	Yes	Yes	Yes	No
Separate	Yes	Yes	Yes	No
Sparks®	Yes	Yes	Yes	No
Stabilizer	Yes	Yes	Yes	No
Text	Yes	Yes	Yes	No
Warper	Yes	Yes	No	No

Clip History Accessibility in Batch

The following table summarizes the differences in accessibility of Batch nodes in a segment's history by product. Certain nodes have limited accessibility. See [Clip History Functionality](#) on page 498.

Batch Node	Inferno and Flame	Flint	Smoke
3D Blur	Yes	No	No
Action	Yes	Yes	Limited
Auto Stabilize	Yes	No	No
Distort	Yes	Yes	No
Exposure	Yes	Yes	No
Glow	Yes	No	No
Keyer-3D	Yes	No	No
Lens Distort	Yes	Yes	No
Modular Keyer	Yes	Yes	Yes
Motion Analysis	Yes	Yes	No
Motion Blur	Yes	Yes	No

Batch Node	Inferno and Flame	Flint	Smoke
Vector Viewer	Yes	Yes	No

Setting Preferences

19

Topics in this chapter:

- [About Preferences](#) on page 504
- [Accessing the Preferences Menu](#) on page 504
- [Project Management Preferences](#) on page 504
- [Broadcast Settings Preferences](#) on page 505
- [Pointer Preferences](#) on page 511
- [User Interface Preferences](#) on page 512
- [Documentation Preferences](#) on page 515
- [Tooltips Preferences](#) on page 516
- [Miscellaneous Preferences](#) on page 516
- [General Preferences](#) on page 517
- [Player Preferences](#) on page 524
- [Timeline Preferences](#) on page 527
- [Transition Preferences](#) on page 531
- [Modules/SoftFX Preferences](#) on page 533
- [Audio Preferences](#) on page 538
- [Storage Preferences](#) on page 545
- [LUT Preferences](#) on page 546
- [Support Preferences](#) on page 549

About Preferences

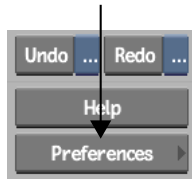
Use the Preferences menu to set up your work environment. Preferences that you set in the Preferences menu are either global preferences that apply no matter where you are in the application, or that are shared in two or more areas. Preference settings are maintained from session to session for each user. For information on saving preferences, see [Saving Setups and Preferences](#) on page 481.

Accessing the Preferences Menu

Access the Preferences menu directly from the EditDesk.

To access the Preferences menu:

- 1 Click Preferences on the EditDesk.



TIP You can also access the Preferences menu from anywhere in the application using the hotkey **Ctrl+Alt+F6**. Depending on where you access the Preferences menu, some preferences may not be available to change.

- 2 To exit the Preferences menu, click EXIT Preferences or use the hotkey **Ctrl+Alt+F6** to return to the previous menu.

Project Management Preferences

The Project Management preferences allow you to monitor or change the current project and user settings.

Project Management					
Host	detroit (localhost)			Volume	stonefs
Project	digital (3072x2048)			Sort	By Name
User	Martin			List From	Local Host

In this section of the Preferences menu, you can:

- Switch to a different project by selecting one from the Project box and clicking Load.

TIP Use the Sort box to sort the project list by name, date, or resolution.

- Switch to a different user by selecting one from the User box and clicking Load.
- Edit a project's settings by selecting one from the Project box and clicking Edit.
- Edit a user's settings by selecting one from the User box and clicking Edit.
- Create projects by selecting <create new project> from the Project box.
- Create users by selecting <create new user> from the User box.

See [Managing Projects and Users](#) on page 335.

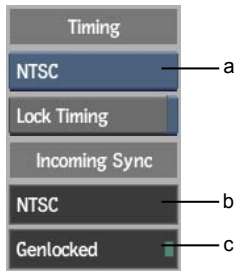
NOTE When accessing the Preferences menu with the hotkey **Ctrl+Alt+F6** from anywhere in the application other than the EditDesk or the Clip Library, you are not able to edit the project's settings.

Broadcast Settings Preferences

Broadcast monitor settings can be applied globally for Backdraft Conform in modules that support multiple viewports. Settings can be changed on-the-fly while you are working. These preferences are stored in the project directory.

Timing Preferences

Sets the broadcast monitor timing and indicates the incoming sync.



- (a) Video Timing box
 (b) Incoming Sync field
 (c) Signal Status field

Video Timing box Select the video I/O timing that the broadcast monitor is to use. Select No Preview to disable the broadcast monitor output.

Lock Timing button Enable to lock the timing to the one selected in Video Timing. While enabled, it prevents the timing from changing when you switch between project.

Incoming Sync field Displays the timing of the sync received by the workstation.

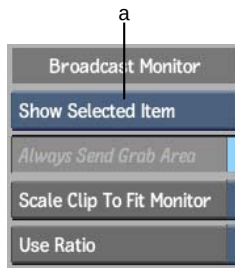
Signal Status field Indicates whether the current project is currently genlocked (green light) or not (red light). Displays Free Run if the workstation uses the video card's internal sync.

It is a good idea to edit the software initialisation configuration file (by default, *init.cfg*) to uncomment all VTRs that you expect to use over the course of your project (or you can uncomment all VTRs). The video I/O timing setting for each session automatically ignores incompatible VTR devices.

NOTE If the Video keyword is disabled in the software initialization configuration file, No Preview appears in the Video Timing box.

Broadcast Monitor Preferences

The broadcast monitor outputs a complete image or selected viewport. View output in different contexts, to suit multiple types of workflow.



(a) Broadcast Monitor box

Broadcast Monitor box Select what to preview on your broadcast monitor.

Select:	To display:
Show Selected Item	The proxy or full-resolution version of the selected clip.
Screen Grab	The contents of a selected image viewport or the Player.
Off	Nothing on the broadcast monitor.

Always Send to Grab Area button Enable to display the Player or viewport. This button is active when the Screen Grab option is selected.

Scale Clip To Fit Monitor button Enable to resize the clip to fit the broadcast monitor. This button is active when the Show Selected Item option is selected.

Use Ratio button Enable to maintain the original proportions of the clip. Disable to use the monitor ratio. This button is active when the Show Selected Item option is selected.

Displaying a Clip in the Broadcast Monitor

Use the Show Selected Item option in the Broadcast Monitor box to display the clip you selected in the broadcast monitor. Use the Broadcast Monitor buttons to resize and set the proportions of the clip. If the clip is zoomed in on the application monitor, the clip is still displayed in its entirety on the broadcast monitor.

When you select multiple clips, the broadcast monitor displays the first clip in a selection. When the Triptych Player is in use, the broadcast monitor displays the output of the current view.

When the Show Selected Item option is selected, you can manage additional preferences. See [Broadcast Overlay Preferences](#) on page 508, [Broadcast Multiview Preferences](#) on page 509, and [Image Data Type Preferences](#) on page 509.

Displaying the User Interface in the Broadcast Monitor

Use the Screen Grab option in the Broadcast Monitor box to display content you select in the Player or module viewport in the broadcast monitor. The content is only displayed in the broadcast monitor when a module viewport or the Player are displayed in the application monitor.

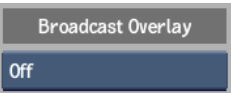
If the output is zoomed in or panned in on the application monitor, the broadcast monitor displays the output in the same state.

When this broadcast option is selected, the Always Send Grab Area button appears. Enable this button to display Player or viewport output, including times when neither is in use.

Broadcast Overlay Preferences

These preferences appear when Show Selected Item is selected in the Broadcast Monitor box. See [Displaying a Clip in the Broadcast Monitor](#) on page 507. Use the Broadcast Overlay box to display content with grids, guides or a letterbox, in the broadcast monitor.

NOTE The letterbox displayed in the broadcast monitor is always relative to the border.



Broadcast Overlay box Select the overlay option that best works with the content on the broadcast monitor.

Select:	To display broadcast monitor content with:
Off	No letterbox or reference overlay elements.
Letterbox	The aspect ratio letterbox and guides as defined in the Guide controls of the Grid menu. See Setting Up Aspect Ratio Guides on page 109.

Select:	To display broadcast monitor content with:
All	All letterbox and reference overlay elements displayed in the application monitor.

Broadcast Multiview Preferences

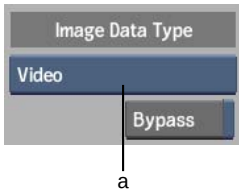
This preference is active when Show Selected Item is selected in the Broadcast Monitor box. See [Broadcast Monitor Preferences](#) on page 506.



Always Display Result button Enable when working in modules with multiple views to display an image of the Result viewport in the broadcast monitor, including when a different view is selected in the application monitor. When a view without clips is selected, the Always Display Result button is enabled by default.

Image Data Type Preferences

These preferences are active when Show Selected Item is selected in the Broadcast Monitor box and the Always Display Result button disabled. See [Broadcast Monitor Preferences](#) on page 506 and [Broadcast Multiview Preferences](#) on page 509.



(a) Image Data Type box

Image Data Type box Select the type of image data you are displaying in the broadcast monitor. Your selection determines the type of transformation that is applied to the clip to modify the contrast.

Select:	To:
Logarithmic	Apply a transformation to a logarithmic film scan.

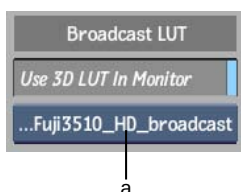
Select:	To:
Video	Apply a transformation to a video clip.
Linear	Apply a transformation to a 16-bit floating point image, with a high dynamic range.

Bypass button Enable to deactivate the image data type display settings in the broadcast monitor.

Broadcast LUT Preferences

These preferences appear when Show Selected Item is selected in the Broadcast Monitor box. See [Displaying a Clip in the Broadcast Monitor](#) on page 507.

Use the Broadcast LUT preferences to apply and select a 3D LUT you can use in the broadcast monitor. This selection does not affect the LUT settings in the application monitor.



(a) 3D LUT List box

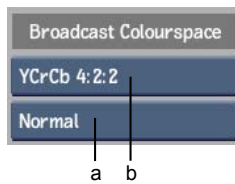
Use 3D LUT In Monitor button Enable to apply a 3D LUT from the 3D LUT list in the broadcast monitor.

3D LUT List box Displays the list of 3D LUTs that you imported in the LUT menu. See [LUT Preferences](#) on page 546.

Broadcast Colour Space Preferences

These preferences appear when Show Selected Item is selected in the Broadcast Monitor box. See [Displaying a Clip in the Broadcast Monitor](#) on page 507.

Use the Broadcast Colour Space preferences to select the colour space used by the broadcast monitor.



(a) Colour Space box (b) Colour Space Range box

Colour Space box Select the colour space displayed by the broadcast monitor.

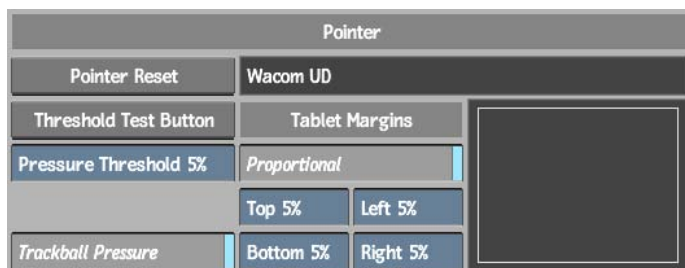
Select:	To display:
YCrCb 4:2:2	The compressed colour space when using a broadcast monitor that is either YCrCb 4:2:2-compliant or connected by a single-link to the SDI card.
YCrCb 4:4:4	The complete colour space when using a YCrCb 4:4:4 broadcast monitor that is connected by dual-link to the SDI card.

Colour Space Range box Select whether to display the normal colour space or the extended range.

Select:	To display:
Normal	The normal colour space. This is the recommended setting.
Headroom	The extended colour space when using a broadcast monitor that supports YCrCb headroom and footroom.

Pointer Preferences

You can adjust the sensitivity of the pen and other pointer preferences.



If you are using a mouse, or if the pen failed to initialise on start-up, the items in this menu do not appear. Instead, you see a fixed field indicating that you are in Mouse mode. To re-initialise the pen, press **Shift+T+Insert**.

Pointer Reset button Returns all pointer preferences to their default values.

Tablet Model box Displays the model of the currently installed tablet.

Threshold Test button Assesses the sensitivity of the pen interactively. Press the pen on the button and a sliding grey bar in the message bar displays the response to the amount of pressure applied.

Pressure Threshold field Sets the amount of pressure that you want to apply when using the pen. Use a higher value to decrease the sensitivity of the pen (more pressure required). A value of 5 works well.

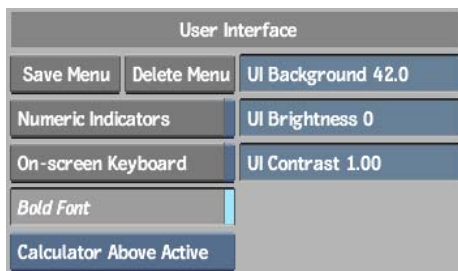
Trackball Pressure Determines whether the trackballs respond to changes in the pressure applied when using the stylus. When enabled, increase pressure on a trackball to create a greater (faster) change; decrease pressure to create a more refined (slower) change.

Jitter Filter field Adjusts the amount of jitter if you are using an Intuos tablet (Wacom® GD- series). The cursor may jitter when the tablet is close to a source of magnetic fields, such as your monitor. You can adjust the Jitter Filter setting of the pen to compensate for this unwanted jitter. This value represents the minimal amount of pen movement needed to report a new coordinate on the screen.

Tablet Margins controls Adjust the left, right, top, and bottom boundary of the active area on the tablet. Use the Proportional button to make these four values change proportionally.

User Interface Preferences

The User Interface menu provides access to custom menu setups, and user interface settings.



Numeric Indicators Use the Numeric Indicators button to enable or disable value indicators on numeric fields. See [Numeric Fields](#) on page 24.

On-screen Keyboard When you enter text in a field, you can choose to have the on-screen keyboard appear or just have editing access to the field. To use the on-screen keyboard, enable On-Screen Keyboard.

TIP You can also turn the keyboard on or off anywhere in Backdraft Conform by pressing **Ctrl+Alt+K**.

Bold Font Toggle bold font for text on buttons on and off.

TIP You can also toggle the bold font on or off anywhere in Backdraft Conform by pressing **Ctrl+Alt+B**.

Calculator Placement box The calculator appears when you click in a numeric field. Use the Calculator Placement box to determine where the calculator will appear.

Select:	To open the calculator:
Calculator Free Floating	In its most recent location.
Calculator Lower Right	In the lower-right corner of the user interface.
Calculator Beside Active	Right or left of the active numeric field.
Calculator Above Active	Above the active numeric field.

To move the calculator to a new location, click and drag on the top edge of the calculator. If Calculator Free Floating is selected, the calculator will open in the new location the next time a numeric field is activated.

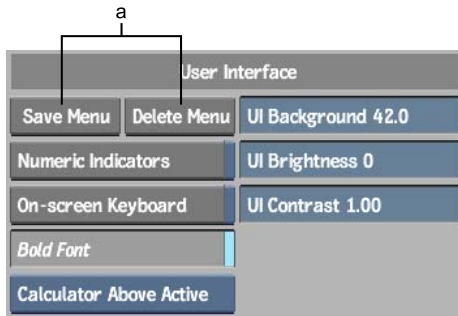
UI Background Adjust the background brightness. 0 = black and 100 = white. The default value is 18. A darker background is suggested for film work, and a lighter background is suggested for video work.

UI Brightness Adjust the brightness of interface elements such as buttons and fields. The default value is 0. The image window, image proxies, and background are not affected by the UI Brightness setting.

UI Contrast Adjust the contrast of interface elements such as buttons and fields. The default value is 1.0. The image window, image proxies, and background are not affected by the UI Contrast settings.

Creating Custom Menus

You can create a custom menu setup by changing the size and location of buttons, fields, and boxes on the interface using the User Interface menu.



(a) Custom menu options

All interface items are aligned on a grid. To display the grid on the screen, press **Ctrl+Alt+F9**. Press **Ctrl+Alt+F9** a second time to hide the grid.

To select an interface item, click it using the left mouse button. To select a group of interface items, press and hold the **Ctrl** key while clicking each. Drag the control handles that appear on the selected items to change their size. To move a selected item, press and hold on the item and drag it to the desired location. To reposition the button title text, click the button with the centre mouse button and drag the text to the desired location.

WARNING There are a number of hidden buttons in the menus. Do not alter these buttons as you may affect the functionality of Backdraft Conform.

Saving a Custom Menu Setup

After modifying the menu setup, you can save your custom setup to use in later work sessions.

To save a custom menu setup:

- 1 Make changes to the default menus in any location in Backdraft Conform.
- 2 Open the Preferences menu (**Ctrl+Alt+F6**).
- 3 In the User Interface section, click Save Menu.
The file browser appears.

- 4 Click in the Filename field next to the Save button, enter a name for your menu setup files, and press **Enter**. (It is not necessary to specify a filename extension.)

The custom menu setup is saved.

Removing a Custom Menu Setup

You can remove custom menu setups that you no longer need.

To remove a custom menu setup:

- 1 In the User Interface menu, click Delete Menu.
The file browser appears.
- 2 Select the menu setup you want to remove.
- 3 Click the Confirm button that appears to remove the setup and return to the Preferences menu.

Loading a Custom Menu Setup

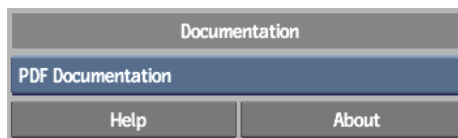
If you want to load a custom menu setup, you must do so when you start Backdraft Conform.

To start Backdraft Conform with a custom menu setup:

- At the command line, type:
Backdraft Conform -f <filename>
where <filename> is the name of the custom menu setup. (It is not necessary to specify a filename extension.)

Documentation Preferences

You can access PDF and HTML versions of the documentation for Backdraft Conform.



PDF Documentation box Select a PDF document to open from the list.

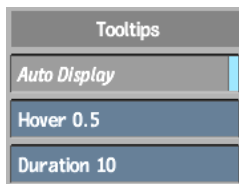
Help button Open the online help in a browser.

TIP You can also use the hotkey **Ctrl+=** to display the online help from anywhere in the application.

About button Click to display licensing and copyright information about Backdraft Conform.

Tooltips Preferences

Use the Tooltips preferences to set how tooltips are displayed. Tooltips display the keyboard shortcut and a brief description for objects (such as buttons and fields) on the user interface.



Auto Display button Enable or disable automatic tooltip display. If you disable automatic display of tooltips, you can still display them for selected buttons using the hotkey **Ctrl+Alt+spacebar**.

Hover field Change the amount of time you must position the mouse over the object before the tooltip displays (in seconds).

Duration field Change the amount of time that the tooltip is visible (in seconds).

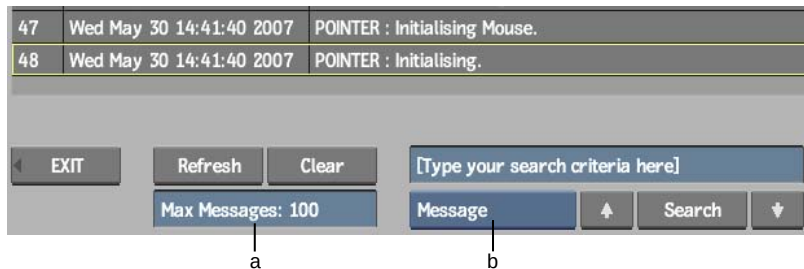
Miscellaneous Preferences

Use these preferences to access the message history log and the Hotkey Editor.



Message History button Click (or press **Ctrl+Alt+F7** from anywhere in the application) to access a log of system messages at any time during the current

session. If a message disappears too quickly from the message bar, you can view it from the message history log.



(a) Message Number field (b) Search Criteria box

The most recent message appears as message 1 in the # column. You can re-sort most of the columns by clicking the column heading. Identical and similar messages are identified in the Repeated column. You can set the number of messages saved, refresh or clear the message history, and do specific searches.

To search the message history log:

- 1 Set the search criteria. You can search by Message or Source keywords.
- 2 Enter your keywords in the Argument field.
- 3 Click Search.

All instances of your search are highlighted. Use the arrow keys to scroll through the results.

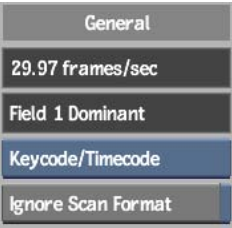
Hotkey Editor Click to enter the Hotkey Editor. For information on using the Hotkey Editor, see [Managing Hotkeys](#) on page 551.

General Preferences

Use the General preferences to control clip information, clip loading, clip history, dual timecode display, and setup scaling.

General

These settings display the project framerate and scan format, and allow you to set clip information.



Project Framerate box A locked field that displays the framerate that correspond with the current project's default resolution.

Project Scan format box A locked field that display the scan format that correspond with the current project's default resolution.

Clip Information box Choose a clip information display option to quickly see a clip's resolution, timecode, and name.

Select:	To display:
Key-code/Frame + Res	Clip name, resolution information (height, width, bit depth, scan format, aspect ratio, fps), keycode, and frame number.
Frame + Res	Clip name, resolution information (height, width, bit depth, scan format, aspect ratio, fps) and frame number (always starting from frame 1).
Key-code/Time-code + Res	Clip name, resolution information (height, width, bit depth, scan format, aspect ratio, fps), keycode, and timecode.
Key-code/Frame	Clip name, keycode and frame number.
Key-code/Time-code	Clip name, keycode and timecode.
Frame	Clip name and frame number (starting from frame 1).
No Display	No information. If you select this option, you can Alt -click clips to display a clip information overlay. The overlay contains the clip name and resolution information (height, width, bit depth, scan format, aspect ratio, fps).

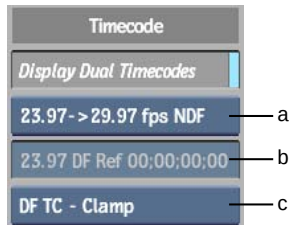
NOTE 12-bit unpacked clips are displayed as 12u. 12-bit unpacked clips created on an IRIX system display as 12ub on a Linux system. Packed clips have no indicator.

Ignore Scan Format Enable Ignore Scan Format to:

- Ignore scan mode when determining whether a clip matches the project's default fps. If the scan mode of the clip does not match that of the project, clip information appears in cyan. For example, if you have a progressive NTSC-sized clip in an NTSC F1 project, the clip's information appears in cyan.
- Disable warnings that are usually given when you load clips with different scan modes into a module.
- Disregard scan mode when detecting mismatching resolutions, in any module that accepts multiple inputs.

Timecode

Use these Timecode preferences when working with 24 fps film material.



(a) Dual TC: 23.97->29.97 fps NDF/DF box (b) Drop Frame Reference Timecode field
(c) Drop Frame Bump Mode box

Display Dual Timecodes button Enable to display both 29.97 and 23.97 fps timecode on the timeline and in the Player. This allows you to monitor which transitions will fall on jitter frames when 2:3 insertion is applied.

Dual TC: 23.97->29.97 fps NDF/DF box Select to view the 29.97 fps timecode in the Dual Timecode display as either drop frame or non-drop frame.

Drop Frame Reference Timecode field When you select Drop Frame mode (see the previous preference), you specify the 23.97 fps reference timecode in this field. This timecode determines the point at which the 29.97 fps material is in sync with the 23.97 fps material.

Drop Frame Bump Mode box Select a translation mode for invalid calculator entries. When typing with the calculator, if an invalid frame or timecode is entered, you can set how the calculator will interpret the entry.

Select:	To:
Clamp	Automatically correct a non-existing entered drop- frame timecode with the closest timecode before roll-over. For example, if you enter a timecode of one hour, nine minutes, one frame (01;09;00;01) with the clamp option enabled, the timecode is automatically replaced with one hour, eight minutes, fifty nine seconds, twenty nine frames (01;08;59;29).
Bump Up	Round to the closest frame after roll-over. For example, if you enter a timecode of one hour, nine minutes, one frame (01;09;00;01) with Bump Up enabled, the timecode is automatically replaced with one hour, nine minutes, two frames (01;09;00;02)
Bump Down	Round to the last even timecode before roll-over. For example, if you enter a timecode of one hour, nine minutes, one frame (01;09;00;01) with Bump Down enabled, the timecode is automatically replaced with one hour, eight minutes, fifty nine seconds, twenty eight frames (01;08;59;28).

History

Use these preferences to enable or disable clip history.



Clip History button Enable to include a history of all operations performed on your clips. See [Clip History](#) on page 489.

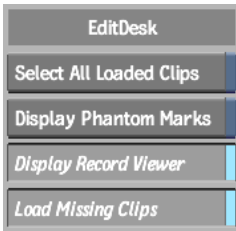
Keep Intermediates button Determines whether Intermediates appear on the EditDesk when working with clip history.

Select:	To:
Keep Intermediates disabled	Not display intermediate results in the Source Area when you edit the content of clip history. This is the default setting.

Select:	To:
Keep Intermediates enabled	Display intermediate results in the Source Area when you change a clip using the clip history. The intermediates will continue to accumulate at the bottom left of the Source Area until this option is turned off.

EditDesk

Use the preferences to help set your EditDesk working environment.



Select all Loaded Clips button Enable to have any clips you load to the EditDesk appear selected once they are loaded to the EditDesk. For example, if you enable this preference and load three clips to the EditDesk, all three clips appear selected. By default, this preference is disabled.

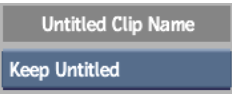
Display Phantom Marks button Turn phantom marks on or off on the timeline and source clip. Phantom marks indicate the result of a 4-point edit regardless of whether you have marks set. See [Enabling Phantom Marks](#) on page 917.

Display Record Viewer button When Display Record Viewer is enabled, the currently selected clip in the Record Area has a proxy displayed with a red border in the Source Area. When Display Record Viewer is disabled or if there are no clips in the Record Area, this clip does not appear in the Source Area.

Load Missing Clips button When loading a saved setup from a module, Backdraft Conform searches for clips on the EditDesk, and then the clip library (if they are not found on the EditDesk). Enable to also load clips to the EditDesk when loading a module setup.

Untitled Clip Name

Set how untitled clip names are displayed in Backdraft Conform.



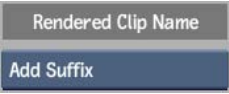
Untitled Clip Name box Use an automatic timestamp to rename untitled clips to make it easier to distinguish multiple <Untitled> clips.

Select:	To name your clip:
Keep Untitled	<Untitled>
Use Date & Time	yyyy-mm-dd_hhmm
Use Date	yyyy-mm-dd
Use Time	hhmm

After you set this preference, any new untitled clips are renamed according to your selection.

Rendered Clip Name

Set how rendered clip names are displayed in Backdraft Conform.



Rendered Clip Name box Select whether to add an acronym of the module as a prefix or suffix to a rendered clip name, if a setup name does not already exist for the clip. If a setup name does not exist, the rendered name of the clip is the background clip name (or front clip name, if there is no background clip), with the module suffix or prefix. You can also choose Do Not Add.

Autosave

Use the Autosave fields to specify how often all clips currently loaded on the EditDesk are saved. If your work session terminates due to a software or hardware failure, you can recover all the work done up to the last time an autosave was performed.

Autosave
Soft save 2 min 30 sec
Hard save 15 min 0 sec

Soft Save field Set the time until a soft autosave performs. A small red icon appears indicating a two second delay before a soft autosave occurs. To abort this autosave, move anywhere within the application (in this case, the next autosave occurs at the interval you set in the Soft save field). The maximum interval is 30 minutes 0 seconds. The default value is 2 minutes 30 seconds. Enter a value of 0 minutes 0 seconds to disable the Autosave function.

Hard Save field Set the time until a hard autosave performs. A hard autosave occurs at the specified time regardless of any user intervention. If a soft autosave occurs, the hard autosave is also reset. The minimum interval for the hard autosave is the same as the time you enter for the soft autosave (in this case only hard autosaves occur). The maximum interval is 30 minutes 0 seconds. The default value is 15 minutes 0 seconds. Enter a value of 0 minutes 0 seconds to disable the Autosave function.

NOTE You can do a forced autosave by pressing **Ctrl+Shift+Alt+Enter** from the EditDesk.

Undo

Use the Undo Levels field to specify how many levels of information are saved to the undo buffer (the default is 10 levels). This value determines the maximum number of actions you can undo when working on the EditDesk. For example, if the Undo Levels value is set at 5 and you delete 6 clips from the EditDesk, you can click Undo once for every clip you want to restore to the EditDesk, except the first one. Since the Undo Levels value is set to 5, the first deleted file cannot be restored.

Undo
Clear Buffer
Levels 10

When you delete clips from the EditDesk, they are temporarily stored in the undo buffer and occupy space in the framestore. To remove the clips from the undo buffer and free up disk space on the framestore, use Clear Buffer.

Burn Update Interval

Enter a value to set the interval between which the Burn background rendering queue is checked.

Burn
Update 30 secs

NOTE This option appears only if Burn is installed on your system.

EditDesk Library

Use this table to customize the extended List View of the EditDesk Library. See [Using List View](#) on page 55.

Editdesk Library		
Name	Shown	
EditDesk Library	*	
View	*	
S-I	*	
H	*	
TC In	*	
TC Out	*	

Name column Lists all of the possible column header names for the extended List View. Drag rows up or down in the list to change its List View order. The selections displayed from top to bottom represent the order from left to right.

Shown column Click a row selection to change its display in the extended List View. Selections with an asterisk (*) will be displayed in the extended List View.

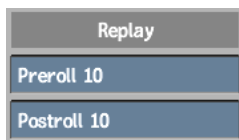
NOTE The EditDesk Library and View columns must be displayed as the first two columns in the List View, and are therefore not editable in this table.

Player Preferences

Use the preferences in the Player tab to define the behaviour of the Player controls and displays.

Replay

Use these preferences to set preroll and postroll frames for use in the Player. See [Replaying the Timeline](#) on page 884.

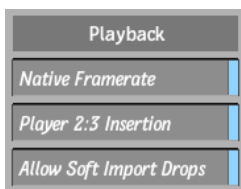


Preroll field Set the number of preroll frames when using the Replay option in the Player.

Postroll field Set the number of postroll frames when using the Replay option in the Player.

Playback

Use these preferences to set Player playback options.



Native Framerate button When enabled, Native Framerate uses the clip's framerate as the Player's playback speed. Use this option to play back a clip that uses a different framerate than the project. Note that the playback is a close approximation and may not be completely accurate.

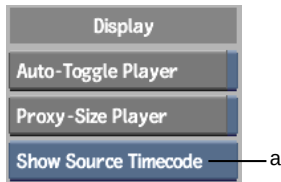
Player 2:3 Insertion button Enable to allow viewing 23.97 fps clips at 29.97 fps in the Player and in the broadcast monitor. A virtual (temporary) 2:3 insertion is performed in real time. You can only play back with 2:3 insertion at normal speed. If you speed up or slow down playback, insertion is not applied.

This option only works if the project frame rate is 29.97 fps and the clip being played is a 24p clip.

Allow Soft Import Drops button Enable to keep soft-imported material synchronized with audio by dropping frames in real-time mode. Disable to play all frames.

Display

Use these settings to define the display of the Player.



(a) Source Time Mode button

Auto-Toggle Player button With Auto-Toggle Player enabled, the Player is opened automatically when the hotkeys for Play (**V**), Reverse Play (**C**), Replay (**T**), and Reverse Replay (**Shift+T**) are used.

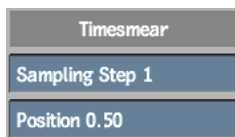
Proxy-Size Player button Enable to change the size of the image in the Player's standard layout to the size of the proxies, if screen space permits. If the proxies are too large for the available space, or if the current project has no proxies, the option is ignored and the default image size is used.

When this option is disabled, if you are using Proxies resolution in the Player, and the proxy size is different from the default image window size, the image is zoomed in or out to fit the default size. See [Setting Playback Resolution and Mode](#) on page 80.

Source Time Mode button Set the Player to display the timecode, keycode, or frame number of the source clip.

Timesmear

Use the Timesmear area to set preferences for working with the Timesmear.



Sampling Step field Specify the number of frames that are sampled. The higher the number, the more accurate the Timesmear will be.

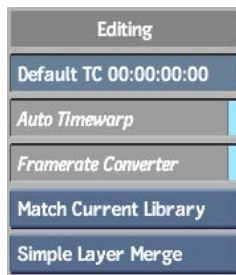
Position field Specify which part of the frame will be sampled when the Timesmear is created. The default value (0.50) samples the centre of the frame.

Timeline Preferences

Use the preferences in the Timeline tab to customize the behaviour of various timeline controls and to control the information displayed on timeline elements.

Editing

Use the preferences when editing on the timeline.



Default Timecode field You can specify the default start timecode value for new items overwritten or inserted into the Record Area. By default, the start timecode is 00:00:00:00.

Auto Timewarp Enable when performing a four-point edit if you do not want to timewarp the frames from the source clip. Auto Timewarp is enabled by default. When Auto Timewarp is disabled, a four-point edit is treated as a three-point edit.

When you specify the number of frames in the record clip for the four-point edit, the same number of frames is used in the source clip. The source clip selection begins at the in point. If the source is shorter or longer than the number of frames specified in the record clip, a timewarp is applied to the source clip in order to match the duration of the record clip.

Framerate Converter Controls non-native framerates. When enabled (default), this tool formats the source clip to the correct destination framerate by applying a video timewarp or an audio timewarp to the source clip.

Match box Use the Match options with the **Match** hotkey to match record clips with their source clips. See [Matching Clips with Their Source Clip](#) on page 926. Select from the following options.

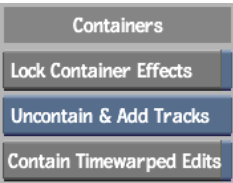
Select:	To:
Match Segment	Perform a copy of the selection with in and out points representing the edit.
Match Current Library	Match the selection to the original source clip (including all tracks of the source clip). For instance, if the element is video, the loaded source clip may contain sync audio as well. If the source clip is not located, a Match Segment is performed.
Match All Libraries	Match the selection to the original source clip. This option is the same as Match Current Library except that all project libraries are searched until the source clip is located. As a result, this match operation can take longer than the other two. If the clip is not found, a Match Segment is performed.

Merge Layers Mode box Defines how a timeline will be 'flattened' when using the Merge Layers command. This command is used to create a one-layer version of a multilayer video track. See [About Managing Media on the Timeline](#) on page 1033.

Select:	To merge layers by:
Simple Layer Merge	Hard committing all soft transitions. Cut points between elements are preserved; clip handles are not.
Complex Layer Merge	Hard committing soft transitions but creating separate elements with clip handles for each.
Committed Layer Merge	Preserving editable soft transitions and clip handles.

Containers

Use the following preferences when working with containers on the timeline.



Lock Container Effects button Use to control how effects associated with segments are processed when you create containers.

- Enable to prevent recalculation of multi-layer effects when you move their container. This is useful when containing a composite in which a background is outside the container.

NOTE When a soft effect is processed, it is locked. If the effect is part of a layered effect and the bottom part is moved, the effect is invalidated, and the result may differ once the effect is unlocked. Also, a locked effect does not display the soft effect quick menu when selected. To unlock the effect, you must either enter the editor, unlock it, or add an additional effect.

- Disable to reprocess any effects that have been invalidated or not yet rendered.

Uncontain Options box Use to determine whether new layers and tracks are overwritten when a container segment is uncontained. See [Working with Containers](#) on page 961.

Select:	To:
Uncontain & Overwrite	Overwrite segments outside the container on layers and tracks that conflict with the container segments.
Uncontain & Add Tracks	Preserve tracks when you uncontain a container by adding sufficient new layers and tracks to house the previously contained segments. All tracks inside and outside the container are preserved.

Contain Timewarped Edits button When you perform a fit-to-fill four-point edit, you can enable Contain Timewarped Edits to preserve the edits (including splices and/or transitions) in the incoming clip by containing the incoming clip and applying a timewarp to the container instead of the clip. The result element is a timewarped container, and the container contains the edited incoming clip—all its splices and/or transitions preserved.

Display

Use these settings to customize your timeline display.



(a) Element Display Option box

Element Display Option box Select Offsets, Handles, or No Info to change the information displayed on the first line of elements on the timeline. With Offsets or Handles selected, the following information appears:

- Record names (if any) of all shots on the timeline and the number of frames in the head and tail of each shot (displayed when Handles is selected).
- History indicator (a small H icon) if the segment contains clip history.
- Tape names (if any) and source names (if any) of all shots on the timeline, and the offset values of the shots (displayed when Offsets is selected).
- The record timecode of each shot on the timeline.
- The source timecode of each shot on the timeline.
- The offset value for elements out of sync with the master sync.
- Audio gain status and frame code mode on audio elements.
- If the element uses a soft-imported clip as a source, its source format and the path to the source files.
- Comment line (if any).
- Length, both source and record, of the clip.

You can also display the information temporarily when No Info is selected by **Alt**-clicking on the timeline or the Source Area, and dragging the cursor over the elements (use the left **Alt** button). As you drag, the information on each element is displayed.

NOTE You may have to enlarge the timeline view to see all the displayed information. See [Manipulating the Timeline](#) on page 878.

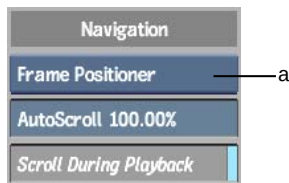
Grid Lines button Use the Grid Lines button to control the number of grid lines that appear on the timeline:

- When this button is enabled, a grid line appears for every frame.
- When this button is disabled, a grid line appears at every 10 frames.
Note that the grid lines are for visual reference only—they do not affect segments in any way.

Phantom Inserts button Enable to see a pink preview of a segment when you insert edits on the timeline, so you can preview where your edit will go (enabled by default).

Navigation

Use these preferences to help navigate on the timeline.



(a) Positioner box

Positioner box When the Frame Positioner option is selected, the timeline positioner snaps from frame to frame as it is moved. When the Sub-frame Positioner option is selected, the timeline positioner snaps on a sub-frame (one-tenth of a frame) basis. Use the sub-frame positioner for sub-frame editing of audio tracks.

Autoscroll Speed field Adjust the speed at which the timeline scrolls. The timeline autoscrolls as you hold the positioner against either end of the timeline viewing area. The default speed is 100%.

Scroll During Playback button Enable to scroll the timeline during playback to keep the frame positioner visible.

Transition Preferences

Use the Transitions area to set defaults and other preferences for transitions.

Attributes

Set the following transition attribute preferences.



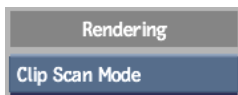
Length field Set the default length for dissolve and wipe transitions.

Transition Alignment box Set the default alignment for dissolves, wipes, axis, and custom transitions to Centred, From Cut, or Up To Cut.

Transition Interpolation box Set the default interpolation for transition curves to either Hermite or Linear.

Rendering

Set the render mode you want to use when you add a transition to a clip. You can select Interlaced, Progressive, or Clip Scan Mode. In Clip Scan Mode, Backdraft Conform automatically sets the render mode to that of the clip (either progressive or interlaced).



Editing

When you lift or extract an element that is part of a dissolve or wipe, the dissolve or wipe either stays attached to the lifted or extracted element, or remains attached to the record element, depending on how the Link on Extract/Copy option is set.



- When Link on Extract/Copy is disabled, associated dissolves remain on the timeline.

- When Link on Extract/Copy is enabled, associated dissolves are lifted along with the element that is lifted. The Link Transition button on the timeline must also be enabled.

Wipe

You can either set a wipe or import a wipe file to be used as the default wipe for transitions. Click the Default Wipe button to access the file browser, or specify an SMPTE wipe number in the Default Wipe field.

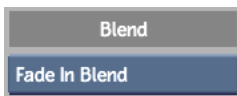


Modules/SoftFX Preferences

Use the Modules/SoftFX area to set preferences for adding soft effects and working in modules.

Blend

Set the default blend mode.



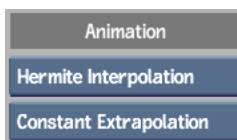
Default Blend Mode box You can set the default Blend mode when you create blending transitions. See [Dissolves and Wipes](#) on page 993.

Select:	To:
Fade In	Create a mix curve that starts at 100% at the first frame and ends at 0% at the end of the clip.
Constant	Create a constant mix value of 50% for the length of the blend.
Fade In/Out	Fade in to the incoming clip for the first 0.5 seconds and fade out for the last 0.5 seconds. Clips shorter than 1 second fade in for the first 25% of the clip, and fade out for the last 25% of the clip.

Select:	To:
Fade Out	Create a mix curve that starts at 0% at the first frame and ends at 100% at the end of the clip.

Animation

Use the Animation area to set the default interpolation and extrapolation modes for setting keyframes.



Default Interpolation box Set the default interpolation type to be Constant, Linear, Hermite, or Natural.

Default Extrapolation box Set the default extrapolation type to be Constant, Linear, Cycle, or Rev/Cycle.

Audio Gain Animation

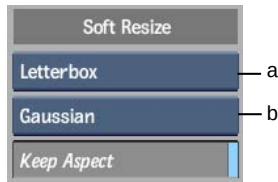
Set the default interpolation mode for setting keyframes on audio segments.



Default Interpolation box Set the default audio interpolation type to be Constant, Linear, Hermite, or Natural.

Soft Resize

Use the Soft Resize area to set the default resize behaviour.



(a) Default Resize Method box (b) Resize Filter box

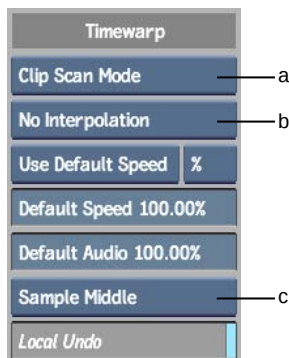
Default Resize Method box Select the default resize method Backdraft Conform will use. You can select Letterbox, Centre/Crop, Crop Edges, or Fill.

Resize Filter box If you select a resize method, such as Fill, that requires image re-sampling, the Resize Filter box appears. The selected option can be overridden when executing a resize operation. This box is not available if the Centre/Crop resize method is selected.

Keep Aspect Ratio If you select Crop Edges or Letterbox as a resize method, the Keep Aspect button appears. Enable Keep Aspect to preserve the pixel aspect ratio of the source clip. This setting can be overridden when executing a resize operation. This option is not available when the Fill or Centre/Crop resize method is selected.

Timewarp

Use the Timewarp area to set preferences for creating timewarps.



(a) Timewarp Render Mode box (b) Timewarp Field Interpolation option box
(c) Timewarp Sample box

Timewarp Render Mode box Set the render mode you want to use when you add a timewarp to a clip. You can select Interlaced, Progressive, or Clip

Scan Mode. In Clip Scan Mode, Backdraft Conform automatically sets the render mode to that of the clip (either progressive or interlaced).

Timewarp Field Interpolation option box When creating and editing timewarps in Interlaced mode, you can select a default interpolation. This setting can be overridden when in the Timewarp quick menu. See [Setting Interlace Interpolation Options](#) on page 1028.

Select:	To:
No Interpolation	Create a timewarp with no field interpolation.
Half Interpolation	Create a timewarp in which interpolation only takes place on displaced fields.
Full Interpolation	Create a timewarp in which all fields are interpolated. Note that this option has the least aliasing, but you may notice some softening of the image due to the blending of the fields.
Shift Up	Shift the image up by a single line. This may help reduce artefacts that appear in reverse timewarps of 100%.
Shift Down	Shift the image down by a single line. This may help reduce artefacts that appear in reverse timewarps of 100%.

Default/Last Timewarp Speed button Select the timewarp speed used by default when you create a timewarp. Select Use Last Speed to use the speed of the last timewarp you created in the session. Select Use Default Speed to use the default timewarp speed specified in the Default Timewarp Speed field.

Timewarp Speed Display button Define whether timewarp speed is displayed as a percentage (%) or in frames per second (fps).

Default Timewarp Speed field Enter the default timewarp speed.

Default Audio Timewarp Speed field Enter the default audio timewarp speed.

Timewarp Sample Option box You can select whether the speed of the timewarp will be set in relation to the speed at the beginning, middle, or end of the timing curve for each frame or field. You can also change the Timewarp Sample option in the Timewarp Editor to override this selection.

Select:	To:
Sample Start	Sample the timewarp at the start of the first frame.

Select:	To:
Sample Middle	(Default) Sample the timewarp at the middle of the first frame. Generally, you should use this setting. Depending on the timewarp speed and how other editing systems create timewarps, you may need to change the sampling to fit what was done elsewhere.
Sample End	Sample the timewarp at the end of the first frame.

Local Undo button When enabled, all events in the Timewarp Editor are added to the undo buffer in a linear sequence. When disabled, all events in the Timewarp Editor are grouped into a single event once you exit the editor. Thus, all those events are “undone” with a single use of Undo.

Setups

You can load setups that were created in a resolution different from that of your current project. For the setups to work correctly in your current project, you must scale them when you load them. To scale setups when loading them, enable the Scale Setups button.



Batch FX

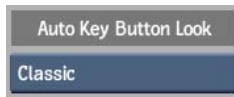
Use these preferences when working with Batch FX.



Interactive Max field Enter the number of seconds that you want the system to attempt a render when previewing Batch FX.

Auto Key Button Look

Set the default look for the Auto Key button.



Auto Key look box Select whether to apply a Classic (grey) or Coloured (yellow) look to the Auto Key button.

Audio Preferences

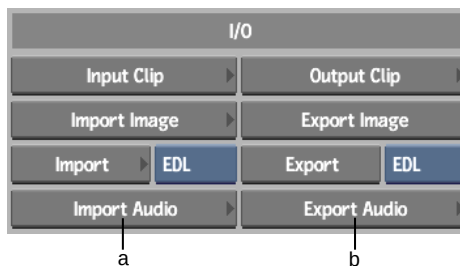
The Audio Preferences menu provides controls for synchronizing audio playback, setting audio I/O, controlling the Lucid ADAT converter (if applicable), and enabling audio waveforms.

Accessing the Audio Preferences Menu

You can access the Audio Preferences from the EditDesk (or by pressing **Ctrl+Alt+F6** from anywhere in the application) as part of the overall Preferences menu. You can also access Audio Preferences from the clip library and from the Engineering menu in the Input and Output Clip menus.

To access audio preferences from the clip library:

- 1 From the clip library, click Import Audio or Export Audio.



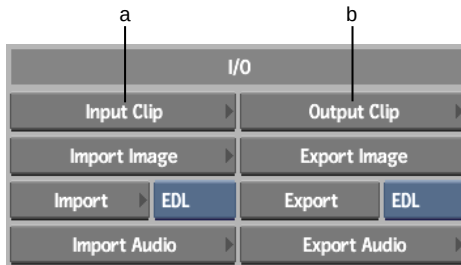
(a) Import Audio button (b) Export Audio button

- 2 Click Audio Preferences to display the Audio Preferences menu.



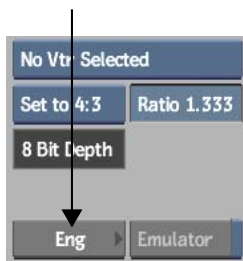
To access audio preferences from the Engineering menu:

- 1 From the clip library, click Input Clip or Output Clip.

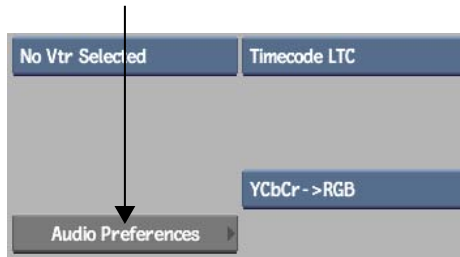


(a) Input Clip button (b) Output Clip button

- 2 In the Input Clip or Output Clip menu, click Eng to display the Engineering menu.

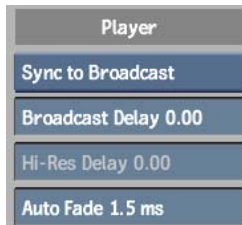


- 3 Click Audio Preferences to display the Audio Preferences menu.



Player

The Player area contains settings to define audio sync during playback.



Monitor Sync box Indicates which monitor will have audio sync when you play back a clip—the broadcast monitor or the high-resolution monitor. Use this box to compensate for audio sync differentials between the two monitors. If necessary, specify the audio delay in the corresponding broadcast or high-resolution monitor.

When the Sync to Broadcast option is selected, audio is synchronized to the broadcast monitor during playback. When the Sync to Hi-Res option is selected, audio is synchronized to the high-resolution monitor during playback.

Broadcast Delay field Sets the number of frames (-30.00 to 30.00) to delay the audio signal when syncing to the broadcast monitor. If your hardware setup includes the DVI Ramp 2 and AJA cards, and you are working in 720p, set the delay to -3.5.

Hi-Res Delay field Sets the number of frames (-30.00 to 30.00) to delay the audio signal when syncing to the graphics monitor. If your hardware setup includes the DVI Ramp 2 and AJA cards, and you are working in 720p, set the delay to -3.5.

Auto Fade field Sets the amount of time (0 to 10 ms) that a fade is added to the start and end of each audio segment. Use this setting to avoid audible clicks between audio sources.

The fade is centered on the audio segment boundaries (provided that the segment has enough head and tail frames). If there are not enough head or tail frames in the audio segment, the fade is applied within the segment.

Meters

The Meters area of the Audio Preferences menu provides controls to configure the audio meters in the AudioDesk that you use to monitor inputs and outputs and ensure that audio does not exceed peaks.



Fader meters Use the Fader Meter fields to specify the meter settings for the faders on the AudioDesk. Use the fader meters with the peak meter indicators to ensure clean audio when you output a clip.

Use this field:	To:
Meter Range	Specify the overall scale for the fader meters (12 - 144 db).
Meter Green	Specify the green meter range (-144 - 0 db).
Meter Yellow	Specify the yellow meter range (-144 - 0 dB).
Meter Step	Specify the step value (2 - 9 dB) for the meters. Enter a lower value to view a more detailed meter.

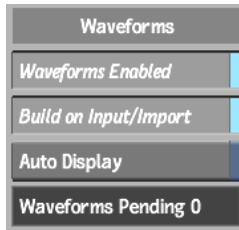
Meter Units box You can change the meters to display either digital or analog units with the Meter Units box.

Select:	To:
Digital PPM (dB)	View the meter in dB.

Select:	To:
Analog (VU)	View the meter in VU.

Waveforms

The Waveforms area contains settings you can use to enable waveforms for display in the timeline.



Waveforms Enabled button Enables or disables waveform display.

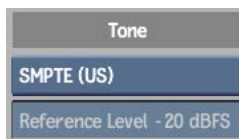
Build on Import/Input button Enables or disables automatic waveform building on import from file or input from tape.

Auto Display button Enable to display waveforms on all audio timeline segments by default.

Waveforms Pending field If you captured a lot of audio and Build on Import/Input is enabled, waveforms may take time to process. In this case, use this locked field to determine how many clips have not yet had their waveforms built.

Tone

The Tone area allows you to set a default for creating an audio tone clip.

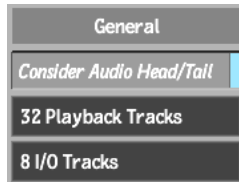


Audio Tone box Sets the default audio tone for Backdraft Conform. Select SMPTE (US), EBU (Europe), or Custom.

Reference Level field If you select a custom audio tone, set the reference level (from -96 dBFS to 0 dBFS).

General

Use these preferences to set audio head and tail behaviour, and to display supported audio tracks.

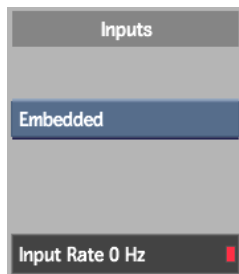


Consider Audio Head/Tail button Enable to include audio that extends before or after video when exporting movie files. Black video frames are displayed for any sections where audio exceeds video. When disabled, audio is truncated to the same length as the video.

Supported Tracks These locked fields indicate how many audio tracks are supported for input and output operations.

Inputs/Outputs

Depending on how your audio is set up, different input and output settings appear.



Input Source box Use this box to select AES-BNC, AES-XLR, or Embedded. AES uses the device connected to the AES connection on the video I/O board (BNC or XLR). Embedded extracts the audio tracks from the video signal.

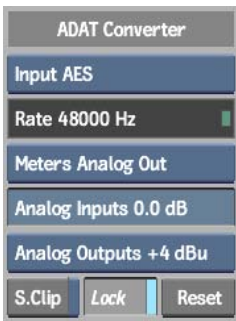
Input Sampling Rate field This locked field displays the current input sampling rate.

Output Source field This locked field displays all current outputs.

Output Sampling Rate field This locked field displays the current output sampling rate.

ADAT Converter

The ADAT Converter area provides settings to configure the ADAT converter for audio I/O and monitoring. The ADAT Converter area and controls only appear if remote control of the ADAT converter is enabled in the software initialisation configuration file.



Lucid ADA 88192 Converter settings



Lucid ADA 8824 Converter settings

NOTE Depending on the model of your ADAT converter, these controls may differ or provide slightly different functionality.

Input box Select either AES or Analog, depending on the Audio I/O device you are using.

Dig 1-2 box Select the type of I/O connection used for I/O channels 1 and 2: AES (XLR) or SPDIF (RCA).

A/D Sync box Select the sync source used by the ADAT converter for analog/digital conversion.

Meters box Select the signal that you want the LED meters on the ADAT to display.

Analog Inputs field Enter an analog input value.

Analog Outputs field Enter an analog output value.

NOTE With the Lucid 88192 ADAT converter, you have the choice of -10 dBV or +4 dBu as analog output values.

S.Clip box Enable to reset the peaking indication on the ADAT display. Peaks occur when the input signal is too hot for the ADAT converter.

Lock box Enable to prevent modifications of the ADAT converter from its front panel.

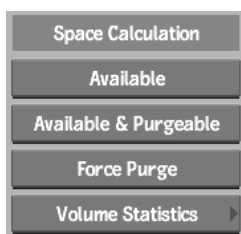
Reset button Resets ADAT converter parameters to their default values.

Storage Preferences

Storage preferences allow you to test disks, view volume statistics, and calculate available space.

Space Calculation

Use these preferences to view free space and volume statistics.



Available box Click to display all available frames in the message bar.

Available & Purgeable box Click to display all available frames, as well as all purgeable frames in the message bar.

Force Purge box Click to purge frames before making the space calculation. Purged frames cannot be recovered.

The amount of available space on your storage device is displayed on the message bar, and is refreshed when an AutoSave occurs. If you turn AutoSave off, then the duration between storage space checks will occur according to the value set for the **DL_CHECKSPACE_DELAY** environment variable.

For example, to set the interval of the space check to 150 seconds, enter the following in the *.cshrc* file: **setenv DL_CHECKSPACE_DELAY 150**

NOTE You can also type the environment variable in a shell before launching Backdraft Conform to set the value for the current session only.

Volume Statistics button The Volume Statistics utility is a quick way to review the clip libraries on your framestore and identify which ones contain the most clips. This can be useful when you are housecleaning and need to figure out which clip libraries are likely candidates for freeing up space.

When you click the Volume Statistics button, the Volume Statistics table appears after a few moments. It lists the number of frames, proxies, and audio sources stored in the clip libraries and work areas of each project. You can also see the total percentage of storage used by each clip library.

Framestore

You can test the disk speed to verify the rate at which the framestore can read data.



Test Disks button When you click the Test Disks button, a message appears in the message bar indicating: the number of frames read per second; the number of seconds required to read a single frame; and the amount of data, in megabytes, read per second.

For example: “TEST DISKS: Sequential Frame Read. 289.09 fps 0.14 spf 289.12 MBps.”

The frame used in the calculations is the frame defined by the current project's default resolution.

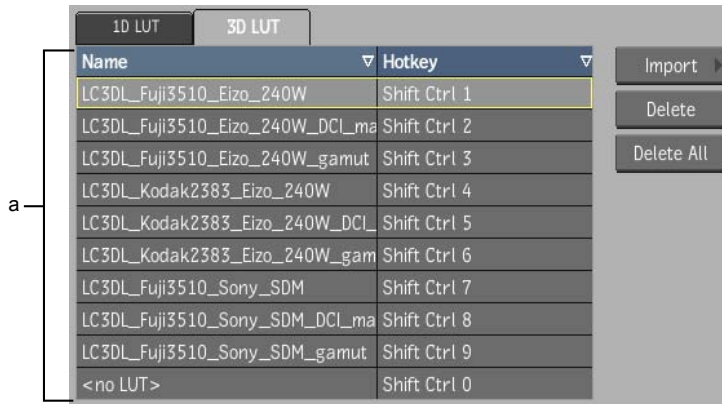
NOTE Click anywhere to abort the process.

LUT Preferences

Use the LUT preferences to import and list the 1D and 3D LUTs you can use in Backdraft Conform. See [General Workflow for LUTs](#) on page 1168.

You can use a hotkey to switch between the first ten LUTs in a 1D LUT list. Press **Alt+Shift+1** for the first LUT, **Alt+Shift+2** for the second LUT, and **Alt+Shift+0** for the tenth LUT in the list.

You can use a hotkey to switch between the first ten LUTs in a 3D LUT list. Press **Ctrl+Shift+1** for the first LUT, **Ctrl+Shift+2** for the second LUT, and **Ctrl+Shift+0** for the tenth LUT in the list.



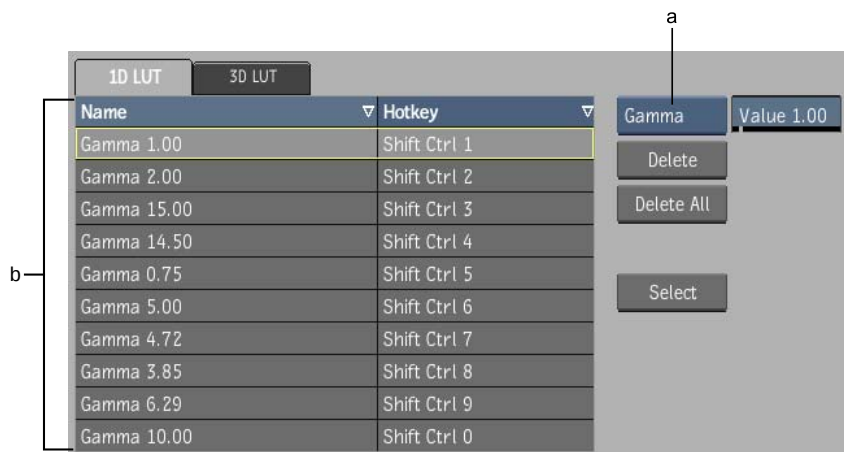
(a) 3D LUT list

3D LUT List box Displays the list of 3D LUTs that you imported for use in Backdraft Conform.

Import button Opens the Import LUT browser. Navigate to the 3D LUT file you want to use, and select it to load it to the 3D LUT list.

Delete button Deletes the selected LUT from the 3D LUT list.

Delete All button Deletes all LUTs from the 3D LUT list.



(a) LUT Type box (b) 3D LUT list

1D LUT List tab Displays the list of gamma LUTs that you defined and 1D LUTs that you imported for use in Backdraft Conform.

LUT Type box Select whether you want to define a gamma LUT or import a 1D LUT file in the current row and assign the selected hotkey.

Import button Opens the Import LUT browser. Navigate to the file you want to use, and select it to load it to the 1D LUT list. This button is active when the LUT Type box is set to LUT file.

Value field Displays the gamma value. This field is active when the LUT Type box is set to Gamma.

Delete button Deletes the selected gamma or 1D LUTs from the list.

Delete All button Deletes all LUTs from the 1D LUT list.

Select button Apply the selected gamma or 1D LUT.

To define a gamma LUT:

- 1 Click the 1D LUT tab to display the 1D LUT list.
- 2 Select the row with the hotkey you want to assign to the gamma LUT.
- 3 Enter a gamma value in the Value field.

To apply a LUT from the 1D LUT list:

- 1 Click the 1D LUT tab.
- 2 Select the row with LUT you want to apply to the display.
- 3 Click Select.

The filename of the applied LUT and its assigned hotkey display in blue.

NOTE When a 1D or gamma LUT is applied it cannot be deleted, unless you click the Delete All button to clear the entire 1D LUT list.

To import a 1D or 3D LUT:

- 1 Click a tab to display the list for the type of LUT you want to import.
- 2 Select the row with the hotkey you want to assign to the LUT.
- 3 If the 1D LUT list is displayed, in the LUT file box, select LUT file.
- 4 Click the Import button.

- 5 In the file browser, navigate to the file you want to import.
- 6 Select the LUT file.
The LUT file appears in the LUT list in the selected row.

Support Preferences

Use these preferences to help Autodesk Customer Support diagnose problems with your system.

WARNING Use only if instructed by Autodesk Customer Support.



Upload Logs button Click to upload pertinent system logs to Autodesk Customer Support.

NOTE Some project and system information is included in the logs.

Upload Config Info Only button Enable to upload only configuration information instead of the entire log set when using the Upload Logs button.

Max Logged Days field Displays the number of logged days to be uploaded when using the Upload Logs button.

MTBF Report button Click to upload an MTBF (Mean Time Between Failures) report to Autodesk Customer Support.

Managing Hotkeys

20

Topics in this chapter:

- [About the Hotkey Editor](#) on page 551
- [Determining a Button's Current Hotkey](#) on page 553
- [Hotkey Errors](#) on page 553
- [Accessing the Hotkey Editor](#) on page 553
- [Searching the Hotkey Catalogue](#) on page 556
- [Editing Hotkeys](#) on page 556
- [Creating New Local Hotkeys](#) on page 558
- [Managing Hotkeys](#) on page 559

About the Hotkey Editor

Use the Hotkey Editor to manage hotkeys (keyboard shortcuts). The Hotkey Editor allows you to view listings of the current hotkeys. You can also modify existing hotkeys or create new ones. New and modified hotkeys are saved as a user preference, and can be copied between user profiles on Backdraft Conform.

Map-to-Button and Functional Hotkeys

There are two types of hotkeys: *map-to-button* and *functional* hotkeys.

Map-to-button hotkeys are keystroke sequences that are mapped to a button or a field on the current menu. You can create and edit as many map-to-button hotkeys as you like. You can even assign a hotkey to options in a pop-up menu.

Functional hotkeys are predefined hotkeys for specific functions. You cannot create new functional hotkeys, but you can redefine and remap the ones provided with the system.

Hotkey Domains

There are three hotkey domains: global, shared, and local.

Domain:	Used for:
Local	Hotkeys that are available only from a specific module.
Shared	Hotkeys that are available from several modules.
Global	Hotkeys that are available from anywhere within the system.

Keystroke Conventions

When creating and editing hotkeys, the following keystroke conventions apply:

- You are limited to four keystrokes per hotkey operation.
- Keystrokes in a hotkey operation are pressed at the same time.
- You cannot use a combination of keystrokes more than once.

Logical Ordering

Logical ordering means that the keystrokes in a hotkey combination are organized to conform to conventions, regardless of the order in which you enter them. Keys are saved in alphanumeric order except for the following:

- **Alt**, **Shift**, **Ctrl**, and **Space** are always saved in that order, regardless of the order in which you enter them.
- **Alt**, **Shift**, **Ctrl**, and **Space** are always forced to the beginning of a keystroke sequence.

- **Del, Ins, Home, PgUp, End, and PgDn** are always forced to the end of a keystroke sequence.

Since logical ordering is applied to hotkey combinations, you cannot use a combination of keystrokes more than once.

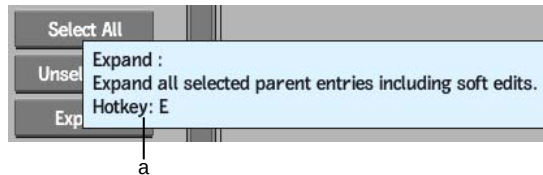
Determining a Button's Current Hotkey

You can determine the hotkey assigned to a button from anywhere within Backdraft Conform.

To determine the hotkey for a button:

- If auto display of tooltips is enabled in the Preferences menu, hover over the button for which you want to determine the assigned hotkey. If you have disabled the auto display of tooltips, press and hold **Alt+Ctrl+spacebar** and hover over the button.

If a hotkey exists for the button, it is displayed in the tooltip.



(a) Current hotkey message

Hotkey Errors

When you press a hotkey, a white keyboard appears in the lower-right corner of the screen. If a hotkey becomes stuck at any time, the white keyboard remains until you unstick the hotkey by pressing it. Click the white keyboard to display the name of the problematic hotkey in the message bar.

Accessing the Hotkey Editor

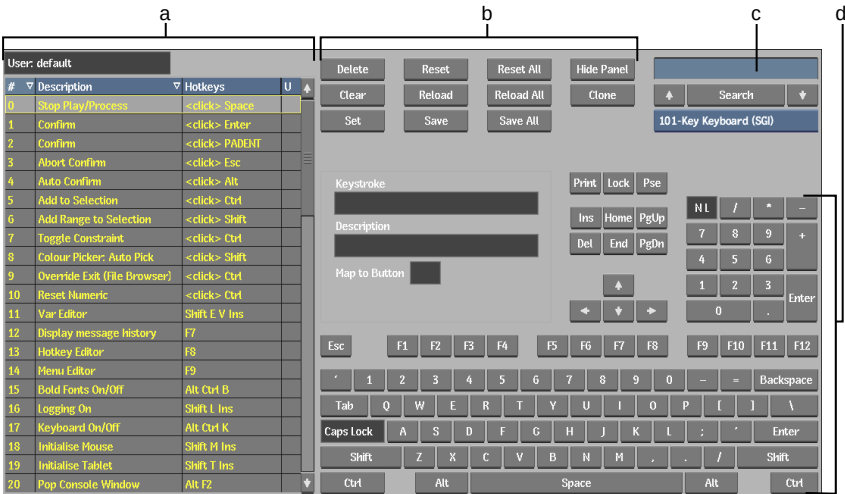
Use the Hotkey Editor to view, modify, and create hotkeys.

To access the Hotkey Editor:

- Do one of the following:
 - In the Miscellaneous section of the Preferences menu, click Hotkey Editor.
 - On the EditDesk or in any module, press **Alt+Ctrl+F8**.

To exit the Hotkey Editor:

- Do one of the following:
 - If you entered the Hotkey Editor from the Preferences menu, click EXIT.
 - If you entered the Hotkey Editor from the EditDesk or any module, click Exit or press **Alt+Ctrl+F8** again.



(a) Hotkey Catalogue (b) Hotkey Manager (c) Search Field (d) Keystroke Editor

Hotkey Catalogue

A catalogue of hotkeys is maintained for every user. If the user profile was created in the default home directory, the catalogue is found in */usr/discreet/user/editing/<user_name>/hotkey*. If the user profile was created

elsewhere, the catalogue is found in <user home directory>/hotkey. The hotkeys in the hotkey catalogue are stored in the following formats:

- *default.<component>.butt.hotkey*
- *default.<component>.func.hotkey*
- *factory.<component>.butt.hotkey*
- *factory.<component>.func.hotkey*

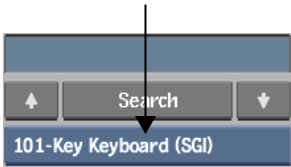
Where:	Means:
<component>	The module containing the hotkey.
default	The keystroke that is currently in use.
factory	The Autodesk factory default.
butt	A button hotkey.
func	A non-button function hotkey.

User-modified hotkeys are stored in a separate file: *default.<component>.butt.hotkey.user*. This file is loaded after the system hotkey file, *default.<component>.butt.hotkey*. Entries in the user-modified hotkey file replace the system hotkey entries, with the exception of cloned hotkeys, which are duplicated.

NOTE You can copy hotkey preferences between users in the Project Management menu when starting Backdraft Conform. Duplicated hotkeys are displayed in red in the hotkey catalogue. See [Creating User Profiles](#) on page 360.

Selecting Your Keyboard Type

In the Hotkey Editor you can select the type of keyboard you are using to take advantage of extra keys on certain keyboards.



You have the choice of the following keyboards:

- **107-Key Keyboard (Autodesk)** The extra keys available are the Smoke key, the Fire key, the Blank key (beside the Fire key), and the F13, F14, and F15 keys.
- **104-Key Keyboard (PC)** The extra keys available are the left and right Windows key, and the right Menu key.
- **101-Key Keyboard (SGI)** This keyboard has no extra keys available.

When you select your keyboard, the onscreen keyboard is changed to reflect your choice, and entries in the Hotkey Catalogue are updated accordingly.

NOTE If a hotkey is set on a key not available for the keyboard selected, the Hotkey Catalogue displays the entry in black.

Searching the Hotkey Catalogue

You can search the Hotkey catalogue to find hotkeys whose description match your search criteria.

To search the Hotkey catalogue:

- 1 In the Search field, enter the characters you want to search for.
- 2 Click Search.
The catalogue is searched and the hotkeys whose description match your search criteria are highlighted.
- 3 If more than one hotkey is highlighted, use the previous and next buttons located next to the Search field to move through the list of search results.

Editing Hotkeys

The Hotkey catalogue shows the global, shared, and local hotkeys for the current module.

Editing Local Hotkeys

Almost every module has its own catalogue of hotkeys. The hotkeys listed in white are local hotkeys, and can be customized to suit your needs without affecting other modules. Modified hotkeys are saved as a user preference.

To edit a local hotkey:

- 1 In the module where you want to use the new hotkeys, access the Hotkey Editor (**Alt+Ctrl+F8**).
- 2 Select the hotkey in the Hotkey catalogue.
The keystroke sequence and its description appear in the Keystroke Editor fields. If you select a map-to-button hotkey, the word “Yes” appears in the Map-to-Button field.
- 3 Click Clear in the Hotkey Manager area to clear the existing keystroke sequence.
- 4 Enter the new keystroke sequence by clicking keys in the Keystroke Editor or by pressing keys on your computer's keyboard.
- 5 Click Set in the Hotkey Manager area.
- 6 Click Save to save the changes to the current user's Hotkey catalogue.
The edited hotkey is marked in the catalogue with a “Y” to show that it is user-modified.



#	Description	Hotkeys		
15	Keyboard On/Off	K	Y	
16	Initialize Mouse	Shift M Ins		
17	Initialize Tablet	Shift T Ins		
18	Pop Console Window	Alt F2		

NOTE If you enter a keystroke sequence that is already in use, an error message is displayed.

Editing Global and Shared Hotkeys

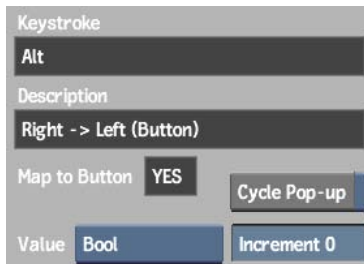
You can edit global and shared hotkeys wherever the Hotkey Editor is available. When you access the Hotkey Editor through the Preferences menu, click Global

or Shared to view all current global or shared hotkeys, respectively. In this menu, the names of these keys appear in yellow.

In other modules, the global and shared hotkeys appear in yellow in the Hotkey catalogue. When changing a global or shared hotkey, you are warned that the change will affect all modules, and are asked to confirm the action.

Creating New Local Hotkeys

You can create new map-to-button hotkeys only. You cannot create new functional hotkeys. New hotkeys are saved as a user preference.



The screenshot shows a dialog box for creating a hotkey. It has several fields and buttons: 'Keystroke' with 'Alt', 'Description' with 'Right -> Left (Button)', 'Map to Button' with 'YES' and 'Cycle Pop-up' buttons, and 'Value' with 'Bool' and 'Increment 0' buttons.

To create a map-to-button hotkey:

- 1 With the Hotkey Editor open, click the menu button for which you want to create the hotkey.

NOTE If the button you want to click is hidden by the Hotkey Editor, click the Hide Panel button.

If the menu button you selected is a map-to-button hotkey, Yes appears in the Map to Button field, and the name of the menu button appears in the Description field.

- 2 Enter the new keystroke sequence by clicking keys in the Keystroke Editor (or your computer's keyboard). The new keystroke appears in the Keystroke field.
- 3 If the menu button is a field, you can set a default value type and increment in the Value Type box and Increment field.
- 4 If the menu button is an option box, you can enable Cycle Pop-up to allow your new hotkey to cycle through the options each time it is pressed.
- 5 Click Set in the Hotkey Manager area.

- 6 Click Save to save the changes to the current user's Hotkey catalogue.

Managing Hotkeys

Use the Hotkey Manager area of the Hotkey Editor to manage the Hotkey catalogues.



Delete Removes a hotkey from the current Hotkey catalogue. Select the hotkey in the catalogue and click Delete and then click Confirm. You must use Save to make the change permanent.

Clear Clears the contents of the Keystroke field in the Keystroke Editor before you enter a new keystroke sequence.

Set Is the second-to-final step when assigning a keystroke sequence to a button or function. You must use Save as the final step to make the change permanent. See [Editing Hotkeys](#) on page 556 and [Creating New Local Hotkeys](#) on page 558.

Reset Resets the current local hotkeys to their default settings.

Reload Reloads the current catalogue of hotkeys. This is useful if you made a change but have not yet saved it, and you wish to discard the change.

Save Saves the current hotkeys to the current user's Hotkey catalogue.

Reset All Resets all hotkeys to their default settings.

Reload All Reloads all hotkeys from the current user's Hotkey catalogue.

Save All Saves all hotkeys to the current user's Hotkey catalogue.

Hide Panel Hides the Hotkey Editor panel when you want to select a menu button otherwise hidden by the panel. The panel reappears when you select a menu button. Alternatively, click in an open area to return to the Hotkey Editor panel without selecting anything.

NOTE This button is only available when accessing the Hotkey Editor from a module.

Clone Used to assign a regular keyboard keystroke sequence to a single button, field, or function. You can use Clone to map multiple keystroke sequences to a single button, field, or function using the regular system keyboard. This feature does not provide macro functionality.

To clone a button, field, or function:

- 1 Select a button, field, or function in the Hotkey catalogue.
- 2 Click Clone in the Hotkey Manager area to create a second entry for this button, field, or function.
A “Y” appears in the Hotkey catalogue indicating that the cloned hotkey is user-modified.
- 3 Activate a control or enter a keystroke sequence on the system keyboard).

NOTE You must enter a keystroke sequence that is not in use. Otherwise, an error message appears.

- 4 Click Set in the Hotkey Manager area of the Hotkey Editor.
- 5 Click Save to save the changes to the current user catalogue.

Installing Fonts

21

Topics in this chapter:

- [About Fonts in Backdraft Conform](#) on page 561
- [Installing Adobe Postscript Type 1 Fonts](#) on page 563
- [Installing Other Supported Fonts](#) on page 564

About Fonts in Backdraft Conform

A few basic fonts are available the first time you start Backdraft Conform. Other fonts must be installed. If you are transferring fonts from a Windows or Macintosh machine, there are special considerations, particularly for Adobe Postscript® Type 1 fonts.

Supported Fonts

The following font types are supported:

- Adobe Postscript Type 1 fonts: A single-byte font type designed for Roman language fonts; one of the earliest cross-platform (Macintosh and Windows) fonts. These fonts consist of an outline font file and an Adobe font metrics (AFM) file. On Linux systems, the outline file must be a printer font ascii (*.pfa*) file, not a printer font binary (*.pfb*) file as on Windows machines.

- TrueType fonts: A widely used cross-platform font format, easily installed on Linux systems.
- CID (Character ID) fonts: A multi-byte adaptation of Adobe Postscript® Type 1 fonts, well-suited to representing the large character sets of Asian languages such as Japanese, Korean, and Chinese.
- OpenType® fonts: A cross-platform font developed jointly by Adobe and Microsoft®, supporting expanded character sets and layout features such as the euro currency symbol and the broad range of accented characters required by eastern European languages.

Fonts Requiring Additional Work

The following font types require additional work before integration into Backdraft Conform:

- TrueType Collection (.ttc) fonts: These must be converted to (non-compressed) TrueType font (.ttf) files. Their conversion is beyond the scope of this document.
- FontMonger fonts: These are not Adobe Postscript Type 1 fonts. They can be used in Backdraft Conform, but must be converted first. See [Installing Adobe Postscript Type 1 Fonts](#) on page 563.

Font Locations

The following directories are used for fonts.

Directory	Purpose
<i>/usr/lib/X11/fonts/Type1</i>	Contains the outline files for Adobe Postscript Type 1 fonts installed with the system or supplied by Autodesk. These files have the extension .pfb.
<i>/usr/lib/X11/fonts/Type1</i>	Contains the Adobe font metrics (AFM) file for Adobe Postscript Type 1 fonts installed with the system or supplied by Autodesk. These files have the extension .afm.
<i>/usr/discreet/font</i>	Contains TrueType (.ttf) files.

Directory	Purpose
Other directories	Can be used to store supported fonts as desired, and are loaded into Backdraft Conform using the font file browser.

Installing Adobe Postscript Type 1 Fonts

When installing Windows and Macintosh Adobe Postscript Type 1 fonts in Backdraft Conform, you must first transfer the font files to the Backdraft Conform system. Then you convert them into a format recognizable by the software. The converter used depends on the source of the font (Windows or Macintosh).

An Adobe Postscript Type 1 font consists of two files. The *.pfb* file contains the outlines for each character. The *.afm* file contains the Adobe font metrics. If the AFM file is not present, you can still use the font in Backdraft Conform; however, it is preferable to have the AFM file, since it supplies Linux with additional font information, including kerning-pair data.

You can transfer the font files using an NFS or FTP utility. For fonts transferred from a Windows system to a Linux system, you can then use the *pfbtopfa* utility to convert the Windows printer font binary (*.pfb*) file to a Linux-friendly outline font (*.pfa*) file. The AFM file does not require conversion.

For Adobe Postscript Type 1 fonts transferred from a Macintosh to a Linux system, you must install a font-conversion utility, such as *t1utils*.

To use Adobe Postscript Type 1 fonts:

- 1 Use FTP Explorer or a similar file transfer utility to move the fonts from the Windows or Macintosh machine.
- 2 In the transfer utility, set the transfer format to *binary* mode.

NOTE In Mac OS 9 (and earlier) TCP programs, select the *MacBinary* option. In OS X, you will need to install a utility, such as BinJuggler, to encode the files before transferring.

- 3 Transfer the font files to the directory of your choice on the Linux system, keeping the outline file and AFM file together.
- 4 On the Linux system, go to the directory where you transferred the font files.

- 5 For files transferred from a Windows machine, convert the outline file from a printer font binary (*.pfb*) file to a printer font ascii (*.pfa*) file using the *pfbtopfa* utility:

```
pfbtopfa input.pfb [output.pfa]
```

For example, to convert the Myriad font, type:

```
pfbtopfa myriad.pfb myriad.pfa
```

- 6 For files transferred from a Macintosh, use a font-conversion utility (such as *t1utils*) to convert the font files.
- 7 The next time you start Backdraft Conform, you can load and select the fonts.

Installing Other Supported Fonts

Most TrueType, CID, and OpenType fonts that you use on a Windows or Macintosh system can be copied to the Linux system for use with Backdraft Conform.

NOTE TrueType Collection (*.ttc*) fonts are not supported directly. These must be converted to (non-compressed) TrueType font (*.ttf*) files. Their conversion is beyond the scope of this document.

To install other supported fonts:

- 1 Using an FTP or other file transfer utility, copy the fonts from the Windows or Macintosh system to the Linux system.
- 2 In the transfer utility, set the transfer format to *binary* mode.

NOTE In Mac OS 9 (and earlier) TCP programs, select the *MacBinary* option. In OS X, you will need to install a utility, such as BinJuggler, to encode the files before transferring.

- 3 Log in to your Linux system as *root*.
- 4 If necessary, in a terminal, copy the fonts to the directory of your choice.
- 5 The next time you start Backdraft Conform, you can load and select the fonts.

NOTE When entering non-Latin text characters in Backdraft Conform, consult your system documentation to make sure the required input method packages are installed. For example, to enter Chinese characters, you can use the *chinput* package.

Topics in this chapter:

- [About Utilities](#) on page 568
- [Volume Integrity Check](#) on page 569
- [Finding and Deleting Invalid Frames](#) on page 570
- [Disk Testing Utility](#) on page 572
- [Log Files](#) on page 572
- [Getting Started with the Command Line Utilities](#) on page 575
- [Command Line Parameters](#) on page 577
- [cmtool](#) on page 580
- [dlfsdump -fs](#) on page 584
- [list_framestore](#) on page 585
- [to_framestore](#) on page 586
- [from_framestore](#) on page 588
- [imcopy](#) on page 591
- [iminfo](#) on page 600
- [fcof](#) on page 601
- [publishTool](#) on page 602
- [stonifiseTool](#) on page 604
- [vstat](#) on page 606
- [vic](#) on page 607

About Utilities

This chapter presents the two types of utilities: a disk testing utility, accessed from the application, and command line utilities, accessed from a shell. In addition, the chapter discusses the volume integrity check and how to find and delete invalid frames.

Disk Testing Utility

Use the disk testing utility, Test Disks, to test your framestore bandwidth.

Command Line Utilities

Use the command line utilities, also known as the DL Tools, from a shell to move clips between files stored on local or remote filesystems and clip libraries stored on your framestore. The command line utilities can be used in the background without affecting the normal operation of Backdraft Conform.

The following table summarizes the command line utilities.

Utility	Purpose
<i>cmtool</i>	Provides a suite of tools for working with the contents of your volumes. Perform tasks such as adding and deleting clips, libraries, and projects.
<i>dlfsdump -fs</i>	Lists the contents of the specified framestore.
<i>imcopy</i>	Imports, exports, and copies images while performing operations such as cropping, resizing, and format conversion. The Network Filesystem (NFS) must be installed and configured in order to access images on remote systems.
<i>iminfo</i>	Lists clip information.
<i>list_framestore</i>	Lists the contents of the specified project or clip library.
<i>from_framestore</i>	Exports a clip stored in a clip library on the framestore of the local machine to a sequence of SGI image files in a filesystem on a local or remote system.
<i>to_framestore</i>	Imports uncompressed SGI image files from a local or remote filesystem to the framestore of the local machine.

Utility	Purpose
<i>fcof</i>	Finds all clips using the specified frame—find-clip-of-frame (fcof).
<i>publishTool</i>	Publishes clips to the specified directory.
<i>stonifiseTool</i>	Writes clips to the framestore.
<i>vstat</i>	Provides statistics on usage of storage.
<i>vic</i>	(Volume integrity check) Corrects media referencing errors on the framestore.

Volume Integrity Check

When you start Backdraft Conform, a volume integrity check is performed automatically if a previous crash is detected. This check determines if there are any inconsistencies between the clip metadata stored on the system disk and the frames on the framestore and, when possible, repairs any problems that are found. Inconsistencies can occur if the application crashes before the metadata associated with a clip has been saved to the clip library on the system disk. Metadata for clips on the EditDesk is saved by the autosave process, while metadata for clips in the clip library is saved following various operations such as opening a new clip library.

How It Works

The volume integrity check compiles a list of all frame IDs in the clip libraries on the system disk. It then queries the framestore to verify the status of each frame, and compares it to the frame ID data in the list. Each frame on the framestore has one of three statuses—used, unused or free.

Used The frame is used in a clip.

Unused The frame has been deleted in the application (though it still physically exists on the framestore until that area of the framestore is needed for another frame).

Free The storage associated with the frame ID is no longer available (the frame is no longer recoverable).

If the integrity check detects frames that have IDs in the library but have a status of unused on the framestore, it fixes them by changing their status to used.

Also, if the check finds any frames that are used in the framestore but are not listed in the compiled library list, it creates a clip out of them, which it places in the Lost+Found clip library. The order of these frames will be the order in which they were created.

NOTE If the integrity check discovers empty soft partitions, they are automatically removed.

Lastly, if the check finds frame IDs in the library list for which there are no corresponding frames on the framestore, it reports them as invalid frames in an error message displayed at the end of the check. Invalid frames occur if Stone and Wire was prevented from writing new frames to the framestore during a work session, for example, because of a system failure or power failure. By default, Stone and Wire updates itself every 300 seconds or after 2000 changes occur, whichever comes first. A change includes the creation of a new frame or any change made to an existing frame. Therefore the maximum amount of work that could be lost from this situation is 300 seconds, or 5 minutes of work.

Forcing a Volume Integrity Check

You can force a volume integrity check using an environment variable in the shell where you launch Backdraft Conform or you can use the *vic* utility. See [vic](#) on page 607.

To force a volume integrity check on start-up:

- 1 In the shell where you plan to launch Backdraft Conform, turn on the volume integrity check by typing:
setenv DL_FORCE_IC
- 2 Start Backdraft Conform. See [Starting Backdraft Conform](#) on page 609.
A volume integrity check is run before Backdraft Conform starts.

Finding and Deleting Invalid Frames

When invalid frames exist on the EditDesk or in a clip library, they appear as black or red frames. These frames are not recoverable. If you get a message stating that invalid frames exist, you should delete them because their presence slows system performance. You have the option of deleting the entire clip to which they belong or deleting just the invalid frames in the clip.

The *vic* utility identifies invalid frames and lists their IDs in the system console and SYSLOG. They can then be used as arguments to the *fcof* utility (find-clip-of-frame) to find which clip or clips use them.

You can also use the *vic* utility in repair mode (with the -r flag) to do this automatically. This option enables *vic* to search the media library and replace missing frame ids with a LOST frame label. In the library, the names of impacted clips appear red. When these clips are loaded into the record timeline, the names of the affected segments also appear red. Lost frames are displayed with the LOST label over them. The flag set on clips is not permanent, so resaving the clip will remove the red from the names.

The following procedure explains how to locate and delete invalid frames in clips located on the EditDesk and in clip libraries.

To find and delete invalid frames:

- 1 Exit the application.
- 2 In the command shell where Backdraft Conform was launched, make sure */usr/discreet/io/<version number>/bin* is in your path.
- 3 Start the utility by typing:

```
fcof <framestore volume> <frameId> [-v]
```

Option	Function
framestore volume	Specifies the volume to check (stonefs, stonefs1, stonefs2).
frameID	Specifies the frame's ID (0x1234abcd5678cdef).
-v	Enables additional verbosity.

fcof scans all the libraries on the specified volume searching for clips referencing the given frame. The output tells you which clips use the frame and where they are located. When a large list of invalid frames is detected, it is usually more efficient to find the clip for a given frame, delete it, and perform another integrity check before searching for the next invalid frames. Very often all invalid frames are in the same few clips so finding affected clips for each invalid frame is unnecessary.

Disk Testing Utility

A disk testing utility, Test Disks, is accessible from the User Interface. Use it to assess the framestore's performance.

To verify framestore performance:

- 1 In the Preferences menu, click the Storage button.
- 2 Under Framestore, click Test Disks.



The raw performance of the framestore appears in the message bar. The display includes:

- The number of frames read per second
- The number of seconds it takes to read one frame
- The average amount of data read in a second, in MB per second

For example:

TEST DISKS: Sequential Frame Read.289.33 fps 0.14 spf. 289.16 MBps.

Click anywhere to abort the process.

Log Files

You can access log files for Backdraft Conform. Log files are useful for tracking the success or failure of operations. For example, you can use a log file to find a problem that occurred on a particular date with Backdraft Conform.

Viewing Log File Messages

Use the following procedure to view the contents of a log file for Backdraft Conform.

To view the contents of a log file:

- 1 Change to the log directory for the application by typing:

```
cd /usr/discreet/log/
```

- 2 When you are diagnosing when and why an error occurred, it can be useful to view the names of all the log files corresponding to a given application with the date that each log file was created.

View the log files corresponding to the application by typing:

```
ls -ltr /usr/discreet/log/<application>*
```

Where <application> is an application such as Backdraft Conform.

The following is an example of feedback for Backdraft Conform.

-rw-rw-r--1	root user	5785	Apr 5	09:52	conform2010_detroit_app.log.4
-rw-rw-r--1	root user	146977	Apr 5	14:54	conform2010_detroit_app.log.3
-rw-rw-r--1	root user	13765	Apr 7	10:15	conform2010_detroit_app.log.2
-rw-rw-r--1	root user	2732	Apr 8	14:59	conform2010_detroit_app.log.1
-rw-rw-r--1	root user	2732	Apr 8	15:54	conform2010_detroit_app.log

Where the `_app` suffix indicates the log file is an application log file. See [Types of Log Files](#) on page 574. The `<number>` suffix distinguishes log files for the same application.

- 3 View the contents of the application log file by typing:

```
kedit <application>.log.<log file number>
```

Where <application> and <log file number> vary depending on the file you want to view.

The following is an example of feedback from the Backdraft Conform2010.log.1 file.

```
# Discreet conform2010_detroit_app log file - 1.0
# Started - (EST) Mon Apr 19 13:56:52 2009
# Hostname - detroit
[notice] 2246 CoMsgLogger.C:86 06/19/09:13:56:51.978 Command line: 'con-
form2010_detroit_app'
[notice] 2246 log.C:235 06/19/09:13:56:52.070 Autodesk(r) Backdraft Conform(r)
```

```
[notice] 2246 log.C:236 06/19/09:13:56:52.070 Version 2010
[notice] 2246 log.C:237 06/19/09:13:56:52.070 (c) Autodesk Canada Inc./Autodesk
Inc., 1997-2010. All rights reserved.
[notice] 2248 CoThreadLinux.C:145 06/19/09:13:56:52.077 Registered process 'logger'
[notice] 2249 CoThreadLinux.C:145 06/19/09:13:56:52.084 Registered process 'Remote
Command Server'
[notice] 2246 swClient.C:147 06/19/09:13:56:52.095 Using Stone+Wire API 2010.0.
[notice] 2246 swxStoneAdapter.C:798 06/19/09:13:56:52.220 Compatible S+W
filesystem driver (1119) and S+W API (1126) versions detected.
[notice] 2246 swxStoneAdapter.C:855 06/19/09:13:56:52.222 Compatible SWR driver
(1119) and S+W API (1126) versions detected.
[notice] 2246 SWCentralPath.C:40 06/19/09:13:56:52.222 Central path not specified.Us-
ing default: '/usr/discreet'.
[notice] 2246 swxStandardFSAdapter.C:428 06/19/09:13:56:53.532 Using StandardFS
Path /usr/discreet/clip/standardfs.links.
```

Where `[notice]` indicates the type of log file entry. See [Interpreting Application and VIC Log File Messages](#) on page 575.

Types of Log Files

There are four types of log files that are generated for Backdraft Conform.

Application Contains all types of messages associated with the current application. The application log file name has the following format:

```
<application name>_<build
type>_<host>_app.log[.<index>]. For example, Backdraft
Conform2010_n32_detroit_app.log.1
```

Shell Contains all messages that appear in the start-up shell where you launched the application. The shell log file name has the following format:

```
<application name>_<host name>_<date application was
launched (year:month:day)>_<time application was
launched (00:00:00-hour:minute:second-24 hour
clock)>_shell.log. For example, Backdraft
Conform2010_detroit_20100329_170238.log.1
```

Volume Integrity Check (VIC) Contains the volume integrity check messages. See [Volume Integrity Check](#) on page 569. The log file name is `vic.log.<number>`.

Backdraft Conform error Contains all the error messages generated by Backdraft Conform. The log file name is `iffis.error.log`.

Interpreting Application and VIC Log File Messages

A log file is composed of separate entries. If the log file is an application or VIC log file, it contains a message level, time stamp, and a message. The following example, taken from an application log file, is used to illustrate the contents of a log file entry.

[notice] 2246 swClient.C:147 04/19/09:13:56:52.095 Using Stone+Wire API 2010.0.

Message level Indicates the severity of the message, as described in the following table. In this example, [notice] is the message level.

Type of Mes- sage	Relays Information About	Example
User	An operation that was success- ful.	Setup loaded success- fully
Error	An operation that was unsuccess- ful.	Cannot delete file '/tmp/image.jpg': Permission denied
Warning	An operation that was successful but had accompanying errors.	When you are loading a setup, you receive the following message: Cannot find clip: 'PAL BARS.'
Notice	An operation that was successful but completed slightly differ- ently than expected.	Stone+Wire client connection success- ful on port 7002.

Time stamp Indicates the time the application was launched. Time, including the date, is tracked by the hardware timer to the nearest one thousandth of a second. In this example, the time value is 06/19/04:13:56:52.095.

Message Indicates the success or failure of operations performed by an application. In this example, the message is Using Stone+Wire API 3.0.

Getting Started with the Command Line Utilities

The command line utilities, DL Tools, can be found in *usr/discreet/io/<version number>/bin*. This path is added to your *.cshrc* file when you install Backdraft Conform. You do not need to type the path name to execute the utilities.

NOTE <version number> is the version of DL Tool and not the software version number.

The command line utilities can be used in the background without affecting the normal operation of Backdraft Conform.

Determining the Utilities Version

Since the command line utilities are stored in *usr/discreet/io/<version number>/bin*, it is useful to know what version has been installed.

To determine the utilities version:

- 1 Open a command shell.

- 2 Type:

```
versions -bn | grep -i dltools
```

This produces output in the following format:

```
I DLtools<version_nbr> <package_nbr> discreet tools,  
version <version_nbr>
```

In this output, the last four digits of the package number represent the build. This number can be useful when reporting to technicians during troubleshooting.

Example

The following represents a typical output of the **versions** and **grep** commands when used in the previous procedure:

```
I DLtools83 1658372105 discreet tools, version 8.3
```

In this case, the <package_nbr> is 1658372105, the build number is 2105, and the <version_nbr> is 8.3.

Gaining Access to the Remote Machine

The *.rhosts* file defines which remote hosts can invoke commands on the local machine without requiring a password. To use the *to_framestore* and *from_framestore* utilities successfully, you must add an entry to the remote machine's *.rhosts* file. Otherwise, you will be denied access to it.

To modify the *.rhosts* file:

- 1 On the remote machine, log in to the account from which you will be running Backdraft Conform.
- 2 Open a command shell.
- 3 Change to the account's home directory by typing:
cd ~
- 4 Open the *.rhosts* file (or create one) using a text editor.
If it does not exist, create a new one.
- 5 Add the following line (if it is not already present):
+ <host name>
where *<host name>* is the name of the machine where you will be running the utilities.
- 6 Save the file and close the text editor.
- 7 For safety, ensure you are the only user that can write to the file:
chmod 644 .rhosts

Command Line Parameters

The following sections describe the parameters required in the *list_framestore*, *from_framestore*, *to_framestore*, and *imcopy*, utilities.

Clip Directory Pathname

To use the *list_framestore*, *from_framestore*, *to_framestore*, and *imcopy*, utilities, you need to provide a path to a framestore clip as the source or destination of the operation. The format of this path is the following:

/usr/discreet/clip/<volume>/<project>/<library>@<clip name>

where

- *<volume>* is the name of the volume you are using. The first volume on a system is *stonefs*. If you have multiple volumes on the system, you need to specify *stonefs1*, *stonefs2* to access additional *stonefs* volumes.

- `<project>` is the name of the project containing the library you want to access. The command: `ls -l /usr/discreet/clip/stonefs | grep "^d"` lists the projects currently in use on volume stonefs.
- `<library>` is the name of the library in that project. The command: `ls -l /usr/discreet/clip/stonefs/myproject/*.000.clib` lists all the libraries currently defined in *myproject*. Only the leading part of the library filename should be used as the `<library>` part of the path to the clip; you should not add the `.000.clib` to it. For instance, assuming you have a library file *BigLib.000.clib* in project NTSC on framestore stonefs, the clip path format would be:
`/usr/discreet/clip/stonefs/NTSC/BigLib@myclip`
- `<clip name>` specifies the name and location of the clip. See [Clip Name Format](#) on page 578.

Clip Name Format

The following clip naming formats are used to specify the location of clips in the *list_framestore*, *to_framestore*, *from_framestore*, and *imcopy*, utilities.

Absolute Paths

An initial `/` indicates that the path for the clip is anchored at the root of the library. The following three formats can be used to find or list clips:

`/EditDesk1/SourceArea1/Clip1`

where Clip1 is in the Source Area named SourceArea1 on EditDesk1.

`/SourceArea2/Clip2`

where Clip2 is in the Source Area named SourceArea2.

`/Clip3`

where Clip3 is located at the root of the library.

Untitled EditDesks, Reels, and Clips

Backdraft Conform uses one or more `/` to refer to an unnamed clip, EditDesk, or reel.

`/`

is an unnamed clip in the library.

//

is an unnamed clip in an unnamed Source or Record Area in the library.

///

is an unnamed clip in an unnamed Source Area or Record Area in an unnamed EditDesk.

//SourceArea5/Clip5

Clip5 is in Source Area 5 in an unnamed EditDesk.

/EditDesk6//Clip6

Clip6 is in an unnamed Source or Record Area on EditDesk6.

/EditDesk7/SourceArea7/

is an unnamed clip in SourceArea7, which is located on EditDesk7.

File Template

In the *from_framestore*, and *imcopy* utilities, you can use a file template to specify a pattern from which the name of each destination image file will be derived. Similarly, in the *to_framestore* utility, you can use a template to specify a sequence of source image files. In the *imcopy* utility, both the source and destination can be image sequences specified by a file template.

The *from_framestore* utility (as well as *imcopy* when used to export from a framestore clip) stores each frame of a clip as a separate image file in a local or remote filesystem.

Image files are numbered sequentially so that the order of frames in the clip can be maintained in transfers. Specify the filename and the numbering format for the image files with the following file template:

<clip name>%04d.sgi

The 4 instructs the utility to use four digits when numbering the files; the 0 instructs it to use leading zeros before the file number.

For example, if you use the file template *example%04d.sgi* in the *from_framestore* utility, the following image files are stored in the specified destination directory:

- *example0001.sgi*
- *example0002.sgi*

- *example0003.sgi*, etc.

The *to_framestore* utility looks for matching filenames in the specified source directory.

cmtool

The *cmtool* utility includes options that you can use to work with the contents of your volumes. Without entering the application, you can perform activities such as opening, closing, deleting, and renaming volumes, projects, partitions, archives, and libraries. Additionally, you can view the contents of volumes, projects, partitions, archives and libraries.

NOTE You can use *cmtool* to determine the unique ID (UID) of a clip. Both *publishTool* and *stonifiseTool* accept a UID instead of the name and creation date of a source clip. To determine the UID of a clip, list the contents of the library in which it resides, locate the clip, and find its UID in the clip ID column. A UID has the format H_0000000000_S_0000000000_U_00000.

To start *cmtool*:

- 1 Make sure that */usr/discreet/io/<version number>/bin* is in your path.
- 2 Type:
cmtool
The *>cmtool* prompt appears.
- 3 At the *>cmtool* prompt, type a *cmtool* option. See [cmtool Options](#) on page 581.

Example

open volume stonefs

To view the available *cmtool* options:

- 1 Make sure that */usr/discreet/io/<version number>/bin* is in your path.
- 2 Type:
cmtool
- 3 Type:

help

cmtool Options

The following options may be used with *cmtool*.

Option	Function
ls volume	Lists the framestore, host name, amount of used and available frames, all partitions, and all projects for the current volume.
ls project	Lists the project management settings for the current project such as the resolution, aspect ratio, and scan mode. Additionally, all libraries are listed.
ls library	Lists the contents of the current library. You must open the volume, project, and library before you use this command.
ls partition	Lists the partition settings such as the address, size, percentage of the volume occupied, frame size, proxy depth, and aspect ratio.
ls archive	Lists device type, header name, segment file name, and all entries in the archive.
ls entry <entry index number>	Lists the entry name, its class and the date of creation.
delete <library name>	Deletes the library.
delete <project name>	Deletes the project.
delete <partition name>	Deletes the partition.
delete <entry index number>	Deletes the entry.
close volume <volume name>	Closes the volume.

Option	Function
close project <project name>	Closes the project.
close partition <partition name>	Closes the partition.
close archive <archive name>	Closes the archive.
close library <library name>	Closes the library.
close all	Closes all volumes.
open volume <volume name>	Opens the volume.
open project <project name>	Opens the project and sets it as the current project.
open partition <partition name>	Opens the partition and sets it as the current partition.
open library <library name>	Opens the library and sets it as the current library.
open archive -file <file name>	Opens the file archive.
open archive -tape <tape device name>	Opens the tape archive.
set volume <volume name>	Sets the volume as current.
set project <project name>	Sets the project as current.
set partition <partition name>	Sets the partition as current.
format archive -file <file name> <archive name> <capacity>	Formats the file archive. If a file archive exists with the same name, the contents are erased.

Option	Function
format archive -tape <tape device name> <archive name> <capacity> <block size>	Formats the tape archive. If a tape archive exists with the same name, the contents are erased.
format partition <partition name>	Formats the partition archive. If a partition exists with the same name, the contents are erased.
format project <project name>	Formats the project. If a project exists with the same name, the contents are erased.
rename partition <new partition name>	Renames the current partition.
generate <clip name> <number of frames> <frame width> <frame height>	Creates a clip within the current library.
generateTone <clip name> <number of frames> <number of tracks>	Creates an audio clip containing a tone within the current library.
importAudio <clip name> <file, file2,...>	Creates a clip and appends all the tracks specified by the list of audio files.
add library <library name>	Creates a library within the current project.
lock volume	Locks the current volume to prevent users on other hosts from accessing the volume.
get framestorename <host name>	Lists the name of the framestores.
show framestores	Lists the names of all framestores on the network.
quit	Exits the <i>cmtool</i> utility.

dlfsdump -fs

Use the *dlfsdump -fs* utility to obtain a list of the contents of a framestore. Some of the lists you can view include libraries, projects, tracks, and source clips.

Syntax

dlfsdump -fs <framestore name> <dlfsdump -fs option>

Where:	Is:
<framestore name>	The name of the framestore, for example, <i>stonefs</i> .

Example

dlfsdump -fs stonefs -projects

dlfsdump -fs Options

The following options may be used with *dlfsdump -fs*.

Option	Function
-projects	Lists all projects for the volume.
-libraries	Lists all libraries on the volume.
-path <path of project> -libraries	Lists all libraries in the project.
-libraries -desktoponly	Lists all EditDesks in the project.
-path <path of project or library> -clips	Lists all clips in the project or library.
-tracks	Lists all tracks on the volume.
-sources	Lists all source clips on the volume.
-media	Lists all media on the volume.

Option	Function
-frameids	Lists all frame IDs for the frames on the volume.
-path <path of the project or library> -frameids	Lists all frames in the project or library.
-allids	Lists all IDs for libraries, EditDesks, reels, and clips.
-id <clip ID> -frameids	Lists the frame IDs of the clip with the given clip ID.

list_framestore

The *list_framestore* utility lists the contents of each clip library that you create in a framestore project. You can use the *list_framestore* utility to list the contents of the framestore before using the *to_framestore*, *from_framestore*, or *imcopy*, utilities.

The listing shows the absolute path to the clip, the clip name, its creation date and time, and its description. For a source clip, the description is the timecode and the number of frames.

Syntax

```
list_framestore <clip directory pathname>
```

Where:	Is:
<clip directory pathname>	The clip directory pathname of the clip library. For example: <i>/usr/discreet/clip/stonefs/NTSC/paint</i> .

Example

The following command lists the contents of the framestore for a project called WARSHAW. It contains two libraries, the default, and *WARSHAW_ON_THE_MAIN*. Both libraries contain two clips:

```
list_framestore
/usr/discreet/clip/stonefs/NTSC_50_FS0/NAB08_LYCOS

LIBRARY
/usr/discreet/clip/stonefs/NTSC_50_FS0/NAB08_LYCOS

/LYCOS/LYCOS_MASTER/LYCOS/LYCOS_NATIONAL_FINAL
/LYCOS-24P/3:2--0001/LYCOS-24P/FM-0001/LYCOS-24P/3:2--0003
/LYCOS-24P/3:2--0004 /LYCOS-24P/0005/LYCOS-24P/3:2--0006
/LYCOS-24P/
```

Note the order of information in the output: the reel name, clip name, creation date, creation time, start timecode and length in frames. An “A” at the end of a line indicates an audio clip.

to_framestore

The *to_framestore* utility copies image files from the specified directory to the framestore.

Once the transfer is complete, the clip is available in the clip library. You can use the Load Clip command to load the clip to the EditDesk. See [Loading Clips to the EditDesk](#) on page 407.

Syntax

```
to_framestore [-v|w] [-f
startframe]"<clip library pathname>@<clip name>" <hostname>:<directory
pathname>/<file template> [<starting frame
number>[<ending frame number>]]
```

Where:	Is:
<clip library path- name>	The directory pathname of the clip library. This pathname is displayed in the LIBRARY line of the <i>list_framestore</i> listing. For example: <i>/usr/discreet/clip/stonefs/NTSC/paint</i> .
<clip name>	The name of the clip as shown in the first column of the <i>list_framestore</i> output.
<hostname>	The hostname of the local or remote machine where the destination filesystem resides.

Where:	Is:
<directory path-name>	The path of the destination directory on the local or remote machine.
<file template>	The template used to name and number the image files, for example, <i>example%04d.sgi</i> .
<starting frame number>	The number of the first frame in the clip that you want to copy (optional).
<ending frame number>	The number of the last frame in the clip that you want to copy (optional).

NOTE If the message `remuser too long` appears when you initiate *to_framestore*, the current user name exceeds eight characters. In this case, use the **su** (substitute user identity) command to switch to another user's identity with a user name of eight characters or less. Note that you must enter the corresponding user password.

to_framestore Options

The following options may be used with *to_framestore*.

Option	Function
-v	A flag that causes the utility to operate in verbose mode.
-l	A flag that overrides the default, when reading or writing 12-bit images, and causes the utility to use the 12 least significant bits. 12-bit images are stored in 16 bits. By default, image data is stored in the 12 most significant bits. This flag is used mainly when working with 16-bit SGI image files originating from an Oxberry film scanner.
-w	A flag that causes the utility to wait one second between reading each frame from the directory. This option applies to the <i>to_framestore</i> utility only.

Using 12-Bit Clips

You can use *to_framestore* with 12-bit clips. When importing 16-bit SGI image files, *to_framestore* expects to find the 12 bits of data in the 12 most significant

bits of each colour component. You can use the `-l` command line option to tell it to look at the 12 least significant bits instead. These options are most commonly used when working with 16-bit SGI image files originating from an Oxberry film scanner. See [About Importing Media Files](#) on page 220.

Restrictions

The following restrictions apply to the *to_framestore* utility:

- Only RGB non-RLE encoded SGI images can be used. If you have SGI images that use RLE encoding, you can use the `/usr/sbin/verbatim` utility to convert these to non-RLE encoding.
- The image files to be imported with *to_framestore* must be the same size as the default resolution for the project into which you will import the images.
- The *to_framestore* utility must be invoked from the machine on which the framestore resides.
- If you specify the name of an existing clip as the destination clip name, *to_framestore* will create a new clip with the same name. You cannot overwrite or replace an existing framestore clip. See [File Template](#) on page 579.

from_framestore

The *from_framestore* utility copies clip information files from the framestore on the local machine and saves them as image files in the specified destination directory.

If you transfer two or more clips with the same name, the most recent clip is used unless you specify otherwise.

Before using the *from_framestore* utility, make sure the clip has been saved in the clip library. See [Saving to Clip Libraries](#) on page 377.

Syntax

```
from_framestore [-vl]  
"<clip library pathname>@<clip name>" <hostname>:<directory
```

pathname>/<file template> [<starting frame number>[<ending frame number>]]

Where:	Is:
<clip library path-name>	The directory pathname of the clip library. This pathname is displayed in the LIBRARY line of the <i>list_framestore</i> listing. For example: <i>/usr/discreet/clip/stonefs/NTSC/paint</i> .
<clip name>	The name of the clip as shown in the first column of the <i>list_framestore</i> output.
<hostname>	The hostname of the local or remote machine where the destination filesystem resides.
<directory path-name>	The path of the destination directory on the local or remote machine.
<file template>	The template used to name and number the image files, for example, <i>example%04d.sgi</i> .
<starting frame number>	The number of the first frame in the clip that you want to copy (optional).
<ending frame number>	The number of the last frame in the clip that you want to copy (optional).

NOTE If the message `remuser too long` appears when you initiate *from_framestore*, the current user name exceeds eight characters. In this case, use the **su** (substitute user identity) command to switch to another user's identity with a user name of eight characters or less. Note that you must enter the corresponding user password.

Example

```
from_framestore  
/usr/discreet/clip/stonefs/NTSC/paint@jaune  
sgi2:/usr/tmp/jaune%04d.sgi
```

This command retrieves the clip information for all frames in the clip *jaune* from the clip library */usr/discreet/clip/stonefs/NTSC/paint*, and creates the image files *jaune0001.sgi*, *jaune0002.sgi*, and so on in the directory */usr/tmp* on the remote machine *sgi2*.

from_framestore Options

The following options may be used with *from_framestore*.

Option	Function
-v	A flag that causes the utility to operate in verbose mode.
-l	A flag that overrides the default, when reading or writing 12-bit images, and causes the utility to use the 12 least significant bits. 12-bit images are stored in 16 bits. By default, image data is stored in the 12 most significant bits. This flag is used mainly when working with 16-bit SGI image files originating from an Oxberry film scanner.
-w	A flag that causes the utility to wait one second between reading each frame from the directory. This option applies to the <i>to_framestore</i> utility only.

Using 12-Bit Clips

You can use the *from_framestore* utility with 12-bit clips. By default, when exporting a 12-bit clip, *from_framestore* creates 16-bit SGI image files with the 12 bits of data from the framestore in the 12 most significant bits of each 16-bit colour component. You can override this behaviour with the `-l` command line option, which forces the data to be stored in the 12 least significant bits of each 16-bit colour component.

Restrictions

The following restrictions apply to the *from_framestore* utility:

- Only RGB non-RLE encoded SGI images can be used. If you have SGI images that use RLE encoding, you can use the */usr/sbin/verbatim* utility to convert these to non-RLE encoding.
- The *from_framestore* utility must be invoked from the machine on which the framestore resides.

imcopy

imcopy is a powerful utility that lets you import and export images or image sequences from the framestore and convert them to any image format supported by Backdraft Conform. It supports image operations such as cropping, scaling, and LUT conversion. In addition, *imcopy* allows you to select the output compression.

While *from_framestore* and *to_framestore* work with uncompressed SGI image files only, *imcopy* recognizes all the image file formats supported by Backdraft Conform. However, unlike *from_framestore* and *to_framestore*, this utility must have direct access to the image files, whether on a local filesystem or on a remote host accessed via NFS.

Use *imcopy* to:

- Convert image formats supported by Backdraft Conform. *imcopy* supports 8 bits per component or greater for image formats such as Cineon, SGI, Wavefront™, TIFF, Tdi/Maya, and DPX.
- Apply a LUT (Lookup Table) for linear-to-log conversion.
- Crop and resize images upon import/conversion.
- Extract the alpha channel from an RGBA image, and output it as a separate file.

To start *imcopy*:

1 Make sure that */usr/discreet/io/<version number>/bin* is in your path.

2 Type:

```
imcopy <imcopy options> <in file name and path> <out  
file name and path> <start index> <stop index>
```

Syntax

```
imcopy [-f] <format> [-c] <channel format> [-m] <output  
image compression> [-o] <origin of source> [-s] <source  
width and height> [-d] <width and height of destination  
image> [-t] <destination aspect ratio> [-l] <full path  
of input lut file> [-w] <full path of output lut> [-v]  
[-b] <r,g,b values of background> [-i] <bits per pixel  
in internal buffer> [-e] <bits per pixel of output>
```

image> [-u] [-k] <crop setting> [-q] <resize quality> [-D] <scan mode> [-F] <framecode mode of clip> [-j] <jpeg compression factor> [-a] [-A] <audio file name> [-x] [-M] [-n] <physical device> [-p] <image pan x,y values> [-P] [-T] <timecode> [-O] [-g] <proxy generation setting> <in file name and path> <out file name and path> <start index> <stop index> <step factor>

Where:	Is:
<in file name and path>	The name of the file that you are inputting.
<out file name and path>	The name of the file that you are outputting.
<start index>	The start frame of the file.
<stop index>	The end frame of the file.
<step factor>	The frames of the file that you are outputting.

Example

```
imcopy -k fitall -d 2048,1556 -q quality -f Cineon
/usr/discreet/clip/stonefs/NTSC/video@clip_name
/usr/tmp/clip_name.%04d.cineon
```

NOTE %04d means use 4 digits padded with zeroes; %d means do not use any padding for the numeric part of the name.

To view the available imcopy options:

- 1 Make sure that `/usr/discreet/io/<version number>/bin` is in your path.
- 2 Type:
imcopy

imcopy Options

The following options may be used with *imcopy*.

Option	Function	Default
-f	Sets output file format.	Same as source image
-c	Sets output channel format (BW, RGB, or RGBA).	Same as source image
-m	Sets output image compression (default, none, rle, lzw).	Same as source image
-o	Sets (x,y) source origin in <i>infile</i> .	0,0
-s	Sets source width and height in <i>infile</i> .	Whole file
-d	Sets destination image width and height.	Same as source image
-t	Sets the destination aspect ratio. Accepts floating point values; i.e. 4:3 as 1.33, 16:9 as 1.77, etc.	Same as source image
-l	Maps input pixels through LUTs in the <i>inlut</i> file. Specify the full path to the LUT file.	No mapping
-w	Maps output pixels through LUTs in the <i>outlut</i> file. Specify the full path to the LUT.	No mapping
-v	Specifies verbose reporting.	Non-verbose
-i	Sets bits per pixel (bit depth) in the internal buffer (8 or 12).	8
-e	Sets bits per pixel in the output image (8, 10, 12 16).	8
-u	Stores 12-bit images in unpacked mode. By default, 12-bit images are stored using 12 bits of data. In unpacked mode, they are stored in 16 bits of data, the OpenGL® standard.	Packed
-b	Sets R,G,B, or a background colour between 0.0 and 1.0.	0.0, 0.0, 0.0, 0.0

Option	Function	Default
-k	Sets cropping type (crop, fit, fitall, or fitboth): - <i>crop</i> centres and crops the image. - <i>fit</i> scales the longest edge to fit the frame size. - <i>fitall</i> scales the shortest edge to fit the frame size and crops the longest edge. - <i>fitboth</i> scales both X and Y to fit the new frame size and distorts the image. Use the -b option to specify the colour of the cropped part of the image (default is black).	crop
-q	Sets resize quality: coarse, medium, quality, bicubic.	quality
-D	Sets the scan mode for the media: F1, F2, or P.	None
-F	Sets clip frame code mode: 24, 25, 30, 30DF, 50, 60, 60DF.	30
-j	Sets JPEG compression factor (0-100).	75
-a	Combines alpha file: -a <file to go in alpha channel>.	None
-A	Specifies the audio files to add to the media. You can add more than one audio file by separating the audio file names with commas.	None
-x	"invert" or "noinvert", extracts alpha channel to <file-name>_alpha.	None
-M	Creates a matte container. You must use -x in conjunction with this command to create a matte.	None
-n	Sets which physical device the media was captured from. For example, you can specify a tape name.	Imported
-p	Pans image by x and y.	0, 0
-P	Soft imports the media.	None
-T	Sets the start timecode of the media.	00:00:00:00
-O	Specifies an offset in the sequence of exported images.	Same as start index

Option	Function	Default
-g	Generates proxies (first, all, or none): - <i>first</i> generates proxies for the first frame of the clip only. - <i>all</i> generates proxies for each frame.	None

Supported Formats (-f option)

The following formats are supported by *imcopy*.

Image Format	Default Extension
Alias	als
Cineon	(none)
DPX	(none)
Pixar	picio
Pict	pict
JPEG	jpeg
SGI	sgi
Softimage	pic
Targa	tga
TdiMaya	iff
Tiff	tif
Wavefront	rla

Converting File Formats

To convert an image from one format to another using *imcopy*, you must specify which file to convert, where the file is located, the format it should be converted to, and where to store the file on output.

Syntax

imcopy -f <output format> <in file name and path> <out file name and path> <start index> <stop index>

Where:	Is:
<output format>	The file type of the output file.
<in file name and path>	The name of the file that you are inputting.
<out file name and path>	The name of the file that you are outputting.
<start index>	The start frame of the file.
<stop index>	The end frame of the file.

Example

```
imcopy -f tiff /usr/tmp/SGI/source%04d.sgi  
/usr/tmp/TIFF/dest%04d.tif 1 100
```

This operation converts the SGI images into TIFF images.

Input	Output
/usr/tmp/SGI/source0001.sgi	/usr/tmp/TIFF/source/dest0001.tif
/usr/tmp/SGI/source0002.sgi	/usr/tmp/TIFF/source/dest0002.tif
/usr/tmp/SGI/source0100.sgi	/usr/tmp/TIFF/source/dest0100.tif

Converting 10-bit Cineon Images

Digital film scans often consist of logarithmic data. Because Backdraft Conform algorithms are optimized for linear data, a LUT is often used on import to convert the gamma and correct the logarithmic data for a linear data environment. Since Cineon images contain 10-bit logarithmic data, you need to use a LUT to convert the 10-bit logarithmic data to 8-, 10- or 12-bit linear. You can use one of the LUTs provided, or create a custom LUT and use it with *imcopy* to import Cineon files directly into the framestore. See [Colour Management](#) on page 1165.

Extracting an Alpha Channel from an RGBA Image

You can use the `-x` option to extract the alpha channel from your RGBA image. The RGBA infile will be split into two RGB outfiles; the *destination_alpha_filename* file will contain only the alpha channel of the *inRGBA_file*, and the *outRGB_file* will contain only the RGB components of the *inRGBA_file*.

NOTE The `-x` option expects an additional parameter. “`-x noinvert`” means that the alpha component will be extracted as is. “`-x invert`” will extract and invert the alpha component.

Syntax

imcopy `-x noinvert` <in RGBA file> <destination for RGB and alpha files> <start index> <stop index>

Where:	Is:
<in RGBA file>	The name of the file that you are inputting.
<destination for RGB and alpha files>	The name of the file that you are outputting.
<start index>	The start frame of the file.
<stop index>	The end frame of the file.

Example

```
imcopy -x noinvert /usr/tmp/SGI/source%04d.sgi
/usr/discreet/clip/stonefs/NTSC/MyLib@myclip 1 100
```

This example takes the SGI RGBA images in the sequence and creates two clips in the *MyLib* library on the NTSC project of the framestore *stonefs*.

Input	Output
/usr/tmp/SGI/source0001.sgi	RGB in frame 1 of <i>myclip</i> , Alpha in frame 1 of <i>myclip_alpha</i>
/usr/tmp/SGI/source0002.sgi	RGB in frame 2 of <i>myclip</i> , Alpha in frame 2 of <i>myclip_alpha</i>
/usr/tmp/SGI/source0100.sgi	RGB in frame 100 of <i>myclip</i> , Alpha in frame 100 of <i>myclip_alpha</i>

On output, the clip *myclip* contains the RGB image, and the clip *myclip_alpha* contains the alpha channel of the original image.

Integrating an Alpha Channel into an RGB Image

You can use the `-a` option to combine an alpha (matte) infile and an RGB infile to produce an RGBA outfile.

NOTE When reading a matte from the RGB framestore, *imcopy* will only take information from the image's red channel.

Syntax

imcopy **-a** <in matte file> <in RGB file> <out RGBA file>

Where:	Is:
<in matte file>	The name and path of the source matte file.
<in RGB file>	The name and path of the source RGB file.
<out RGBA file>	The name of the result RGBA file.

Example

```
imcopy -a
/usr/discreet/clip/stonefs/NTSC/MyLib@myclip_alpha
/usr/discreet/clip/stonefs/NTSC/MyLib@myclip
/usr/tmp/SGI/dest%04d.sgi 1 100
```

This example takes the RGB data from *myclip* in the *MyLib* clip library in project *NTSC* on framestore *stonefs*, combines it with the matte clip *myclip_alpha*, and generates an SGI RGBA for the first 100 frames.

Input	Output
RGB from frame 1 of <i>myclip</i> and Alpha from frame 1 of <i>myclip_alpha</i>	/usr/tmp/SGI/dest0001.sgi
RGB from frame 2 of <i>myclip</i> and Alpha from frame 2 of <i>myclip_alpha</i>	/usr/tmp/SGI/dest0002.sgi

Input	Output
RGB from frame 100 of <i>myclip</i> and Alpha from frame 100 of <i>myclip_alpha</i>	<i>/usr/tmp/SGI/dest0100.sgi</i>

Cropping an Image

If you want to import a section of your source image only, you can specify the origin of this section with the `-o` (x position, y position) option. You can specify the size of this section with the `-s` (width, height) option.

The size of the internal buffer is specified with the `-d` (width, height) option. By default, the size of the internal buffer is the same as the width and height of the source image. If the buffer size differs from the source image, resize the selected rectangle from the source image into the internal buffer size using the `-k` (cropping type) option.

The `-q` option can be used to specify the quality of resizing: coarse, medium, quality or bicubic.

NOTE If you are importing an image to the framestore, the specified width and height parameters of the framestore are used to define the destination size of your image.

Cropping the Frames

You can crop the source frames using the `-k` option. The available options are as follows.

Option	Function
<code>-k crop</code>	Centres and crops the image. <code>-b r, g, b, or a</code> can be used to specify the colour for the cropped part of the image (default is black).
<code>-k fit</code>	Scales the longest edge to fit the frame size. Unused parts of the frame are filled with black.
<code>-k fit-all</code>	Scales the shortest edge to fit the frame size and crops the longest edge. The frame will be filled and part of the original image will be missing.
<code>-k fit-both</code>	Stretches or squeezes the image to fill the new resolution. This option scales the X and Y dimensions of the image non-proportionately to make it fit in the current frame. This changes the aspect ratio, which results in a distorted image.

Adjusting Bit Depths

By default, the internal buffer has a depth of 8 bits. If your source image has a depth greater than 8 bits, you should specify an internal buffer depth of 12 bits using the `-i 12` option to avoid truncating data to 8 bits per component. This changes the buffer depth from 8 bits to 12 bits.

Once the desired area of the source image has been cropped and resized and the bit depth has been converted into the internal buffer, the image is written to the destination. If the destination is an image file, the image file format will be the same as the input format. You can use the `-f` (image format) option to specify a different image format. By default, *imcopy* outputs images with 8-bit depth. Use the `-e` (bit depth) option to override the default setting.

Source Image Bit Depth	Option Parameter
16-bit (TIFF, SGI, Wavefront, Tdi/Maya)	<code>-e 16</code>
10-bit (Cineon, DPX)	<code>-e 10</code>

NOTE By default, if you write an image file with more than 8 bits per component into an 8-bit internal buffer, *imcopy* will only preserve the 8 most significant bits. To avoid this, specify an input LUT with the `-l` option to convert the source image bit depth to the internal buffer bit depth. For example, if using the default 8-bit internal buffer depth (`-i 8`), you could use the **10logto8** LUT provided. Or, for a 12-bit internal buffer depth (`-i 12`), you could use the **10logto12** LUT provided. See [Colour Management](#) on page 1165.

iminfo

Use the *iminfo* utility to obtain image information. This is useful if you want to quickly check information about an image file without entering the application. The following information is listed for the file:

- Image format
- Width and height
- Channel type, such as RGB
- Bit depth
- Compression type
- Orientation, such as top-to-bottom, left-to-right

- Timecode
- Number of the clip within a sequence and the total length of the sequence

To list the image file information:

- 1 Make sure `/usr/discreet/io/<version number>/bin` is in your path.
- 2 Type:

```
iminfo
```

Syntax

```
iminfo [-f] <format> <file path and name>
```

Where:	Is:
<format>	The format of the clip for which you want the information. The format for the file can be Alias, Cineon, Dpx, Jpeg, Pict, Pixar, Sgi, Softimage, Targa, Maya, Tiff, Wavefront, or Photoshop. The utility will return the image information more quickly if you provide the format.
<file path and name>	The file path and name of the clip for which you want the information.

Example

```
iminfo -f Jpeg /usr/tmp/girl.jpg
```

fcof

The find-clip-of-frame (*fcof*) utility scans all the libraries on the specified volume searching for clips referencing a given frame. The output tells you which clips use the frame and where they are located. When a large list of invalid frames is detected, it is usually more efficient to find the clip for a given frame, delete it, and perform another integrity check before searching for the next invalid frames. Very often all invalid frames are in the same few clips so finding affected clips for each invalid frame is unnecessary.

Syntax

```
fcof <framestore volume> <frameId> [-v]
```

Where:	Is:
<framestore volume>	The volume to check (stonefs, stonefs1, stonefs2).
<frameID>	The frame's ID (0x1234abcd5678cdef).

Example

```
fcof stonefs 0x1234abcd5678cdef
```

fcof Options

The following option may be used with *fcof*.

Option	Function
-v	Enables additional verbosity

publishTool

Use the *publishTool* utility to publish clips from the shell using the Complex publish feature. See [Types of Publishing](#) on page 302.

NOTE You cannot use the *publishTool* utility to perform a Simple or Flatten publish.

To start *publishTool*:

- 1 Make sure `/usr/discreet/io/<version number>/bin` is in your path.
- 2 Type:
publishTool <options> <source clip path>
 <destination library> <destination path>

Syntax

```
publishTool [-f <output file format>] [-m <output
compression>] [-v] [-j <jpeg compression factor>] [-o
<output file name format>] [-n <maximum number of source
handles>] [-L] [-U <uid>] <source clip path>
<destination library> <destination path>

<source clip path> has the syntax:

<project path>/<library name>@<desktop>/<reel>/<clip
name>@<clip creation date>

<clip creation date> has the format "YYYY/MM/DD hh:mm:ss".
```

Examples

```
publishTool -f sgi -U H_0000054367_S_0000065473_U_00234
/mnt/NAS/910/clip/stonefs/bluelune@mydesktop/myreel
juneclips /usr/tmp

publishTool
/usr/discreet/clip/stonefs/MyProject/MyLibrary@MyClip@"2009/01/01
12:12:12" MyPublishedClips /usr/discreet/published
```

publishTool Options

The following options may be used with *publishTool*.

Op- tion	Function	Default
-f	Sets the output file format. Possible values are Alias, Cineon, Dpx, Jpeg, Pict, Pixar, Sgi, Softimage, Targa, Maya, Tiff, Wavefront, Photoshop.	Dpx
-m	Sets the compression. Possible values are def (Default), none, rle (Runlength-encoded), and lzw (Lempel-Ziv & Welch).	None
-v	Turns verbose mode on.	Verbose mode is off.
-j	Sets the JPEG compression factor. Possible values are from 0 - 100.	50

Option	Function	Default
-o	Sets the output file name format.	.%%04d (where 4 means use 4 digits and 0 means use 0 as a placeholder where applicable)
-n	Sets the maximum number of handles for the source clip to keep.	60
-L	Creates soft links to the image files instead of making copies, if the media is already soft-imported and in the same file format.	Off
-U	Specifies the unique ID (UID) of the source clip. You can use this instead of the clip name and creation date to retrieve the source clip. This is useful when you need to distinguish between two or more source clips with the same name and creation date. Use <i>cmtool</i> to determine the UID of a clip; the UID appears in the clip ID column when you list the contents of a library. It has the format H_0000000000_S_0000000000_U_00000. If you use this option, you omit the <clip name> and <clip creation date> in the <source clip path>.	Off

stonifiseTool

Use the *stonifiseTool* utility to write clips to the framestore.

To start *stonifise*:

- 1 Make sure `/usr/discreet/10/<version number>/bin` is in your path.
- 2 Type:
stonifiseTool <option> <source clip path>
<destination library name>

Syntax

```
stonifiseTool [-v] [-U <uid>] <source clip path>
<destination library name>

<source clip path> has the syntax:

<project path>/<clip library name>@<clip name>@<clip
creation date>

<clip creation date> has the format "YYYY/MM/DD hh:mm:ss".
```

Examples

```
stonifiseTool -v
/usr/discreet/clip/stonefs/experience/juneclips@flowers@"2009/07/06
13:12:36" augustclips

stonifiseTool -U H_0070054367_S_0008065473_U_00265
/mnt/NAS/910/clip/stonefs/bluelune@mydesktop/myreel
juneclips
```

stonifiseTool Options

The following option may be used with *stonifiseTool*.

Op- tion	Function	Default
-v	Turns on verbose mode.	Verbose mode is off.
-U	Specifies the unique ID (UID) of the source clip. You can use this instead of the clip name and creation date to retrieve the source clip. This is useful when you need to distinguish between two or more source clips with the same name and creation date. Use <i>cmtool</i> to determine the UID of a clip; the UID appears in the clip ID column when you list the contents of a library. It has the format H_0000000000_S_0000000000_U_00000. If you use this option, you omit <clip name> and <clip creation date> in <source clip path>.	Off

vstat

The *vstat* utility provides statistics on usage of storage. It lists the projects, number of full resolution frames, number of proxy frames, and number of megabytes of audio. It also lists the size of the volume and the amount of space used and available.

Volume statistics are also available in Backdraft Conform from the Preferences menu.

Syntax

```
vstat -v <volume> [-l] [-d] <verbose level>
```

Where:	Is:
<volume>	The name of the volume. For example: <i>stonefs</i> .
<verbose level>	Value for the reporting level.

Example

```
vstat -v stonefs -d 2
```

vstat Options

The following option may be used with *vstat*.

Option:	Function:	Default
-v	Determines the volume for which statistics are returned.	None
-l	Library mode. Displays the number of frames used per project and per library. If you add the number of frames for each library together, the total is usually less than the total number of frames per project. Each frame is counted for the project, but duplicate frames are only counted once for libraries.	None

Option:	Function:	Default
-d	Sets the reporting level (0, 1, 2) where 0 provides essential information, 1 provides important information, and 2 provides informative information.	1

vic

Use *vic*, the command line integrity checking tool, to correct media referencing errors. For example, if a frame is used in two libraries, but it only has one reference count on the framestore, this is an error. The *vic* utility corrects the reference count.

Syntax

```
vic [-h]
```

```
vic -v <volume> [-d <verbose level>] [-l] [-C] [-p  
<project name>] [-f] [-w]
```

Example

```
vic -v stonefs1 -d 2
```

vic Options

The following options may be used with *vic*.

Op- tion	Function	Default
-h	Displays the usage syntax.	
-a	Checks all volumes currently available.	
-v	Specifies volume to check (stonefs, stonefs1, stonefs2).	
-d	Sets the verbosity or “reporting” level (0, 1, 2) where 0 provides essential information, 1 provides important information, and 2 provides informative information.	2

Option	Function	Default
-l	"Lazy" mode. Will not decrement the reference count on a framestore.	
-C	Validates volume connections only. No content check is performed.	
-p	Specifies the project where Lost+_Found would be created, in case unreferenced frames are found.	
-f	Deletes unreferenced material; that is, it frees up material that would normally be placed in Lost+_Found. Use with caution.	
-w	Will skip integrity checking of audio waveforms.	
-r	Activates repair mode. This option enables vic to search the media library and replace missing frame ids with a LOST frame label. In the library, the names of impacted clips appear red. When these clips are loaded into the record timeline, the names of the affected segments also appear red. Lost frames are displayed with the LOST label over them. The flag set on clips is not permanent, so resaving the clip will remove the red from the names.	

Command Line Start-up and Exit Options

23

Topics in this chapter:

- [Starting Backdraft Conform](#) on page 609
- [Exiting Backdraft Conform](#) on page 612
- [Initialising the Tablet](#) on page 613
- [Killing Processes](#) on page 613

Starting Backdraft Conform

If you are running Backdraft Conform for the first time, make sure you have correctly installed and configured the application. There are several start-up options you can use to specify a particular setup or to enable a customized configuration.

To start Backdraft Conform:

- 1 Log in to the *Backdraft Conform* user account at your workstation.
- 2 Do one of the following:
 - To start Backdraft Conform normally, double-click the application's icon on the workstation's desktop.

- To start Backdraft Conform using start-up options, open a shell, and then type: **conform-** <option>. See [Start-up Options](#) on page 610.

After a few moments, the Project Management menu appears.

- 3 Select the project and user you want to use or create new ones. See [Managing Projects and Users](#) on page 335.
- 4 Click Start.

The application has finished loading when you see the yellow cross cursor, and the message “Startup Complete” appears.

NOTE Backdraft Conform will not start if your system disk does not have enough space available. The system disk must have enough free space to accommodate the largest clip library plus an additional 10 MB.

- 5 Tap the pen, click the mouse, or press **Enter** to display the EditDesk.

Start-up Options

There are a number of start-up options that you can use with the **conform** command under special circumstances. More than one start-up option can be specified on the command line. These start-up options are case-sensitive.

You can see an on-screen list of these start-up options by typing:

conform-H

NOTE The **conform-H** command does not launch the application.

Framestore-Related Start-up Options

WARNING When you use the **-v** option, all framestore data will be deleted with no possibility of recovery.

Type:	To:
conform-v	Initialise the framestore volume (all projects).
conform-H	Specify the remote host name.
conform-V	Specify the framestore name.
conform-i	Remove all clips from the project.

Type:	To:
conform-r	Initialise only the EditDesk for the selected project.
conform--red-frames	Activate repair mode. This option enables vic to search the media library and replace missing frame ids with a LOST frame label. In the library, the names of impacted clips appear red. When these clips are loaded into the record timeline, the names of the affected segments also appear red. Lost frames are displayed with the LOST label over them. The flag set on clips is not permanent, so resaving the clip will remove the red from the names.

Audio sources are stored on the framestore, so initialising the framestore also removes all audio clips from the project.

Project Management-Related Start-up Options

Type:	To:
conform -c <file-name.cfg>	Use a configuration file other than the default, where <file-name.cfg> is the name of the file. The specified file supersedes the default configuration file. If you do not use the option, Backdraft Conform looks first for <i>init.cfg</i> , and if that is not found, it looks for <i>conform.cfg</i> .
conform -J <project>	Define the project that appears in the Project Management menu when you start Backdraft Conform, where <project> is the name of the project you want to use. If you start Backdraft Conform with both the -J and -U options, Backdraft Conform bypasses the Project Management menu.
conform -U <user>	Define the user that appears in the Project Management menu when you start Backdraft Conform, where <user> is the name of the user you want to use. If you start Backdraft Conform with both the -J and -U options, Backdraft Conform bypasses the Project Management menu.

Miscellaneous Start-up Options

Type:	To:
conform-F	Force Backdraft Conform to install new fonts that you added to the directory <i>/usr/lib/DPS/outline/base</i> (and <i>/usr/lib/DPS/AFM</i> if you have also installed the corresponding font metric file).

Type:	To:
conform-B	Prevent the broadcast monitor from blanking when an image viewer or Player is not displayed. The broadcast monitor then displays the screen content that is displayed in the corresponding region. This option is hardware dependent and may not work on all hardware configurations.
conform-L	Disable writing to the <i>.log</i> file. Backdraft Conform keeps a log file of your actions in a text file (<i>.log</i>) in your Backdraft Conform home directory. Usually this file is cleared and recreated every time Backdraft Conform is started. (Note that the log file is useful when reporting problems to Customer Support.)
conform-l	Append the current session to the existing log file. (See description of the log file above.)
conform-M	Define the amount of memory assigned to frame buffering. This option overrides the default settings, or if it has been uncommen- ted, the value set by the MemoryApplication keyword in the file <i>init.cfg</i> .
conform-p <n>	On multi-processor machines, start Backdraft Conform using less than the full array of processors, where <n> is the number of processors to be used. Normally, Backdraft Conform uses all available processors.
conform-f <filename>	Use a custom menu file, where <filename> is the name of the menu file. For information on custom menus, see Creating Custom Menus on page 514.
conform-Z	Starts Backdraft Conform and skips the integrity check.

Exiting Backdraft Conform

Click the Exit command in the Preferences menu to exit the current work session and save the status of the EditDesk and current menu preferences. Alternatively, press **Alt+F12** from any menu and confirm.

Initialising the Tablet

If you use the pen and tablet while the application is starting, the tablet will fail to initialise. Press **Shift+T+Insert** to initialise the tablet if it does not function during a work session.

Killing Processes

If Backdraft Conform hangs but you can still interact with the operating system, you must use either the kill alias defined in the Backdraft Conform `.cshrc` file or the **kill** command in conjunction with the individual process IDs.

WARNING These kill procedures should not be used to exit Backdraft Conform unless the application is hung or otherwise not responding. Killing processes indiscriminately can cause system problems. Under normal conditions, you should use one of the exit procedures described in [Exiting Backdraft Conform](#) on page 612.

Killing All Backdraft Conform-Related Processes

The `.cshrc` file that comes with your Backdraft Conform system contains the alias **kc** which can be used to kill all Backdraft Conform processes at once.

To kill all Backdraft Conform-related processes:

- In a shell, type **kc**.

To verify that all Backdraft Conform-related processes have been killed:

- Type **ps -fu <conform account name>**.

This command displays information about all active processes, including the application with which each process is associated, and a process ID number. If all Backdraft Conform processes have been successfully killed, this command should return no results.

Never restart Backdraft Conform if there are still Backdraft Conform processes left over from a previous session. If some Backdraft Conform processes persist after using the kill alias, you must kill them independently.

Killing Processes Individually

Use the **kill** command to kill processes individually, using their process ID number.

To use the kill command to kill processes individually:

- 1 Press **Alt+F3** to send Backdraft Conform to the background.
- 2 Open a shell.
- 3 At the command line in the shell, type:

```
ps -fu <conform account name>
```

This command displays information about all active processes, including the application with which each process is associated, and a process ID number.

- 4 Determine the process ID number for Backdraft Conform.
- 5 At the command line, type:

```
kill <process number>
```

where <process number> is the process number you determined in step 4. This command terminates the Backdraft Conform process that is currently executing.

NOTE There may be more than one Backdraft Conform process running at any time. For example, there may be one process per CPU, plus some additional processes to manage the framestore. You should kill each of these processes.

You can now restart Backdraft Conform.

Part 6: Conforming

Part 6 includes these chapters:

- [Conforming Overview](#) on page 617
- [Importing EDL Files](#) on page 621
- [Creating and Editing EDL Files](#) on page 651
- [Capturing and Importing Media Using EDLs](#) on page 679
- [Unlinking and Relinking Media and Clips](#) on page 695
- [Exporting EDLs](#) on page 721
- [Timecode and Keycode](#) on page 731
- [Importing Final Cut Pro XML](#) on page 759
- [Importing Subtitle XML](#) on page 797
- [Importing AAF Files](#) on page 813
- [Importing and Exporting OMF Files](#) on page 839



Image courtesy of efe-X

Topics in this chapter:

- [About EDL Files](#) on page 617
- [Supported File Interchange Formats](#) on page 618
- [About DLEDL Files](#) on page 619
- [Working with EDLs](#) on page 619

About EDL Files

An EDL (Edit Decision List) file is a digital list of commands used to describe a series of film or video edits. It consists of an ordered list of reel, keycode, and timecode data, which represents the original location (usually video tapes or sequences of images stored on disk) of each media clip used in the edit. These media clips can later be easily obtained in order to conform the final cut. EDLs are the primary method of transferring information about an edit project between offline and online editing systems.

The most primitive EDL formats are telecine log files. Telecine log files typically describe the most basic edit decisions, which contain only tape name, clip name, source timecode, keycode, and whether 2:3 pulldown was used.

Standard EDL formats, such as CMX3600, support basic functions, such as cuts, dissolves, SMPTE wipes, speed variations (including freeze frames), and direction

changes (Forward/Reverse). EDL comments, clip names, and audio patching comments are also supported.

OMF®, AAF, and FCP XML file formats are more modern, enhanced formats of EDLs, supporting multiple layers of video and audio, as well as an expanded set of transitions and effects. Some may include embedded audio.

Collectively, all these formats are known as File Interchange® Formats, but they are still commonly referred to as EDLs.

Supported File Interchange Formats

Backdraft Conform supports the Telecine Log, Standard EDL, and Enhanced EDL formats as follows:

Telecine Log Formats

The following telecine log file types are supported by Backdraft Conform:

- FLX (Flex)
- ATN (AATON)
- TLC (Telecine Log Converter)
- ALE (Avid® Log Exchange)

NOTE ALE files also support the basic functions of other EDL types.

Standard EDL Formats

The following Standard EDL formats are supported by Backdraft Conform:

■ CMX 340	■ SONY™ 910
■ CMX 3600	■ SONY 5000
■ CMX OMNI (ASCII version)	■ SONY 9000
■ GVG 4	■ SONY 9000 Plus (v2.21 or higher)
■ GVG 4 Plus (v4.1 or higher)	■ SONY 9100
■ SONY 900	■ ALE (Avid Log Exchange)
■ EDM (edit)	

NOTE It is recommended that you use EDLs in the CMX 3600 format.

Enhanced EDL Formats

The following enhanced EDL formats are supported by Backdraft Conform:

- Open Media Framework® (OMF) Interchange® files. See [Importing and Exporting OMF Files](#) on page 839.
- Advanced Authoring Format (AAF) files. See [Importing AAF Files](#) on page 813.
- Final Cut Pro® (FCP) XML files. See [Importing Final Cut Pro XML](#) on page 759.
- Subtitle XML. See [Importing Subtitle XML](#) on page 797.

About DLEDL Files

A DLEDL is an EDL file based on the CMX 3600 format supported by most digital nonlinear editing systems. DLEDLs are unique to Autodesk Visual Effects and Finishing applications and contain extra comments that are interpreted by Backdraft Conform.

Using DLEDLs in your post-production workflow allows you to automate the import of media files (video and audio) residing in different locations. Instead of performing media import for each file separately, you can use a DLEDL to import all media files in a single operation, which allows you to significantly save processing time. See [Creating and Editing EDL Files](#) on page 651.

Working with EDLs

Typically, when working on media projects, you receive offline EDLs from which you capture, or import, and then assemble your clips for the finishing process. You may also edit an EDL and export it as another format.

Importing EDLs

You can import EDLs in any standard format, including telecine logs, standard EDLs, or enhanced EDLs, into Backdraft Conform. In many cases, the EDLs

point to material that matches your project's default resolution. However, because Backdraft Conform provides a mixed resolution environment, you can also use EDL tools to capture and assemble clips of any resolution within the same project. You can also use EDL conversion tools to convert EDLs from one video standard to another. For example, you can convert an offline NTSC EDL to an HD 59.97 format and then capture the full-resolution sources for finishing. See [Importing EDL Files](#) on page 621.

Editing EDLs

You can import EDLs in any standard format and edit them while dynamically seeing your changes. You may include DLEDL flags in the event comments that reference the location and name of file-based media for multiple file import. See [Creating and Editing EDL Files](#) on page 651.

Capturing and Importing Media Using EDLs

You can use an EDL to reconstruct a work session created in an offline editing system. You can use an EDL to capture image or audio media from a VTR into Backdraft Conform, or to import (or soft-import) media files from a standard filesystem into Backdraft Conform. See [Capturing and Importing Media Using EDLs](#) on page 679.

Exporting EDLs

You can also export EDL-based projects in cases where you need to perform some processing in another application, or for the purpose of archiving. In the process of outputting an EDL, you actually output the media used to build a clip to the clip library or to a VTR. This is useful for quickly dumping source clips onto a tape. You can also output an EDL in order to conform a program on another system, for example, to perform the final colour grading. See [Exporting EDLs](#) on page 721.

Timecode and Keycode

An integral component of EDLs is timecode and keycode. These are the identification markers by which your media is referenced in an EDL. Timecode and keycode can be imported with the material, assigned, changed, burned-in, or removed. See [Timecode and Keycode](#) on page 731.

Importing EDL Files

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Topics in this chapter:

- [About Importing EDL Files](#) on page 621
- [About the Import EDL Menu](#) on page 622
- [About the Load EDL Menu](#) on page 634
- [Importing EDLs](#) on page 636
- [Importing EDLs at Non-Native Frame Rates](#) on page 638
- [Importing EDLs with Varicam Information](#) on page 638
- [Converting EDLs](#) on page 640
- [Loading File-based EDLs](#) on page 641
- [Searching EDLs](#) on page 647
- [Closing EDLs](#) on page 648

About Importing EDL Files

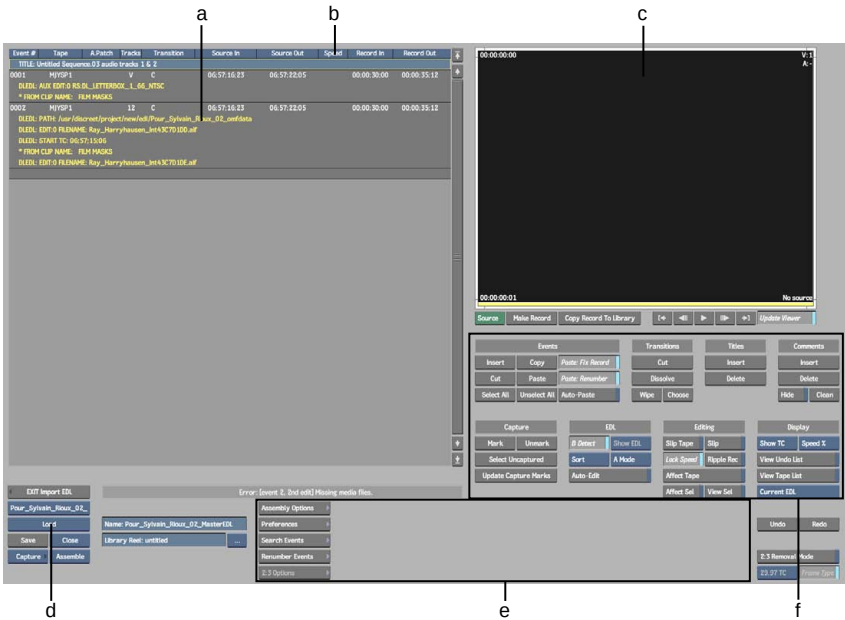
Use an EDL to reconstruct a work session created in an offline editing system or to import image sequences from a standard filesystem. Typically, when recreating a project from an interchange file such as an EDL (referred to as conforming an EDL), you import the file, capture the material or import the referenced files, and then assemble the captured or imported material into a clip on a destination library reel.

This chapter covers the import of standard EDLs and telecine log files. Other file interchange formats are covered as follows:

- Final Cut Pro® (FCP) XML files. See [Importing Final Cut Pro XML](#) on page 759.
- Advanced Authoring Format (AAF) files. See [Importing AAF Files](#) on page 813.
- Open Media Framework® (OMF) Interchange files. See [Importing and Exporting OMF Files](#) on page 839.
- Subtitle XML. See [Importing Subtitle XML](#) on page 797.

About the Import EDL Menu

Use the Import EDL menu to create, import, edit, auto-capture, assemble, and save EDLs.



(a) EDL work area (b) Work area column headers (c) EDL Player (d) Load button
(e) Import EDL menus (f) EDL editing tools

The EDL work area is divided into 12 columns.

Event # The event number, followed by a capture indicator.

Tape The name of the tape containing the source clip.

A. Patch The Audio Patch information.

Tracks The track for the edit (shown as a combination of: V, 1, 2, 3, 4, 5, 6, 7, 8).

Transition The type of transition between the clips: C for cuts, D <duration> for dissolves, and W <wipe code> <duration> for SMPTE wipes.

Source In The starting timecode of the element in the source clip.

Source Out The ending timecode of the element in the source clip. (**Ctrl-click** the heading to view Source duration.)

Keycode In The starting keycode of the element in the source clip.

Keycode Out The ending keycode of the element in the source clip.

Speed The speed at which the source clip is timewarped in the edit. The value is preceded by a negative sign if the effect is a reverse. The column is blank if the speed value is 100% (no timewarp).

Record In The starting timecode of the element in the result clip.

Record Out The ending timecode of the element in the result clip. (**Ctrl-click** the heading to view Record duration.)

NOTE The EDL file may contain more than one page of entries. To see all the events in the EDL, use the scroll bar to scroll up or down the list.

Operations Group

The Operations group contains the commands that allow you to import an EDL.



(a) File Name field

File Name box Select a previously loaded EDL file to display in the EDL work area.

Load button Opens the Load EDL menu where you set options for loading EDLs.

Save button Opens the Save EDL menu where you set options for saving EDLs.

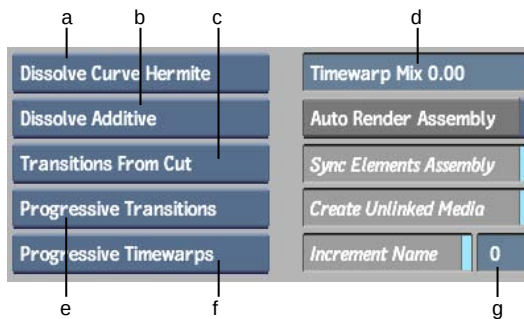
Capture button Opens the Auto-Capture menu where you capture media from a VTR using an EDL.

Close box Select Close to close the currently displayed EDL file, or Close All to close all EDL files.

Assemble box Select Assemble to combine the captured or imported material into a clip on a destination library reel. Select M-Assemble to combine multiple EDLs into a multitrack clip.

Assembly Options Menu

The Assembly Options menu contains options that you can set that affect EDL assembly.



(a) Dissolve Curves box (b) Dissolve Type box (c) Transitions Alignment box
 (d) Timewarp Mix field (e) Transition Render Option box (f) Timewarp Render Option box (g) Increment field

Dissolve Curves box Select the type of interpolation to use for all dissolves.

Select:	To:
Dissolve Curves as in Prefs	Use the interpolation mode set in the Preferences menu.
Dissolve Curves Linear	Create dissolves with linear interpolation curves.
Dissolve Curves Hermite	Create dissolves with hermite interpolation curves.

Dissolve Type box Select a rendering option for dissolves during EDL assembly.

Select:	To:
Dissolve Additive	Render dissolves as additive.
Dissolve Non Additive	Render dissolves as non additive.
Dissolve Inv Non Additive	Render dissolves as inverse non additive.

Transitions Alignment box Select an option for the placement of transitions in assembled EDLs.

Select:	To:
Transitions From Cut	Align transitions after the cut.
Transitions Centred	Centre transitions on the cut.

Select:	To:
Transitions Up To Cut	Align transitions before the cut.

Transition Render Option box Select the rendering mode for transitions in assembled EDLs.

Select:	To:
Interlaced Transitions	Override the Preferences settings and render transitions in Interlaced mode.
Progressive Transitions	Override the Preferences settings and render transitions in Progressive mode.
Render Trans. as in Prefs	Use the Preferences settings.

Timewarp Render Option box Select an option for the rendering mode for timewarps in assembled EDL.

Select:	To:
Progressive Timewarps	Override the Preferences settings and render timewarps in Progressive mode.
Interlaced TW, No Interp	Override the Preferences settings and render timewarps in Interlaced mode with no interpolation.
Interlaced TW, Half Interp	Override the Preferences settings and render timewarps in Interlaced mode with half interpolation.
Interlaced TW, Full Interp	Override the Preferences settings and render timewarps in Interlaced mode with full interpolation.
Render TW as in Prefs	Use the Preferences settings.

Timewarp Mix field Enter the mix value for assembled timewarps. You can enter any value from 0.00 to 1000.00.

Auto Render Assembly button Enable to render transitions and timewarps when you assemble the final clip.

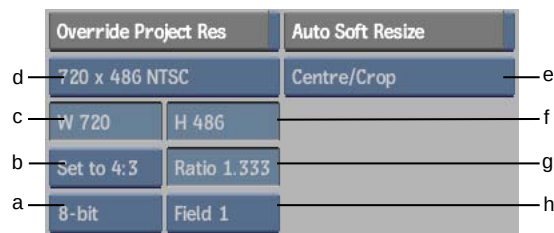
Sync Elements Assembly button Enable to automatically create Edit Sync groups for video and audio tracks that share the same timecode. See [Creating Edit Sync Groups for Multiple Video Tracks](#) on page 903.

Create Unlinked Media button Enable to assemble an EDL, even if you do not have all the sources and, later, use the Recapture/Relink media feature to bring the missing media into your work-in-progress timeline clip.

When you disable this option, you get virtual sources with no indication of source timecode and tape name for the events when no recapture media exists for an event.

Increment Name button Enable to increment the assembled clip name (when assembling the same clip multiple times).

Increment field Enter a number by which the name is incremented. Active only when the Increment Name button is enabled.



(a) Frame Depth box (b) Aspect Ratio Presets box (c) Frame Width field (d) Resolution Presets box (e) Fit Method box (f) Frame Height field (g) Aspect Ratio field (h) Scan Mode box

Override Project Resolution button Enable to assemble pre-captured material of a different resolution than your project's default resolution. Additional controls become active that you use to specify the resolution options for assembly.

During assembly, the system searches the specified library reel for matching media. For media to match an event during EDL assembly, all the specified parameters must be the same (including frame rate, resolution, bit depth, and so on). When a match occurs for an event, the event is marked as captured.

By default, Override Project Resolution is disabled and the project's default resolution is used when matching EDL events to pre-captured media.

NOTE If an EDL refers to a clip that has the same tape name and timecode but is of a different resolution than the default resolution or that of the first matched event, the clip will not be marked as captured. For example, if you are assembling an NTSC EDL and the EDL refers to a captured HD clip with the same tape name and timecode, the HD clip will not be marked as captured.

Resolution Presets box Select one of many standard resolutions, as well as a Custom option that you can use to specify non-standard resolutions.

Auto Soft Resize button Enable to apply a soft resize when assembling any clip that was captured at a resolution that differs from the native project resolution. Options become active that allow you to specify how the soft resize should be applied.

Fit Method box Select a fit method option to be applied to the imported clip.

Select:	To:
Centre/Crop	Fit the source image, centred, over the destination frame. If the source is larger than the destination, it is cropped. If the source is smaller than the destination, it is surrounded by a black border.
Crop Edges	Fit one edge of the source into the destination frame without stretching or squashing the frame. Excess parts of the source frame after resizing are cropped. If the source—after the one edge is resized—is wider than the destination, its overhanging left and right edges are cropped. If the source is taller than the destination, the upper and lower edges are cropped.
Fill	Fit the source, width and height, into the destination frame. If the source and destination frames do not have the same aspect ratio, the image can become distorted.
Letterbox	Fit the source to the destination frame without squashing or stretching it, and without cropping the source. If the source is wider than the destination, black bars fill the top and bottom of the destination frame. If the source is narrower than the destination, black bars fill the right and left sides of the frame. In all cases, the entire source frame is contained within the destination frame.

Frame Width field Displays the frame width of the selected resolution preset. If Resolution Presets is set to Custom then this field is active, allowing you to enter the frame width value that you want to use.

Aspect Ratio Presets box Select a standard frame aspect ratio. Select the Set to w:h option to set the clip to use square pixels. Select Custom to define a custom frame aspect ratio in the Aspect Ratio field.

Frame Depth box Select from one of five frame depth options: 8-bit, 10-bit, 12-bit, 12-bit u, or 16-bit fp.

Frame Height field Displays the frame height of the selected resolution preset. If Resolution Presets is set to Custom then this field is active, allowing you to enter the frame height value that you want to use.

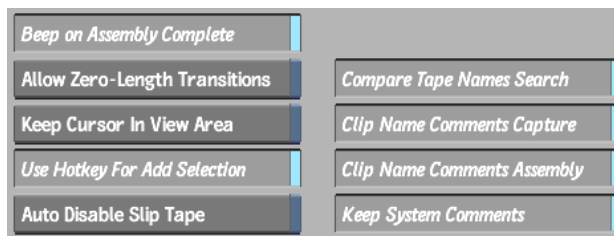
Aspect Ratio field Displays the aspect ratio of the imported clip. When Aspect Ratio Presets is set to Custom, this field becomes active so that you can enter a custom frame aspect ratio.

Scan Mode box Select an option to determine the order in which the fields of interlaced material are scanned.

Select:	To:
Progressive	Scan a frame-based clip with no interlacing.
Field 1	Scan Field 1 first, followed by Field 2.
Field 2	Scan Field 2 first, followed by Field 1.

Preferences Menu

Use the options in the Preferences menu to specify your EDL preferences.



Beep on Assembly Complete button Enable to hear an audible tone when the EDL is assembled.

Allow Zero-Length Transitions button Enable to allow zero-length wipes and dissolves. If this option is disabled and you change a transition duration to zero, the transition automatically becomes a cut.

Keep Cursor In View Area button Enable to keep the cursor from leaving the window when you scroll an EDL. When you scroll an EDL, the cursor will stop at the first or last event on the EDL page.

Compare Tape Names Search button Disable to ignore tape names during assembly.

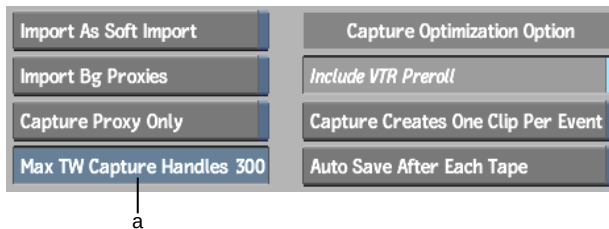
Clip Name Comments Capture button If your events contain clip names in their comments, enable this option to use those names during capture. If this option is disabled, the event number is used as the captured shot's name.

Use Hotkey For Add Selection button Use to change the functionality of selecting events. When this option is disabled, you add to your selection range by clicking the events. When this option is enabled, you must hold the **Ctrl** key or the pen button while clicking events to add them to your selection range.

Auto Disable Slip Tape button By default, the Slip Tape option remains enabled after you slip sources. Enable this option to disable the Slip Tape option automatically after you slip sources.

Clip Name Comments Assembly button If your events contain clip names in their comments, enable this option to use those names during assembly. If this option is disabled, the EDL title is used as the assembled clip's name.

Keep System Comments button Use the Keep System Comments option to protect system comments. When enabled, you can only delete user comments.



(a) Max TW Capture Handles field

Import As Soft Import button Enable to soft-import files with a file-based EDL that are located on a standard filesystem. If you disable this option, the files are hard-imported.

Import Background Proxies button Enable to allow proxies to be generated in the background.

Include VTR Preroll button Enable to capture the events in one pass and store them as individual clips in the clip library. By default, if events in an EDL are separated by a shorter duration than the VTR preroll and more than 10 frames, they are captured in a single pass.

Capture Proxy Only button Use this option in HD projects to auto-capture proxies only when conforming an EDL. This option does not appear in SD projects.

Max TW Capture Handles field You can set the maximum number of handles to be captured for source clips that are part of timewarped events. On timewarped events, the capture handles value is equal to the capture handles value multiplied by the speed of the timewarp. For example, for an EDL event

with an increased speed of 500% (in NTSC), if the capture handles are set to 30 frames, 150 frames are captured as handles (30 frames multiplied by 5).

Standard handles may not be enough in the case of high-speed timewarps.

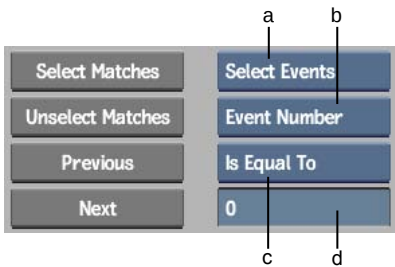
Capture Creates One Clip Per Event button Enable to create a clip in the clip library for every event in the EDL. When disabled, a single clip is created in the library for each group of events captured during the same pass. You can assemble the montage regardless of which option you chose to store EDL events in the clip library.

To reduce the size of clip libraries, you should disable this feature. However, if you need to reference back to individual shots, they may be easier to find if you enable the option and generate a clip for every event.

Auto Save After Each Tape button When this option is enabled, the system performs an AutoSave between each tape when auto-capturing.

Search Events Menu

Use the Search Events menu to search entries for text or timecode in an EDL. When you search the EDL, you need to specify the item you want to search, the filter type you want to use, and the criteria for which you want to search.



(a) Select Item box (b) Search Item box (c) Filter Type box (d) Search Criteria field

Select Matches button Highlight all items that match the search criteria.

Unselect Matches button Remove the highlight from all items that match the search criteria.

Select Item box Select the option that you want to search for.

Select:	To highlight:
Select Events	All events that match the search criteria.

Select:	To highlight:
Select Edits	All edits that match the search criteria.

Search Item box Specify the item that you want to search for in the EDL.

Select:	To search for:
Event Number	Event numbers.
Tape	Tape names.
Transition Length	A specific transition duration.
Source In	A source in timecode.
Source Out	A source out timecode.
Speed	A specific timewarp speed.
Record In	A record in timecode.
Record Out	A record out timecode.
Comment	A comment or text within a comment.
Track	A track.

Previous button Move the cursor to the previous item that matches the search criteria.

Next button Move the cursor to the next item that matches the search criteria.

Filter Type box Specify the filter type. The filter type will differ depending on the item you are searching. For numerical searches, select one of the following options from the Filter Type box.

Select:	To find:
Is Equal to	All event numbers that match your search criteria.
Is Not Equal to	All event numbers that do not match your search criteria.
Is Less Than	All event numbers that are less than your search criteria.
Is Greater Than	All event numbers that are greater than your search criteria.

For alphabetical searches, select one of the following options from the Filter Type box.

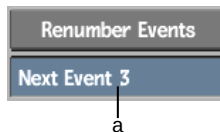
Select:	To search:
Matches	For all tapes that match your search criteria.
Does Not Match	For all tapes that do not match your search criteria.
Contains	For all tapes that contain your search criteria.
Does Not Contain	For all tapes that do not contain your search criteria.
Is Less Than	For all tapes lexicographically less than your search criteria.
Is Greater Than	For all tapes lexicographically greater than your search criteria.

Alphabetical searches are performed on Tape and Comment items by default. To perform a numeric search on these items, enable Treat As Numeric. To match results by case, enable Case Sensitive.

Search Criteria field Enter the search criteria.

Renumber Events Menu

Use the options in the Renumber Events menu to specify the value by which events are renumbered.



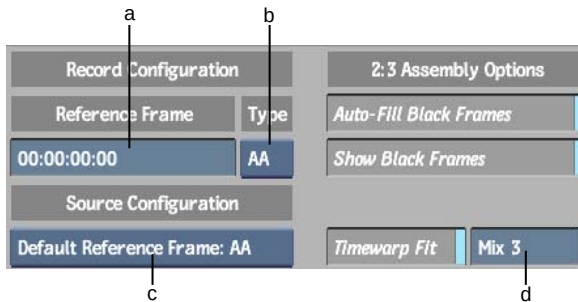
(a) Next Event field

Renumber Events button Renumbers the selected events according to the value specified in the Next Event field.

Next Event field Enter a value for the next event.

2:3 Pulldown Options Menu

Use the 2:3 Pulldown Options menu to set the parameters for 2:3 pulldown insertion upon import.



(a) Reference Frame field (b) Reference Frame Type box (c) Default Reference Frame box (d) Mix field

Reference Frame field Enter the timecode for the reference frame. This is only required for clips stored as files, and not for material on tapes.

Reference Frame Type box Set the reference frame type: AA or BB, corresponding to the timecode value entered in the Reference Frame field.

Auto-Fill Black Frames button Enable to fill black frames with the last frame of the outgoing event. By default, gaps occurring between EDL events are filled with black frames.

Default Reference Frame box Select AA or BB.

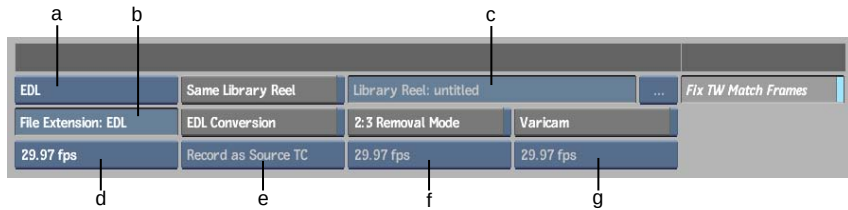
Show Black Frames button Enable to highlight the places in the currently loaded EDLs where gaps of black frames occur.

Timewarp Fit button Enable to automatically apply a timewarp to material on tapes referenced by EDLs where 2:3 pulldown removal was disabled (for example, when a tape contains native 30 fps interlaced video material), so that it can be easily integrated with 24 fps material.

Mix field Enter the number of frames to ensure that match frames on timewarped elements are maintained. This field is active when Timewarp Fit is enabled.

About the Load EDL Menu

Use the Load EDL menu to set a variety of options when loading EDLs.



(a) EDL Type box (b) File Extension field (c) File Name field (d) EDL Frame Rate box
(e) Conversion option box (f) Frame Code Mode box (g) Varicam Frame Rate box

Exit Load EDL button Exits the Load EDL menu.

EDL Type box Select an EDL type to load. Available options are: ALE, FLX, ATN, TLC, EDM, R23, ETL, and OMF.

File Extension field Displays the file extension for the associated file type. Click to enter a new one.

Same Library Reel button Enable to load a series of EDLs, capture the EDLs, and assemble them on the same reel in the clip library. When you are capturing an EDL and you enable Multi-assemble, only the EDLs that are set to the same library reel are captured.

EDL Conversion button Enable to convert the EDL to another frame rate. See [Converting EDLs](#) on page 640.

File Name field Enter a filename.

2:3 Removal Mode button Enable to remove pulldown when loading the EDL. See [Pulldown](#) on page 1133.

Varicam button Enable if the EDL is used to capture material shot with Varicam.

Fix TW Match Frames button Enable to fix match frame errors. When you import an EDL that contains dissolves or timewarps, a match frame error may occur. This can cause an unwanted cut at the point where the timewarp begins in your EDL. Match frame errors occur when the in point of the second edit in a dissolve is not the same timecode as the out point of the previous shot. This feature is enabled by default.

EDL Frame Rate box Displays the framerate of the current EDL. Click to select another one.

Conversion option box Select the option that corresponds to the type of conversion that you want to apply to the EDL. The conversion scripts that appear in this list depend on the frame rate of the EDL you are loading.

Frame Code Mode box Select the option (29.97 fps or 30 fps) that corresponds to the EDLs that you are loading. If you are loading multiple EDLs, the same Frame Code Mode is used for all of them.

Varicam Frame Rate box Select the Varicam frame rate.

Importing EDLs

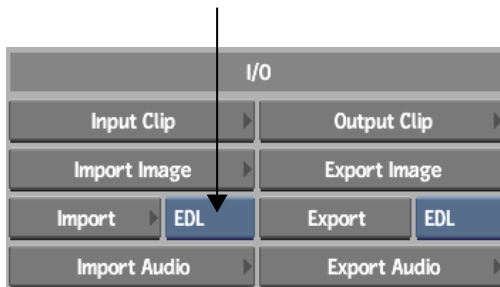
You can import as many EDLs as you want simultaneously. However, the EDL module displays only one EDL at a time. When you import an EDL, you have the option of converting the EDL to another frame rate, removing pulldown, and fixing timewarp errors. You can also import EDLs that reference material shot with Varicam. Since you can work in multiple resolutions in Backdraft Conform, you also have the option of importing an EDL at a non-native project frame rate.

In addition to EDLs, you can import ALE, FLX, ATN, TLC, OMF, and EDM files into the EDL module.

Use DLEDLs where you need to import multiple media files in a single pass. Using DLEDLs in your post-production workflow allows you to automate the import of media files (video and audio) residing in different locations. Instead of performing media import for each file separately, you can create a DLEDL and import all media files in a single operation, which allows you to significantly save processing time.

To import an EDL:

- 1 In the clip library, from the Interchange Format box, select EDL.



- 2 Click Import.
- 3 In the Import EDL menu, click Load.
The file browser and the Load EDL menu appear.

- 4 Select the type of file that you want to import from the EDL Type box.

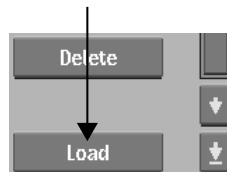


Files of the selected type appear in the file browser.

- 5 Set any options, such as Same Library Reel, EDL Conversion, 2:3 Removal Mode, Fix TW Match Frames, or Varicam. See [About the Import EDL Menu](#) on page 622.
- 6 From the file browser, select the file to load.

TIP To load multiple EDLs, hold **Ctrl** and select the EDLs.

- 7 Click Load.



The Import EDL menu reappears.

- 8 To toggle the display between timecode and keycode, click the Timecode/Keycode button. Keycode will only be displayed if it is present and correctly corresponds to the timecode for events. If there is no keycode data for a particular event, timecode is displayed.

Event #	Tape	A.Patch	Tracks	Transition	Keycode In	Keycode Out	Speed	Record In	Record Out
TITLE: 001									
0001	002		V	C	03:59:59:14	03:59:59:29		00:00:00:00	00:00:00:15
0002	002		V	C	KK248181 6659+03 KK248181 6660+14			00:00:00:15	00:00:01:25
0003	002		V	C	KK248181 6660+14 KK248181 6676+09			00:00:01:25	00:00:15:25
0004	002		V	C	FN723405 8172+12 FN723405 8193+08			00:00:15:25	00:00:34:10

- (a) Keycode for events (b) Keycode In column (c) Keycode Out column
(d) Timecode for event with missing keycode

- 9 Switch between the currently open EDLs by selecting the EDL that you want to view from the EDL box.

Importing EDLs at Non-Native Frame Rates

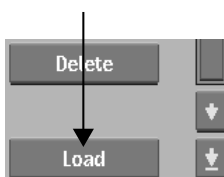
You can load any EDL into your project, regardless of the frame rate of the imported EDL. Once the EDL is loaded, you can assemble it into a clip. For the system to recognize the media from a non-native frame rate EDL and mark it as captured, the Override Project Resolution button must be enabled before assembling. See [Assembly Options Menu](#) on page 624.

To import a non-native frame rate EDL into a project:

- 1 In the Editing menu, from the Interchange Format box, select EDL, then click Import.
- 2 In the Import EDL menu, click Load.
- 3 In the EDL Load menu, select the frame rate of the EDL you are importing.



- 4 In the file browser, select the EDLs that you want to load.
- 5 Click Load.



Importing EDLs with Varicam Information

Varicam is a type of camera that can record material to tape at different frame rates, even though the tape always runs at 60p. Frames are recorded to tape in such a way that Backdraft Conform can decode them into a supported frame rate on capture.

Backdraft Conform removes the redundant frames so that the frame rate of the captured clip corresponds to the frame rate of the project. You can monitor the process using the VTR Status display. The Current Frame Rate field is

updated depending on the frame rate of the captured material. Upon loading, the EDL will be converted to the correct Timecode.

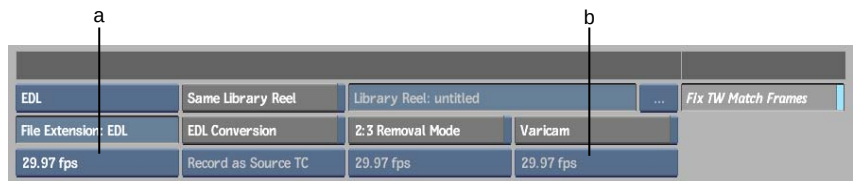
You can import EDLs that reference material shot on Varicam, but note the following:

- You should use a Varicam project template when importing Varicam material so that the imported clips will have the proper frame code mode and timing. To enable Varicam project templates, the corresponding 1280X720p VideoPreviewDevice keyword must be defined in the *init.cfg* file. See the *Autodesk Visual Effects and Finishing Configuration File Reference Guide*.
- EDLs that reference media shot on Varicam at unsupported frame rates (referred to as “off speed”) cannot be properly recaptured. Instead, you can use the Panasonic® Frame Rate Converter to convert media to a supported frame rate before you perform the offline.
- You cannot use Varicam in conjunction with 2:3 Removal Mode or EDL Conversion.

You can import EDLs, FCP XML, and AAF files that reference tape-based media shot on Varicam.

To load an EDL with Varicam media:

- 1 From the Import EDL menu, click Load.
The Load EDL menu appears.



(a) EDL Frame Rate box (b) Varicam Frame Rate box

- 2 Select an EDL file with Varicam information.
- 3 Enable the Varicam button.
The EDL Conversion and 2:3 Removal Mode buttons are disabled.
- 4 Select the Varicam frame rate.

The Varicam Frame Rate box only includes the frame rates that can be used: 23.976, 24, 29.97, 30, 59.94, and 60 fps.

- 5 Select the EDL frame rate.

When Varicam is enabled, the EDL Frame Rate box only includes the frame rates that can be used: 23.976, 24, 29.97, 30, 59.94, and 60 fps.

- 6 Click Load.

The EDL with Varicam media is loaded into the Import EDL menu.

- 7 From the Show Timecode box, select Show VC to display the Varicam timecode in the EDL work area.

The timecode of events on the Varicam tapes is displayed in the EDL work area. This timecode is set at 30 fps, even though Varicam tapes contain 60 fps progressive media.

Converting EDLs

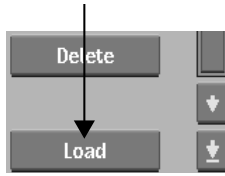
Use the EDL conversion utility to convert an EDL from one frame rate to an EDL of another frame rate. The available conversion scripts depend on the frame rate of the original EDL.

To convert the EDL to the correct format when loaded:

- 1 If necessary, disable the Varicam button.
- 2 In the Load EDL menu, select an EDL, and then enable EDL Conversion.
- 3 In the Conversion option box, select the option that corresponds to the type of conversion you want to apply to the EDL. The conversion scripts that appear in this list depend on the frame rate of the EDL you are loading.



- 4 Click Load to convert and load the EDL.



Depending on the option you select, all timecodes in the EDL are recalculated, and a suffix (such as _60p or _24p) is added to the EDL in the EDL list.

You can also use the EDL Conversion tool to use the Record Timecode as Source Timecode and to capture one tape for the whole show. The original tape names will get converted to comments that you could filter on the EditDesk to apply soft effects on.

Loading File-based EDLs

A file-based EDL is a type of log file that you use to import (or soft import) image sequences from a standard filesystem. File-based EDLs can include image files and audio files. Telecine logs can only include image files.

All EDLs contain event numbers, cuts, and timecode. A file-based EDL differs from a standard EDL in that it contains comments that point to the location of media files. Generally, you do not assemble a file-based EDL into a record timeline clip. An exception is FCP XML files created during offline sessions. See [Importing Final Cut Pro XML](#) on page 764.

You load a file-based EDL in the same way that you load a standard EDL.

You can use the EDL module to import telecine logs. When you load a telecine log from the EDL module, only the following information is imported:

- Tape name
- Clip name
- Source timecode
- Keycode
- 2:3 pulldown removal information (whether there is 2:3 pulldown, the reference frame timecode, the reference type, and the drop frame reference timecode)

A file-based EDL correlates the timecode from tapes to keycode from film reels for one or more contiguous clips. The timecode reflects where on the tape clips were recorded during a telecine or offline edit session. The keycode indicates the source reel and frames of film where the clips originated from.

As well, using these files, you can recapture material from tape with pulldown removal because the pulldown phase is indicated for each sequence.

The other elements contained in the file, such as audio information, are disregarded.

Loading ALE Files

You can load Avid® Log Exchange (ALE) files into the EDL module. The source information from the ALE file is extracted to create the EDL.

ALE files do not reflect a full editing session because they do not contain record timecodes. When the ALE file is imported into the EDL module, it is assigned record timecodes automatically, starting with the default start record timecode specified in the Preferences menu.

NOTE If you are working in NTSC, the record timecode is added in drop-frame mode.

ALE files must contain the following three sections:

- Heading
- Column
- Data

The Heading section contains information such as the video format and tape name. The Column section contains the heading names for the data, such as start timecode, end timecode, start and end keycode, and track information. The Data section contains the data for the file, such as timecode, name, and track information.

Each column of data in the ALE file must be separated by a tab. The Column headings can appear in any order as long as the column data appears below the correct heading.

To be converted to an EDL file, the ALE file must have the following data.

Entry	Required Syntax
Heading	VIDEO_FORMAT <format> where <format> is NTSC or PAL
Column	Start
Column	End

NOTE If any of the above syntax is missing, it is not a valid ALE file and will be rejected.

The following optional data will be recognized and used if present.

Entry	Required Syntax
Heading	Tape <tapename> where <tapename> is a global tape name
Column	Name
Column data	<clipname> where <clipname> is the name for a clip NOTE This is added to the EDL Comment field starting with "From Clip Name"
Column	Tape
Column data	Tape <tapename> where <tapename> is the tape name for the event NOTE If the ALE file also contains a global tape name, the global tape name is ignored.
Column	Tracks
Column data	VA1A2

If no Tape token is present, the tape will be named 001. If Name is missing, no name will be given to clips. If Tracks is missing, all events are assigned to V.

The following is an example of a valid ALE file:

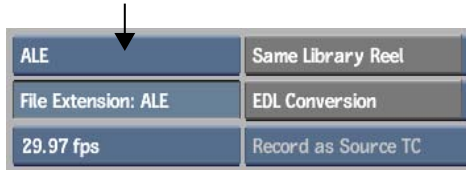
Heading

VIDEO_FORMAT	NTSC
TAPE	001

Column				
Name	Start	End	Tracks	Tape Data
Clip 1	10;03;05;01	10;04;06;19	VA1A2	003
Clip 2	10;06;08;23	11;09;25;29	V	

To load an ALE file:

- 1 In the clip library, click Import EDL.
- 2 In the Import EDL menu, click Load.
- 3 From the EDL Type box, select ALE.



- 4 Use the file browser to go to the directory that contains the ALE file.
- 5 Select the ALE file that you want to translate.
If it is a valid ALE file, it is loaded into the EDL module. If it is not a valid ALE file, an error message appears in the message bar.

Loading FLX, ATN, and TLC Files

You can load FLX, ATN, or TLC telecine files into the EDL module. The source information from the files is extracted to create the EDL.

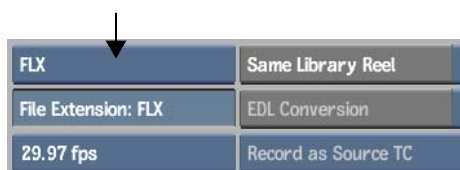
The following information is imported from the telecine log:

- Tape name
- Clip name
- Source timecode
- Keycode

- 2:3 pulldown removal information (whether there is 2:3 pulldown, the reference frame timecode, the reference type, and the drop frame reference timecode)

To load FLX, ATN, or TLC files:

- 1 In the clip library, click Import EDL.
- 2 In the Import EDL menu, click Load.
- 3 From the EDL Type box, select FLX, ATN, or TLC.



- 4 Use the file browser to go to the directory that contains the FLX, ATN, or TLC file.
- 5 Select the file that you want to translate.
If it is a valid file, it is loaded into the EDL module. If it is not a valid file, an error message appears in the message bar.

Loading EDM Files

You can import EDLs and setup information into your projects using EDM and AUX files exported from edit 6.0 (or later). You only need to import the EDM file—the AUX files are read automatically during the import of the EDM file. The EDM and AUX files must be located in the same directory.

When you first import the EDM file, each edit Video track and Sub-Timeline is a separate EDL. To work with the imported EDLs, you must multi-assemble them into one master EDL, applying the Convert EDM and Assemble Selected EDLs commands. This allows you to capture all the associated material at the same time.

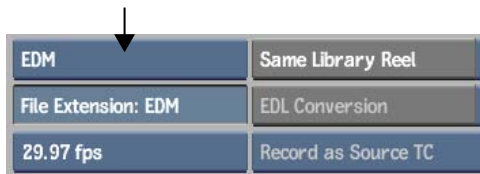
When you assemble the EDLs, the associated Video tracks are converted into layers, Audio tracks are converted into audio tracks, and Sub-Timelines are converted into containers. Colour Correction, Text (Inscriber®), and other effects from Combustion are converted into setup files and associated with

the appropriate timeline element. CG Inscrber text may be imported and converted into a Text setup.

NOTE CC setups are automatically applied to the clip but Keyer and Stabilizer Setups must be loaded manually.

To import an EDM file:

- 1 In the Import EDL menu, close all open EDLs.
- 2 Click Load to display the file browser.
- 3 From the EDL Type box, select EDM.



- 4 Enable Same Library Reel.
- 5 Locate the directory containing the EDM and AUX files.
- 6 Select the EDM file that you want to import.
The EDLs included in the EDM file are loaded and the setups in the associated AUX files are converted and copied into the setup directories of the current project.
- 7 Capture the clips using the Auto-Capture menu. If multiple EDLs were imported, enable Multiple EDLs in the Auto-Capture menu. See [Auto-Capturing an EDL](#) on page 682.
- 8 Go back to the Import EDL menu and select <M-assemble> from the EDL box.
- 9 In the Multi-Assembly menu that appears, click Convert EDM.
All the EDLs belonging to the EDM file are selected and assigned to containers or layers in a track, in the order found in the original EDM file.

TIP You can specify a different order of tracks or layers by clicking the EDL in either the Track or Layer column. Clicking the Track column assigns the EDL to a new track. Clicking the Layer column assigns the EDL to a layer belonging to the highest existing track number in the set of EDLs belonging to the EDM.

The edit tracks are assembled into corresponding layers, Sub-Timelines are assembled into containers, and the setups are associated with the appropriate timeline elements.

- 10 Click Assemble Selected EDLs to assemble the clip.
- 11 Exit to the clip library.
The assembled clip appears in the library reel you specified.
- 12 Bring the assembled clip to the Record Area of the EditDesk. For information on working with the clip on the timeline, see [Navigating the Timeline](#) on page 875.

Searching EDLs

Use the Search Events menu to search entries for text or timecode in an EDL. When you search the EDL, you need to specify the item that you want to search, the filter type you want to use, and the criteria for which you want to search.

To search an EDL:

- 1 In the Import EDL menu, click Search Events.
- 2 Specify the item that you want to search for in the Search Item box. See [Search Events Menu](#) on page 631.
- 3 When you perform a search on Speed, toggle the Display Speed button to display the speed in FPS or as a percentage.
- 4 Alphabetical searches are performed on Tape and Comment items by default. To perform a numeric search on these items, enable Treat As Numeric.
- 5 Specify the filter type. The filter type will differ depending on the item you are searching.
- 6 Enter the search criteria in the Search Criteria field.

- 7 To match results by case, enable Case Sensitive.
- 8 Select the option that you want from the Select Item box.
- 9 Click Select Matches to find the items.
- 10 Use the Next and Previous buttons to navigate the selected matches.

Closing EDLs

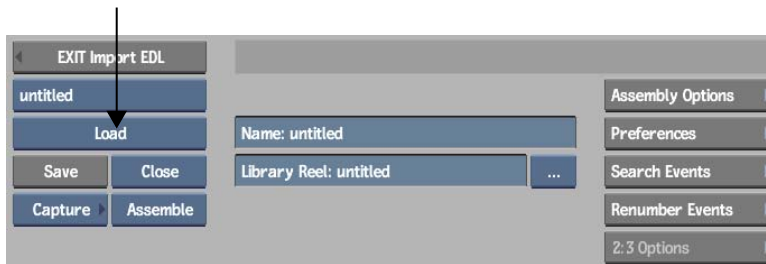
Once you open an EDL in the Import EDL menu, it remains open until you close it. You can close one or all open EDLs.

To close an EDL:

- 1 Make sure the EDL you want to close is selected in the Current EDL box.
- 2 Click Close, and then confirm the action to close the EDL.
You can also hold down the Close box and select Close All, then confirm the action to close all opened EDLs.

Reopening EDLs

After you close an EDL you can reopen it by selecting it in the History list. The History list appears when you hold down the Load button. The last four opened EDLs appear in the History list.



To reopen an EDL that was recently closed:

- Hold down the Load button, and select the EDL that you want to open.

To clear the History list:

- Hold down the Load button, and then select Clear History.

Creating and Editing EDL Files

26

Topics in this chapter:

- [About Creating and Editing EDLs](#) on page 651
- [About EDL Editing Commands](#) on page 652
- [Creating an EDL](#) on page 662
- [Editing an EDL](#) on page 663
- [Creating and Editing DLEDLs](#) on page 672
- [Saving EDLs and Tape Lists](#) on page 677

About Creating and Editing EDLs

You can create and edit EDLs. You can also save new EDLs as files or output them to tape. The Import EDL module extends these capabilities by allowing you to create and edit information in EDLs directly in the module. You can even create a blank EDL and add events, transitions, and comments. Essentially, this is similar to editing, only you are doing it without the audio-visual cues that you get on the EditDesk.

About EDL Editing Commands

There are a large variety of EDL editing commands available in the Import EDL menu. These are categorized into the following eight groups:

- Events

■ Titles

■ Capture

■ Editing
- Transitions

■ Comments

■ EDL

■ Display

Events Group

Use the commands in the Events group to cut or copy single or multiple events and paste them to a new location in any open EDL. You can also use special paste functions and selection tools for events.



- Insert Event button**

Inserts a new event into the EDL.
- Cut Event button**

Cuts the selected event. May be used with Paste Event button.
- Copy Event button**

Copies the selected event. May be used with Paste Event button.
- Paste Event button**

Pastes the previously cut or copied event to the selected location.
- Paste: Fix Record button**

Enable to change Record In of the first pasted event to start at Record Out of the previous event. All pasted events are then rippled by the same amount.
- Paste: Renumber button**

Enable to automatically renumber all events according to the Next Event value in the Renumber Events menu. If this option is disabled, the pasted events retain their original event numbers. See [Renumber Events Menu](#) on page 633.

Select All button Click to select all events for capture.

Unselect All button Click to unselect all events.

Auto-Paste button Enable to quickly cut events from multiple EDLs and automatically paste them to a single EDL. For a selected EDL, when clicking the Paste button, any events that are cut or copied are automatically pasted to the first EDL.

Transitions Group

Use the commands in the Transitions group to change any transition to a cut, dissolve, or standard SMPTE wipe.



Cut button Changes the transition type to a cut for the selected transition, or range of transitions.

Dissolve button Changes the transition type to a dissolve for the selected transition, or range of transitions.

Wipe button Changes the transition type to a wipe for the selected transition, or range of transitions. The wipe type is set to SMPTE 001.

Choose button Opens the Choose Wipe menu from which you can select from a variety of standard SMPTE wipe types.

Titles Group

You can add or delete a title from an EDL using commands in the Titles group of the Import EDL menu.



Insert Title button Enter a new title in the Titles area of the EDL work area. You can add multiple titles. To edit a title, double-click it and enter the new title.

Delete Title button Delete a title in the EDL work area.

Comments Group

You can add or delete comments from events using the commands in the Comments group of the EDL menu. Comments can contain up to 256 alphanumeric characters. You can also toggle comments on or off.

EDL comments become part of the source clip when assembling the EDL. Multiple comment lines are merged into one timeline comment line.



Insert Comment button Add a comment to the event selected in the EDL work area. You can add multiple comments to an event. To edit a comment, double-click it and enter the new comment.

Delete Comment button Delete a comment selected in the EDL work area.

Hide button When enabled, will hide all comments in the EDL work area.

Clean button Removes asterisks from comments.

Capture Group

You can mark events for capture or select only the uncaptured ones for recapture.



Mark button Click to mark the selected events for recapture with an “X”. This allows you to keep track of events that you want to recapture. Events that have already been captured are marked with a lower case x. Therefore, when you mark a captured event for recapture, a lower and upper case x appear (x X) to the right of the event number.

Event #	Tape	A.Patch
TITLE: COL_NOISE		
0001 x X	ZOZO	
FROM CLIP NAME: COL_NOISE		

(a) Capture mark (b) Recapture mark

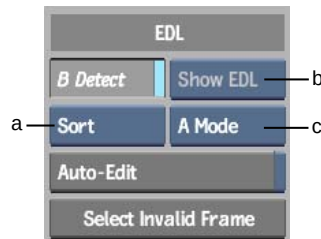
Unmark button Click to remove a recapture mark from the selected events.

Select Uncaptured button Click to select all uncaptured events in the EDL. The next time you click Auto-Capture, only the selected events are captured.

Update Capture Marks button Click to update the list of captured events.

EDL Group

You can use any of these options in the EDL group when using EDLs to capture media.



(a) Sort box (b) Show Timecode box (c) Sort Mode box

BRoll Detect button Enable to detect BRolls. BRolls appear as the original tape. You are not prompted for the tape containing the BRoll when you capture the clips. When disabled, BRolls are indicated with a “B” following the tape name in the Tape entry.

Show Timecode box Select the type of timecode to display.

Select:	To:
Show EDL	Display EDL timecode.
Show VC	Display Varicam timecode.

Sort box Click Sort to sort the current EDL, or click Sort All to sort all the EDLs. EDLs are sorted according to the sort order specified in the Sort Mode box. You can change the way an EDL is sorted.

Auto-Edit button Enable to quickly modify only the entries in the selected columns of the EDL. Click the column headers of the columns that you want to auto-edit. Starting with the first entry that you edit, press **Enter** to move automatically to the next entry. If no further entries exist, a new event is added.

Sort Mode box Select the appropriate sort order.

Select:	To sort the EDL:
A Mode	By Record In timecode. If you want to view the EDL in the order of the final assembly, sort the EDL in A Mode.
B Mode	By Tape and Record In timecode.
C Mode	By tape number and Source In timecode. If you want to view the EDL in the order the clips are captured, sort the EDL in C Mode. EDLs are always captured in C Mode, regardless of the sort mode you selected.
S Mode	By Source In timecode, regardless of tape number. This sort mode is useful for multi-camera real-time EDLs.
by Event#	By event number.
by Tracks	By tracks. In this sort mode, video tracks are placed at the bottom of the list, and the highest audio track is placed at the top of the list.
by Uncaptured	By placing all uncaptured events at the top of the list.

Select Invalid Frame button Click to select a frames of 0 length.

Editing Group

When you modify an entry in an EDL, several options control how other entries are affected. Make sure these options are either enabled or disabled, depending on how you want to edit the EDL.



Slip Tape button Enable to slip all source clips on the tape, or all record clips in the EDL list. All the in and out points of all source or record clips change without affecting their duration.

Lock Speed button Enable to edit the timecode without changing the speed value for the event.

Slip button Enable to slip a source or record clip in a single event. The in and out points of the selected clip change without affecting its duration.

Ripple Rec button Enable to move all Record entries, following an edited or pasted Record Out entry, forward or backward accordingly. This is useful when you want to edit the Record Out of an event without overwriting or creating a gap between the following shots.

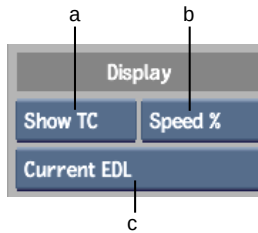
Affect Sel button Enable to affect only the selected events.

Affect Tape button Enable to affect every relevant entry on the same tape when you modify a single entry.

View Sel button Enable to view only the selected events.

Display Group

The Display group contains options for modifying the display of events in the EDL list.



(a) Show TC/KC box (b) Speed box (c) EDL Display box

Show TC/KC box Select whether to display keycode or timecode.

Select:	To:
Show TC	Display timecode.
Show KC	Display keycode.

Speed box Select a mode to display the speed change for timewarps.

Select:	To:
Speed %	Display the speed change as a percentage.
Speed FPS	Display the speed change in frames per second.

EDL Display box Select a display mode for EDLs, Tape List view, or Undo List view.

Select:	To:
EDL	Display timecode.
Undo List	View all modifications (up to the number of undo levels specified in the Preferences menu) that you made in the current session, and undo a single or series of commands. Click the item in the undo list that you want to undo. All operations are undone up to and including that modification. All operations prior to the highlighted modification are redone.
Tape List	Display the Tape List view, showing the last selected EDL.
Tape List (All EDLs)	Display the Tape List view, showing all selected EDLs.

EDL View

An EDL contains events, edits, and entries. An event is a complete element in the EDL such as a shot, dissolve, or wipe. An edit is an individual component that makes up an event, such as an outgoing shot or an incoming shot. An entry is an individual value for any variable in the edit, such as dissolve length, Source In, or Speed.

a	b	0011	250	V	C	01:00:06:06	01:00:08:03	00:01:18:04	00:01:20:01
		0012	250	V	C	01:00:05:14	01:00:15:09	00:01:00:00	00:01:09:15
		0012	250	V	D 10 (C)	01:00:20:07	01:00:25:05	00:01:09:15	00:01:14:13
						c			

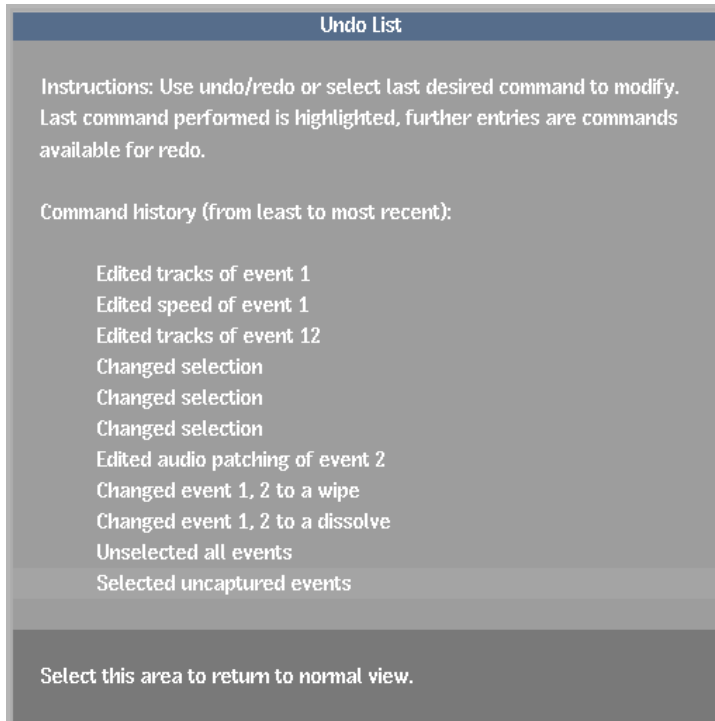
(a) Edits (b) EDL events (c) EDL entries

Every event has a different event number. Some events, such as dissolves and wipes, consist of two edits. The two edits in a dissolve (outgoing and incoming shots) have the same event number.

Undo List View

Use the Undo List to view all modifications (up to the number of undo levels specified in the Preferences menu)that you made in the current session and undo a single or series of commands.

Click the item in the Undo List that you want to undo. All operations are undone up to and including that modification. All operations prior to the highlighted modification are redone.



Tape List View

Use Tape List view to see all the tapes needed to assemble the current EDL or all currently open EDLs. In a regular EDL, you can see how raw source footage should be captured into an edited record timeline using timecode. Generally, the source footage is listed in an EDL based on its chronological order in the timeline.

You can use the tape list to modify information pertaining to events for a given tape.

As well, each tape's entry can be expanded in Tape List view to show keycode and 2:3 pulldown information associated with the source timecode.

Click the column header to sort the tape list in descending order using that column. Click the column heading again to sort the tape list in ascending order.

///	Tape ▾	Capture	FCM	Tracks	Start
▼	MASTER	On	23.976 fps	V1	00:00:03+17
○		TC Start	TC Duration	Film FCM	Keycode
○		03:59:59+14	00:00:00+15	N/A	N/A
○		04:00:00+04	00:00:01+10	23.976 fps	KK248181 6659+03 (1)
○		04:00:01+14	00:00:14+00	23.976 fps	KK248181 6660+14 (2)
○		04:00:15+19	00:00:18+15	23.976 fps	FN723405 8172+12 (2)
○		N/A	N/A	N/A	N/A

The work area of the Tape List view is divided into nine columns, and two sections for each tape.

The upper fields of each tape entry contain the following columns.

Tape The name of the tape that contains the source footage. To change the tape name, click and enter a new name.

Capture The capture flag for the tape. When set to On, the tape is captured during an auto-capture session. To set the capture flag for a given tape to On or Off, click the item under the Capture column and drag left or right to set it On or Off.

FCM The frame code mode for the tape. If the frame code mode is 29.97, you can drag over the item in this column to switch between DF/NDF modes.

Tracks The number and type of tracks that will be captured for the tape.

Start The starting timecode for the first event to be captured on the given tape.

Capture Time The duration of the material to capture for the given tape.

Telecine Indicates the telecine log associated with the tape.

Final Telecine Indicates the final telecine log associated with the tape.

Events The number of events to capture for the given tape. You cannot modify this value in Tape List view.

The lower fields of each tape entry contain the following columns.

TC Start Start timecode for each keycode sequence.

TC Duration Duration of time for the keycode sequence.

Film FCM Film frame code mode indicating the speed of the telecine when it scanned the film frames. Change the film FCM by clicking the Keycode field to access the calculator. See [About the Keycode Calculator](#) on page 739.

Keycode Keycode for the first frame of the sequence.

Removal Whether to apply 2:3 pulldown to the sequence.

Ref Frame Timecode of the reference frame.

Ref Type Type of reference frame.

DF Ref Frame Timecode of the drop frame reference frame.

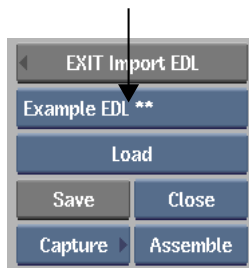
NOTE For more information on the 2:3 pulldown fields in Tape List view, see [Overriding Default 2:3 Pulldown Configuration Tape-to-Tape](#) on page 1140.

Creating an EDL

You can create an EDL in the Import EDL module. This is useful when you have an EDL printed on paper (but no electronic file) and you need to capture the material. With the EDL module, you can manually recreate the EDL with all the information needed so that you can automatically recapture.

To create an EDL:

- 1 In the Import EDL menu, select <new> from the EDL box.



A blank EDL is created.

- 2 Use the EDL Editing tools to insert, cut, copy, and paste events, comments, titles, and transitions into the new EDL. See [About EDL Editing Commands](#) on page 652.
- 3 Edit the EDL events as needed. See [Editing an EDL](#) on page 663.
- 4 Click Save to save the new EDL. See [Saving EDLs and Tape Lists](#) on page 677.

Editing an EDL

Once you import an EDL, you can edit any value except the event number. This includes:

- The tape name for single or multiple events
- The audio patching information
- The transition duration and speed value of dissolves
- A cut to a dissolve or wipe
- The source and record timecodes of events

These tasks are described in the following sections. You can open multiple EDLs and copy and paste events between them. You can also use Auto Edit mode to quickly make changes to the entries you specify.

NOTE EDLs with references to a generated output tape (EDLs created with the Export EDL feature using the Output All or Output Generated option) are opened as read-only and cannot be edited. To edit a read-only EDL, save it to the filesystem with a different name.

Editing a Tape Name

You can change a single event's tape name, or the tape name for all events on the same tape. This is useful if the events you want to capture are on a different tape than that listed in the EDL.

Tape names can be up to 56 characters long. The EDL Editor displays only the first eight characters, but the clips maintain the original tape name.

To edit a tape name:

- 1 In the Import EDL menu, do one of the following:
 - To change the tape name for all events on the same tape, enable Affect Tape.
 - To change only the selected tape name, disable Affect Tape.

- 2 Click the Tape entry in the event you want to edit and enter the new name:
 - If the Affect Tape option is enabled, the tape name for all events on the same tape changes automatically.
 - If the Affect Tape option is disabled, only the tape name for the selected event changes.
 - If the Affect Selection option is enabled, only the tape names for selected events change.

Audio Patching

If you want to capture audio from a different track than that specified in the EDL, you can change the audio patching for a single event, selected events, or all events on the same tape. For example, if an edit specifies the audio tracks as 1 and 2, but you want to capture the audio from tracks 3 and 4, use the Audio Patching menu to reroute the audio during auto-capture.

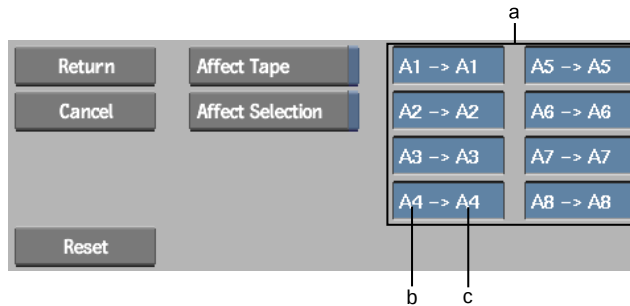
NOTE You can also specify the patch tracks from the Engineering menu when you want to affect the whole capture session. See [Audio Track Patching](#) on page 685.

To change audio patching:

- 1 In the EDL work area, select the events that you want to modify.
- 2 Click an Audio Patch field.

Event #	Tape	A.Patch	Tracks	Transition	Source In	Source Out
TITLE: 1010						
0001 x	BL		V	C	00:00:00:00	00:00:00:10
0001	250		V	D 10 (F)	01:02:07:29	01:02:08:15
FIREEDL: FOCUS_DESCR FROMCUT						
0002 x	BL		V12	C	00:00:00:00	00:00:00:11
0002	250		V	D 10 (F)	01:00:05:07	01:00:06:03
FIREEDL: FOCUS_DESCR FROMCUT						
0003 x	BL		V	C	00:00:00:00	00:00:00:11
0003	250		V	D 10 (F)	01:01:01:11	01:01:02:12
FIREEDL: FOCUS_DESCR FROMCUT						

The Audio Patching menu appears.



(a) Audio Patch boxes (b) Source audio track (c) Destination audio track

You can edit the source audio tracks. Each one of the eight available source audio tracks can be patched to one of the eight available destination audio tracks. You can patch the same source audio track to multiple destination audio tracks.

- 3 Enable or disable the Affect Tape and Affect Selection buttons. See [Editing Group](#) on page 657.
- 4 Reroute the audio in the Audio Patch boxes by doing one of the following:
 - Drag in an Audio Patch box to cycle through source audio tracks one through eight.
 - Click an Audio Patch box to access the calculator, then type a value one through eight indicating the source audio track.
- 5 Click Return.

To exit the Audio Patching menu without changing the patching information, click Cancel.

The source tracks that have been patched to different audio tracks than the defaults are indicated in the affected event's Audio Patch Field. Dashes in the Audio Patch Field indicate the track is patched to its default. Comments are also added which indicate the name of audio tracks and their patching information.

When clips are captured, audio tracks are patched as indicated.

Event #	Tape	A Patch	Tracks	Transition	Source In	Source Out	Speed	Record In	Record Out
TITLE: FINAL SHOW audio tracks 1 & 2									
0001	LORES	65-----	12	C	01:00:00:00	01:07:07:16		01:00:00:00	01:07:07:02
* FROM CLIP NAME: Lo Res Show * PATCH LORES: FROM SOURCE 6 TO RECORD 1 * PATCH LORES: FROM SOURCE 5 TO RECORD 2									
0002	LORES	65-----	12	C	01:07:37:00	01:12:15:21		01:07:37:00	01:12:15:13
* FROM CLIP NAME: Lo Res Show * PATCH LORES: FROM SOURCE 6 TO RECORD 1 * PATCH LORES: FROM SOURCE 5 TO RECORD 2									

(a) Comments indicate patching information (b) Source 1 and 2 patched to destinations 5 and 6

Editing Tracks

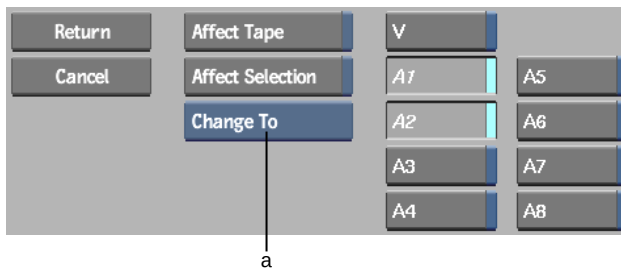
You can edit the tracks of an event in the EDL. Editing tracks is useful if you want to modify the tracks captured when you auto-capture or assemble the EDL.

For example, if the Track entry for an event is V1 and you want to capture only the video track (V), change the Track entry to V.

To edit the tracks for an event:

- 1 In the EDL work area, select the Track entries in the event that you want to edit from the EDL.

The Track menu appears.



(a) Track Edit Mode box

- 2 Enable the tracks that you want to edit.
- 3 Enable or disable the Affect Tape and Affect Selection buttons. See [Editing Group](#) on page 657.

- 4 From the Track Edit Mode box, select the mode that you want to use.

Select:	To:
Change To	Replace tracks in the event with tracks you specified in the Track menu.
Add	Add the tracks you specified in the Track menu to the tracks in the event.
Filter	Keep only the tracks you specified in the Track menu. For example, if an event is "V12" and you specify "V1," audio track 2 is filtered out, and the resulting event has "V1."
Flip	Reverse the status of tracks you specified in the Track menu. For example, if an event is "V23" and you specify "V34," the resulting event has "V24."

- 5 Click Return to confirm the change or Cancel to exit back to the EDL module without making any modifications.

Editing Transitions in EDLs

You can change any transition to a cut, dissolve, or SMPTE wipe. If the effect of an event is a dissolve, you can edit its duration (Transition Duration). If the effect of an event is a wipe, you can also select the type of wipe in the SMPTE Wipe library.

You can add or modify transitions based on a selection range.

You can also change a cut to a dissolve by clicking the Transition entry of the cut. You can change a dissolve to a cut by setting the Transition Duration to 0, as long as the Allow Zero-Length Transitions option is disabled in the EDL preferences. See [Preferences Menu](#) on page 629.

Dissolves in EDLs

Dissolves are represented in the EDL by two consecutive edits with the same event number. The first edit represents the outgoing shot of the dissolve and the second edit represents the incoming shot of the dissolve. The dissolve is listed in the Transition column of the second edit as D *n* (where *n* is the transition duration).

The Transition duration appears in the Transition entry of the second edit in the dissolve. The Start Location for the dissolve is also indicated in the Transition entry.

If the EDL was exported from Backdraft Conform, the dissolve can be Centred, From Cut, or Up To Cut. The start location for the dissolve appears beside the Transition duration.

The following illustration is a typical dissolve in an EDL.

a	0001 x	BL	C	00:00:00+00	00:00:01+00	01:00:59+15	01:00:59+15
	0001	BC01	D 24	01:00:27+21	01:00:50+00	01:00:59+15	01:01:21+18
b	* BLEND DISSOLVE						
			c				

(a) Outgoing shot (b) Incoming shot (c) Transition duration

If you change the Transition duration of a dissolve, the Source Out of the incoming shot changes by the same duration automatically.

Wipes in EDLs

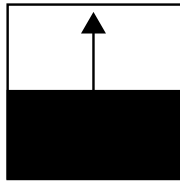
Wipes are represented in the EDL by two consecutive edits with the same event number. The first edit represents the outgoing shot of the wipe and the second edit represents the incoming shot of the wipe. The wipe is listed in the Transition column of the second edit as W n m (where n is the wipe code and m is the wipe duration).

The SMPTE wipe number appears in the Transition entry of the second edit in the wipe. The Start Location for the wipe is also indicated in the Transition entry. A wipe can be Centred, From Cut, or Up To Cut. The start location for the wipe appears beside the Transition duration. The following illustration is a typical wipe in an EDL.

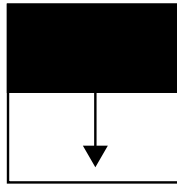
a	0001 x	BL	C	b	00:00:00+00	00:00:01+00	01:00:59+15	01:00:59+15
	0001	BC01	W 001	24	01:00:27+21	01:00:50+00	01:00:59+15	01:01:21+18
	* BLEND DISSOLVE							
			c	d				

(a) Outgoing shot (b) Transition duration (c) Incoming shot (d) SMPTE wipe number

If you add 500 to the SMPTE wipe number, the wipe is inverted during assembly. For example:



Wipe 002



Wipe 502

If you change the Transition duration of a wipe, the Source Out of the incoming shot automatically changes by the same duration.

Editing Timecode

If you want to capture different material than what appears in the EDL, you can slip or trim the edits to specify the correct material for your final assembly. You can change any source or record timecode in the EDL.

You can also edit timecode and keycode in the Tape List.

To edit timecode:

- 1 If you want to edit source timecode, and keycode in and out values are displayed, toggle the Show Timecode/Show Keycode box to Timecode.
- 2 Do one of the following:
 - Click the source or record timecode entry you want to modify and drag right to increase the value or drag left to decrease the value. You can use hotkeys to change the values in varying increments.

Use:	To:
Shift-drag	Jump by seconds.
Ctrl-drag	Jump by minutes.
Alt-drag	Jump by hours.

- Double-click the source or record timecode you want to modify to get the calculator, and then enter a new timecode. If the source or

record timecode is already selected, click it again to get the calculator. See [About the Timecode Calculator](#) on page 738.

When you edit source timecode, the corresponding keycode changes to reflect the new frames to be captured. Toggle the Show Timecode/Show Keycode button to see the edited keycode in and out values. You cannot edit the keycode for events in the EDL work area.

NOTE Other entries in the same edit affected by your modifications become highlighted as you edit an entry.

Editing Tape List Timecode and Keycode

In Tape List view, you can slip all the start timecode values for a given tape. This is useful when you need to modify the start timecode of a tape that is used in multiple EDLs, because you edit the value only once.

You can also slip keycode and its associated start timecode and duration. This is similarly useful to alter keycode values correlated to the timecode for given sequences on the tapes.

To slip the start timecode value for a given tape:

- 1 In the Import EDL menu, from the Display group, enable View Tape List.
- 2 Do one of the following:
 - Click the start timecode entry you want to modify and drag right to increase the value or drag left to decrease the value. You can use hotkeys to change the values in varying increments.

Use:	To:
Shift-drag	Jump by seconds.
Ctrl-drag	Jump by minutes.
Alt-drag	Jump by hours.

- Click the start timecode entry you want to modify to get the calculator, then enter a new timecode. See [About the Timecode Calculator](#) on page 738.

To slip the keycode for a given tape:

- 1 In the Import EDL menu, from the Display group, enable View Tape List.
- 2 If necessary, click the triangle on the left of the tape entry to expand its contents.



///	Tape ▾	Capture	FCM	Tracks	Start
	MASTER	On	23.976 fps	V1	00:00:03+17

Sequences of timecode on the tape are associated to keycode values. If no keycode is available from the telecine log(s) you loaded, N/A (not available) appears for the sequence.

///	Tape ▾	Capture	FCM	Tracks	Start
▼	MASTER	On	23.976 fps	V1	00:00:03+17
○	TC Start		TC Duration	Film FCM	Keycode
b ○		03:59:59+14	00:00:00+15	N/A	N/A
○		04:00:00+04	00:00:01+10	23.976 fps	KK248181 6659+03 (1)
a ○		04:00:01+14	00:00:14+00	23.976 fps	KK248181 6660+14 (2)
○		04:00:15+19	00:00:18+15	23.976 fps	FN723405 8172+12 (2)
○		N/A	N/A	N/A	N/A

- (a) Timecode start and duration defines sequence, with corresponding keycode
 (b) Timecode without corresponding keycode

- 3 To edit the keycode for a sequence, do one of the following:
 - Drag the keycode entry you want to modify to the right to increase the value or to the left to decrease the value.
 - Click the keycode entry you want to modify to get the keycode calculator, and then enter a new keycode. See [About the Keycode Calculator](#) on page 739.

The keycode values associated to the timecode sequence (defined by the values in TC Start and TC Duration fields) are altered.

If you change the frame rate in the keycode calculator, it is reflected in the Film FCM field.



Film FCM	Keycode
N/A	N/A
23.976 fps	KK248181 6659+03 (1)

Editing and Creating Timewarps

You can edit an existing timewarp or create a timewarp in your EDL. When you edit a timecode entry of an event with the Lock Speed option disabled, no other entries are affected. This results in a speed change because the source duration differs from the record duration.

For example, if you increase the Source In entry of an event by 5 seconds, the record clip of the same event is 5 seconds shorter than the source clip. The result clip is timewarped when assembled. No other entries are affected. See [Assembling EDLs](#) on page 688.

Timewarps are represented in the Speed column of the EDL. If the Speed value is blank, the event is not timewarped. If there is a Speed value, the event is timewarped.

0018	003	V	C	14:06:14:13	14:06:14:17	50.0%	10:00:16:07	10:00:16:15
						a		

(a) Speed value

To edit or create a timewarp:

- 1 In the Import EDL menu, from the Editing group, disable Lock Speed.
- 2 In the EDL, click the source or record timecode entry for the event that you want to edit and enter the new value.

The value of the timewarp appears in the Speed entry. You may also click directly in the Speed box to change the entry. If the event is already a timewarp, editing any timecode of that event changes its speed value.

You can view the speed value in either percentage or frames per second. Select the View mode in the EDL Preferences menu. See [Preferences Menu](#) on page 629.

Creating and Editing DLEDLs

DLEDLs can be used in a workflow where you need to import multiple media files in a single pass. They consist of comments that are used to enhance basic EDLs.

DLEDL Structure

The DLEDL is an EDL file based on the CMX 3600 format supported by most digital non-linear editing systems. The following table lists the DLEDL flags used in creating an EDL file. It describes the comments used in creating DLEDLs and provides examples of basic EDLs that you can use in your projects.

Note that the order of flags always remains the same:

- Clip name (EDL comment)
- Start TC
- File path
- Video file name
- Audio 1 file name
- Audio 2 file name
- Audio 3 file name
- Audio 4 file name

DLEDL Flag Example	Description
DLEDL: START TC: 10;00;00;00	The start timecode of the clip that will be created from the media files imported into the Autodesk Visual Effects and Finishing application. This timecode can be different from the source start timecode of the EDL event. Both drop-frame (00:00:00:00) and non-drop-frame (00;00;00;00) time-codes are supported.
DLEDL: PATH /CXFS1/PRODUCTION1/SHOW5	The location of the files on the filesystem. All the files for an event must be in the same directory.
DLEDL: EDIT:0 FILENAME: INTRO.(010@240).dpx or DLEDL: EDIT:0 FILE-NAME: (009@100).dpx	Name of the video file sequence to load. Numbers in parenthesis refer to frames in the sequence. In this example, the following files are referenced: <i>INTRO.010.dpx, INTRO.011.dpx, ..., INTRO.240.dpx or 009.dpx, 010.dpx, ..., 100.dpx</i>

DLEDL Flag Example	Description
DLEDL: EDIT:0 FILENAME: TONE-8TRK-44KHZ.AIFF_CHANNEL_1.AIF	Audio file name to import. The audio files can contain one file per track (_1), one file per stereo pair (_12), or one file per multiple tracks (_1234). Supported formats are wave (.WAV) or AIFF (.AIF).
DLEDL: REEL: 12345678 123456781234556	The CMX EDL format limits the length of the tape name to eight characters (Backdraft Conform has the same limit). Some editing systems do not impose a tape name length limit. If the tape name exceeds eight characters, Backdraft Conform generates a short name to be used in the EDL and stores the original name in the Source Table list at the end of the EDL file (one Source Table per EDL).
NOTE File names, tape names, and clip names cannot contain spaces or special characters. For example, TAPE 1 should be set to TAPE_1 (no space) and CLIP\$,12/2 to CLIP_12_2 (no special characters).	

Using DLEDLs Examples

The following examples are given to facilitate the creation of edit decision lists for the automatic import of multiple media files into a project. You can simply copy and paste the suitable example into a text editor, modify it accordingly, save the file with an *.edl* extension, and import the resulting file into your application.

Video-only EDL

```
TITLE: SIMPLE EDL VIDEO ONLY

FCM: DROP FRAME

001 TAPENAME V C 10:00:00:00 10:00:05:00 00:00:30:00
00:00:35:00

* FROM CLIP NAME: clip

DLEDL: START TC: 10;00;00;00
```


DLEDL: PATH: /CXFS1/PRODUCTION1/SHOW5
DLEDL: EDIT:0 FILENAME: INTRO.(010@240).dpx
DLEDL: REEL:TAPENAME TAPENAMEEVERYLONG

Simple Video and Audio (2 Tracks) EDL

TITLE: SIMPLE EDL WITH VIDEO AND 2 AUDIO TRACKS (1
TRACK PER FILE)
FCM: DROP FRAME
001 TAPENAME AA/V C 10:00:00:00 10:00:05:00 00:00:30:00
00:00:35:00
* FROM CLIP NAME: TONE-8TRK-44KHZ.AIFF
DLEDL: START TC: 10;00;00;00
DLEDL: PATH: /CXFS1/PRODUCTION1/SHOW5
DLEDL: EDIT:0 FILENAME: INTRO.(010@240).dpx
DLEDL: EDIT:0 FILENAME:
TONE-8TRK-44KHZ.AIFF_CHANNEL_1.AIF
DLEDL: EDIT:0 FILENAME:
TONE-8TRK-44KHZ.AIFF_CHANNEL_1.AIF
DLEDL: REEL:TAPENAME TAPENAMEEVERYLONG

Simple Video and Audio (4 Tracks) EDL

TITLE: SIMPLE EDL WITH VIDEO AND 4 AUDIO TRACKS (1
TRACK PER FILE)
FCM: DROP FRAME
001 TAPENAME AA/V C 10:00:00:00 10:00:05:00 00:00:30:00
00:00:35:00
* FROM CLIP NAME: TONE-8TRK-44KHZ.AIFF
DLEDL: START TC: 10;00;00;00
DLEDL: PATH: /CXFS1/PRODUCTION1/SHOW5
DLEDL: EDIT:0 FILENAME: INTRO.(010@240).dpx

```
DLEDL: EDIT:0 FILENAME:
TONE-8TRK-44KHZ.AIFF_CHANNEL_1.AIF

DLEDL: EDIT:0 FILENAME:
TONE-8TRK-44KHZ.AIFF_CHANNEL_2.AIF

DLEDL: EDIT:0 FILENAME:
TONE-8TRK-44KHZ.AIFF_CHANNEL_3.AIF

DLEDL: EDIT:0 FILENAME:
TONE-8TRK-44KHZ.AIFF_CHANNEL_4.AIF

AUD 3 4

DLEDL: REEL:TAPENAME TAPENAMEEVERYLONG
```

Simple Video and Audio (2 Tracks - Stereo) EDL

```
TITLE: SIMPLE EDL WITH VIDEO AND 2 AUDIO TRACKS (2
TRACKS PER FILE)

FCM: DROP FRAME

001 TAPENAME AA/V C 10:00:00:00 10:00:05:00 00:00:30:00
00:00:35:00

* FROM CLIP NAME: TONE-8TRK-44KHZ.AIFF

DLEDL: START TC: 10;00;00;00

DLEDL: PATH: /CXFS1/PRODUCTION1/SHOW5

DLEDL: EDIT:0 FILENAME: INTRO.(010@240).dpx

DLEDL: EDIT:0 FILENAME: TONE_12.AIF

DLEDL: REEL:TAPENAME TAPENAMEEVERYLONG
```

Simple Video and Audio (4 Tracks - Stereo) EDL

```
TITLE: SIMPLE EDL WITH VIDEO AND 4 AUDIO TRACKS (2
TRACKS PER FILE)

FCM: DROP FRAME

001 TAPENAME AA/V C 10:00:00:00 10:00:05:00 00:00:30:00
00:00:35:00

* FROM CLIP NAME: TONE-8TRK-44KHZ.AIFF
```

```

DLEDL: START TC: 10;00;00;00
DLEDL: PATH: /CXFS1/PRODUCTION1/SHOW5
DLEDL: EDIT:0 FILENAME: INTRO.(010@240).dpx
DLEDL: EDIT:0 FILENAME: TONE_12.AIF
DLEDL: EDIT:0 FILENAME: TONE_34.AIF
AUD 3 4
DLEDL: REEL:TAPENAME TAPENAMEVERYLONG

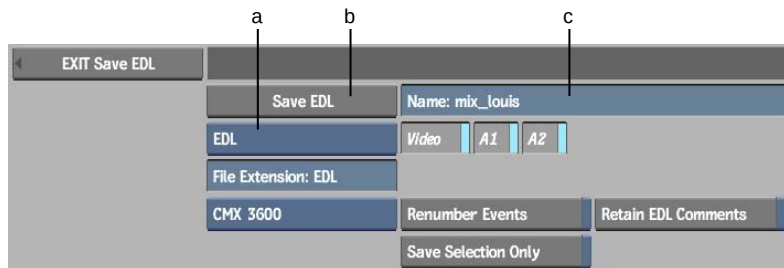
```

Saving EDLs and Tape Lists

You can save an EDL after you have made modifications to it. You can also save a tape list using the Save EDL menu. When you save a tape list, a tab-delimited ASCII file is created.

To save an EDL:

- 1 After modifying an EDL, click Save.
The Save EDL menu appears.



(a) EDL Format box (b) Save EDL button (c) Name field

- 2 Enter the name for the saved EDL in the Name field.
- 3 Select the EDL format from the EDL Format box.
- 4 Enable the tracks you want to include in the new EDL.
- 5 Enable Renum Events to consecutively renumber events in the new EDL.

- 6 If you want to save only the selected portion of the current EDL, enable Save Selection Only.
- 7 Enable Retain EDL Comments if you want to keep the comments from the current EDL.
- 8 Click Save EDL.

To save a tape list:

- 1 In the Import EDL menu, click Save.
- 2 From the EDL Format box, select Tape List.
- 3 Enter a name for the tape list, and then click Save EDL.

Ensure that your file name does not contain any of the following characters: ` # ~ @ \$ % ^ & * () [] { } < > \ | / ! ? , ; : ' "

A Discreet Tape List (DTL) file is created. All information in the tape list, including timecode and keycode data, is saved. DTL files are ASCII files that can be opened in any text editor. DTL files can also be loaded in the EDL module to accompany EDLs.

Capturing and Importing Media Using EDLs

27

Topics in this chapter:

- [About Capturing and Importing Media Using EDL Files](#) on page 679
- [About the Auto-Capture Menu](#) on page 680
- [Capturing Clips Using an EDL](#) on page 681
- [Importing Files Using an EDL](#) on page 686
- [Assembling EDLs](#) on page 688
- [Viewing Captured and Assembled Material](#) on page 691

About Capturing and Importing Media Using EDL Files

Use an EDL to reconstruct a work session created in an offline editing system or to import image sequences from a standard filesystem.

Typically, when recreating a project from an EDL (referred to as conforming to an EDL), you import the file, capture the material or import the referenced files, and then assemble the captured or imported material into a clip on a destination library reel.

Using DLEDLs in your post-production workflow allows you to automate the import of media files (video and audio) residing in different locations. Instead of performing media import for each file separately, you can create a DLEDL

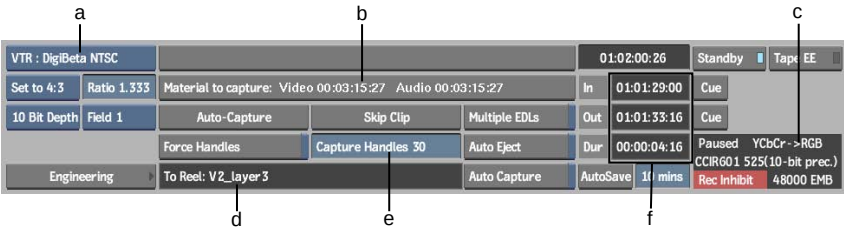
and import all media files in a single operation, which allows you to significantly save processing time. See [Creating and Editing DLEDLs](#) on page 672.

Both FCP XML and AAF file formats are more modern EDL formats that support multiple layers of video and audio, as well as an expanded set of transitions and effects. See [Importing Final Cut Pro XML](#) on page 759 or [Importing AAF Files](#) on page 813.

You can use the telecine log to capture from tapes created during telecine sessions, and read the 2:3 pulldown removal information and keycode data contained in the files. See [Pulldown](#) on page 1133.

About the Auto-Capture Menu

This is the Auto-Capture menu.



(a) Device Name box (b) Material to Capture status bar (c) VTR Status display area (d) Library Reel field (e) Capture Handles field (f) Timecode fields

Device Name box Select the device from which you will be capturing media.

Material to Capture status bar Displays the time remaining for capturing the selected video and audio.

Auto-Capture button Click to display the capture options. From the menu that appears, select the appropriate option for the capture.

Select:	To:
Capture This Tape	Capture clips on the currently loaded tape.
Skip This Tape	Skip the current cassette and proceed to the next tape.
Abort Capture	Abort the auto-capture.

Captured events are indicated in the event number column by an x sign.

NOTE If a clip for a selected event already exists in the clip library, it is not recaptured.

Skip Clip button Skips the clip being captured. The capture is aborted and the events are marked as “skipped.” The next time you click Auto-Capture, the capture is started at the first event following the skipped clip. To reset, exit and enter the Auto-Capture menu.

Multiple EDLs button Captures multiple EDLS.

VTR Status display area Displays the current status of the VTR. Different information is displayed under certain conditions. Depending on the model of the VTR, you may be able to change the Tape EE and Standby boxes. See [Verifying the VTR Status](#) on page 168.

Engineering button Click to display options for auto-capturing an EDL. See [Setting Video Input and Output Engineering Menu Controls](#) on page 172.

Library Reel field Displays the Library Reel.

Force Handles button Enable to ensure that the clip contains the number of handles that you want. The next time that you capture the EDL, the clips that do not have as many handles as defined in the Capture Handles field are recaptured. By default, clips are not recaptured if the specified material already exists on the reel, as defined in the Source In and Source Out entries of the EDL.

Capture Handles field Enter the number of extra frames to use as handles before and after the specified material. Capture handles are set by default based on the project frame code mode. If specifying more handles causes material to overlap, or if fewer than 10 frames separate events, the material is captured as a single clip.

When capturing using keycode data, if the keycode for the frames in the handles does not follow the keycode for the captured segment sequentially, then those handles are not captured.

Auto Capture button Enable to automatically begin capturing when you insert the tape into the VTR.

Auto Eject button Enable to automatically eject a tape after it has been captured. The last tape of a capture session is not ejected.

Capturing Clips Using an EDL

Use the Auto-Capture menu to load clips specified in an EDL. You can also use the multi-capture option to capture material from multiple EDLS.

Before a capture, the clip library reel specified in the Library Reel field is searched for clips that match those about to be captured. Only required clips are captured.

During auto-capture, the current position and in and out points are shown in the Timecode fields. Also, the remaining time in a capture session is displayed in the Time Remaining to Capture field.

Auto-Capturing an EDL

Before you auto-capture an EDL, make sure all the preferences are set correctly. Once you set the auto-capture options, you can capture the EDL.

To auto-capture an EDL:

- 1 From the clip library, click Import EDL.
- 2 From the Import EDL menu, click Load.
The EDL Load menu appears.
- 3 Select the EDLs that you want to load.
- 4 Optional: Enable Same Library Reel, if you want to load a series of EDLs and capture these open EDLs to the same reel in the clip library (using Multiple EDLs).
- 5 Click Load.
The selected EDLs are loaded into the Import EDL module.
- 6 Enter a name for the clip in the Name field.
- 7 Enter a library name in the Library Reel field.
- 8 In the EDL list, select the events that you want to capture. Do any of the following:
 - To select a single event, click the event number entry. Click the event number entry of another event to unselect the first entry.
 - To select a range of events, hold **Shift**, select an event, and click the last event in the range that you want to select. You can also click and drag to select a range of events.
 - To add to a range of events, hold the **Ctrl** key or the pen button when you select an event.
 - To select all events, use the Select All or Unselect All buttons.

NOTE When no event is selected, all events in the EDL are captured.

- 9 Optional: Use the Mark and Unmark buttons to keep track of events that you want to capture. See [Capture Group](#) on page 654.
- 10 Click Capture.
The Auto-Capture menu appears.
- 11 Ensure that the correct VTR is selected in the Device Name box.

NOTE Make sure the VTR is in Remote mode; otherwise, the clips will not be transferred. You can switch the VTR from Local to Remote mode only on the VTR panel. If the Local box in the menu is enabled, the VTR is in Local mode. See [Controlling a VTR](#) on page 168.

The frame at the current position of the selected device is displayed in the image window. You can use the controls below the image window to play all the clips on the selected device. See [Viewing Captured and Assembled Material](#) on page 691.

- 12 Specify any VTR options in the Engineering menu. See [Setting Video Input and Output Engineering Menu Controls](#) on page 172.
- 13 Optional: Set the value in the Capture Handles field.
If Force Handles is enabled, clips will be recaptured if they do not contain at least as many handles as specified in the Capture Handles field. See [Capture Group](#) on page 654.
- 14 To capture all open EDLs that share the same library reel, enable Multiple EDLs.

NOTE If you already have one EDL loaded, and then load another EDL with the Same Library Reel option enabled, both EDLs will be captured on the same reel in the clip library as long as Multiple EDLs is enabled in the Capture menu.

- 15 Set any options for audio sources. See [Defining Audio Tracks to be Captured](#) on page 684.
- 16 Click Auto-Capture.
If a tape is not already loaded, you are prompted to insert one into the VTR. The options for capture appear.



- 17 Click Capture This Tape to begin the auto-capture.
To minimize VTR transport, the clips are sorted according to their positions on the tape. Clips are always captured in C Mode, regardless of the display sort mode you selected.
- 18 When required, select a different tape to capture from in the Capture Order list.

Tape	Start	Trk
AX	00:00:00:00	V
BC01	01:00:23:12	V12

You will need to repeat this for every tape that you are using during the auto-capture.

- 19 When the auto-capture is complete, click Exit Auto-Capture.
Each clip is named according to the event number or clip name comment, and is assigned in and out points set to the location used by the EDL at the time of capture. Tracks that are not used by the event are not assigned an output channel (denoted by "--").
- 20 Click Exit Import EDL.
The clips appear in the clip library on a reel specified in the Library Reel field.

Defining Audio Tracks to be Captured

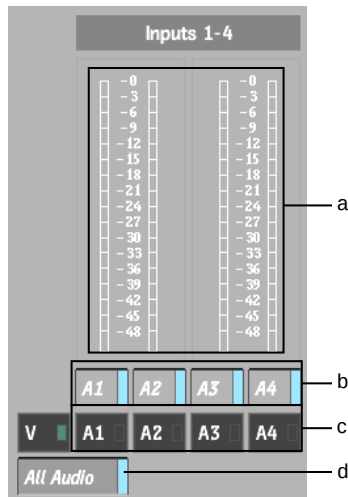
You can define the number of audio tracks to be captured for all sources that have audio. By default, audio is captured for each event only as specified in

the EDL. Using the All Audio option, you can capture more audio than is defined in the EDL. This is useful for EDLs that may have missing audio. If an event was mislabelled (on the audio side), you can modify the EDL to assemble other source track audio.

The All Audio button does not affect sources in the EDL that have no associated audio and it does not affect the EDL.

To define the number of audio tracks to be captured:

- 1 In the Auto-Capture menu, enable All Audio.



(a) Input Level meters (b) Enabled Audio Track buttons (c) Audio Track buttons
(d) All Audio button

- 2 Enable the audio track buttons to define the number of audio tracks generated for all sources with audio. The first four audio tracks (A1 to A4) are captured by default.

Audio Track Patching

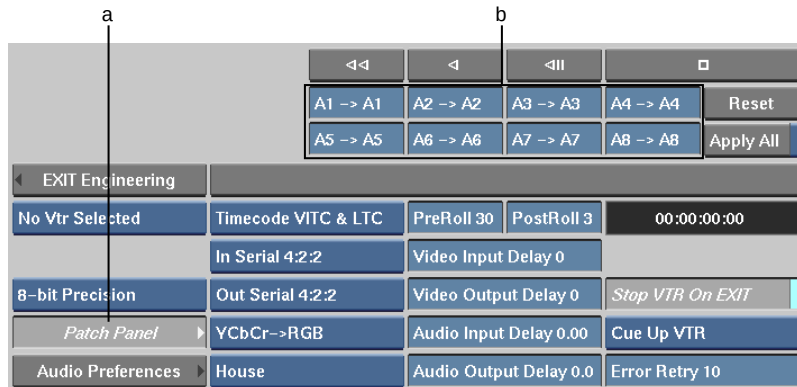
You can adjust the audio track patching for the capture session using the audio patch controls in the Engineering menu. Each audio channel has a separate control that contains the source channel and its mapped record channel. You can adjust the patching for up to eight audio channels. By default, audio

channels A1-A8 on the source tapes map to audio channels A1-A8 in the captured clips.

To adjust audio patching for an EDL capture session:

- 1 In the Auto-Capture menu, click Engineering.

The Engineering menu appears.



(a) Patch Panel button (b) Audio patch panel.

- 2 Click the Patch Panel button to display the audio patch panel.
- 3 Drag the audio field that corresponds to the channel that you want to patch.

The fields in the patch panel correspond to the recorded audio channels. Therefore, if you want to map source audio 3 & 4 to record audio 1 & 2, you set the first field (which corresponds to record A1) to A3->A1 and the second field (which corresponds to record A2) to A4->A2.

Importing Files Using an EDL

Use a file-based EDL to import (or soft import) files from a standard filesystem into Backdraft Conform. These are usually OMF files, or EDLs that contain DLEDL flags in the event comments that reference the location and name of the files to import.

In the case of OMF files, this includes only audio media. Upon loading the OMF file into the EDL module, the embedded audio media is extracted from the OMF file and placed in a temporary location. Before assembling the EDL,

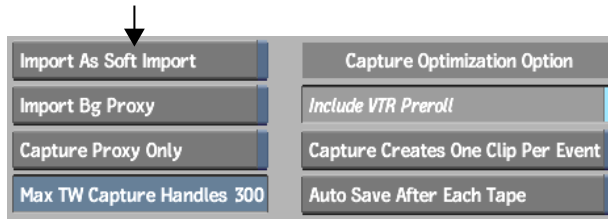
you import the audio media references in the OMF file EDLs to create clips in the clip library.

To import files using a file-based EDL:

- 1 From the clip library, click Import EDL.
- 2 From the Import EDL menu, click Load.
The EDL Load menu appears.
- 3 Select the EDLs that you want to load.
- 4 Click Load.
The selected EDLs are loaded into the Import EDL module. The EDL contains events that point to the files on the filesystem. When you load a file-based EDL, Import is selected in the Capture/Import box.
- 5 Enter a name for the clip in the Name field.
- 6 Enter a library name in the Library Reel field.
- 7 In the EDL list, select the events that you want to import.
Do any of the following:
 - To select a single event, click the event number entry. Click the event number entry of another event to unselect the first entry.
 - To select a range of events, hold **Shift**, select an event, and click the last event in the range that you want to select. You can also click and drag to select a range of events.
 - To add to a range of events, hold the **Ctrl** key or the pen button when you select an event.
 - To select all events, use the Select All or Unselect All buttons.

NOTE When no event is selected, all events in the EDL are imported.

- 8 Optional: If you need to soft-import the files, in the Preferences tab, enable Import As Soft Import to load the files.
Otherwise, the files are copied to the framestore.



- 9 Click Import.
The files are imported.

Assembling EDLs

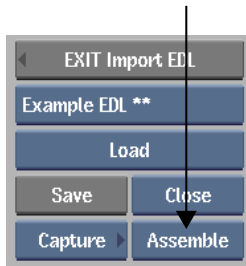
Before assembling an EDL, make sure that you have auto-captured or imported the clips you want to use from the EDL. If you are assembling clips that have not been captured, they are replaced with either black frame elements or Unlink Media elements. See [Recapturing Media](#) on page 710.

Assembling a Single EDL

Once all the media is available on the system (for instance, after completing an auto-capture session and importing files) and the Assembly Options are set, you can assemble your EDL.

To assemble a single EDL:

- 1 From the Import EDL menu, load the EDL that you want to assemble.
- 2 Optional: Click Assembly Options and specify any assembly options that you want to use. See [Assembly Options Menu](#) on page 624.
- 3 Enter the name for the assembled clip in the Name field.
- 4 Specify the destination library reel.
- 5 In the Assemble box, click Assemble.



When the auto-assembly is complete, the assembled clip is saved in the specified clip library. The assembled clip is always the first clip on the reel.

You can use the Player to view the final assembled EDL result. See [Viewing Captured and Assembled Material](#) on page 691.

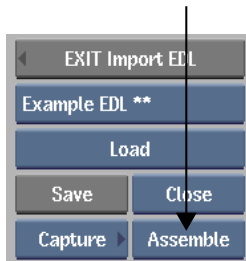
- 6 Click Exit EDL.

Assembling Multiple EDLs

If you have multiple EDLs, you can use Multi-assemble mode to combine all the EDLs into a multitrack. You can also use Multi-assemble mode to create a multilayer clip for vertical editing. When you multi-assemble EDLs, you select the EDLs in the order in which you want them to appear in the multitrack.

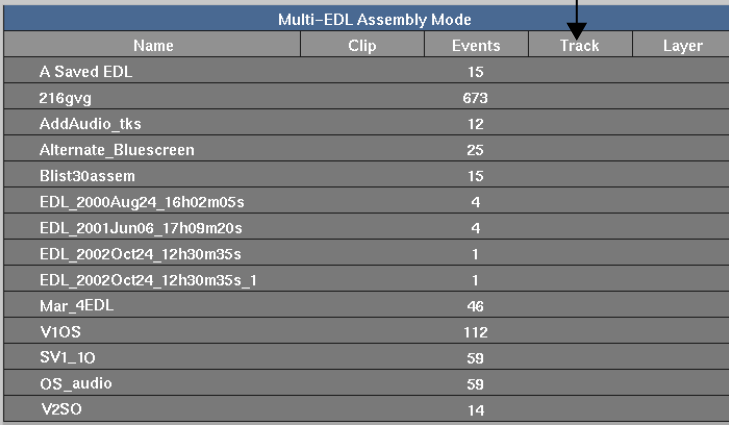
To multi-assemble clips:

- 1 In the Import EDL menu, load all the EDLs that you want to multi-assemble.
- 2 In the Assemble box, select and click M-Assemble.



The Multi-Assemble menu appears.

- 3 Select EDLs in the order that you want them to appear in the multitrack by clicking the Track column.



Multi-EDL Assembly Mode				
Name	Clip	Events	Track	Layer
A Saved EDL		15		
216gvg		673		
AddAudio_tks		12		
Alternate_Bluescreen		25		
Blist30assem		15		
EDL_2000Aug24_16h02m05s		4		
EDL_2001Jun06_17h09m20s		4		
EDL_2002Oct24_12h30m35s		1		
EDL_2002Oct24_12h30m35s_1		1		
Mar_4EDL		46		
V1OS		112		
SV1_1O		59		
OS_audio		59		
V2SO		14		

- 4 If you want to create a multilayer clip for vertical editing, you can change the layer assignment by clicking the Layer column.
You may need to deselect some entries, depending on the track to which you are trying to add additional layers.
- 5 Enter the name for the assembled clip in the Name field.
- 6 Specify the destination library reel.
- 7 Click Assemble Selected EDLs.
The assembled clip is created in the clip library.

Capturing and Assembling Multiple EDLs into Acts

You can assemble more than one EDL onto the same video layer to create acts. For instance, if you have a show that you have edited in three separate blocks (with three different EDLs), you can assemble these EDLs back into one clip. If the EDLs have overlapping timecode, you have to manually adjust the timecode; otherwise, when you assemble the EDLs, there will be missing material in the assembled clip.

To capture and assemble multiple EDLs into acts:

- 1 From the Import EDL menu, click Load.

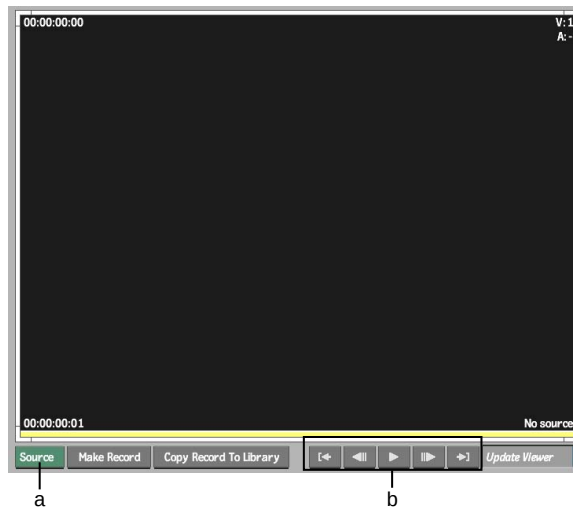
The EDL Load menu appears.

- 2 From the EDL Load menu, enable Same Library Reel.
- 3 Select the EDLs that you want to load, and then click Load.
The selected EDLs are loaded into the Import EDL module.
- 4 Switch between the opened EDLs to make sure that there is no overlapping timecode between the EDLs.
If there is, adjust the timecode manually. See [Editing an EDL](#) on page 663.
- 5 Enter a name for the clip in the Name field.
- 6 Click Capture.
The Auto-capture menu appears.
- 7 Enable Multiple EDLs.
- 8 Click Auto Capture.
All the material is captured.
- 9 Click Exit Auto Capture to return to the Import EDL module.
- 10 From the Assemble box, select M-Assemble.
The Multi-Assemble menu appears.
- 11 Click the Track column for the first EDL, then **Ctrl**-click the Layer column for each of the other EDLs that you want to add to the same track.
Refer to the Track and Layer column to make sure that all EDLs will be assembled on the same tracks/layers. For example, if you want to add three EDLs to track V1, all three EDLs should all be assigned to track V1 and layer L1.
If you want to add other EDLs as acts on another video track, click the Track column for the first EDL in the set. Next, **Ctrl**-click the Layer column for the other EDLs you want to add to the same track.
- 12 Click Assemble Selected EDLs.
The selected EDLs are assembled onto the specified library reel.

Viewing Captured and Assembled Material

Use the EDL Player to view source clips of a captured and assembled EDL. You can assemble all or part of the clip with the EDL Player. You can also make a

record clip and view the final material in the EDL Player. You can then modify the EDL, make a new record clip, and view your changes in the EDL Player without having to exit the EDL module.



(a) Focus box (b) Player controls

To view captured material:

- 1 In the Import EDL menu, ensure that the Source option is selected in the Focus box.
- 2 Select an event in the EDL.
The first frame of the selected event appears in the EDL Player. You can also select the Source In or Record In entries in the EDL to do the same. Select the Source Out or Record Out entries in the EDL to display the last frame of the event in the EDL Player.
- 3 Use the EDL Player controls to view the clip.
- 4 To make a record of the current clip, click Make Record.
- 5 To copy the record clip to the library, click Copy Record To Library.

To view an assembled EDL:

- 1 Select the events that you want to assemble.
- 2 Click Make Record in the EDL Player.

A record clip is created and appears in the EDL Player.

- 3 Use the Player controls to view the clip.

You can modify the EDL and repeat these steps to view your changes. Once you have the result that you want, click the Copy Record To Library button to save the clip in the clip library.

Unlinking and Relinking Media and Clips

28

Topics in this chapter:

- [About Unlinking and Relinking Media and Clips](#) on page 695
- [Unlinking Media from Clips in the Clip Library](#) on page 696
- [Unlinking Media from Selected Timeline Segments](#) on page 699
- [Reformatting Clips](#) on page 701
- [Reformatting Examples](#) on page 708
- [Recapturing Media](#) on page 710
- [Relinking Media to Clips](#) on page 719

About Unlinking and Relinking Media and Clips

The clip library contains a suite of tools for making different versions of a project— Unlink, Relink, Reformat, and Recapture. These tools allow you to separate the media of a clip from its metadata, optionally reformat the metadata of an unlinked clip to another resolution, recapture the associated media, and then relink the metadata to the newly captured media.

You can use these capabilities for a number of purposes, for example:

- Create multiple masters by working on a project at one resolution and then reformatting it to another. You can speed up your interaction within the application by working on the lower resolution version. You could, for example, shoot in HD or film, finish the project in SD in Backdraft Conform, and output in either resolution.
- Work on proxies instead of the actual media during the course of the project. You can unlink the media from a clip but retain the proxies. When the project is complete, recapture the media at the required resolution, relink, and output as the finished version. Working on proxies provides an improved level of interactivity, particularly with projects based on high-definition media. Also, less space on the framestore is used during the project.
- Replace shots that were captured incorrectly, for example, if frames became corrupted during capture.
- Replace shots that were worked on outside Backdraft Conform after being captured. For example, replace shots that were colour corrected using an image processor after the original capture.
- Move clips to a new facility. Unlink the media from clip metadata, transfer the metadata to the new facility, recapture the material at the new facility, and then relink the recaptured material to the clips.
- Unlink media from a timeline prior to archiving at the end of a project, the result being a much smaller archive. The media would need to be recaptured and relinked to the timeline when restoring the archive.
- Free up space on the framestore. Media is removed from the framestore when unlinked from a clip, given that no other clips are referencing that media. Depending on the way you manage clips on a project, this may be a feasible method of gaining framestore space.

Unlinking Media from Clips in the Clip Library

You can break the link between the media and the metadata of a clip using the Unlink tool. You can unlink the video media, the audio media, or both. When you unlink a clip's media from the metadata, all the metadata is retained. This includes tracks, layers, containers, timecodes, the tape name, dissolves, wipes, cuts, and soft effects.

When a clip is unlinked, and there is no other clip referencing the media, the media is deleted. If a source clip is used in multiple timelines and you unlink media for one timeline only, the other timelines are not affected. This ensures that you do not accidentally delete the link to another user's media.

All clips in Backdraft Conform except virtual sources can be unlinked. After unlinking, you can, for some types of clips, recapture the media associated with the unlinked clip, and relink it to the clip.

You can relink the media from clips captured from a VTR and from clips imported into Backdraft Conform from image and audio files. When you unlink imported clips, the original path to the image files is retained in the clip metadata, making it easier to reload the associated media. When you unlink captured video-based media, the tape name and in and out timecodes are retained in the clip metadata, allowing you to easily recapture the material associated with the metadata, and relink the material to it.

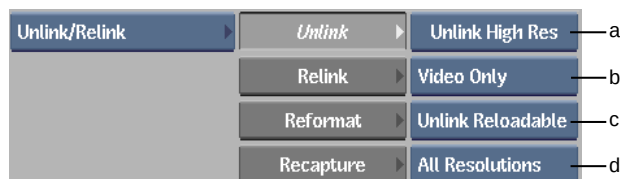
The media of clips processed in modules cannot be relinked to the clips; the same applies to hard-committed clips. In these cases, the media is flagged as un-reloadable. When unlinking from the Tools menu, you can unlink only the material that can be recaptured or you can unlink all media (including the clips processed in effects modules).

Unlinked clips can be archived and transferred using Wire, and they can be used when exporting to an EDL.

You can unlink entire timelines from the clip library or selected timeline segments directly on the timeline.

To unlink media:

- 1 Open the clip library containing the clips from which you want to unlink the media.
- 2 In the Clip Library menu, click Tools.
- 3 From the Tools menu, choose Unlink/Relink.
- 4 If necessary, enable Unlink to display the Unlink Media controls.



(a) Unlink Media box (b) Media Type box (c) Limit Unlink box (d) Limit Resolution box

- 5 Select the clips that you want to unlink.
- 6 From the Media Type box, select the type of media that you want to unlink from the clip.

Select:	To:
Video Only	Unlink the video media from the clip metadata.
Audio Only	Unlink the audio media from the clip metadata.
Video & Audio	Unlink the audio and video media from the clip metadata.

NOTE If you select Video Only or Audio Only on a clip containing both types of media, you can perform the unlink operation on the remaining media in the unlinked clip at a later time.

- 7 From the Limit Unlink box, select an option.

Select:	To:
Unlink Reloadable	Unlink the media only from clips whose media can be recaptured or reimported and relinked to the clip. Clips created in effects modules are not unlinked.
Unlink All	Unlink the media from all selected clips regardless of whether the media can be recaptured and relinked to the clip.

- 8 From the Limit Resolution box, select an option.

Select:	To:
All Resolutions	Select clips of any resolution.
Specified Res	Specify a framerate and a resolution. Only clips that match the selected criteria are unlinked.

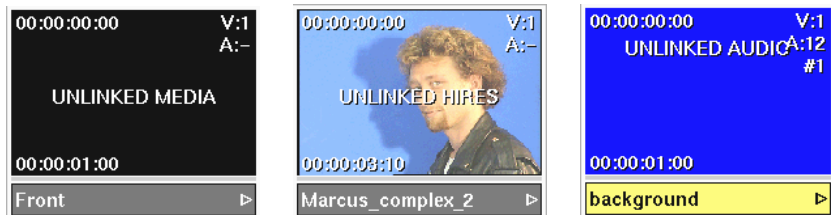
- 9 From the Unlink Media box, select an option.

Select:	To:
Unlink	Unlink the media from the metadata.
Unlink High Res	Unlink the media from the metadata but retain the proxies. Proxies must be generated prior to unlinking with this option.

- 10 Confirm the action. If there are multiple clips, you will be prompted to apply the changes to all the clips or each one individually.

The media is unlinked from the metadata for the selected clips. The appearance of the unlinked clip depends on the unlink options you picked:

- If you selected Unlink with Video or Video & Audio, the label “Unlinked Media” appears on black frames.
- If you selected Unlink with Audio, the video images appear on the frames, with the label “Unlinked Audio” superimposed on them.
- If you selected Unlink High Res, the proxy image appears if Proxy resolution is set for the clip in the Player. See [Setting Playback Resolution and Mode](#) on page 80. If Full Res resolution is set in the Player, the words “Unlinked Hires” appear on black frames.
- If only some segments were unlinked, the untouched media is unaffected by the change.



Unlinking Media from Selected Timeline Segments

You can unlink selected segments of a timeline using the Unlink tool. This is useful for replacing selected segments with a recaptured shot. For example, if a set of shots has been colour corrected outside of Backdraft Conform since they were originally captured, you can unlink the segment on the timeline, save the timeline to the clip library, capture the colour-corrected shots using the Recapture tool in the Tools menu, and relink them automatically into the timeline clip.

If you are working with generated proxies in your project, you can unlink the media and retain the proxies, for example, if you want to work on the proxies prior to recapturing the original media.

When you unlink timeline segments, the media of the associated source clips is not unlinked from the clip metadata. Therefore, space is not freed up on

the framestore as it can be when unlinking clips from the clip library. If you wanted to delete the media associated with a source clip from the framestore, you would have to explicitly unlink that source as well as the segment on the timeline.

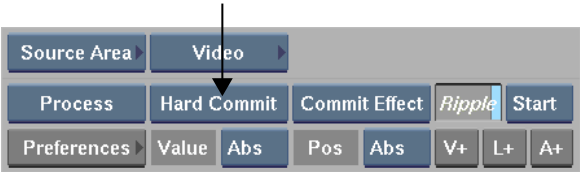
After you unlink a segment, you cannot relink to the unlinked media — you must recapture it first. However, you can use Undo during a work session to re-establish a link between a segment and its media. Note that when unlinking from the EditDesk, the media is unlinked regardless of whether or not it is reloadable.

To replace the unlinked segments, save the timeline and use the procedure described in [Recapturing Media](#) on page 710. Only the events corresponding to the unlinked segments are listed in the events list for recapture.

Segments selected for unlinking can have soft effects applied to them. The soft effects will be retained in the clip metadata. You can unlink segments that have transitions applied to them; however, you cannot unlink just a transition.

To unlink the media for selected timeline segments:

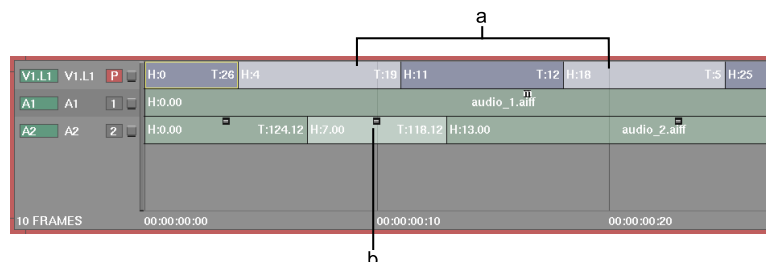
- 1 In timeline view, display the timeline containing the segments that you want to unlink.
- 2 Select the segments that you want to unlink. Alternatively, if you want to unlink only one segment, make it the current segment by placing the positioner over it.
- 3 From the Media Management box, select an unlink option.



Select:	To:
Unlink	Unlink the media from the selected segments. Proxies are not retained.

Select:	To:
Unlink High Res	Unlink the media from the selected segments and retain the proxies. You can continue to work with the proxies.
NOTE To view and work with proxies on the EditDesk and in the Player after unlinking, select Proxies in the Player Resolution box in the Player. See Setting Playback Resolution and Mode on page 80.	

- Click Confirm. If there are multiple clips to confirm, you can click Confirm All to confirm them all or click Confirm for each clip.
The selected segments are unlinked. On the timeline, unlinked video segments are a lighter grey than other video segments and unlinked audio segments are a lighter green.



(a) Unlinked video segments (b) Unlinked audio segment

In the Record Area proxy, the image is replaced with a black image containing the label “Unlinked Media” (if you selected Unlink). If you selected Unlink Hi Res, the label “Unlinked Hires” appears on the proxy. If Proxy resolution is selected in the Player, the proxy image appears.

Reformatting Clips

Whether you want to create final masters of your project in different resolutions or simply increase your speed of interactivity by working in a resolution lower than that of the final version, the Reformat tool can facilitate your work by simplifying the steps involved.

When working with timelines that point to differently formatted or lower resolution proxies, you can reformat the timeline so it can later relink back to the original source media files.

You can change the metadata resolution parameters of unlinked clips using the Reformat tool. For example, you can reformat a clip to another specified frame size, framerate, or scan mode. You can then recapture media of the specified format and relink it to the clip. For instance, assume your project was shot in HD 59.94i (16x9), down-converted to NTSC at 16x9 aspect ratio and then brought into Backdraft Conform. You perform your online editorial with the SD material and in the middle of the project, you learn that you need to deliver an HD version. The Reformat tool allows you to select all the SD source clips and change the metadata into HD clips. Soft effects are scaled automatically to the new format. You can then recapture the material using the HD tapes and link the HD material to the reformatted clips.

If the clip that you are unlinking is based on a timeline that contains some segments that are not unlinked, the media of these segments will also be reformatted and, if needed, timewarped. You can specify the fit method for this media. Usually you can use this reformatted media as a guide only, replacing it with a version created at the appropriate resolution at a later time.

NOTE When you want to change the resolution parameters of regular clips that have no unlinked media from the clip library, use the Resize tool in the Clip Library menu. See [Resizing Clips on Import, Export, or in a Clip Library](#) on page 1106.

In general, use the following workflow when reformatting unlinked clips.

Step:	Refer to:
1. Verify whether or not the clip contains module-processed segments. If so, decide on the method you will use to replace the material for these segments.	Handling Clips with Processed Effects on page 703.
2. Unlink the edited clips. All the editorial decisions, layers, soft effects, and transitions are conserved in the metadata.	Unlinking Media from Clips in the Clip Library on page 696 or Unlinking Media from Selected Timeline Segments on page 699.
3. Reformat the clips to the appropriate resolution and framerate. Apply a fit method to existing media on the timeline.	Reformatting Unlinked Clips for Recapture on page 705.

Step:	Refer to:
4. Recapture the clips using the appropriate material.	Recapturing Media on page 710.
5. Relink the newly captured media to the existing metadata.	Relinking Media to Clips on page 719.
6. Capture the source material for module-processed segments at the appropriate resolution, reapply the setups, reprocess, and replace the low-quality version.	Handling Clips with Processed Effects on page 703.

You have many options for changing the resolution, including setting a custom resolution. The following table lists some typical resolution conversions you can make to the metadata.

Convert from:	To:
NTSC 4x3	NTSC 16x9
NTSC (4x3 or 16x9)	HDTV 720P
NTSC (4x3 or 16x9)	HDTV (23.976p)
NTSC (4x3 or 16x9) (24p)	HDTV 59.94i (with pulldown removal)
NTSC (4x3 or 16x9) (24p)	HDTV (23.976p)
PAL 4x3	PAL 16x9
PAL (4x3 or 16x9)	HDTV 25p / 50i
PAL or NTSC	Film 2K (scanned files)

See [Reformatting Examples](#) on page 708.

Handling Clips with Processed Effects

Media processed in modules cannot be recaptured and relinked to an unlinked clip. If your timeline contains segments comprised of processed clips, and your project workflow involves unlinking, reformatting, and, later, recapturing media, you will need to manually convert the processed shots to the required

resolution. Use one of the following suggested workflows to convert these shots.

Replacing Shots After Recapturing the Timeline

This workflow is suitable for situations where you want to retain and output two versions of a project.

To replace module-processed shots after recapture:

- 1 Create the module-based effects on the SD version and process.
- 2 Save the setups.
- 3 Add the shots to the timeline.
- 4 When the project is complete, save the current version of the timeline (for example, PAL or NTSC), and output as needed.
- 5 Unlink a second copy of the timeline using Unlink Reloadable. The processed segments will be ignored.
- 6 Reformat the timeline to the new resolution. Select a fit method for resizing the media on the timeline; you can use it as a reference prior to replacing it.
- 7 Capture the material of the second resolution and link it to the clip.
- 8 Import the DPX material or capture the HD source material required for the processed shots.
- 9 Bring the DPX or HD sources into the appropriate modules, apply the setups to this material, process, and replace on the timeline. The timeline is now ready for output at the second resolution.

Replacing Shots Prior to Recapturing the Timeline

This workflow is only suitable for projects where a single final resolution is planned.

To replace shots prior to recapture:

- 1 Perform the module-based effect on the SD version and process. Save the setups.
- 2 Import the DPX material or capture the video material at the required resolution for the shot.
- 3 Reapply the setup in the module and process.

- 4 Replace the shot on the timeline.
- 5 When the project is complete, unlink the timeline, choosing Unlink Reloadable. The processed shots will be ignored.

A variation on this workflow would be to create the module-based effects in the final resolution, avoiding the need to reapply the setups, reprocess, and replace the shot. However, you would need to have the final resolution material for those shots available at an earlier point in the project.

To create effects on the final resolution material:

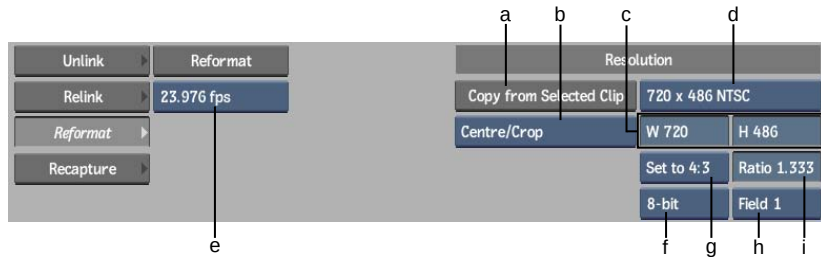
- 1 When you know you will work in a module, import the DPX version or capture the HD version of the shot.
- 2 Perform the effect on the DPX version or HD version and process.
- 3 Replace the shot on the timeline.
- 4 When the project is complete, unlink the timeline, choosing Unlink Reloadable. The processed shots will be ignored.
- 5 Reformat the clip to the new resolution. Make sure the resize settings are exactly that of the final. They will therefore not affect the module-processed media.
- 6 Recapture the remaining material and relink.

Reformatting Unlinked Clips for Recapture

Reformat the metadata of unlinked clips using the Reformat tool.

To reformat unlinked clips prior to recapturing the media:

- 1 Open the clip library containing the unlinked clips you want to reformat.
- 2 Select the unlinked clips you want to reformat.
- 3 Click Tools to display the Tools menu.
- 4 From the Tools menu, choose Unlink/Relink.
- 5 Click Reformat.
The Reformat controls appear.



(a) Copy from Selected Clip button (b) Fit Method box (c) Width and Height fields (d) Resolution Presets box (e) Frame Code Mode box (f) Bit Depth box (g) Aspect Ratio Presets box (h) Scan Mode box (i) Aspect Ratio field

- 6 Specify the destination resolution by doing one of the following:
 - Select a preset from the Resolution Presets box.
 - Specify the dimensions using the Width and Height fields.
- 7 From the Frame Code Mode box, set the framerate and drop frame mode as needed.

If you have a clip that contains some linked media and some unlinked metadata, when you change the frame code mode such that the duration of the clip is affected, the unlinked metadata and linked media are treated differently. The linked media is timewarped to accommodate the new duration. For unlinked metadata, if more material is needed to accommodate the change in duration, it is input when the clip is recaptured. Effects will look identical, although the timing of the clip will be adjusted.
- 8 Set the aspect ratio, bit depth, and scan mode as needed.
- 9 If your clip contains video tracks or segments that still contain media (for example, module-processed shots), select a resize fit method from the Fit Method box.

NOTE This parameter only affects existing media in the clip, not the media that is later recaptured and relinked to the clip.

- 10 Click Reformat and confirm the action. If there are multiple clips to confirm, you can click Confirm All to confirm them all or click Confirm for each clip.

The clip metadata for the selected clips is updated to the specified values. Any existing media is also converted and resized using the specified fit

method. You can now recapture the media associated with these clips in the appropriate format.

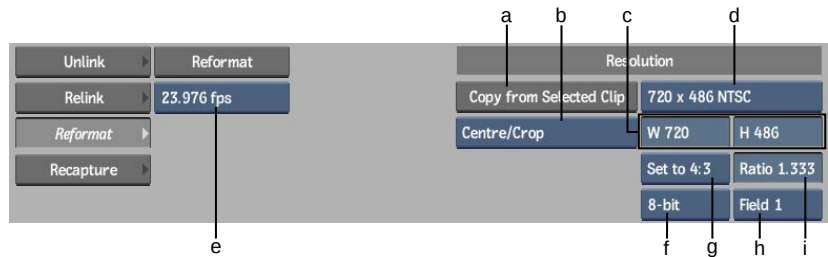
Copying Formats between Clips and Timelines

You can copy the format of a selected clip or timeline to other clips or timelines. This is useful in cases where, for example, you want to reformat a timeline to match the formatting of the source media after working with proxies.

To copy the format of a clip or timeline to other clips or timelines:

- 1 Open the clip library containing the clips and/or timelines that you want to reformat.
- 2 Click Tools to display the Tools menu.
- 3 From the Tools menu, choose Unlink/Relink.
- 4 Click Reformat.

The Reformat controls appear.



(a) Copy from Selected Clip button (b) Fit Method box (c) Width and Height fields (d) Resolution Presets box (e) Frame Code Mode box (f) Bit Depth box (g) Aspect Ratio Presets box (h) Scan Mode box (i) Aspect Ratio field

- 5 Select the clip or timeline from which you want to copy the format.
- 6 Click the Copy from Selected Clip button. The Resolution settings and Framerate setting change to reflect those of the selected clip.
- 7 Select the clips or timelines that you want to reformat.
- 8 Click Reformat and confirm the action. If there are multiple clips to confirm, you can click Confirm All to confirm them all or click Confirm for each clip.

The clip metadata for the selected clips is updated to the specified values. Any existing media is also converted and resized using the specified fit method. You can now recapture the media associated with these clips in the appropriate format.

Reformatting Examples

The following are suggested procedures for reformatting a project to a different resolution upon its completion.

To reformat a project from SD (NTSC or PAL) to HD:

- 1 Shoot the project at an HD resolution.
- 2 Convert the material to SD using, for example, a VTR.
- 3 Capture the SD material into Backdraft Conform.
- 4 Complete the project in SD.
- 5 When the project is complete, unlink the media.
- 6 Reformat the unlinked clip to HD.
- 7 Recapture the original HD material.
- 8 Relink the clip with the HD media.

To reformat a project from SD (NTSC or PAL) to DPX:

- 1 Shoot the project on film.
- 2 Use a telecine to convert the material to SD.
- 3 Bring the SD version into Backdraft Conform.
- 4 Complete the project in SD.
- 5 When the project is complete, unlink the media.
- 6 Reformat the timeline clip to 2K. Soft effects are scaled automatically.
- 7 Recapture using the Select Convert Tape to Files option.
- 8 Access the DPX material corresponding to the SD version shots and reload.
- 9 Relink.

To reformat a project from NTSC 24p to HD 24p:

- 1 Shoot the project at 1080 24p.
- 2 Down-convert the material to NTSC with pulldown added, using tape-to-tape transfer or telecine.
- 3 Capture the material into Backdraft Conform, removing pulldown. The reel information in the clip metadata shows that the material originated as 30 fps interlaced. It contains dual timecode.
- 4 Work on the project at 24p.
- 5 When the project is complete, unlink the media.
- 6 Reformat the timeline clip to HD 1080 24p.
- 7 Recapture and relink the HD 1080p material.

To reformat a project from NTSC 30i to HD 24p:

- 1 Shoot the project at 1080 24p.
- 2 Down-convert the material to NTSC with pulldown added, using tape-to-tape transfer or telecine.
- 3 Capture the material into Backdraft Conform.
- 4 Work on the project in NTSC 30 fps.
- 5 When the project is complete, unlink the media.
- 6 Reformat the timeline clip to HD 1080 24p.
- 7 Recapture and relink the HD 1080p material.

To reformat a project from PAL to HD 24p:

- 1 Shoot the project at 1080 24p.
- 2 Convert the material to PAL using a telecine.
- 3 Capture the material into Backdraft Conform.
- 4 Work on the project at 24p or in PAL.
- 5 When the project is complete, unlink the media.
- 6 Reformat the timeline clip to HD 1080p.
- 7 Recapture and relink the HD 1080p material.

Recapturing Media

You can recapture unlinked media that originates from VTR sources, image files, audio files, and film scanners. The media can be of the same resolution as the originally captured media or of a different resolution. If you are recapturing media of a different resolution, you must first reformat the unlinked clip to the new resolution. See [Reformatting Unlinked Clips for Recapture](#) on page 705.

When you recapture media, Backdraft Conform checks that the tape name and the duration of all shots exactly matches that of the originally captured media. Usually the timecode matches as well; however, you have the option of slipping the start timecode for individual tapes recaptured from a VTR. Similarly, when reloading image files, you can “swap” any file for another as long as it has the exact duration of the original file. This is useful when you want to replace one shot with another. For example, if a CG shot was re-rendered, you can recapture the re-rendered shot in place of the original. You can also change the tape name associated with a clip. In the case of audio files, you can only recapture the original audio — you cannot “swap” an audio file for another audio file.

NOTE You can slip the source timecode on a tape to match a new tape. This is useful when performing a new film transfer at another timecode. Do this using the Tape list.

You can recapture and relink media from a different type of source than the original. For example, if you transfer film material to a VTR and then capture it from the VTR and use this format to work in Backdraft Conform, you can later import DPX files of the same material and link this format to your timeline. The files can be of any format supported for import into Backdraft Conform. See [Supported File Formats](#) on page 220.

You can recapture unlinked media from a clip that contains some unlinked media and some media still present in the clip. For example, you can recapture a clip with only the audio unlinked or with timeline segments containing clips processed in modules. When you recapture, Backdraft Conform only recaptures the unlinked media. The segments or entire tracks that contain media are ignored. If proxies are defined for the project, they are regenerated on recapture.

NOTE Recapturing captures all the heads and tails in an unlinked clip. If needed, you can consolidate an unlinked clip prior to recapture.

When you recapture, one clip per event is placed in a reel, similarly to the way captured clips are placed in a reel when auto-capturing an EDL. By default, a reel named “Recapture” is created in the clip library for the events, but you can specify a different reel name or an existing reel.

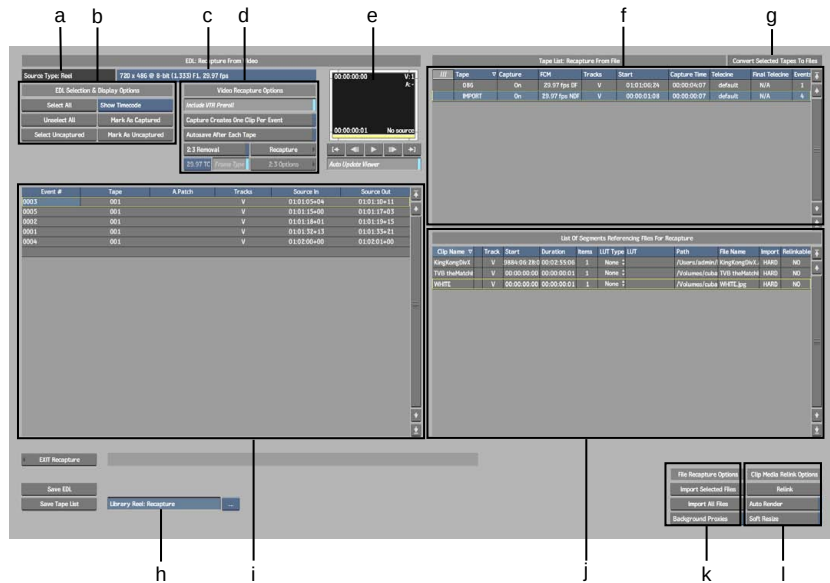
After you have recaptured the media, you must link it to the unlinked clip. You can do this as the last step of the recapture process or from the clip library at a later time.

Recapturing Media from a VTR

Recapture video-based media associated with unlinked clips using the Recapture tool.

To recapture media from a VTR:

- 1 Open the clip library containing the unlinked clips for which you want to recapture media.
- 2 Select the unlinked clips.
- 3 Click Tools to display the Tools menu.
- 4 From the Tools menu, choose Unlink/Relink.
- 5 Click Recapture.
The Recapture screen appears.



(a) Source Type label (b) EDL Selection & Display Options (c) Source Resolution box (d) Video Recapture Options (e) Auto Update Viewer (f) Tape list (g) Convert Selected Tapes To Files (h) Library Reel box (i) EDL list (j) Imported Clips list (k) File Recapture Options (l) Clip Media Relink Options

The Recapture screen contains the following three list areas:

- The Tape List contains the tape names for the media that you recapture from a VTR.
- The Sources List contains the media events.
- The Imported Clips List contains the file-based media associated with the unlinked clip. The Source Type label indicates the origin of the media. All this information is read from the clip metadata.

6 Optional: Change the library reel where you want to place the captured material by selecting one from the Library Reel box or create one by clicking in the Library Reel Name field. By default, the captured clips will be placed in a reel called “Recapture”.

7 Optional: From the Source Resolution box, select the resolution of the device from which you are capturing material.

If your timeline clip uses sources of differing resolutions, the resolutions are listed in the Source Resolution box. This box acts as a filter on the

Tape list and Event list. Only those tapes or events of the currently displayed resolution are listed.

The tapes containing the material of the specified resolution are displayed.

- 8 If the list contains any tapes that you do not want to recapture during this session, click in the Capture field of the tape and drag to the left or right.

The value changes from On to Off.

- 9 Set any options as needed. See [About the Import EDL Menu](#) on page 622.
- 10 Optional: Slip the start timecode of one or more tapes by dragging in the Start field of a tape in the Tape list.
- 11 Select the events that you want to recapture.

Do any of the following:

- To select a single event, click the event number entry. Click the event number entry of another event to unselect the first entry.
- To select a range of events, hold **Shift**, select an event, and click the last event in the range that you want to select. You can also click and drag to select a range of events.
- To add to a range of events, hold the **Ctrl** key or the pen button when you select an event.
- To select all events, use the Select All or Unselect All buttons.
- To select only the uncaptured events, click Select Uncaptured.

NOTE When no event is selected, all events in the EDL are recaptured.

- 12 To remove pulldown on capture, enable 2:3 Removal and set options as needed.

You can remove pulldown on recapture regardless of whether pulldown was removed when the original material was captured. See [Capturing Film-Based Media with 2:3 Pulldown Using EDLs](#) on page 1139.

- 13 Optional: If you want to generate proxies of the media in the background, enable Background Proxies.

- 14 Click Recapture.

The Auto-Capture menu appears.

- 15 Set menu options as required and capture the material. See [Auto-Capturing an EDL](#) on page 682.

NOTE In the Auto-Capture menu, do not change the aspect ratio, bit depth, or scan mode. The default values in these fields currently match the metadata in the selected unlinked clips and they must be matched in order to relink the material with the unlinked clip after the capture.

- 16 Click Exit Auto-Capture to return to the Recapture menu.
All captured events have a small x to the right of the event number.
- 17 View the captured material in the Recapture Viewer to make sure that the capture was successful.
- 18 Enable Auto Render if you want to re-render all timeline soft effects and transitions.
- 19 Optional: If the material needs to be soft-resized, enable Soft Resize.
This is useful, for example, when importing a 720x486 clip into a 720x480 project. See [Resize](#) on page 1105.
- 20 Click Relink.
The captured media is relinked with the unlinked clips. If you enabled Auto Render, timeline soft effects are re-rendered.
- 21 Click Exit Recapture to return to the clip library.
The relinked clip is located in the reel specified in the Library Reel box.

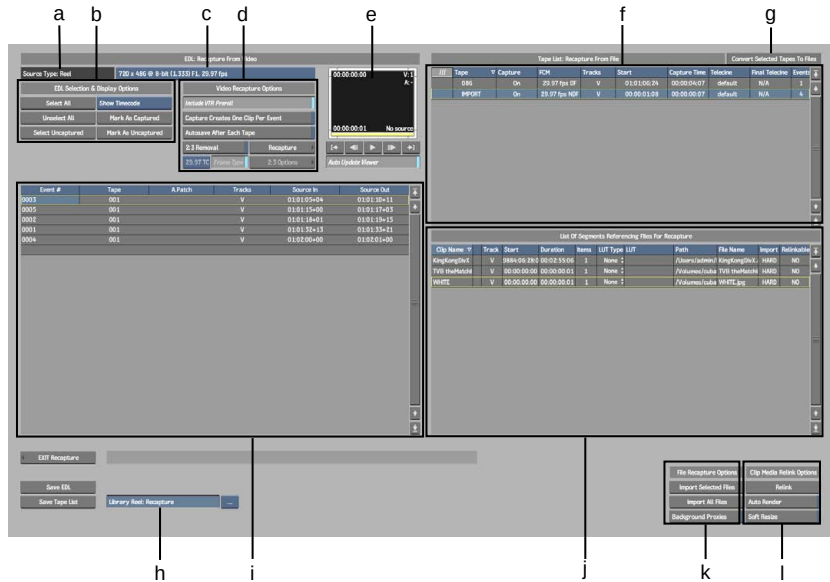
Reloading Imported Files

Reload file-based media associated with unlinked clips using the Recapture menu.

To reload imported clips:

- 1 Open the clip library containing the unlinked clips for which you want to reload media files.
- 2 Select the unlinked clips.
- 3 Click Tools to display the Tools menu.
- 4 From the Tools menu, choose Unlink/Relink.

- Click Recapture.
- The Recapture screen appears.



(a) Source Type label (b) EDL Selection & Display Options (c) Source Resolution box (d) Video Recapture Options (e) Auto Update Viewer (f) Tape list (g) Convert Selected Tapes To Files (h) Library Reel box (i) EDL list (j) Imported Clips list (k) File Recapture Options (l) Clip Media Relink Options

The Imported Clips List lists files that you import into Backdraft Conform. This information is read from the clip metadata.

- Check the column next to Clip Name. All entries marked with a checkmark can be reloaded from the current path. Otherwise, a different path and filename can be specified.
- Specify the path for any entries as required by clicking the Path field of the entry.
- Optional: In the Import field, select SOFT if you want to soft-import the files. See [About Soft-Import](#) on page 226.
- Optional: Select an alternative file in the File Name field of the entry.
- Optional: Associate a LUT with the selected video file. In the LUT Type field, select 1D LUT, 3D LUT, or Gamma correction. Select a LUT in the

LUT field for the entry. See [Applying a LUT on Import or Export](#) on page 1181.

- 11 Optional: If you want to generate proxies of the media in the background, enable Background Proxies.
- 12 From the File list, select the file entries that you want to reload.
If you are reloading all the clips, you do not need to select any entries.
- 13 Click Import Selected Files or Import All Files.
The files are loaded.
- 14 View the loaded files in the Recapture Viewer to make sure the files were loaded successfully.
- 15 Enable Auto Render if you want to re-render all timeline soft effects.
This is done during the relink process executed in the next step.
- 16 Optional: If the material needs to be soft-resized, enable Soft Resize.
This is useful, for example, when importing a 720x486 clip into a 720x480 project. See [Resize](#) on page 1105.
- 17 Click Relink to relink the captured media with the unlinked clips.
The specified files are linked with the unlinked clips. If Auto Render was enabled, timeline soft effects are re-rendered.
- 18 Click Exit Recapture to return to the clip library.
The reel specified in the Library Reel box contains a clip with the relinked media and the recaptured sources.

Loading Image Files into Video-Based Sources

When recapturing unlinked media, you can substitute files such as DPX images files for sources on a timeline that originated as video. This is useful when you want to conform an SD clip that was captured from video tapes to film scanned material. The requirements to accomplish this are as follows:

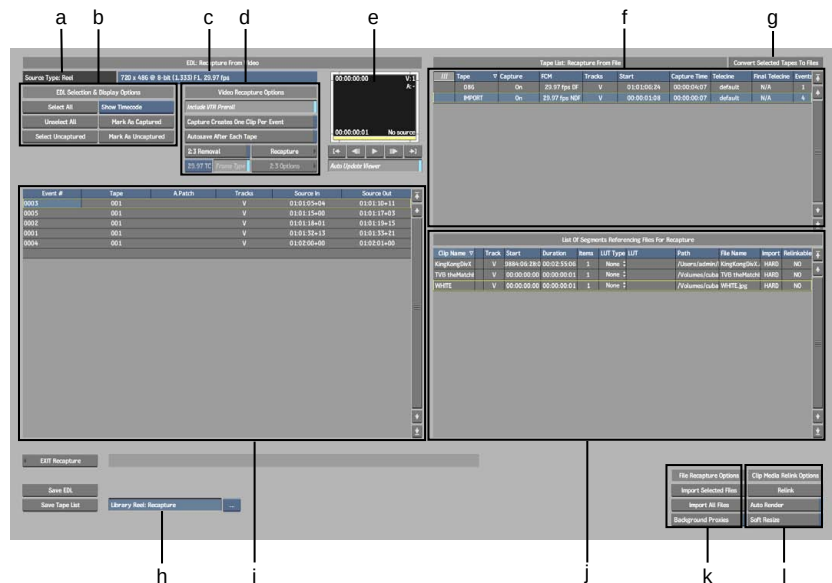
- The unlinked clip must be reformatted to the resolution and file format parameters (such as framerate and scan mode) of the files you are loading. See [Reformatting Clips](#) on page 701.
- The duration of each file you are loading must be identical to the duration of the clip or segment it is replacing.

NOTE This procedure is not supported for audio files.

To load files into video-based sources:

- 1 Display the clip library containing the unlinked clips for which you want to recapture media.
- 2 Select the unlinked clips.
- 3 Click Tools to display the Tools menu.
- 4 From the Tools menu, choose Unlink/Relink.
- 5 Click Recapture.

The Recapture screen appears.



(a) Source Type label (b) EDL Selection & Display Options (c) Source Resolution box (d) Video Recapture Options (e) Auto Update Viewer (f) Tape list (g) Convert Selected Tapes To Files (h) Library Reel box (i) EDL list (j) Imported Clips list (k) File Recapture Options (l) Clip Media Relink Options

The tapes corresponding to the video-based unlinked media are listed in the Tape list. The Source Type label indicates the origin of the media. This information is read from the clip metadata.

- 6 By default, the captured clips will be placed in a reel called “Recapture”. You can change the library reel where you want to place the captured material by selecting one from the Library Reel box or create one by clicking the Library Reel Name field.
- 7 Optional: From the Source Resolution box, select the resolution of the device from which you are capturing material.

If your timeline clip uses sources of differing resolutions, the resolutions are listed in the Source Resolution box. This box acts as a filter on the Tape list and Event list. Only those tapes or events of the currently displayed resolution are listed.

The tapes containing the material of the specified resolution are displayed.
- 8 Select the tapes containing events for which you want to load equivalent files.

NOTE The status of the Capture field does not affect the selection.

- 9 Click the Convert Selected Tapes to Files button.

The events belonging to the selected tapes appear in the File list. No path or filenames currently appear, but the reel name is placed in the path field temporarily, for reference. Next, you set the correct path and filename for the file corresponding to each video-based event.
- 10 Specify the path for any entries as required by clicking the Path field of the entry.
- 11 Optional: Select an alternative sequence of files in the File Name field of the entry.
- 12 Optional: Associate a LUT with the selected video file. In the LUT Type field, select 1D LUT, 3D LUT, or Gamma correction. Select a LUT in the LUT field for the entry. See [Applying a LUT on Import or Export](#) on page 1181.
- 13 Optional: If you want to generate proxies of the media in the background, enable Background Proxies.
- 14 Select the file entries that you want to reload from the File list. If you are reloading all the clips, you do not need to select any entries.
- 15 Click Import Selected Files or Import All Files.

The files are loaded.

- 16** View the loaded files in the Recapture Viewer to make sure the files were loaded successfully.
- 17** Enable Auto Render if you want to re-render all timeline soft effects.
- 18** Optional: If the material needs to be soft-resized, enable Soft Resize.
This is useful, for example, when importing a 720x486 clip into a 720x480 project. See [Resize](#) on page 1105.
- 19** Click Relink to relink the captured media with the unlinked clips.
The loaded files are linked with the unlinked clips. If Auto Render was enabled, timeline soft effects are re-rendered.
- 20** Click Exit Recapture to return to the clip library.
The reel specified in the Library Reel box contains a clip with the unlinked media and the captured sources.

Relinking Media to Clips

After you recapture media for an unlinked clip, you must link it to that clip to associate it with the clip metadata. You can relink recaptured image file imports, audio file imports and VTR-captured clips. Module-processed clips are tagged as un-reloadable, and cannot be recaptured or relinked.

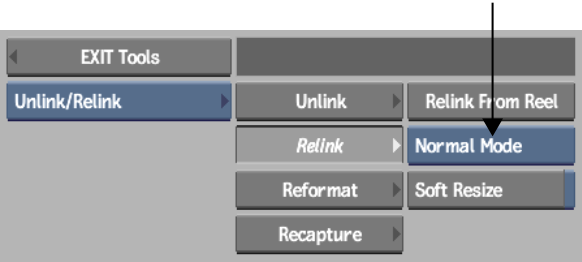
You can link the captured media directly from the Recapture menu after recapturing it, or from the clip library using the Relink tool. In most instances, it is more convenient to relink directly after recapture from the Recapture menu. When you relink the media to the clip from the Recapture menu, an assembled clip is placed in the specified reel. This clip is given the same name as the original unlinked clip. The original unlinked media clip is kept in its original location. This clip can be used again for recapturing.

Use the Relink tool in the clip library to relink media to an unlinked clip when it is not convenient to do so from the Recapture menu. When relinking from the clip library, the media and metadata you are relinking must be located in the same reel.

To relink in the clip library:

- 1** If the unlinked clip metadata that you want to relink with recaptured media is not located in the reel containing the recaptured media, move it there by dragging and dropping.
- 2** Select the unlinked clip.

- 3 Click Tools to display the Tools menu, then choose Unlink/Relink.
- 4 Click Relink.
The Relink menu opens.
- 5 To account for possible linking problems that may arise when importing files using an EDL, select an option from the Relink Mode box.



Select:	To:
Normal Mode	Relink clip metadata to media based on the tape name and timecode only.
Strict Mode	Relink clip metadata to media based on the tape name and timecode, as well as the filename. This value is used by default.

NOTE When you relink using the Recapture module, files are always searched using Strict mode.

- 6 Optional: Enable Soft Resize. See [Resize](#) on page 1105.
- 7 Click Relink From Reel.
All the captured clips in the reel that are associated with the original clip are relinked to it.

Topics in this chapter:

- [About Generating and Outputting EDLs](#) on page 721
- [About the Export EDL Menu](#) on page 722
- [Generating EDLs](#) on page 727
- [Outputting EDLs](#) on page 729

About Generating and Outputting EDLs

Use the Export EDL menu to save an EDL for any clips that you select in the clip library. When you save an EDL, you can use one of the following methods:

- Generate an EDL file and save it to the EDL directory.
- Output the EDL to a VTR using the Output options or as a clip in a clip library.

When you generate an EDL, you create an EDL from a clip in the clip library in any of the supported industry standard formats (such as CMX3600, Sony™ 9100, GVG). These files are made up of metadata only.

A clip may contain a number of audio tracks. However, this depends on the EDL format that you generate. When a format uses only two audio tracks, the other audio tracks are disabled.

In the process of outputting an EDL, you actually output the media used to build a clip to the clip library or to a VTR. This is useful for quickly dumping source clips onto a tape. You can also output an EDL in order to conform a program on another system to perform the final colour grading. In this case, after the colourist has completed work and created a new graded tape, you can recapture the graded material into a final colour-corrected clip using the output EDL.

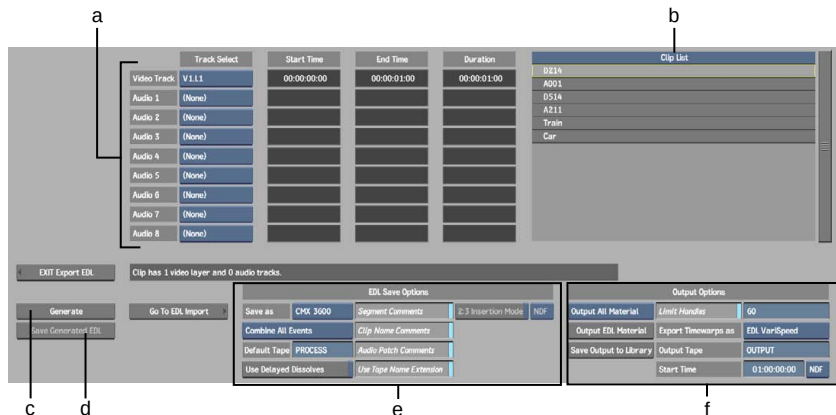
About the Export EDL Menu

Use the Export EDL menu to save and export a clip as an EDL file or output a generated EDL to a VTR or clip library.

This menu consists of four main areas:

- Track table
- Clip list
- EDL Save Options group
- Output Options group

Additionally, there are a few important controls outside of these areas such as the Generate button and the Save Generated EDL button.



(a) Track table (b) Clip list (c) Generate button (d) Save Generated EDL button (e) EDL Save Options group (f) Output Options group

Generate button Generate the new EDL. This action activates the Save Generated EDL, Output EDL Material, and Save Output to Library buttons.

Save Generated EDL button Save the generated EDL as a file. Specify a file name and path for the saved EDL in the file browser that appears, and then click Save. Ensure that your file name does not contain any of the following characters: ` # ~ @ \$ % ^ & * () [] { } < > \ | / ! ? , ; : ' "

Track Table

The Track table shows the video and audio tracks that the EDL will be based on. The table is divided into five columns.

a

	Track Select	Start Time	End Time	Duration
Video Track	V1.L1	00:00:04:00	00:00:28:24	00:00:24:24
Audio 1	A1	00:00:04:00	00:00:27:01	00:00:23:01
Audio 2	A2	00:00:04:00	00:00:27:01	00:00:23:01
Audio 3	(None)			
Audio 4	(None)			
Audio 5	(None)			
Audio 6	(None)			
Audio 7	(None)			
Audio 8	(None)			

(a) Track Type column

Track Type The first row specifies the video track and the remaining rows refer to the audio tracks.

Track Select The selected track's name and number. Use this display to select the tracks that the EDL is based on.

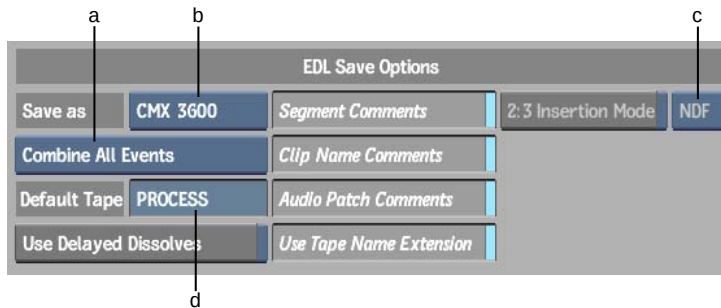
Start Time The track's start timecode.

End Time The track's end timecode.

Duration The track's duration.

EDL Save Options Group

When you generate an EDL, you can change the EDL format, how matching events are combined, and the default tape number. You set the appropriate options in the EDL Save Options area of the Export EDL menu.



(a) EDL Event Combination box (b) EDL Format box (c) Frame Code Mode box
(d) Default Tape field

EDL Event Combination box Select an option to indicate how events with the same source timecodes, record timecodes, and tape ID are combined when the EDL is generated.

Select:	To use:
Combine All Events	A single entry for all video and audio events.
Combine Audio Events	One entry for audio events and a separate entry for video events.
Never Combine Events	A separate entry for each video and audio event.

EDL Format box Select the format of the generated EDL. You can save EDLs in any of the following formats:

- CMX 340
- CMX OMNI
- GVG 4 Plus (GVG v4.1 or higher)
- SONY 910
- SONY 9000
- SONY 9100
- CMX 3600
- GVG 4
- SONY 900
- SONY 5000
- SONY 9000 Plus (v2.21 or higher)

Segment Comments button Enable to allow comments added to the timeline to be included in the generated EDL.

Clip Name Comments button Enable to allow clip name comments to be included in the generated EDL.

2:3 Insertion Mode button Enable to convert the framerate of a 24p clip from 23.97 fps to 29.97 fps, and maintain 2:3 pulldown information for all in and out points (including cuts, wipes, dissolves, and timewarps). 2:3 pulldown data is important when master tapes are sent out for hardware-based tape-to-tape colour correction.

The EDL file will include explicit notification of hybrid splices as punctuation marks in the record in and out data.

A:	Indicates a:
period (.)	Regular splice record-in point for 29.97 fps non-drop frame timecode tapes.
comma (,)	Regular splice record-in point for 29.97 fps drop frame timecode tapes.
colon (:)	Hybrid splice record-in point for 29.97 fps non-drop frame timecode tapes.
semi-colon (;)	Hybrid splice record-in point for 29.97 fps drop frame timecode tapes.

This button is enabled by default when a 24p template is selected at project creation.

Frame Code Mode box Select the drop frame mode for the output material. Select DF (drop frame) or NDF (non-drop frame) format.

Use Delayed Dissolves button When enabled, delayed dissolves are included in the generated EDL.

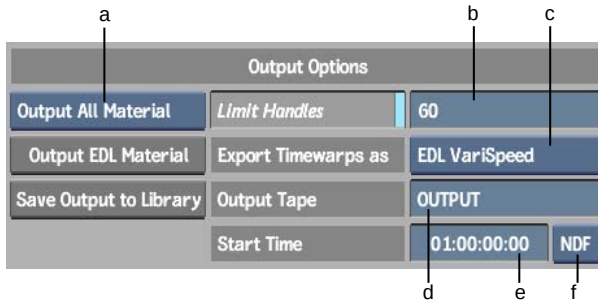
Default Tape field Enter a tape name to override the default tape ID when saving an EDL. Source clips are assigned tape IDs when loaded using the Input Clip or Import EDL menu.

Audio Patch Comments button Enable to allow clip audio patching comments to be included in the generated EDL.

Use Tape Name Extension button Enable to add a list to the end of the EDL that shows the relationship between the short tape name (8 characters, maximum) used in the EDL and the long tape name (52 characters, maximum) that you can set in the Import EDL menu.

Output Options Group

Before outputting an EDL, select the material that is output, the length of handles (if any), the method of exporting timewarps, the output tape ID, and the starting timecode.



(a) Output Type box (b) Limit Handles field (c) Timewarp Mode box (d) Output Tape field (e) Start Timecode field (f) Frame Code Mode box

Output Type box Select the material to output to a VTR.

Select:	To:
Output All Material	Output all source clips and clips created in Backdraft Conform.
Output Generated Only	Output only clips created in Backdraft Conform.
No Output	Not output any clips. Only the EDL is generated.

Limit Handles button Enable to export the source clip with a specified maximum number of frames before and after.

Limit Handles field Enter a value for the number of frames used before and after the edit.

Timewarp Mode box Select how timewarps are output.

Select:	To:
EDL Varispeed	Create a timewarp command in the EDL that plays the clip at the timewarp speed.
Rendered Source	Render the timewarp before outputting the clip to the VTR. This creates a newly rendered clip and replaces the timewarp.

NOTE There is no standard EDL format that recognizes timewarps created using the Timewarp Editor. If you create a timewarp using a custom curve, you must use the Rendered Source option; otherwise, the timewarp curve is lost.

Output EDL Material button Output the EDL material to a VTR. The EDL Output module appears, which is comprised of the same controls as the Clip Output module.

Save Output to Library button Output the EDL material as a clip in the clip library. The EDL is output to the same library reel from which you originally accessed the Export EDL menu.

Output Tape field Enter a tape ID for the output material. The Output tape ID is used in the EDL to reference the destination of the material. Note that the edit's original tape ID is added to the Comment field. This is useful if you want to trace an element to its original source.

Start Timecode field Enter a value to specify the start timecode for the output material. If the start timecode is 01:00:00:00, the clip with all the material begins at 01:00:00:00. The start timecode is used in the EDL to reference the location of material.

Frame Code Mode box Select the drop frame mode for the output material. Select DF (drop frame) or NDF (non-drop frame) format.

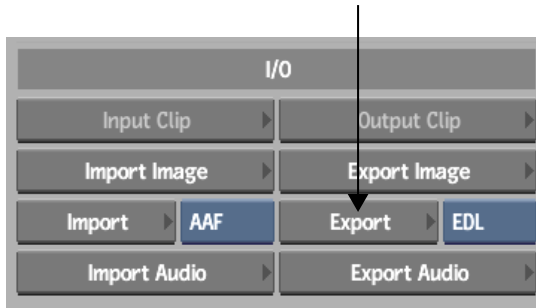
Generating EDLs

You can generate an industry-standard EDL containing the metadata needed to recreate a clip that consists of one video track and up to eight audio tracks (depending on the EDL format). For clips that contain more than one video track or eight audio tracks, you must generate multiple EDLs.

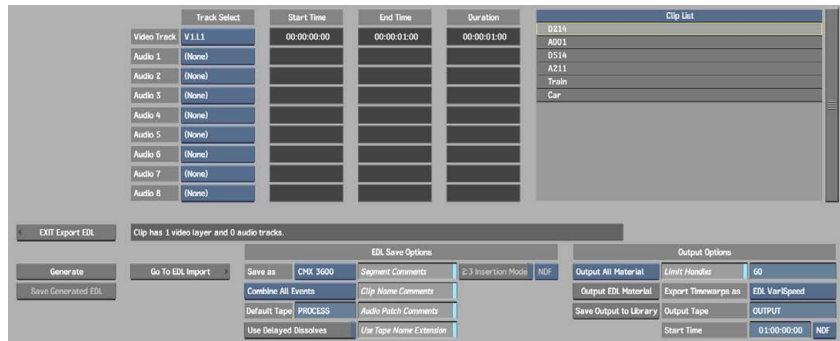
In addition to source/record timecode for video and audio tracks, you can include clip name comments, audio patching information, and the reel name in the generated EDL. This information can be useful in helping to recreate a timeline clip on another system.

To generate and save an EDL:

- 1 In a clip library select the clips that you want to export.
- 2 Click Export EDL.



The Export EDL menu appears.



- 3 In the Clip list, select the clip that you want to export.
- 4 In the Track table, select video and audio tracks to include in the EDL.
- 5 Specify any EDL Save options. See [EDL Save Options Group](#) on page 723.
- 6 In the Output Options group, from the Output Type box, select No Output.
- 7 Click Generate.
The EDL is generated and the Save Generated EDL button becomes active.
- 8 Click Save Generated EDL.
The file browser appears.
- 9 Specify the location of the exported file and the file name, and then click Save.

Ensure that your file name does not contain any of the following characters: ` # ~ @ \$ % ^ & * () [] { } < > \ | / ! ? , ; ' "

The EDL is exported to the specified location.

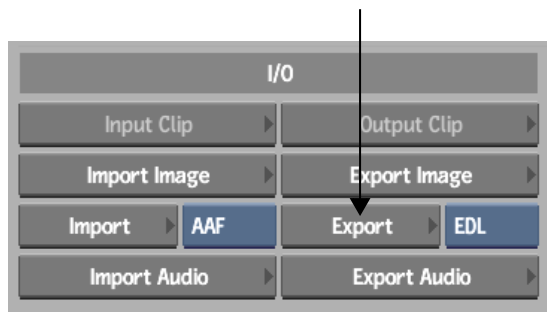
Outputting EDLs

You can output an EDL as a clip in the clip library or to a VTR. This is an alternate method of archiving a project that, along with an EDL, provides a backup mechanism for restoring both project metadata and media.

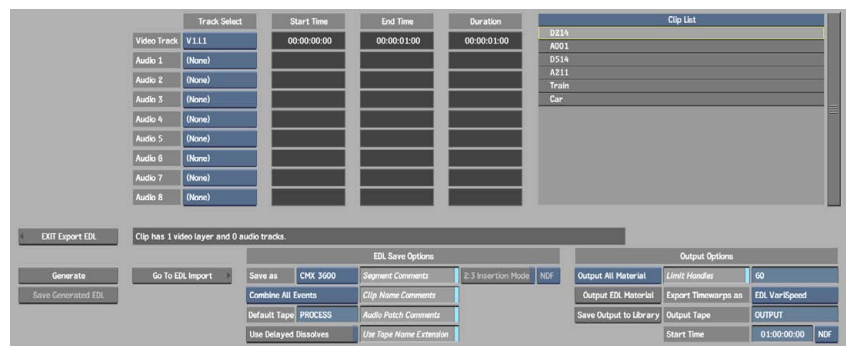
When you output a clip, the original start and end timecodes are added to the Comment field of the generated EDL along with the tape ID. This is useful if you want to trace the material referenced in the generated EDL to its location on the original source tape.

To output an EDL to a VTR or a clip library:

- 1 In the clip library, select the clips that you want to output.
- 2 Click Export EDL.



The Export EDL menu appears.



- 3 In the Clip list, select the clip that you want to export.
- 4 In the Track table, select video and audio tracks to include in the EDL.

- 5 Specify any EDL Save options. See [EDL Save Options Group](#) on page 723.
- 6 In the Output Options group, from the Output Type box, select either Output All Material or Output Generated.
- 7 Specify any Output options. See [Output Options Group](#) on page 726.
- 8 Click Generate.

The EDL is generated and the Save Generated EDL, Output EDL Material, and Save Output to Library buttons become active.
- 9 Do one of the following:
 - Click the Output EDL Material button to output the EDL material to a VTR. The EDL Output module appears, which is comprised of the same controls as the Clip Output module.
 - Click the Save Output to Library button to output the EDL material as a clip in the clip library. The EDL is output to the same library reel from which you originally accessed the Export EDL menu.

Topics in this chapter:

- [About Timecode and Keycode](#) on page 731
- [Displaying Timecode and Keycode](#) on page 733
- [About the Timecode Calculator](#) on page 738
- [About the Keycode Calculator](#) on page 739
- [About the Change TC/KC/Rate Tools](#) on page 742
- [Changing Timecode](#) on page 748
- [Changing Keycode](#) on page 749
- [Changing Frame Code Mode](#) on page 750
- [Manually Assigning Timecode and Keycode on Import](#) on page 751
- [About the Burn In Menu](#) on page 753
- [Burning-in Clip Information](#) on page 756

About Timecode and Keycode

Timecode and keycode are essential tools for working with EDLs, or for conform and recapture. They are the identification markers by which your media is referenced in an EDL. Timecode and keycode can be imported with the media, assigned, changed, burned-in, or removed.

Timecode is a form of media metadata that labels individual frames of video or film. Timecode contains binary-coded-decimal hour, minute, second, and frame

identification. Timecode is used in film, video, or audio material to provide a time reference for editing, synchronisation, and identification. The invention of timecode made modern videotape editing possible, and led to the creation of non-linear editing systems. Timecode is defined in the SMPTE 12M specification.

Keycode (also known as edge code) tracks frames of film from source reels through the post-production pipeline using code. Keycode is a variation of timecode designed to uniquely identify frames in filmstock. Keycode is a valuable tool for any project that originates on film, evolves through digital post production, and eventually references the original film material for final image capture. Keycode is printed on film in both a human-readable and machine-readable form. It indicates the manufacturer and film emulsion, a unique identification for each reel, as well as the footage and frame number.

Keycode appears in a varying number of increments along the film strip depending on the film gauge. For example, on 35 mm film, keycode appears every foot, which translates to every 16 frames of film.

Ways that Timecode and Keycode is Preserved or Destroyed

Depending on how you work with a clip, the timecode and keycode it contains can be either preserved or destroyed.

Timecode and keycode data is preserved in the following circumstances:

- When you edit clips in the timeline.
- When you commit or merge layers in the timeline for a clip from a single source.
- When you commit or merge layers in the timeline for a single-frame virtual clip.
- When you load a single clip into a module and then process, the timecode and keycode is preserved in the result clip.
- When you load multiple clips into a module and then process, the timecode and keycode contained in the back clip is preserved in the result clip.
- When you export or publish a source in the DPX format.

Timecode and keycode data is destroyed in the following circumstances:

- When you load multiple clips into a module, the result clip inherits the timecode and keycode of the back clip. Timecode and keycode for clips other than the back clip is destroyed.
- When you edit a clip and export as a DPX file.

TIP If you are using Clip History, you can retrieve timecode and keycode data from the original source clips.

Displaying Timecode and Keycode

Timecode and keycode can be displayed and monitored in the following user interface areas:

- Clip proxies
- Player
- Clip information overlay
- Timeline
- List View

When ranges of timecode or keycode are displayed, for example, in a Timeline or List view, the range is inclusive. The out value shows the timecode or keycode for the last frame of the element.

Displaying Timecode and Keycode on Clip Proxies

Keycode can be displayed on clip proxies in the Source Area and in the clip library.

Timecode and keycode are displayed in clips as follows.



(a) Timecode for the current frame (b) Keycode for the current frame
Image courtesy of The House

To display timecode and keycode on proxies in the clip library:

- 1 In the clip library, ensure that View Mode is set to Proxies.



(a) View Mode box (b) Information box

- 2 From the Information box, select any option except No Display.

To display timecode and keycode on proxies on the EditDesk:

- 1 On the EditDesk, from the Menu Priority box , select Source Area and then enable it.



- 2 From the Clip Information box, select an option that includes timecode/keycode.



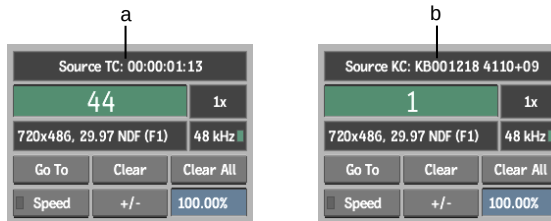
Select:	To display:
KC/F + Res	Keycode, frame number, clip duration, and resolution.

Select:	To display:
KC/TC +Res	Keycode, timecode, clip duration, and resolution.
KC/Frame	Keycode, clip duration, and frame number.
KC/TC	Keycode, timecode, and clip duration.

NOTE You can use the **Ctrl+I** hotkey to cycle through display options, including the keycode options.

Displaying Timecode and Keycode in the Player

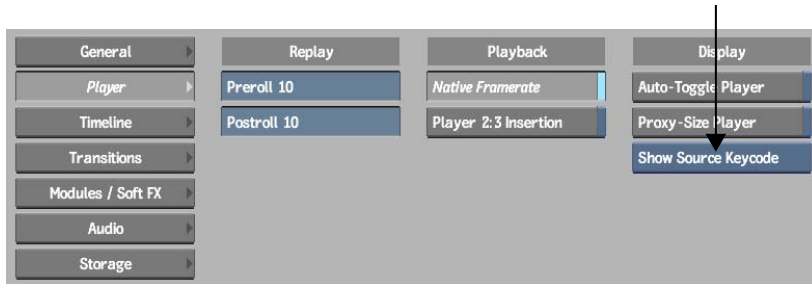
You can see the keycode and timecode of a source clip in the Player.



(a) Keycode Display field in the Player (b) Timecode Display field in the Player

To display timecode or keycode in the Player:

- 1 On the EditDesk, click Preferences.
- 2 In the Preferences menu, click Player.
- 3 In the Display group, from the Source Time Mode box, select a display mode for the Player.

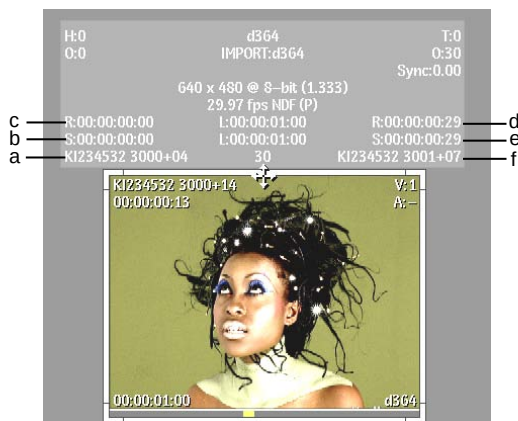


Select:	To display:
Show Source Keycode	The source keycode only.
Show Source Timecode	The source timecode only.

Displaying Timecode and Keycode in the Clip Information Overlay

You can see the timecode and keycode of a source clip by **ALT**-clicking it on the EditDesk.

Timecode and keycode are displayed in the clip information overlay as follows.



(a) Start keycode for the clip (b) Start Source Timecode for the clip (c) Start Record Timecode for the clip (d) End Record Timecode for the clip (e) End Source Timecode for the clip (f) End keycode for the clip

Image courtesy of The House

Displaying Timecode and Keycode in the Timeline

To display the timecode and keycode data for each timeline segment of a clip, expand the timeline segment.

Timecode and keycode is displayed in the timeline as follows.

	H:0 0:0	d364 IMPORT:d364	T:0 0:30	H:0 0:0	d364 IMPORT:d364	T:0 0:30
	Sync:0.00			Sync:0.00		
b	R:00:00:00:00	R:00:00:00:29	R:00:00:01:00		R:00:00:01:29	
	S:00:00:00:00	S:00:00:00:29	S:00:00:00:00		S:00:00:00:29	
a	KI234532 3000+04	KI234532 3001+07	KI234532 3000+04		KI234532 3001+07	

(a) Keycode (b) Timecode

Displaying Timecode and Keycode in the List View

Timecode and keycode data can be viewed in the List View in the Record Area.

Type	Element	SoftEffects	Start	Duration	TC In	TC Out	KC In	KC Out	Tape
19113	19113		00:00:00:00	00:00:00:24	00:00:00:00	00:00:00:23			
Video Track	*		00:00:00:00	00:00:00:24	00:00:00:00	00:00:00:23			
Layer 1	*		00:00:00:00	00:00:00:24	00:00:00:00	00:00:00:23			
Video	19113		00:00:00:00	00:00:00:13	00:00:00:00	00:00:00:12	KI120863 7637+12	KI120863 7638+04	IMPORT
Cut			00:00:00:13	00:00:00:00	00:00:00:13	00:00:00:12			
Video	19113		00:00:00:13	00:00:00:11	00:00:00:13	00:00:00:23	KI120863 7637+12	KI120863 7638+02	IMPORT

(a) In timecode for the segment (b) Out timecode for the segment (c) In keycode for the segment (d) Out keycode for the segment

You can also see timecode and keycode data in the List View of the file browser for source clips.

When you use the numeric keypad as a timecode calculator, some keys have a different function.

Click:	To:
Period	Insert two zeros.
TC/FRM	Switch, or show conversion, between frames and timecode.
DF/NDF	Switch between Drop Frame mode and Non-Drop Frame mode. If you are in PAL video, this button does not appear.

About the Keycode Calculator

When typing keycode values directly into the Keycode field, you use the keycode calculator.

You can select the film manufacturer and emulsion in the keycode calculator to determine the first two values of the keycode.



(a) Keycode field (b) Film Manufacturer box (c) Film Emulsion box (d) Framerate box (e) Film Gauge box (f) Reference Foot box

Keycode field Indicates the keycode value for a frame or for the first frame of a sequence. Click to enter a new keycode value. Subsequent frames are assigned a keycode value incremented from this value in relation to the settings in the Film Gauge box, and optionally, the Reference Foot box when using 3-perf 35 mm film.

NOTE Although you can enter any two letters in the Keycode field to begin a keycode value, only those corresponding to an actual manufacturer and film emulsion populate the Film Manufacturer and Film Emulsion fields.

Film Manufacturer box Select the manufacturer of a source film reel. If you type a value in the Keycode field, the corresponding manufacturer is automatically selected in this box: the first letter of the keycode value indicates the manufacturer.

Film Emulsion box Select the emulsion of a source film reel. If you type a value in the Keycode field, the corresponding manufacturer is automatically selected in this box: the second letter of the keycode value indicates the film's emulsion. Only the film emulsions that correspond to the film manufacturer selected in the Film Manufacturer field appear.

Framerate box Select the framerate used when importing files that retain keycode. This value should be set at the framerate at which the film was transferred to video.

Film Gauge box Select the type of source film from which the frames originated. This is used to assign keycode to a sequence of frames starting with the value entered in the Keycode field.

Reference Foot box Select the reference foot for 35 mm / 3 perf film. Reference Foot is only active when Film Gauge is set to 35 mm / 3 perf. This number is necessary because 3-perf 35 mm film has a different number of frames in each foot of a 3-foot repeating sequence.

Keycode Syntax

Keycode in Autodesk Visual Effects and Finishing applications uses the following syntax:

KQ123456 7890+12

Where:

- K is the film manufacturer.
- Q is the film emulsion.
- 123456 (6 digits) is the film reel unique identifier.
- 7890 (4 digits) is the footage number.
- 12 (2 digits) is the frame number.

In 35mm / 3 perf keycode, a reference foot value is also set. The value can be 1, 2, or 3 between parenthesis:

KQ123456 1234+00(1)

Supported Film Emulsions

The available film emulsions are supported in keycode in Autodesk Visual Effects and Finishing applications as follows.

Kodak

■ 5274/7274 Vision 200T	■ 5277/7277 Vision 320T	■ 5231/7231
■ 5620/7620 Primetime 640T	■ 5600/7600 Primetime	■ 5294/7294
■ SFX 200T	■ 5249/7249	■ 5295/7295
■ 5287/7287 EXR Ultra Lat	■ 5292/7292	■ 5222/7222
■ 5244/7244	■ 5248/7248	■ 5234/7234
■ 5279/7279 Vision 500T	■ 5293/7293	■ 5297/7297
■ 5298/7298	■ 5245/7245	■ 5247/7247
■ 5272/7272	■ 5296/7296	■ 5243/7243
■ 5289/7289 Vision 800T	■ 5246/7246 Vision 250D	

Fuji

■ VELVIA col rev 8540	■ F-64D/125/250D/500	■ FCI

Eastman

■ 5242/7242 Vision Color I	■ 5219/7219 Vision3 500T	■ 7266 TRI-X
■ 5205/7205 Vision2 250D	■ 5299/7299 Vision2 HD	■ 7265 PLUS-X
■ 5212/7212 Vision2 100T	■ 5218/7218 Vision2 500T	■ 5229/7229 Vision2 Exp 500T
■ 5217/7217 Vision2 200T	■ 5284/7284 Vision Exp 500T	■ 5285/7285 Ektachrome 100D
■ 5201/7201 Vision2 50D	■ 5263/7263 Vision 500T	

Agfa

■ XTS 400	■ XT 100	■ XTR 250	■ XT 320

Supported Film Gauges

The following film gauges are supported in keycode for Autodesk Visual Effects and Finishing applications:

- 16 mm and Super 16 mm / 1 perf
- 35mm / 8 perf
- 35mm / 3 perf
- 35mm / 4 perf
- 65mm / 5 perf

The increment offset of a particular frame from the keycode dot (which indicates the zero offset point on the film) can be recorded in one of two modes: frame offset and perforation offset. In general, film scanners can write keycode in either of these two modes.

For 35 mm / 3 perf and 35 mm / 4 perf film, both frame and perforation offset keycode are supported when importing files. For all other gauges, only frame offset mode is supported. In these latter cases, set the telecine to use frame offset keycode when you are scanning.

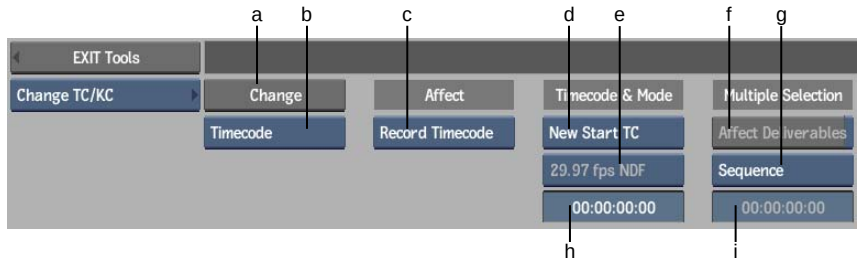
About the Change TC/KC/Rate Tools

The tools used to change timecode, keycode, or frame code mode are accessible in a number of ways from your Autodesk Visual Effects and Finishing application for your convenience. For this reason, the menus may look slightly different, but the functionality remains the same.

The Change Timecode Tool

The Change Timecode tool can be accessed as follows:

- In the clip library, from the Tools box, via the Change TC/KC option, when you select Timecode and New Start TC (or New Start & Mode). Use this option to change the the start timecode of Deliverables.



(a) Change button (b) Timecode/Keycode box (c) Change Target box (d) Change option box (e) Frame Code Mode box (f) Affect Deliverables button (g) Timecode option box (h) Start Timecode field (i) Step Timecode field

- From the A/V Tools box, via the Timecode option, when you select Change TC.



(a) Change option box (b) Start Timecode field (c) Change Target box

The Change Timecode tool options are described as follows.

Change button Click to confirm values entered and apply them to the selected clip.

Timecode/Keycode box Select whether to change the timecode or the keycode. Does not affect a Deliverable as it cannot have a keycode.

Change Target box Select whether the source timecode, record timecode, or both source and record timecode will change.

Change option box Select whether the start timecode and frame code mode will change. Set to New Start TC if only Deliverables are selected.

Select:	To:
New Start & Mode	Change the start timecode and frame code mode (framerate and drop frame mode).
New TC Mode	Change only the frame code mode (framerate and drop frame mode).

Select:	To:
New Start TC	Change only the start timecode. Select this option to change timecodes from Deliverables.

Frame Code Mode box Used to change the framerate and drop frame mode. Disabled when the Change option box is set to New Start TC. See [The Change Frame Code Mode Tool](#) on page 745.

Affect Deliverables button Enable to apply the Start Timecode to the selected Deliverables. Only available if Timecode/Keycode is set to Timecode, Change Target is set to either Record or Src/Rec, and the Change option box is set to New Start TC. Uneditable if only Deliverables are selected.

Timecode option box Select the timecode relationship between multiple selected clips. The Timecode option box is enabled only for Change TC/KC when the Change option box is set to New Start & Mode or New Start TC.

Select:	To:
Step	Step the start timecode of multiple selected clips by the duration specified in the Step Timecode field.
Same TC	Assign the same start timecode to all clips.
Sequence	Assign a start timecode sequentially to each clip so that the clips follow each other immediately but do not overlap.

Start Timecode field Enter the start timecode of a single selected clip or the first clip in a multi-clip selection.

Step Timecode field Enter the timecode step used when assigning a new timecode to multiple clips. Enabled only when Step is selected in the Timecode options box.

The Change Keycode Tool

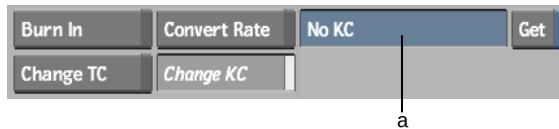
The Change Keycode tool can be accessed as follows:

- In the clip library, from the Tools box, via the Change TC/KC option, when you select Keycode.



(a) Keycode field

- From the A/V Tools box, via the Timecode option, when you select Change KC.



(a) Keycode field

The Change Keycode tool options are described as follows. Only those options that are unique to Keycode and not already described for Timecode are included here.

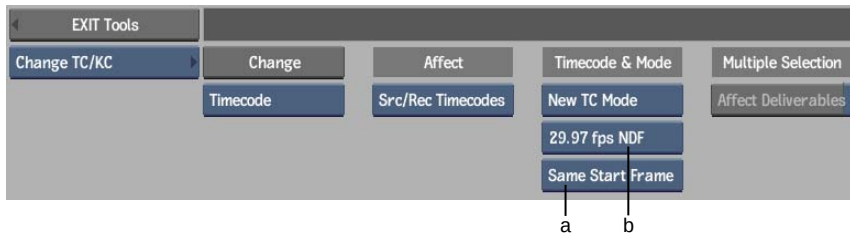
Keycode field Enter the start keycode of a single selected clip or the first clip in a multi-clip selection.

Get button Click and then select a clip to load the Keycode of that clip.

The Change Frame Code Mode Tool

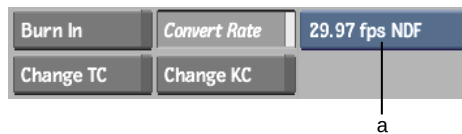
The Change Frame Code Mode tool allows you to change the framerate and drop frame mode of a clip, but also deletes any Deliverable attached to it. The Change Frame Code Mode tool can be accessed as follows:

- In the clip library, from the Tools box, via the Change TC/KC option, when you select Timecode and New TC Mode (or New Start & Mode).



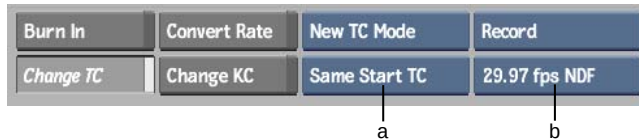
(a) Same Start TC/Frame box (b) Frame Code Mode box

- From the A/V Tools box, via the Timecode option, when you select Convert Rate.



(a) Frame Code Mode box

- From the A/V Tools box, via the Timecode option, when you select Change TC and then New TC Mode.



(a) Same Start TC/Frame box (b) Frame Code Mode box

The Change Frame Code Mode tool options are described as follows. Only those options that are unique to Frame Code Mode and not already described for Timecode are included here.

Same Start TC/Frame box Select a start option. The Same Start TC/Frame box is active only when New TC Mode is enabled.

Select:	To:
Same Start TC	Start with the same timecode as the one used in the old mode.
Same Start Frame	Start with the timecode that matches the corresponding timecode in the new mode—calculated by the number of frames that correspond to the original timecode, starting from 00:00:00;00.

Frame Code Mode box Select the framerate and drop frame mode for the selected clips. The Frame Code Mode box is enabled only when the Change option box is set to New Start & Mode or New TC Mode.

Select:	To apply:	TC Format:
23.976 fps	23.976 frames per second timecode. This frame rate is used for NTSC DVD playback.	00:00:00+00
24 fps	24 frames per second timecode. Used to transfer a video signal to film.	00:00:00+00
25 fps	25 frames per second timecode. Good for LCD monitors or display formats that are not interlaced.	00:00:00:00
29.97 fps NDF	29.97 frames per second Non-Drop Frame timecode (frame rate for colour NTSC). If you use 29.97 fps NDF, its indicated timings will not accurately correspond with real time.	00:00:00:00
29.97 fps DF	29.97 frames per second Drop-Frame timecode (frame rate for colour NTSC). This times the video accurately with real time by dropping the extra frames in the count.	00;00;00;00
30 fps	30 frames per second timecode. Mimics a film camera's frame-by-frame image capture.	00:00:00:00
50 fps	50 frames per second timecode. Standard for PAL.	00:00:00:00
59.94 fps NDF	59.94 frames per second, Non-Drop Frame timecode (standard rate for NTSC). If you use 59.94 fps NDF, its indicated timings will not accurately correspond with real time.	00:00:00:00
59.94 fps DF	59.94 frames per second, Drop-Frame timecode (standard rate for NTSC). This times the video accurately with real time by dropping the extra frames in the count.	00:00:00:00
60 fps	60 frames per second timecode. Used for NTSC video.	00:00:00:00

NOTE If you change the frame code mode of a clip, timewarps will automatically be applied to the audio or video tracks to maintain the audio and video sync.

Changing Timecode

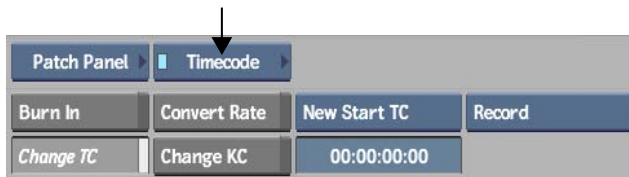
You can change the start timecode of a clip for the record timecode, source timecode, or both.

If you are mixing clips that originate from formats that use different timecode, you may want to change their timecode. Use the Change Timecode tool to change the start timecode for a clip and manage source clips with different timecode formats.

NOTE To change the timecode of a Deliverable with the Change Timecode tools, use the tools available in the clip library.

To change the timecode of a clip:

- 1 Access the Change Timecode tool in one of the following ways:
 - From the A/V Tools box, select Timecode, and then click Change TC.



- In the clip library, click Tools, and then from the Tools box, select Change TC/KC, and click Timecode.



- 2 In the Timecode field, enter the timecode value that you want to apply to the frames of a clip.
- 3 Select other timecode options, such as applying to source, record, or both. See [The Change Timecode Tool](#) on page 742.

- 4 Do one of the following:
 - If you are using the EditDesk tool, click a clip to which you want to apply the timecode value.
 - If you are using the clip library tool, select the clips to which you want to apply timecode, and then click Change. Enable Affect Deliverables to apply the new timecode to all attached Deliverable, if any.

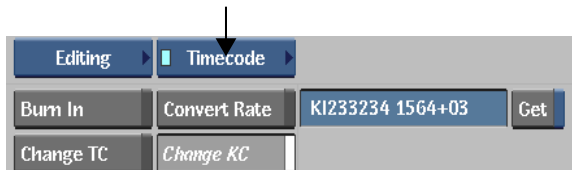
Changing Keycode

You can change or add keycode to a sequence. You might do this, for example, if the keycode data was corrupted when written by the telecine, or if you entered wrong keycode values when using a third-party application to write keycode to an exported sequence.

NOTE You cannot apply keycode to audio files.

To change the keycode of a clip:

- 1 Access the Change Keycode tool in one of the following ways:
 - From the A/V Tools box, select Timecode, and then click Change KC.



- In the Clip Library, click Tools, and then from the Tools box, select Change TC/KC, and click Keycode.



- 2 In the Keycode field, enter the keycode value that you want to apply to the frames of a clip.

Ensure that you enter a keycode value according to the proper syntax. See [Keycode Syntax](#) on page 740.

- 3 Optional: To load the keycode of another clip, click the Get button next to the Keycode field, and select the clip.

The keycode value of the current frame of the selected clip is loaded into the Keycode field. You can then edit this value with the keycode calculator, or apply this keycode to other clips by selecting them.

- 4 Do one of the following:
 - Click a clip to which you want to apply the keycode value. The value is incremented for each frame of the clip according to the values you set.
 - If you are using the Change TC/KC tool, select the clip to which you want to apply keycode, and then click Change.

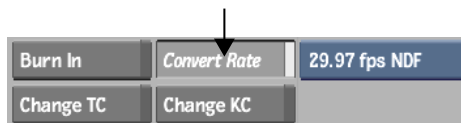
Changing Frame Code Mode

The Frame Code Mode tool allows you to select the framerate and drop frame mode for your clip. You can convert the framerate and drop frame mode on the video and the audio clip. However, when you convert a clip's rate, its playback speed can be affected (both video and audio). And changing the framerate of a clip deletes every associated Deliverable.

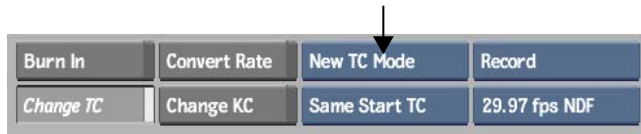
Also, if you change the frame code mode of a clip, timewarps will automatically be applied to the audio or video tracks to maintain the audio and video sync.

To change the frame code mode of a clip:

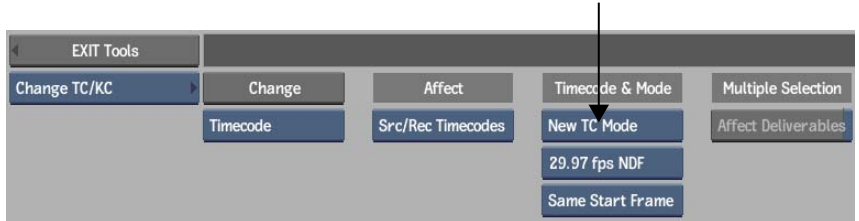
- 1 Access the Change Timecode tool in one of the following ways:
 - From the A/V Tools box, select Timecode, and then click Convert Rate.



- From the A/V Tools box, select Timecode, then select Change TC and then click New TC Mode.



- In the Clip Library, click Tools, then from the Tools box, select Change TC/KC, select Timecode, and then click New TC Mode (or New Start & Mode).



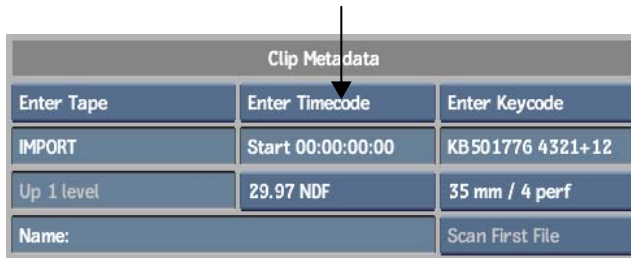
- 2 Select the desired framerate, drop frame mode, and start option. See [The Change Frame Code Mode Tool](#) on page 745.
- 3 Do one of the following:
 - Click a clip to which you want to apply the frame code mode value.
 - If you are using the Change TC/KC tool, select the clip to which you want to apply the frame code mode, and then click Change.

Manually Assigning Timecode and Keycode on Import

When importing sequences composed of any type of image file format, you can manually set the timecode, keycode, and frame code mode for the resulting clip. By setting keycode you also set the film gauge used for the clip. The film gauge defines how the keycode data is calculated.

To manually assign timecode and keycode data to image files on import:

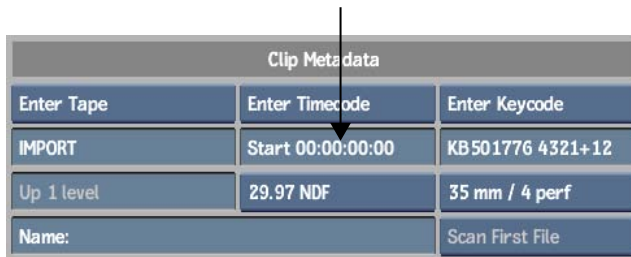
- 1 Follow the general procedure for importing an image file, and stop at the point where you adjust Clip Metadata properties. See [Importing and Soft-Importing Image Files](#) on page 242.
- 2 From the Timecode box, select Enter Timecode.



Clip Metadata		
Enter Tape	Enter Timecode	Enter Keycode
IMPORT	Start 00:00:00:00	KB 501776 4321+12
Up 1 level	29.97 NDF	35 mm / 4 perf
Name:		Scan First File

Any embedded timecode data is ignored and replaced with the value that you enter directly in the Timecode field.

- 3 In the Timecode field, enter a Timecode value using the timecode calculator. See [About the Timecode Calculator](#) on page 738.



Clip Metadata		
Enter Tape	Enter Timecode	Enter Keycode
IMPORT	Start 00:00:00:00	KB 501776 4321+12
Up 1 level	29.97 NDF	35 mm / 4 perf
Name:		Scan First File

After entering a timecode value and closing the timecode calculator, the value appears in the Timecode field.

- 4 From the Keycode box, select Enter Keycode.



Clip Metadata		
Enter Tape	Enter Timecode	Enter Keycode
IMPORT	Start 00:00:00:00	KB 501776 4321+12
Up 1 level	29.97 NDF	35 mm / 4 perf
Name:		Scan First File

Any embedded keycode data is ignored and replaced with the value that you enter directly in the Keycode field.

- 5 In the Keycode field, enter a valid keycode value using the keycode calculator. See [About the Keycode Calculator](#) on page 739.

Clip Metadata		
Enter Tape	Enter Timecode	Enter Keycode
IMPORT	Start 00:00:00:00	KB 501776 4321+12
Up 1 level	29.97 NDF	35 mm / 4 perf
Name:	Scan First File	

After entering a keycode value and closing the keycode calculator, the value appears in the Keycode field. As well, the Film Gauge box in the Image Import menu inherits the the film gauge that you set in the keycode calculator.

TIP If you want to change the film gauge, including the reference foot for 35 mm / 3 perf film, access the keycode calculator again by clicking the Keycode field.

- 6 Continue the procedure for importing an image file.
Your new timecode and keycode values are set.

About the Burn In Menu

Use the Burn In menu to burn in clip information such as keycode, timecode, date, and frame numbers.

The screenshot shows the Burn In menu with the following controls and labels:

- a**: Text Colour pot
- b**: Shadow Colour pot
- c**: Scan Format box (As Front)
- d**: Horizontal Position box (Horizontal Centre)
- e**: Offset box (X 0)
- f**: Vertical Position field (Y 0)
- g**: Name field (<name>)
- h**: Background Colour pot
- i**: Font box (Discreet)
- j**: Vertical Position box
- k**: Size field (Size 50)
- l**: Horizontal Position field

Additional controls on the right include: Comments, Frame Number, Date/Time, Frame Total, Source Timecode, Keycode, and Record Timecode.

(a) Text Colour pot (b) Shadow Colour pot (c) Scan Format box (d) Horizontal Position box (e) Offset box (f) Vertical Position field (g) Name field (h) Background Colour pot (i) Font box (j) Vertical Position box (k) Size field (l) Horizontal Position field

Shadow button Enable if you want the burned-in information to have a drop shadow. To change the colour of the shadow, use the Shadow Colour pot.

Text Colour pot Click to display the colour palette and select a text colour.

Shadow Colour pot Click to display the colour palette and select a shadow colour.

Scan Format box Select the scan format.

Select:	To:
Interlaced	Scan a frame-based clip with interlacing.
Progressive	Scan a frame-based clip with no interlacing.
As Front	Use the Scan format used on the front clip.

Horizontal Position box Select a horizontal position.

Select:	To position:
Horizontal Center	The burned-in text in the horizontal centre.
Right	The burned-in text to the right of the frame.
Left	The burned-in text to the left of the frame.

Offset box Select the appropriate offset option to account for the Safe Action or Safe Title area. This option only functions when the position is set using the Horizontal and Vertical Position boxes, and not when using the Position fields.

Select:	To orient:
Full	The burned-in text within the full frame.
Safe Action	The burned-in text within the safe action area.
Safe Title	The burned-in text within the safe title area.

Horizontal Position field Drag left or right, or click to enter a horizontal position value that offsets the selected option in the Offset box.

Comments button Enable to burn-in a comment that you specify in the Name field.

Date/Time button Enable to burn-in date and time.

Source TC button Enable to burn-in the source timecode.

Name field Displays the current clip name. Click to enter another name or comment to be burned-in. The Name field is active when Comment is enabled.

Background button Enable if you want a colour box behind the text. To change the colour of the background, use the Background Colour pot.

Background Colour pot Click to display the colour palette and select a background colour.

Font box Click to select a font from the browser.

Vertical Position box Select a vertical position.

Select:	To position:
Vertical Center	The burned-in text in the vertical centre.
Top	The burned-in text to the top of the frame.
Bottom	The burned-in text to the bottom of the frame.

Size field Drag left or right, or click to enter the font size of the burned-in clip information.

Vertical Position field Drag left or right, or click to enter a vertical position value that offsets the selected option in the Offset box.

Keycode button Enable to burn-in the keycode.

Frame Number button Enable to burn-in the current frame number.

Record Timecode button Enable to burn-in the record timecode.

Total Frames button Enable to burn-in the total frame number.

Source TC field Click to enter a new source timecode value.

Record TC field Click to enter a new record timecode value.

Keycode field Click to enter a new keycode value.

Source TC Frame Mode box Select a frame code mode for the source clip.

Record TC Frame Mode box Select a frame code mode for the record clip.

Total Frames field Click to enter a value for the total number of frames.

Burning-in Clip Information

Use the Burn In tools to burn-in clip information such as timecode, keycode, and frame numbers. The information appears as text on your clip for your reference.

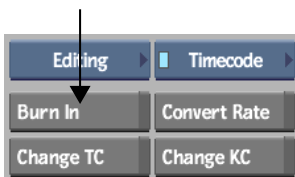
When mixing clips that originate from formats with different timecode, you can burn-in information on a clip to keep a timecode reference clip.

NOTE Burn In settings are saved from session to session. You can reset them to the factory defaults by clicking Reset.

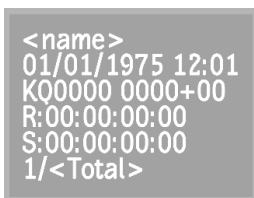
Burn-in the keycode data of the clip with the Burn In tool. The burn-in ensures that keycode data is not lost as frames progress through the work pipeline of your Autodesk Visual Effects and Finishing application. The burn-in can also help when going through other applications. See [Ways that Timecode and Keycode is Preserved or Destroyed](#) on page 732.

To burn-in clip information from the Burn In menu:

- 1 On the EditDesk, from the A/V Tools box, select Timecode.
- 2 Click Burn In.



- 3 Enable the buttons for the clip information that you want to burn into the clip, such as Comments, Source Timecode, Keycode, and Date/Time. The selected information on the clip is shown in the sample frame. See [About the Burn In Menu](#) on page 753.



- 4 Click to edit any of the timecode or keycode fields.

- 5** Click Burn In.
- 6** Select the clip into which you want to burn in the clip information.
- 7** Select the destination for the result clip.
The result clip appears in the selected destination.

Importing Final Cut Pro XML

31

Topics in this chapter:

- [About Importing XML from Final Cut Pro](#) on page 759
- [FCP XML Conform Workflow](#) on page 760
- [Setting One Timecode Track in Final Cut Pro](#) on page 761
- [Logging and Capturing from Tape in Final Cut Pro](#) on page 761
- [Exporting Sequences from Final Cut Pro](#) on page 762
- [Importing Final Cut Pro XML](#) on page 764
- [Relinking to File-based Media](#) on page 767
- [Recapturing Media From Tape](#) on page 774
- [Optimizing the Recapture of Footage Referenced in XML Files](#) on page 775
- [Supported and Unsupported Effects](#) on page 776

About Importing XML from Final Cut Pro

Backdraft Conform allows you to import multi-track compositions from Apple® Final Cut Pro® (FCP) running on both PowerPC™ and X86 (Intel®) platforms. Backdraft Conform reads XML exported from FCP (up to version 5.x of FCP, exported as XML version 2.0) and assembles a timeline accordingly. Newer effects created with later version of FCP and XML exporters are not supported.

Media used during the offline edit in FCP (such as QuickTime files, VTR captures, or image sequences) needs to be recaptured from the source tapes or relinked from files in Backdraft Conform. XML exported from FCP supports multiple tracks of video and audio effects and transitions in a single XML file. As well, more effects and transitions can be transferred between FCP and Backdraft Conform. Only select effects are supported when transferring sequences between FCP and Backdraft Conform.

When transferring projects between FCP and Backdraft Conform, you are only transferring the metadata between the applications, as contained in the XML, and not the media itself. You need to import or soft-import the media in a separate procedure.

It is possible for FCP to export XML containing multiple sequences. However, Backdraft Conform only supports XML containing a single timeline and cannot read XML files with multiple timelines. Ensure that the FCP editor exports only one timeline per XML file.

You can also load FCP XML linked to media shot on a Varicam.

FCP XML Conform Workflow

To provide a smooth transition when importing FCP XML files into Backdraft Conform, follow these steps.

- 1 Ensure that there is only one timecode track used in each of the selected files. See [Setting One Timecode Track in Final Cut Pro](#) on page 761.
- 2 Prepare the sequences in FCP that will be exported as XML. Do one of the following:
 - If you are editing from tape, perform logging and capture from a VTR in FCP. See [Logging and Capturing from Tape in Final Cut Pro](#) on page 761.
 - If you are editing from files, verify that the supported media specifications and network configuration links are still valid for accessing the file-based media.
- 3 Edit and add effects and transitions in FCP. See [Supported and Unsupported Effects](#) on page 776.
- 4 Export XML sequences from FCP. See [Exporting Sequences from Final Cut Pro](#) on page 762.

- 5 Import the FCP XML, and then recapture or relink the media. See [Importing Final Cut Pro XML](#) on page 764.
- 6 Work on the recaptured project and finish it for final output.

Setting One Timecode Track in Final Cut Pro

Final Cut Pro allows you to modify the timecode of source clips or to add auxiliary timecode tracks, specifically Aux 1 and Aux 2. This is useful for multi-camera editing.

Backdraft Conform supports only one timecode track, so it is best to avoid using multiple timecodes in Final Cut Pro or to remove the auxiliary timecode tracks before exporting.

Removing additional timecode tracks involves a process that must be performed on each file to be exported.

To remove additional timecode tracks in a clip:

- 1 In Final Cut Pro, select the clip.
- 2 Choose Modify | Timecode.
- 3 Disable Aux 1 and Aux 2.
- 4 Repeat for every clip for which you want to remove additional timecode tracks.

Logging and Capturing from Tape in Final Cut Pro

If you are working from tapes, log and capture to FCP in a manner that allows the online editor to easily recapture media in Backdraft Conform. You can also edit in FCP using file-based media. You can use both tape-based and file-based media in the same FCP project, and the media can be recaptured and relinked later in Backdraft Conform.

You load XML files and either capture the source material from tape or relink the media to files.

When capturing clips for offline edit sessions in FCP, you enter the tape name in the Reel field of the Log and Capture dialog box. After importing the FCP XML in Backdraft Conform, you recapture all the media from tape. It is this

tape name, as entered in the Reel field in FCP, that indicates which tapes to use.

NOTE Other logging data entered for clips in the FCP Log and Capture dialog box can be imported into Backdraft Conform. See [FCP to Backdraft Conform: Data](#) on page 777.

The following resolution/framerates are supported for footage destined for Backdraft Conform:

■ NTSC@29.97	■ 720p30@29.97	■ 1080i60@29.97
■ PAL@25	■ 720p60@59.94	
■ 720p24@23.976	■ 1080i50@25	

The NTSC@24 (Advanced pulldown) framerate is not supported for footage destined for Backdraft Conform.

Exporting Sequences from Final Cut Pro

When you are ready to export projects from FCP, you must export each sequence separately as an XML file, since Backdraft Conform does not support Bins or Batch lists.

You can, however, export sequences which contain nested sequences and the nested sequences will be translated into containers in Backdraft Conform.

Use the Final Cut Pro File menu to export FCP XML interchange format documents.

If you are exporting file-based XML, as opposed to tape, then you need to ensure that the following guidelines are met:

- Audio bit depth should be set to 16 bits.
- Capture audio by linking two channels to a single audio track.
- Use FCP's Media Manager to copy and recompress the files.

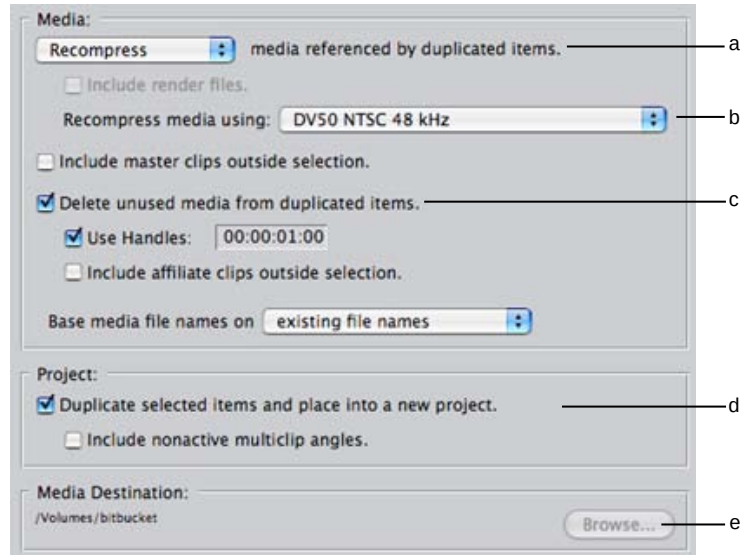
To move and recompress media using FCP Media Manager:

- 1 Select a sequence in the Browser window that you want to move and recompress, in preparation for export to Backdraft Conform.

NOTE If nothing is selected, the entire contents of the Browser are exported. However, Backdraft Conform only supports XML files with a single sequence of edited clips.

2 Choose File | Media Manager.

The Media Manager appears.



(a) Media referenced by duplicated items box (b) Recompress media using box
(c) Delete unused media from duplicated items checkbox (d) Duplicate selected items and place into a new project checkbox (e) Browse button

3 In the Media group, from the Media referenced by duplicated items box, select Recompress.

4 From the Recompress media using box, select a codec that is supported by Backdraft Conform.

5 Ensure that the Delete unused media from duplicated items checkbox is set.

This option consolidates the media and ensures that Backdraft Conform does not capture unnecessary footage.

6 In the Projects group, enable the Duplicate selected items and place into a new project checkbox.

This ensures that all media is placed in the same folder.

- 7 In the Media Destination group, click Browse to select a location for the media and project that is accessible by Backdraft Conform.
- 8 Click OK.

To export XML from FCP:

- 1 Select a sequence in the Browser window that you want to export in an interchange format document.

NOTE If nothing is selected, the entire contents of the Browser are exported. However, Backdraft Conform only supports XML files with a single sequence of edited clips.

- 2 Choose File | Export | XML.
- 3 In the Export XML dialog box, do the following:

- From the XML Format box, select Apple XML Interchange Format, version 2.

NOTE If you are exporting XML from an FCP version prior to 5, only version 1 of the XML Interchange Format version is available. In general, there is parity between both XML Interchange Format versions concerning supported effects in Backdraft Conform. Features specific to FCP 5 will only appear in version 2 of FCP's XML Interchange Format.

- Ensure that the Include master clips outside selection checkbox is not enabled.
- 4 Click OK.
 - 5 In the Save dialog box that appears, save the XML file to an accessible location.

Importing Final Cut Pro XML

Each XML file corresponds to an FCP sequence, including video, audio, and select transitions and effects, that can be opened in the timeline. Some unsupported effects are marked with comments indicating what you have to rebuild in Backdraft Conform based on the original offline edit.

FCP XML supports 720/24p, 720/30p, and 720/60p output from Varicam to create XML files. The timeline of the source is always 59.94, but the timelines can be 24p, 30p, or 60p.

Backdraft Conform can conform XML (23.976/29.97/59.94) from Varicam material (23.976/29.97/30/59.94/60). Backdraft Conform can also remove flagged (non-active) frames when capturing Varicam media. The source material must be at the same framerate as the sequence (for example 23.97 in a 23.97 sequence).

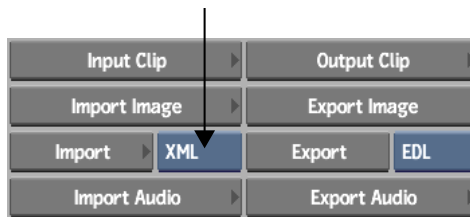
Before importing XML that contains any MXF P2 content, ensure that the P2 recording devices that are used are set to record clip metadata in Type 2. This allows important metadata, such as the User Clip Name, to be assigned properly in the XML file.

When importing FCP XML files that were created in SD resolution and that need to be conformed in HD, you need to reformat the clips. See [Reformatting Clips](#) on page 701.

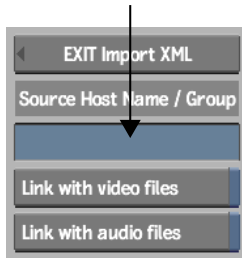
After importing an XML file, you recapture the footage from the original tapes using the Recapture tool. You can also reload file-based media. Once all the media is captured, imported, or soft-imported, you can relink it to the sequence.

To import or soft-import an FCP XML file:

- 1 In the clip library, from the Interchange Format box, select XML.



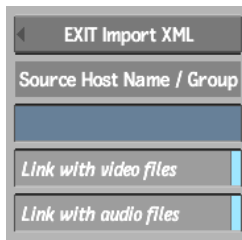
- 2 Click Import.
- 3 In the file browser, navigate to an XML file exported from FCP.
- 4 If you are importing FCP XML that contains media files, and your files are stored on other computers, you can use Wiretap to access them. Enter the host or group name, as configured in the *sw_wiretap_path_translation_db.xml* file.



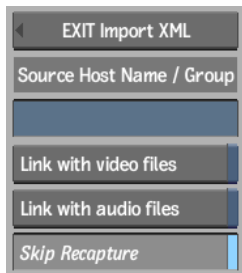
The Wiretap Server must be configured properly to recognise the different hosts that you want to retrieve media from. See the *Autodesk Stone and Wire Filesystem and Networking Guide* or contact your system administrator.

If you do not enter a value in the Source Host Name / Group field, any paths contained in the FCP XML file will be interpreted as pointing to your Backdraft Conform workstation. You can change the path in the Recapture dialog box when relinking.

- 5 If you are importing FCP XML that contains media files of the format and resolution that you want to use, enable Link with video files and/or Link with audio files.



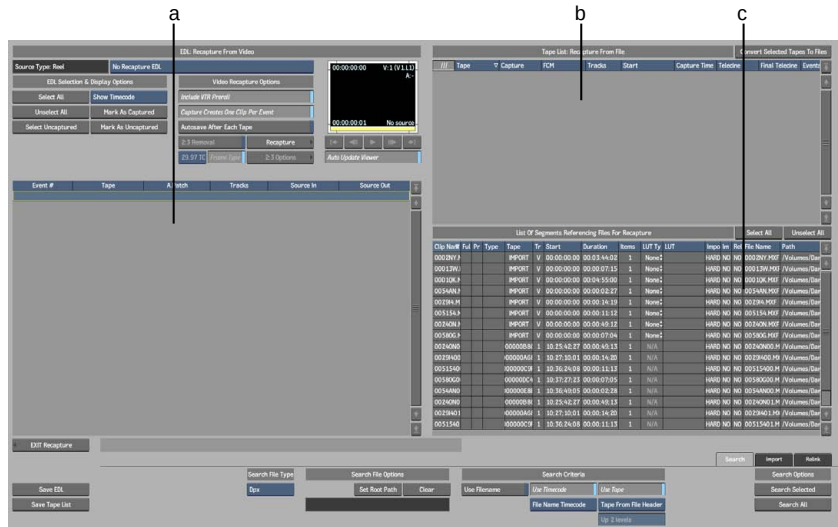
- 6 If you are importing FCP XML that contains media files of a different file type or resolution than what you want to use (for example, when trying to relink to source media after working with proxies), then enable the Skip Recapture button.



Upon clicking Load, you are taken to the Library menu, where you can apply a Reformat action (through the Tools menu) to your timeline, and then use Recapture to load your source media.

7 Click Load.

If you did not enable Skip Recapture, the Recapture menu appears.



(a) Clip List: List of Clips on Tape (b) Tape List: Recapture From File (c) List of Segments Referencing Files For Recapture

- 8 If you are importing FCP XML that references media clips on tapes, a list of clips appears in the Clip List. A list of source tapes also appears in the Tape List. This is the same tape list as logged in FCP. See [Recapturing Media From Tape](#) on page 774.
- 9 If you are importing FCP XML that contains media files, a list of files appears in the List of Segments. This is the list that you need to relink. See [Relinking to File-based Media](#) on page 767.

Relinking to File-based Media

After having edited sequences in Final Cut Pro using file-based media, such as QuickTime movies, you can relink the exported XML to these files in Backdraft Conform.

If the media originated on tape, you can opt to relink to the captured QuickTime files instead of recapturing the media from tape, if you choose to use the captured resolution from Final Cut Pro.

You can relink imported FCP XML files to file-based video or audio media.

Verify that the files you are relinking to are supported in Backdraft Conform. See [Supported File Formats](#) on page 220.

If you are importing FCP XML with Varicam support, it will be identified as such in the Source Type box.

To relink FCP XML to file-based media:

- 1 Swipe to the right to display the List of Segments Referencing Files For Recapture table across the full screen.

- 2 Use the Search Criteria to find the source media files.

When importing sequences (DPX) or streaming media (MXF, QT) that are referenced by XML files, you can use the advanced Search feature to find and read these image sequences or streaming media, based on preset search rules and criteria. These media files are mostly arranged in hierarchical structures that can be identified and traversed through all the subdirectories from a given root destination. Providing additional criteria, such as file type, tape name, and timecode can help to narrow and pinpoint the search.

- 3 From the Search File Type box, select the file type to search for.

The screenshot shows a dialog box with two main sections. The first section, 'Search File Type', contains a button labeled 'Dpx'. The second section, 'Search File Options', contains two buttons: 'Set Root Path' and 'Clear'.

- 4 Click Set Root Path to select the root directory where the search will start.
- 5 Select the criteria that you want to match on.

The screenshot shows a dialog box titled 'Search Criteria'. It contains several buttons: 'Use Filename' (selected), 'Use Timecode', 'Use Tape', 'File Name Timecode', 'Tape From File Header', and 'Up 2 levels'.

Select	To
Use Filename	Search for the exact file name referenced in the XML.
Use Timecode	Read the metadata from found items to make sure that the starting timecode matches the one in the edit list. Select whether to read the timecode from the file header (MXF and QuickTime) or from the file name (DPX).
Use Tape	Read the metadata from found items to make sure that the tape name matches the one in the edit list. Select whether to read the tape name from the file header (MXF and QuickTime) or from the directory (DPX).

If DPX is selected as a format, Use Timecode and Use Tape are on, but Use Filename is turned off. If MXF or QuickTime is selected, Use Filename and Use Timecode are turned on, but Use Tape is off.

- 6 Once all settings are made for the selected file type, click Search Selected or Search All.

A progress bar appears.

The results update the List of Segments Referencing Files For Recapture table. A checkmark appears in the Full Res column for each clip when the full-resolution version of a file is found. The Type column lists the file type/extension. The Tape and Path columns are also updated.

Clip Name ▾	Full Res	Proxy	Type	Tape
00013W.MXF	✓		MXF	IMPORT
00010K.MXF	✓		MXF	IMPORT

- 7 If files are not found, you can redo the search by deselecting match criteria. You can also run the search for a different file type. Data for all the previously found files is kept.
- 8 If the file search still does not find your media, you will have to enter the correct path names manually for each clip. To change the path, select the unfound media segments in the list, and then click the Path field.

File Name	Path
00013W.MXF	/Volumes/DarwinRAID/P 2 Footage/
00010K.MXF	/Volumes/DarwinRAID/P 2 Footage/

This opens the library browser where you can choose a different path.

- 9 Optional: To soft-import the media files, click Select All or drag to select the segments in the list and then, in the Import column, drag left or right to toggle between SOFT and HARD.

LUT Type	LUT	Import
None ▴ ▾		HARD
None ▴ ▾		HARD

NOTE Not all files can be soft-imported (for example, audio files at 44.1 kHz).

- 10 Optional: If you want to apply a LUT or gamma correction to your media files, click Select All or drag to select the segments in the list and then, from the LUT Type column, select an option.

LUT Type	LUT	Import
None ▴ ▾		HARD
None ▴ ▾		HARD

If you selected 1D LUT or 3D LUT for LUT Type, click in the LUT column to choose a specific LUT name.

LUT Type	LUT
3D	LC 3DL_Kodak2
None	

The LUT file name appears in the LUT column.

11 Click the Import tab.

The Import File options appear.

File Type	Clip Media	Clip Metadata		
Dpx	RGB	Tape From Directory	File Name Timecode	No Keycode
			Start 00:00:00:00	No KC
		Up 2 levels	29.97 NDF	16/S16 mm / 1perf
				Scan First File

12 Set any options, as needed.

WARNING These options are provided here in case you are having trouble relinking certain media files. If the files are already found, changing any of these options may prevent them from relinking.

See [Clip Metadata Group](#) on page 231.

13 Optional: Change the name of the reel in the Library Reel Name field.

14 Click Import All Files.

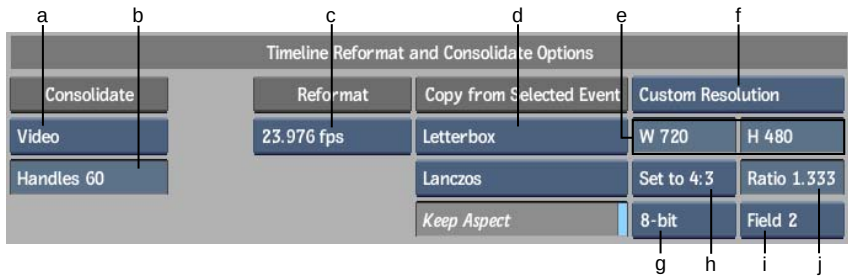
All the files should now be imported or soft-imported.

Import	Imported	Relinkable	File Name
SOFT	YES	YES	00013W.MXF
SOFT	YES	YES	00010K.MXF

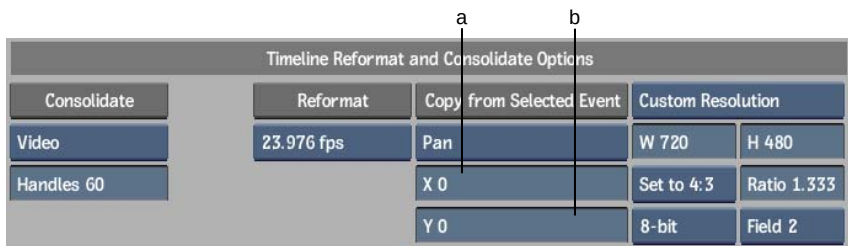
The Imported column indicates whether a file was imported or not. The Relinkable column displays whether the file is relinkable. A file can be imported and non-relinkable if a discrepancy exists between the resolution of the XML and the found media. Also, the media may have already been imported previously, in which case this column would already be checked accordingly.

15 Click the Relink tab.

The Timeline Reformat and Consolidate options appear.



(a) Consolidate option box (b) Handles field (c) Frame Code Mode box (d) Fit Method box (e) Width and Height fields (f) Resolution Presets box (g) Bit Depth box (h) Aspect Ratio Presets box (i) Scan Mode box (j) Aspect Ratio field



(a) Pan Start X field (b) Pan Start Y field

See [Processing Group](#) on page 234.

- 16 If you need to reformat the timeline to match the resolution of a given clip, specify the destination resolution by doing one of the following:
 - Click the Copy from Selected Clip button to copy the formatting information of a selected clip into the Resolution parameters.
 - Select a preset from the Resolution Presets box.
 - Specify the dimensions using the Width and Height fields.
- 17 From the Frame Code Mode box, set the frame rate and drop frame mode as needed.

If you have a clip that contains some linked media and some unlinked metadata, when you change the frame code mode such that the duration of the clip is affected, the unlinked metadata and linked media are treated differently. The linked media is timewarped to accommodate the new duration. For unlinked metadata, if more material is needed to accommodate the change in duration, it is input when the clip is

recaptured. Effects will look identical, although the timing of the clip will be adjusted.

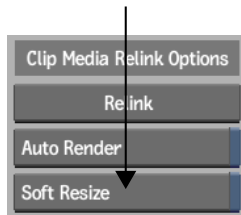
- 18** Set the aspect ratio, bit depth, and scan mode as needed.
- 19** If your clip contains video tracks or segments that still contain media (for example, module-processed shots), select a resize fit method from the Fit Method box.
- 20** Click Reformat and confirm the action. If there are multiple clips to confirm, you can click Confirm All to confirm them all or click Confirm for each clip.

The clip metadata for the timeline clips is updated to the specified values. Any existing media is also converted and resized using the specified fit method. You can now recapture the media associated with these clips in the appropriate format.

- 21** If consolidation was not performed in FCP, do it now.
 - 1** From the Consolidate box, select Audio, Video, or All Tracks.

This determines which tracks are affected by the consolidate operation.
 - 2** In the Handles field, set the maximum number of head and tail frames that you want to retain after consolidating the clip.
 - 3** Click Consolidate and confirm the operation.
- 22** Ensure that all media files are relinkable. Click the Relinkable header to sort the list and group any NOs at the top.

Some files that are not relinkable may only need to be resized to be compatible. For example, the Soft Resize feature allows you to import Quicktime files, included with the FCP XML, at 720x480 instead of the usual NTSC 720x486.
- 23** For files that are not relinkable, enable Soft Resize, and then click Import Selected Files.



Soft resize is applied to all clips that need it.

If the files are still not relinkable then they cannot be soft-imported. Try to import the files normally, or check with your system administrator.

24 Click Relink.

A new reel with the XML filename is created in the clip library for each imported XML file. The assembled clip in the new reel has the same name as the original FCP sequence, and is placed in the same reel as the media.

25 Click Exit Recapture to end the session.

Recapturing Media From Tape

After importing an XML file, you recapture the source material from the original tapes using the Recapture tool.

To recapture media from tape:

- Recapture all the source material from the original sources as indicated in the tape list. See [Recapturing Media](#) on page 710.

NOTE If your assembled clip references media that has already been recaptured, the material does not have to be recaptured again. As well, it is recommended that you consolidate clips before recapturing. See [Optimizing the Recapture of Footage Referenced in XML Files](#) on page 775.

If you are using NTSC or PAL DV footage in FCP, the clips will be recaptured at a different resolution in Backdraft Conform.

FCP Resolution	Recaptured Resolution in Backdraft Conform
NTSC DV = 720 x 480	NTSC = 720 x 486
PAL DV = 720 x 576	PAL = 720 x 576
DVCPRO HD - 1080i50 = 1440 x 1080	HD 1080 = 1920x1080
DVCPRO HD - 1080i60 = 1280 x 1080	HD 1080 = 1920x1080
DVCPRO HD 720p24 = 960 x 720	HD 720 = 1280 x 720
DVCPRO HD 720p30 = 960 x 720	HD 720 = 1280 x 720

FCP Resolution	Recaptured Resolution in Backdraft Conform
DVCPRO HD 720p60 = 960 x 720	HD 720 = 1280 x 720
HDV 1080i50 = 1440 x 1080	HD 1080 = 1920x1080
HDV 1080i60 = 1440 x 1080	HD 1080 = 1920x1080
HDV 720p30 = 1280 x 720	HD 720 = 1280 x 720
OfflineRT NTSC = 320 x 240	NTSC = 720 x 486
OfflineRT PAL = 320 x 240	PAL = 720 x 576

After recapturing and relinking the sequence, exit the Recapture menu to see the clip in the current clip library. A new reel appears in the library. This reel is named the same as the XML file with the added suffix *XML Import*. Within the reel, the clip assembled from the FCP XML is named the same as the sequence in FCP.

NOTE If you load XML files with the same name, the clips that are created from them are added to the same reel.

You can load the reassembled clip into the timeline and proceed to tweak the effects added in FCP.

Optimizing the Recapture of Footage Referenced in XML Files

There are two methods that can help you achieve a more efficient workflow as you import projects from FCP via XML. You can consolidate clips before recapturing to reduce the amount of extra footage, or you can relink clips to already captured media if multiple XML files use the same footage.

Consolidating Clips

After importing an XML file and prior to recapturing it, it is strongly recommended that you consolidate your clip in Backdraft Conform. This ensures that you do not capture all the extra media that was likely captured

during the offline edit. This step should be performed even if a similar process was performed in FCP.

You can consolidate clips in the clip library. See [Consolidating Clips in the Clip Library](#) on page 322.

In general, it is recommended that you use the All Tracks option, available from the Consolidate option box, to consolidate all segments of an unlinked clip. See [About Managing Media on the Timeline](#) on page 1033.

Relinking to Already Captured Material

If you import multiple XML files that reference the same footage, you do not have to recapture the footage each time. Instead, you can relink the clip to media on the same reel.

To relink an imported FCP XML file to already recaptured clips:

- 1 After importing an FCP XML file, change the Library Reel to the reel where the media is located.



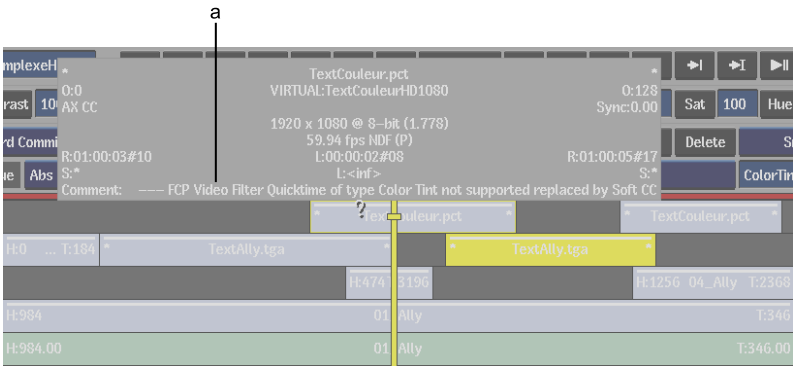
- 2 Click Relink.
The clip is linked to media on the reel that is referenced in the XML file.
- 3 If necessary, recapture any missing media. See [Recapturing Media](#) on page 710.

Supported and Unsupported Effects

The information in this section indicates how FCP data and effects map to Backdraft Conform data, transitions, and Batch FX. Unsupported transitions and effects are indicated as not supported.

In some cases, a comment indicates how an unsupported effect is translated in Backdraft Conform. For example, the FCP colour Tint Video Filter (QuickTime) is not supported in Backdraft Conform. It is replaced by a Colour

Correction soft effect, from which the colour tint effect can be rebuilt. A comment is added to indicate the name of the original FCP effect.



(a) Comment

Keyframe animation applied to effect parameters from FCP is mapped to Backdraft Conform.

FCP to Backdraft Conform: Data

The following tables describe the data that is output from FCP and input into Backdraft Conform.

General Data

FCP composition(s) data maps to Backdraft Conform timeline data.

Final Cut Pro	Backdraft Conform
Name	Name
Framerate	Framerate
Duration	Duration

Editorial Data

FCP Source media data and Record side data maps to Autodesk source clip and record clip data.

Final Cut Pro	Backdraft Conform
Source media data:	Source clips:
■ Tape name	■ Tape name
■ Source TC in/out	■ Source TC in/out
■ Edge code	■ Keycode
■ Log notes	■ Elements comments
■ Aspect ratio	■ Aspect ratio
■ Comments	■ Elements Comments
Record side data:	Record clip:
■ In/Out	■ Segment
■ Transition type	■ Cut/Dissolve/Wipe/Axis
■ Number of video tracks	■ Video layers
■ Number of audio tracks	■ Audio tracks
■ Marker	■ Track marks
■ In/Out marker	■ In/Out marks

Effect Data

FCP transitions map to Backdraft Conform transitions, while FCP Filter effects and FX Script data map to Backdraft Conform soft effects.

Final Cut Pro	Backdraft Conform
Filter effects	Soft effects
Transitions	Transitions

FCP to Backdraft Conform: Animation

The following table describes how animation from FCP is mapped to Backdraft Conform animation.

Animation Interpolation Types

FCP animation interpolation maps to Autodesk interpolation.

Final Cut Pro	Backdraft Conform
Corner	Linear
Smooth	Hermite

FCP to Backdraft Conform: Motion

The following table describes how motion from FCP is mapped to Backdraft Conform Axis soft effect parameters.

Motion

FCP motion maps to Autodesk Axis soft effect parameters.

Final Cut Pro	Backdraft Conform
Basic Motion	Axis Axis
Crop	Axis Edges
Distort	Axis Surface
Opacity	Axis Transparency (partially supported)
Drop Shadow	Axis Shadow
Motion Blur	Not supported
Time Remap	Timewarp (see below)

About Time Remap to Timewarp

FCP Time Remap, both constant and variable, is translated into constant and variable timewarps with keyframes in Backdraft Conform, except for the following:

- Frame blending used with this effect is not translated.
- Negative constant timewarp speeds are not applied to the audio tracks of the segment being timewarped.

- Variable timewarps are not applied to the audio tracks of the segment being timewarped.

FCP to Backdraft Conform: Video Transitions

The names of FCP transitions are preserved in Backdraft Conform and are visible in the timeline.

3D Simulation

Final Cut Pro	Backdraft Conform
Cross Zoom	Dissolve (partially supported)
Cube Spin	Dissolve (partially supported)
Spin 3D	Axis transition (partially supported)
Spinback 3D	Not supported; replaced by Dissolve
Swing	Axis transition (partially supported)
Zoom	Axis transition (partially supported)

Dissolve

Final Cut Pro	Backdraft Conform
Additive Dissolve	Not supported; replaced by Dissolve
Cross Dissolve	Dissolve Additive
Dip to colour Dissolve	Dissolve To/From colour (partially supported)
Dither Dissolve	Not supported; replaced by Dissolve
Fade in/fade out Dissolve	Dissolve To/From Black (partially supported)
Non-Additive Dissolve	Dissolve Non-Additive
Ripple Dissolve	Not supported; replaced by Dissolve

Iris

Final Cut Pro	Backdraft Conform
Cross Iris	SMPTE 007 (partially supported)
Diamond Iris	SMPTE 102 (partially supported)
Oval Iris	SMPTE 119, 120, or 121 (partially supported)
Point Iris	SMPTE 047 (partially supported)
Rectangle Iris	SMPTE 101 (partially supported)
Star Iris	SMPTE 127, 128, or 129 (partially supported)

Map

Final Cut Pro	Backdraft Conform
Channel Map	Not supported; replaced by Dissolve
Luminance Map	Not supported; replaced by Dissolve

Page Peel

Final Cut Pro	Backdraft Conform
Page Peel	Not supported; replaced by Dissolve

QuickTime

Final Cut Pro	Backdraft Conform
Channel Compositor	Not supported; replaced by Dissolve
Chroma Key	Not supported; replaced by Dissolve
Explode	Not supported; replaced by Dissolve
Gradient Wipe	Not supported; replaced by SMPTE 002 without Softness
Implode	Not supported; replaced by Axis transition
Iris	SMPTE Wipes (partially supported): ■ Rectangle = SMPTE 101 ■ Diamond = SMPTE 102

Final Cut Pro	Backdraft Conform
	■ Triangle = SMPTE 103 ■ Triangle Right = SMPTE 104 ■ Triangle Upside Down = SMPTE 105 ■ Triangle Left = SMPTE 106 ■ Arrowhead = SMPTE 107 ■ Arrowhead Right = SMPTE 108 ■ Arrowhead Upside Down = SMPTE 109 ■ Arrowhead Left = SMPTE 110 ■ Pentagon = SMPTE 111 ■ Pentagon Upside Down = SMPTE 112 ■ Hexagon = SMPTE 113 ■ Hexagon Side= SMPTE 114 ■ Circle = SMPTE 119 ■ Oval = SMPTE 120 ■ Oval Side = SMPTE 121 ■ Cat Eye = SMPTE 122 ■ Cat Eye Side = SMPTE 123 ■ Round Rect = SMPTE 124 ■ Round Rect Side = SMPTE 125 ■ 4 Point Star = SMPTE 127 ■ 5 Point Star = SMPTE 128 ■ 6 Point Star = SMPTE 129 ■ Heart = SMPTE 130 ■ Keyhole = SMPTE 131
Matrix Wipe	Not supported; replaced by SPMTE 001 with a comment indicating the type of FCP Matrix Wipe that had been at this mark
Push	Not supported; replaced by Dissolve
Radial	SMPTE Wipes (partially supported): ■ Rotating Top = SMPTE 201 ■ Rotating Right = SMPTE 202

Final Cut Pro	Backdraft Conform
	■ Rotating Bottom = SMPTE 203 ■ Rotating Left = SMPTE 204 ■ Rotating Left Bottom = SMPTE 205 ■ Rotating Left Right = SMPTE 206 ■ Rotating Quadrant = SMPTE 207 ■ Top to Bottom 180 degree = SMPTE 211 ■ Right to Left 180 degree = SMPTE 212 ■ Top to Bottom 90 degree = SMPTE 213 ■ Right to Left 90 degree = SMPTE 214 ■ Top 180 Degree = SMPTE 221 ■ Right 180 Degree = SMPTE 222 ■ Bottom 180 Degree = SMPTE 223 ■ Left 180 Degree = SMPTE 224 ■ Counter Rotating Top Bottom = SMPTE 225 ■ Counter Rotating Left Right = SMPTE 226 ■ Double Rotating Top Bottom = SMPTE 227 ■ Double Rotating Left Right = SMPTE 228 ■ V Open Top = SMPTE 231 ■ V Open Right = SMPTE 232 ■ V Open Bottom = SMPTE 233 ■ V Open Left = SMPTE 234 ■ V Open Top Bottom = not supported; replaced by SMPTE 001 ■ V Open Left Right = not supported; replaced by SMPTE 001 ■ Rotating Top Left = SMPTE 241 ■ Rotating Bottom Left = SMPTE 242 ■ Rotating Bottom Right = SMPTE 243 ■ Rotating Top Right = SMPTE 244 ■ Rotating Top Left Bottom Right = SMPTE 245 ■ Rotating Bottom Left to Top Right = SMPTE 246 ■ Rotating Top Left Right = SMPTE 251

Final Cut Pro	Backdraft Conform
	■ Rotating Left Top Bottom = SMPTE 252 ■ Rotating Bottom Left Right = SMPTE 253 ■ Rotating Right Top Bottom = SMPTE 254 ■ Rotating Double Center Right = not supported; replaced by SMPTE 001 ■ Rotating Double Center Top = not supported; replaced by SMPTE 001 ■ Rotating Double Center Top Bottom = not supported; replaced by SMPTE 001) ■ Rotating Double Center Left Right = not supported; replaced by SMPTE 001
Slide	Axis transition
Wipe	SMPTE Wipes (various partially supported): ■ Slide Horizontal = SMPTE 001 ■ Slide Vertical = SMPTE 002 ■ Top Left = SMPTE 003 ■ Top Right = SMPTE 004 ■ Bottom Right = SMPTE 005 ■ Bottom Left = SMPTE 006 ■ Four Corner = SMPTE 007 ■ Four Box = SMPTE 008 ■ Barn Vertical = SMPTE 021 ■ Barn Horizontal = SMPTE 022 ■ Top Center = SMPTE 023 ■ Right Center = SMPTE 024 ■ Bottom Center = SMPTE 025 ■ Left Center = SMPTE 026 ■ Diagonal Left Down = SMPTE 041 ■ Diagonal Right Down = SMPTE 042 ■ Vertical Bow Tie = SMPTE 043 ■ Horizontal Bow Tie = SMPTE 044

Final Cut Pro	Backdraft Conform
	■ Diagonal Left Out = SMPTE 045 ■ Diagonal Right Out = SMPTE 046 ■ Diagonal Cross = SMPTE 047 ■ Diagonal Box = SMPTE 048 ■ Filled V = SMPTE 061 ■ Filled V Right = SMPTE 062 ■ Filled V Bottom = SMPTE 063 ■ Filled V Left = SMPTE =064 ■ Hollow V = SMPTE 065 ■ Hollow V Right = SMPTE 066 ■ Hollow V Bottom = SMPTE 067 ■ Hollow V Left = SMPTE 068 ■ Vertical Zig Zag = SMPTE 071 ■ Horizontal Zig Zag = SMPTE 072 ■ Vertical Barn Zig Zag = SMPTE 073 ■ Horizontal Barn Zig Zag = SMPTE 074
Zoom	Axis transition (partially supported)
Slide	
Final Cut Pro	Backdraft Conform
Band Slide	Not supported; replaced by Dissolve
Box Slide	Not supported; replaced by Dissolve
Center Split Slide	Not supported; replaced by Dissolve
Multi Spin Slide	Not supported; replaced by Dissolve
Push Slide	Not supported; replaced by Dissolve
Spin Slide	Not supported; replaced by Dissolve
Split Slide	Not supported; replaced by Dissolve
Swap Slide	Not supported; replaced by Dissolve

Stretch

Final Cut Pro	Backdraft Conform
Cross Stretch	Not supported; replaced by Dissolve
Squeeze	Axis transition (partially supported)
Squeeze and Stretch	Not supported; replaced by Axis Transition
Stretch	Axis transition (partially supported)

Wipe

Final Cut Pro	Backdraft Conform
Band	Not supported
Center Wipe	SMPTE 021 (partially supported)
Checker Wipe	Not supported
Checkerboard Wipe	Not supported
Clock Wipe	SMPTE 201 (partially supported)
Edge Wipe	SMPTE 001 (partially supported)
Gradient Wipe	Not supported
Inset Wipe	■ Upper Left = SMPTE 003 (partially supported) ■ Top = SMPTE 023 ■ Upper Right = SMPTE 004 ■ Right = SMPTE 024 ■ Lower Right = SMPTE 005 (reverse) ■ Bottom = SMPTE 025 ■ Lower Left = SMPTE 006 (reverse) ■ Left = SMPTE 026
Jaws Wipe	SMPTE 073 (partially supported, FCP's is smaller than Backdraft Conform's)
Random Edge Wipe	Not supported; replaced by Wipe 001 transition

Final Cut Pro	Backdraft Conform
V Wipe	■ Right = SMPTE 064 (partially supported) ■ Down = SMPTE 61 ■ Left = SMPTE 62 ■ Up = SMPTE 63
Venetian Blind Wipe	Not supported; replaced by SMPTE 001
Wrap Wipe	Not supported; replaced by SMPTE 001
Zig-Zag Wipe	Not supported; replaced by SMPTE 001

FCP to Backdraft Conform: Video Filters

Blur

The following tables describe how video filter effects from FCP are mapped to Backdraft Conform.

Final Cut Pro	Backdraft Conform
Gaussian Blur	Axis Surface + Axis (partially supported)
Radial Blur	Not supported
Wind Blur	Not supported
Zoom Blur	Not supported

Border

Final Cut Pro	Backdraft Conform
Basic Border	Soft Resize
Bevel	Not supported

Channel

Final Cut Pro	Backdraft Conform
Arithmetic	Not supported

Final Cut Pro	Backdraft Conform
Channel Blur	Not supported
Channel Offset	Not supported
Colour Offset	Soft CC (partially supported)
Compound Arithmetic	Not supported
Invert	Soft CC Basics (partially supported)

Colour Correction

Final Cut Pro	Backdraft Conform
Broadcast Safe	Not supported
Colour Correction	Not supported; replaced by Soft CC
Colour Correction 3-way	Not supported; replaced by Soft CC
Desaturate Highlights	Not supported
Desaturate Lows	Not supported
RGB Balance	Not supported; replaced by Soft CC

Distort

Final Cut Pro	Backdraft Conform
Bumpmap	Not supported
Cylinder	Not supported
Displace	Not supported
Fisheye	Not supported
Pond Ripple	Not supported
Ripple	Not supported
Wave	Not supported
Whirlpool	Not supported

Image Control

Final Cut Pro	Backdraft Conform
Brightness & Contrast (Bezier)	Not supported; replaced by Soft CW
Colour Balance	Not supported; replaced by Soft CC
Desaturate	Soft CC
Gamma Correction	Not supported; replaced by Soft CW
Levels	Not supported
Proc Amp	Not supported; replaced by Soft CC
Sepia	Not supported; replaced by Soft CC
Tint	Not supported

Key

Final Cut Pro	Backdraft Conform
Blue and Green screen	Not supported
Chroma Keyer	Not supported; replaced by Soft Axis
Colour Smoothing 4:1:1	Not supported
Colour Smoothing 4:2:2	Not supported
Colour Key	Not supported; replaced by Soft Axis
Difference Matte	Not supported
Luma Key	Not supported
Spill Suppressor - Blue	Not supported; replaced by Soft Axis
Spill Suppressor - Green	Not supported; replaced by Soft Axis

Matte

Final Cut Pro	Backdraft Conform
8-Point Garbage Mask	Not supported; replaced by Soft Axis
Extract	Not supported
4-Point Garbage Mask	Not supported; replaced by Soft Axis
Image Mask	Not supported; replaced by Soft Axis
Mask Feather	Not supported
Mask Shape	Soft Axis (partially supported)
Matte Choker	Not supported; replaced by Soft Axis
Soft Edges	Not supported; replaced by Soft Axis
Widescreen	Soft Resize (partially supported)

Perspective

Final Cut Pro	Backdraft Conform
Basic 3D	Soft Axis Axis (partially supported)
Curl	Not supported
Flop	Soft Axis Axis
Mirror	Not supported
Rotate	Soft Axis Axis

QuickTime

Final Cut Pro	Backdraft Conform
Gaussian Blur	Soft Axis Axis
Brightness/Contrast	Not supported; replaced by Soft CC
Colour Style	Not supported
Colour Tint	Soft CC (partially supported)

Final Cut Pro	Backdraft Conform
Colour Sync	Not supported
Edge Detection	Not supported
Emboss	Not supported
General Convolution	Not supported
HSL Balance	Not supported; replaced by Soft CC
Lens Flare	Not supported
RGB Balance	Not supported; replaced by Soft CC
Sharpen	Not supported

Sharpen

Final Cut Pro	Backdraft Conform
Sharpen	Not supported
Unsharp Mask	Not supported

Stylize

Final Cut Pro	Backdraft Conform
Anti-Alias	Not supported
Diffuse	Not supported
Emboss	Not supported
Find Edges	Not supported
Posterize	Not supported
Replicate	Not supported
Solarize	Not supported

Video

Final Cut Pro	Backdraft Conform
Blink	Soft Axis
De-Interlace	Soft Resize (partially supported)
Flicker Filter	Not supported
Image Stabilizer	Not supported; replaced by Axis Stabilizer
Stop Motion Blur	Not supported
Strobe	Timewarp Strobe
Timecode Generator	Not supported
Timecode Reader	Not supported
Viewfinder	Not supported

FCP to Backdraft Conform: Video Generator

The following tables describe generated effects that are translated into equivalent effects in Backdraft Conform.

Once imported into Backdraft Conform, effects created with the FCP video generator use the project's default resolution, regardless of their original resolution in FCP. This matches the behaviour of FCP: XML files with these effects that are reimported into FCP projects with different resolutions similarly inherit the project's resolution.

Video Generator

Final Cut Pro	Backdraft Conform
Bars and Tone HD108060i	Colour Source SMPTE Bars (partially supported)
Bars and Tone HD720p60	Colour Source SMPTE Bars (partially supported)
Bars and Tone (NTSC)	Colour Source SMPTE Bars (partially supported)
Bars and Tone (PAL)	Colour Source SMPTE Bars (partially supported)
Slug	Black colour Source SMPTE Bars (partially supported)

Matte

Final Cut Pro	Backdraft Conform
Colour	Colour Source (Fill Colour): ■ R = 0-255 ■ G = 0-255 ■ B = 0-255

Others

Final Cut Pro	Backdraft Conform
More Bars and Signals	Not supported

Render

Final Cut Pro	Backdraft Conform
Custom Gradient	Not supported
Gradient	Not supported
Highlight	Not supported
Noise	Colour Source Noise
Particle Noise	Not supported

Shapes

Final Cut Pro	Backdraft Conform
Circle	Not supported
Oval	Not supported
Rectangle	Not supported
Square	Not supported

Text

Final Cut Pro	Backdraft Conform
Crawl	Soft Text (partially supported)
Lower 3rd	Soft Text (partially supported)
Outline Text	Soft Text (partially supported)
Scrolling Text	Soft Text (partially supported)
Text	Soft Text (partially supported)
Typewriter	Not supported; replaced by Colour Source

FCP to Backdraft Conform: Audio

Some FCP audio elements are mapped to Backdraft Conform equivalents.

Audio Transitions

Final Cut Pro	Backdraft Conform
Cross Fade (0dB)	Audio fade (partially supported)
Cross Fade (+3dB)	Not supported; replaced by Audio Fade

Audio Controls

Final Cut Pro	Backdraft Conform
Stereo	Audio Gain (partially supported)

Apple

Final Cut Pro	Backdraft Conform
AuBandPass	Not supported
AuDelay	Not supported
AuDynamicProcessor	Not supported
AuGraphicsEQ	Not supported

Final Cut Pro	Backdraft Conform
AuHighShelfFilter	Not supported
AuHighPass	Not supported
AuLowPass	Not supported
AuLowShelfFilter	Not supported
AuMultibandCompress	Not supported
AuParametricEQ	Not supported
AuPeakLimiter	Not supported

Final Cut Pro HD

Final Cut Pro	Backdraft Conform
3 Band Equalizer	Not supported
Band Pass Filter	Not supported
Compressor/Limiter	Not supported
DC Notch	Not supported
Echo	Not supported
Expander/Noise Gate	Not supported
High Pass Filter	Not supported
High Shelf Filter	Not supported
Hum Remover	Not supported
Low Pass Filter	Not supported
Low Shelf Filter	Not supported
Notch Filter	Not supported
Parametric Equalizer	Not supported
Reverberation	Not supported

Final Cut Pro	Backdraft Conform
Vocal DeEsser	Not supported
Vocal DePopper	Not supported

FCP to Backdraft Conform: Composite Mode

Some FCP composite modes are mapped to Backdraft Conform Axis surface blend modes.

Composite Modes

Final Cut Pro	Backdraft Conform
Modify	■ Add = Add (partially supported) ■ Subtract = Subtract ■ Difference = Negate ■ Multiply = Multiply ■ Screen = Screen ■ Overlay = not supported ■ Hard Light = not supported ■ Soft Light = not supported ■ Darken = Min ■ Lighten = Max ■ Travel Matte - Alpha = not supported ■ Travel Matte - Luma = not supported ■ Normal = not supported

Importing Subtitle XML

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Topics in this chapter:

- [About Subtitle XML](#) on page 797
- [Subtitle XML Workflow](#) on page 798
- [Importing Subtitle XML Files](#) on page 798
- [Adding Subtitle XML Files to the Timeline](#) on page 800
- [Editing Subtitle XML Files](#) on page 801
- [Subtitle XML Syntax](#) on page 802

About Subtitle XML

Subtitle XML allows you to easily add subtitles to a timeline. Subtitle XML can contain multiple versions of the text, for example, in different languages. Subtitle XML files are human-readable text files that can be edited in any text editor.

You can import a Subtitle XML file from the Interchange menu, similar to a Final Cut Pro XML file.

The Subtitle XML file is imported as a single-layer clip with Text soft effects applied as Gap effects at each subtitle interval. You can then add the clip to an

existing timeline to apply the subtitles to it. Each of the Text soft effects contained in the Subtitle XML clip are editable.

To learn more about:	See:
Soft Effects	Soft Effects on page 1003.
Gap Effects	Creating Gap Effects on page 1011.

Subtitle XML Workflow

To use Subtitle XML, you need to import it and then add it to your timeline.

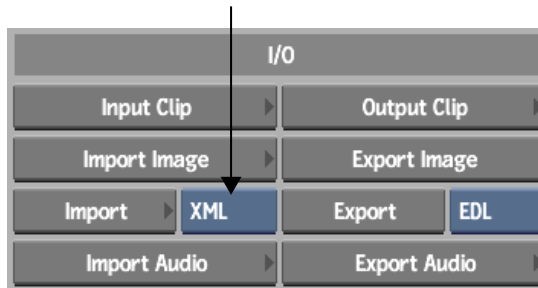
- 1 Import Subtitle XML from the Interchange menu. See [Importing Subtitle XML Files](#) on page 798.
- 2 Add the Subtitle XML clip to the timeline you are working on. See [Adding Subtitle XML Files to the Timeline](#) on page 800.
- 3 Other things you can do:
 - Create different versions of your clip for different audiences by working with multiple Subtitle XML layers. See [Working with Multiple Subtitle XML Files for Clip Versioning](#) on page 800.
 - Edit a Subtitle XML file in a text editor. See [Editing Subtitle XML Files](#) on page 801.

Importing Subtitle XML Files

You can import Subtitle XML files from the Interchange menu.

To import a Subtitle XML file:

- 1 In the clip library, from the Interchange Format box, select XML.



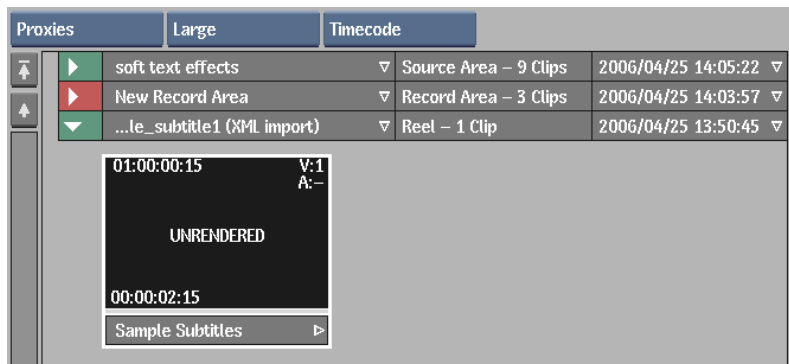
- 2 Click Import.
- 3 In the file browser, navigate to a Subtitle XML file, then select it.

TIP You can select multiple XML files to import.

- 4 Click Load.
The Recapture menu appears.

- 5 Click Exit Recapture.

A new reel appears with an unrendered clip containing the Subtitle XML file. The reel's name is the same as the Subtitle XML filename. The clip's name is retrieved from the name element in the XML code. See [Basic Elements](#) on page 803.



- 6 Do one of the following:
 - To see the Subtitles in the clip library, use the clip library tools to render the clip. See [Processing Clips and Proxies](#) on page 315.
 - To load the clip to the EditDesk, select it, then click Load.

- Add the Subtitle XML file to the timeline. See [Adding Subtitle XML Files to the Timeline](#) on page 800.

Adding Subtitle XML Files to the Timeline

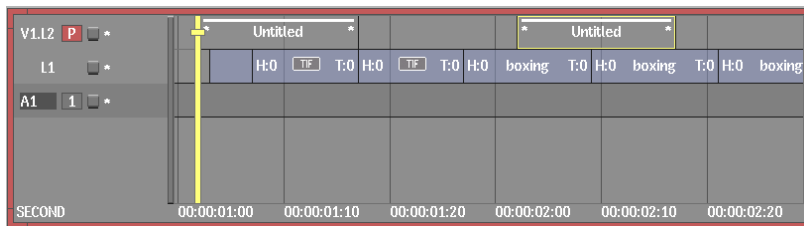
Add the Subtitle XML clip to a timeline. Text soft effects appear (applied to gaps) on the layer at intervals as indicated in the Subtitle XML clip.

You can also correct timing discrepancies by moving the gap (which has the Text soft effect applied) in the timeline.

To add a Subtitle XML layer to the timeline:

- 1 Add a layer to the timeline.
- 2 Move the positioner's focus point to the beginning of the new track where you want to add the Subtitle XML clip.
- 3 Select the Subtitle XML clip on the EditDesk.
- 4 Press Insert (**G**) or Overwrite (**H**).

The Subtitle XML clip is added to the timeline. Text soft effects appear on gaps at the intervals indicated in the Subtitle XML.



Working with Multiple Subtitle XML Files for Clip Versioning

You can add multiple Subtitle XML clips to a timeline, then mute all but the layer you want to process. With this method you can quickly version a clip.

To work with multiple Subtitle XML layers in the timeline:

- 1 Stack multiple Subtitle XML clips onto layers of a timeline.
- 2 Hold **Ctrl** and click the track identifier on all the layers you want to mute.

NOTE A muted layer has a yellow track indicator.

- 3 Drag the timeline onto the Clip Library box to save the clip.
The clip is saved with only the selected subtitles appearing.
- 4 Repeat steps 2 and 3, alternating the subtitles that appear. To show a muted layer, hold **Ctrl** and click its track identifier again.

TIP The top layer cannot be muted.

Editing Subtitle XML Files

You can edit Subtitle XML files in any text editor. This is especially convenient for making multiple versions of the text, for example, in different languages, and not having to do so on the Backdraft Conform workstation.

To edit a Subtitle XML file in a text editor:

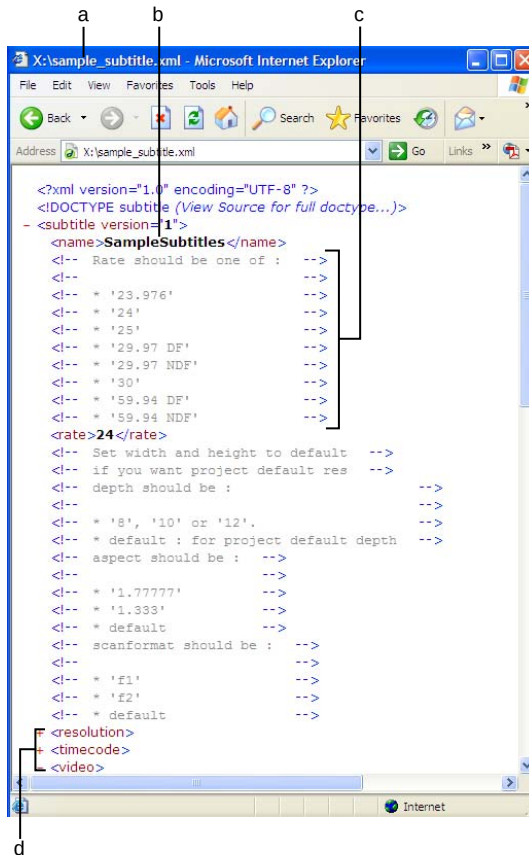
- 1 Open a Subtitle XML file in a text editor such as kedit on Linux, Notepad on Windows, or TextEdit on Macintosh.

TIP Sample Subtitle XML files are available in
/usr/discreet/xml/<version>/samples.

- 2 Edit the file using the proper Subtitle XML syntax. See [Subtitle XML Syntax](#) on page 802.
- 3 Save the Subtitle XML file. Make sure the file maintains the *.xml* file extension to be read properly in Backdraft Conform.
- 4 If necessary, check the validity of the Subtitle XML file.
You can now import the Subtitle XML file from the Interchange menu.
See [Importing Subtitle XML Files](#) on page 798.

To check if the Subtitle XML file is valid:

- Open up the Subtitle XML file in an application that reads XML files, for example, Internet Explorer.
In Internet Explorer, you can collapse or expand each element, and easily see if there are mistakes in the structure of the XML, since it is colour coded.



(a) Subtitle XML file in Internet Explorer (b) Name of Subtitle XML file in `<name>` element (c) Commented values for Rate element (d) Elements can be collapsed or expanded by clicking + or -

Subtitle XML Syntax

Subtitle XML files are human-readable, editable text files. Use the following syntax to work with Subtitle XML files external to the Backdraft Conform workstation.

Basic Elements

The basic elements define the name, timecode, and body (as indicated by the <video> element) of the Subtitle XML file.

<name></name>

Description	An element that defines the name of the Subtitle XML file. This name appears as the name of the clip which is created when importing a Subtitle XML file.
Attributes	none
Sample	<name>French version: Day at the Races</name>

<rate></rate>

Description	A format element that describes the framerate of the Subtitle XML clip that appears in Backdraft Conform after importing the Subtitle XML file.
Attributes	none
Sample	<rate>59.94 NDF</rate>

<resolution></resolution>

Description	A format element that wraps around all of the attributes determining the format of the clip when importing a Subtitle XML file. This clip can then be resized within Backdraft Conform like any other clip, if necessary.
Attributes	<width></width> The width of the imported Subtitle XML clip. <height></height> The height of the imported Subtitle XML clip. <depth></depth> The bit depth of the imported Subtitle XML clip. <aspect></aspect> The aspect ratio of the imported Subtitle XML clip. <scanformat></scanformat> The scanformat of the imported Subtitle XML clip.
Sample	<resolution> <width>1920</width>

```

    <height>1080</height>
    <depth>8</depth>
    <aspect>1.778</aspect>
    <scanformat>default</scanformat>
  </resolution>

```

<timecode></timecode>

Description An element that defines the timecode in and out points during which the subtitles occur. All the titles in the Subtitle XML file will occur during the timecode indicated here, with each title also having its own start and end point indicated within the title elements. See [Title Elements](#) on page 805.

Attributes

```

<start></start>
The start timecode of the subtitle sequence.
<end></end>
The end timecode of the subtitle sequence.

```

Sample

```

<timecode>
  <start>01:00:00;00</start>
  <end>01:00:08;00</end>
</timecode>

```

<video></video>

Description The <video> element wraps around all of the <title> elements, which in turn contain the text and attributes of individual subtitles. See [Title Elements](#) on page 805.

Attributes

```

<title></title>
The <title> element wraps around each subtitle, with its associated start and end time, text, and font style and position parameters. See Title Elements on page 805.

```

Sample

```

<video>
  <title>
    <start>01:00:01;00</start>
    <end>01:00:02;00</end>
    <text>This is a subtitle string</text>
    <font>Garamond</font>
    <size>20</size>
    <fontcolor>

```

```

        <alpha>255</alpha>
        <red>255</red>
        <green>255</green>
        <blue>255</blue>
    </fontcolor>
    <vertical>0</vertical>
    <horizontal>0</horizontal>
    <setup>/usr/discreet/pro-
ject/test/text/paz.ttg</setup>
</title>
<title>
</title>
</video>

```

Title Elements

Each `<title></title>` element defines a single subtitle which will appear as a Text soft effect applied to a gap once imported into Backdraft Conform, and added to a timeline.

The font style, colour, size, and position parameters are overridden if a valid text setup file is referenced within the `<title>` element.

`<start></start>`

Description	The start timecode of the current subtitle
Attributes	none
Sample	<code><start>01:00:01;00</start></code>

`<end></end>`

Description	The end timecode of the current subtitle
Attributes	none
Sample	<code><end>01:00:02;00</end></code>

`<text></text>`

Description	The text of the current subtitle

Attributes	none
Sample	<code><text>This is a subtitle string</text></code>
<code></code>	
Description	The font of the current subtitle. This value is overridden if a valid text setup file is referenced in the <code><setup></code> element.
Attributes	none
Sample	<code>Garamond</code>
<code><size></size></code>	
Description	The font size of the current subtitle. This value is overridden if a valid text setup file is referenced in the <code><setup></code> element.
Attributes	none
Sample	<code><size>20</size></code>
<code><fontcolor></fontcolor></code>	
Description	This element wraps around the font colour elements (<code><alpha></code> , <code><red></code> , <code><blue></code> , <code><green></code>) of the current subtitle. This value is overridden if a valid text setup file is referenced in the <code><setup></code> element.
Attributes	<code><alpha></alpha></code> The <code><alpha></code> colour component of the font of the current subtitle. This value is overridden if a valid text setup file is referenced in the <code><setup></code> element. <code><red></red></code> The <code><red></code> colour component of the font of the current subtitle. This value is overridden if a valid text setup file is referenced in the <code><setup></code> element. <code><green></green></code> The <code><green></code> colour component of the font of the current subtitle. This value is overridden if a valid text setup file is referenced in the <code><setup></code> element. <code><blue></blue></code>

The <blue> colour component of the font of the current subtitle. This value is overridden if a valid text setup file is referenced in the <setup> element.

Sample	<pre><fontcolor> <alpha>255</alpha> <red>255</red> <green>255</green> <blue>255</blue> </fontcolor></pre>

<vertical></vertical>

Description	The vertical text position of the current subtitle. This value is overridden if a valid text setup file is referenced in the <setup> element.

Attributes	none

Sample	<pre><vertical>0</vertical></pre>

<horizontal></horizontal>

Description	The horizontal text position of the current subtitle. This value is overridden if a valid text setup file is referenced in the <setup> element.

Attributes	none

Sample	<pre><horizontal>0</horizontal></pre>

<setup></setup>

Description	The <setup> element can point to a text setup file from which font style and position parameters will be used. The parameters from the text setup file override corresponding elements within the current <title> element.

Attributes	none

Sample	<pre><setup>/usr/discreet/pro- ject/test/text/paz.ttg</setup></pre>

Sample Code

The following is an example of Subtitle XML which creates three Text soft effects applied to gaps at these timecodes:

- 01:00:01;00 until 01:00:02;00
- 01:00:03;00 until 01:00:04;00
- 01:00:05;00 until 01:00:06;02

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE subtitle>
<subtitle version="1">
  <name>SampleSubtitles</name>
  <!-- Rate should be one of : -->
  <!-- -->
  <!-- * '23.976'-->
  <!-- * '24'-->
  <!-- * '25'-->
  <!-- * '29.97 DF'-->
  <!-- * '29.97 NDF' -->
  <!-- * '30'-->
  <!-- * '59.94 DF'-->
  <!-- * '59.94 NDF' -->
  <rate>24</rate>
  <!-- Set width and height to default -->
  <!-- if you want project default res -->
  <!-- depth should be : -->
  <!-- -->
  <!-- * '8', '10' or '12'.-->
  <!-- * default : for project default depth -->
  <!-- aspect should be : -->
  <!-- -->
  <!-- * '1.77777'-->
  <!-- * '1.333'-->
  <!-- * default-->
  <!-- scanformat should be : -->
  <!-- -->
  <!-- * 'f1' -->
  <!-- * 'f2' -->
  <!-- * default-->
  <resolution>
    <width>1920</width>
    <height>1080</height>
    <depth>8</depth>
    <aspect>1.778</aspect>
    <scanformat>default</scanformat>
  </resolution>
  <timecode>
    <start>01:00:00;00</start>
    <end>01:00:08;00</end>
  </timecode>
</video>

```

```

<title>
  <start>01:00:01;00</start>
  <end>01:00:02;00</end>
  <text>This is a subtitle string</text>
  <font>Garamond</font>
  <size>20</size>
  <fontcolor>
    <alpha>255</alpha>
    <red>255</red>
    <green>255</green>
    <blue>255</blue>
  </fontcolor>
  <vertical>0</vertical>
  <horizontal>0</horizontal>
  <setup>/usr/discreet/project/test/text/paz.ttg</setup>
</title>
<title>
  <start>01:00:03;00</start>
  <end>01:00:04;00</end>
  <text>This is another subtitle string</text>
  <font>Garamond</font>
  <size>20</size>
  <fontcolor>
    <alpha>255</alpha>
    <red>255</red>
    <green>255</green>
    <blue>255</blue>
  </fontcolor>
  <vertical>100</vertical>
  <horizontal>100</horizontal>
  <setup>/usr/discreet/project/test/text/paz.ttg</setup>
</title>
<title>
  <start>01:00:05;00</start>
  <end>01:00:06;02</end>
  <text>This is a third subtitle string</text>
  <font>Garamond</font>
  <size>20</size>
  <fontcolor>
    <alpha>255</alpha>
    <red>255</red>
    <green>255</green>
    <blue>255</blue>

```



```
</fontcolor>
<vertical>-100</vertical>
<horizontal>-200</horizontal>
<setup>/usr/discreet/project/test/text/paz.ttg</setup>
</title>
</video>
</subtitle>
```


Importing AAF Files

33

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About Importing Advanced Authoring Format Files

The Advanced Authoring Format (AAF) is a file format that represents a multi-layered timeline complete with transitions, as well as video and audio effects.

AAF files are similar to traditional EDLs, only they are more powerful because of their multi-layer support. AAF files, therefore, are even closer in composition to Final Cut Pro XML files.

Only AAF files exported from Avid editing applications are supported for import into Backdraft Conform. As well, only the metadata in AAF files can be

transferred, not the media itself. Media can be recaptured and/or relinked from the imported AAF file.

Additionally, only select transitions and effects are supported when importing an AAF file to Backdraft Conform.

You can also load AAF made from Varicam content.

AAF Conform Workflow

First, prepare the sequences in your Avid application that will be exported as AAF. These sequences are then imported into Backdraft Conform to be worked on in a timeline.

- 1 Do one of the following:
 - If you are editing from tape, perform logging and capture from a VTR in the Avid application. See [Logging and Capturing from Tape in Avid](#) on page 815.
 - If you are editing from files, verify that the supported media specifications and network configuration links are still valid for accessing the file-based media. See [Relinking to File-based Media](#) on page 819.
- 2 Edit and add effects/transitions in your Avid application. See [Supported and Unsupported Transitions and Effects](#) on page 828.
- 3 Export AAF sequences from Avid applications. See [Exporting Sequences from Avid](#) on page 815.
- 4 Import AAF from the Interchange menu, then recapture or relink the media. See [Importing AAF Files](#) on page 816.
- 5 Work on the recaptured project and/or finish it for final output.

Preparing Sequences Cut in Avid for AAF Import

Prepare sequences in your Avid application before exporting them as AAF files. If you are working from tapes, log and capture to Avid in a manner that will allow the online editor to easily recapture media in Backdraft Conform. You should also be able to edit in Avid using file-based media.

TIP You can use both tape-based and file-based media in the same Avid project, and the media can be recaptured and relinked later in Backdraft Conform.

You can load AAF files using the Interchange commands and either capture the source material from tape or relink the media to files.

Logging and Capturing from Tape in Avid

When capturing clips for offline edit sessions in Avid applications, you enter the tape name in the Tape Name field of the Capture Tool box. After importing the AAF in Backdraft Conform, you recapture all the media from tape. It is this tape name, as entered in the Tape Name in Avid, that will indicate which tapes to use.

The following resolutions/framerates are supported for footage destined for Backdraft Conform:

■ NTSC@23.976	■ NTSC@29.97	■ PAL@24
■ PAL@25	■ 720p24@23.976	■ 720p60@29.97
■ 720p60@59.94	■ 1080p24@23.976	■ 1080p24@24
■ 1080p25@25	■ 1080i50@50	■ 1080i60@59.94

Exporting Sequences from Avid

When you are ready to export projects from the Avid application, you must export each sequence separately as an AAF file, since Backdraft Conform does not support Bins or Batch lists.

You can, however, export sequences which contain nested sequences and the nested sequences will be translated into containers in Backdraft Conform.

Use commands in the Avid File menu to export AAF Interchange Format documents.

To export AAF from Avid:

- 1 Select a sequence in the Bin window that you want to export in an interchange format document.

NOTE If nothing is selected, the entire contents of the Browser are exported. However, Backdraft Conform only supports AAF files with a single sequence of edited clips.

- 2 Choose File | Export | AAF.
- 3 In the Export As dialog box, click Options.
- 4 In the Options dialog box, click Export As and, from the drop-down list, select AAF.

Make sure that you select the proper media management settings. For easy file access from within Backdraft Conform, you can opt to consolidate your sequence's media files to a central location, or simply link the AAF file to the original media, provided that Backdraft Conform has direct access to it.
- 5 Click Save.
- 6 In the Export As dialog box, click Save.

Importing AAF Files

Import AAF sequences from Avid in the same way that you import an EDL. Each AAF file corresponds to a sequence that can be opened in the timeline, including video and audio layers, and select transitions and effects. Some unsupported effects are marked with comments indicating what you have to rebuild in Backdraft Conform based on the original offline edit.

Avid can support 720/24p, 720/30p, and 720/60p output from Varicam to create AAF files. The timecode of the source is always 59.94 but the timelines can be 24p, 30p, or 60p.

Backdraft Conform has the ability to conform AAF (23.976/29.97/59.94) from Varicam material (23.976/29.97/30/59.94/60). Backdraft Conform can also remove non-active frames when capturing Varicam media. The source material must be at the same framerate as the sequence (for example, 23.97 in a 23.97 sequence).

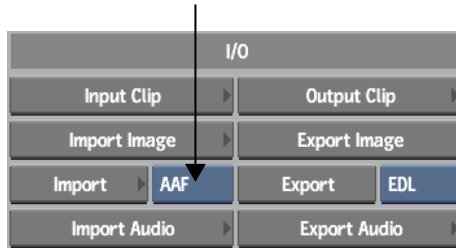
After importing an AAF file, you recapture the footage from the original tapes using the Recapture tool. You can also reload file-based media. Once all the media is captured or reloaded, it is relinked to the sequence.

When importing AAF files that were created in SD resolution and that need to be conformed in HD, you will need to reformat the clips. See [Reformatting Clips](#) on page 701.

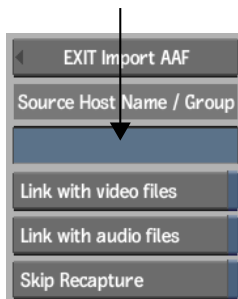
A new reel with the AAF filename is created in the clip library for each imported AAF file. The assembled clip in the new reel has the same name as the original AAF sequence.

To import an AAF file:

- 1 In the Clip Library menu, from the Interchange Format box, select AAF.



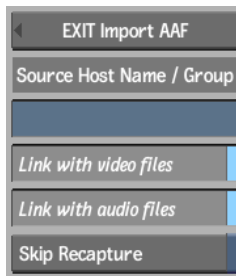
- 2 Click Import.
- 3 In the file browser, navigate to an AAF file exported from an Avid application.
- 4 If you are importing AAF that contains media files, and your files are stored on other computers, you can use Wiretap to access them. Enter the host or group name, as configured in the *sw_wiretap_path_translation_db.xml* file.



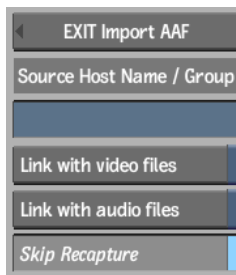
The Wiretap Server must be configured properly to recognise the different hosts that you want to retrieve media from. See the *Autodesk Stone and Wire Filesystem and Networking Guide* or contact your system administrator.

If you do not enter a value in the Source Host Name / Group field, any paths contained in the AAF file will be interpreted as pointing to your Backdraft Conform workstation. You can change the path in the Recapture dialog box when relinking.

- 5 If you are importing AAF that contains media files of the format and resolution that you want to use, enable Link with video files and/or Link with audio files.

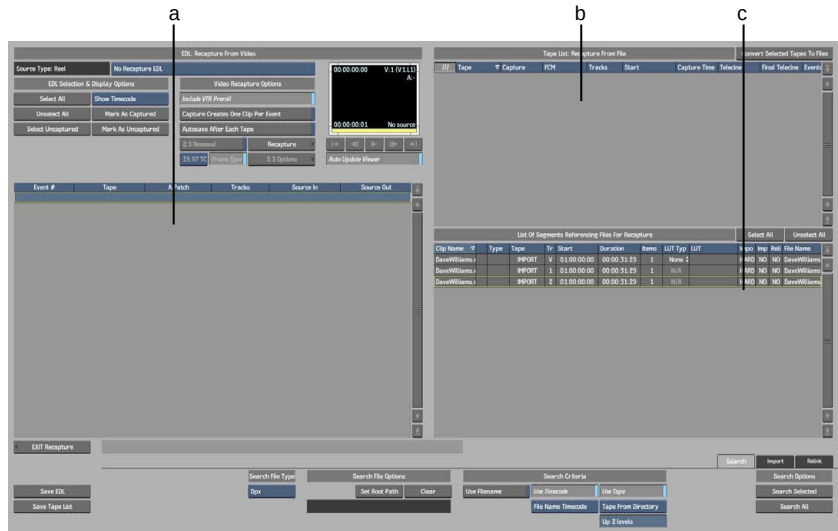


- 6 If you are importing AAF that contains media files of a different file type or resolution than what you want to use (for example, when trying to relink to source media after working with proxies), then enable the Skip Recapture button.



Upon clicking Load, you will be taken to the Library menu, where you can then apply a Reformat action (through the Tools menu) to your timeline, and then use Recapture to load your source media.

- 7 Click Load.
If you did not enable Skip Recapture, the Recapture menu appears.



(a) Clip List: List of Clips on Tape (b) Tape List: Recapture From File (c) List of Segments Referencing Files For Recapture

- 8 If you are importing AAF that references media clips on tapes, a list of clips appears in the Clip List. A list of source tapes also appears in the Tape List. This is the same tape list as logged in your Avid application. See [Recapturing Media From Tape](#) on page 826.
- 9 If you are importing AAF that contains media files, a list of files appears in the List of Segments. This is the list that you need to relink. See [Relinking to File-based Media](#) on page 819.

Relinking to File-based Media

After having edited sequences in your Avid application using file-based media, such as MXF files or QuickTime movies, you can relink the exported AAF to these files in Backdraft Conform.

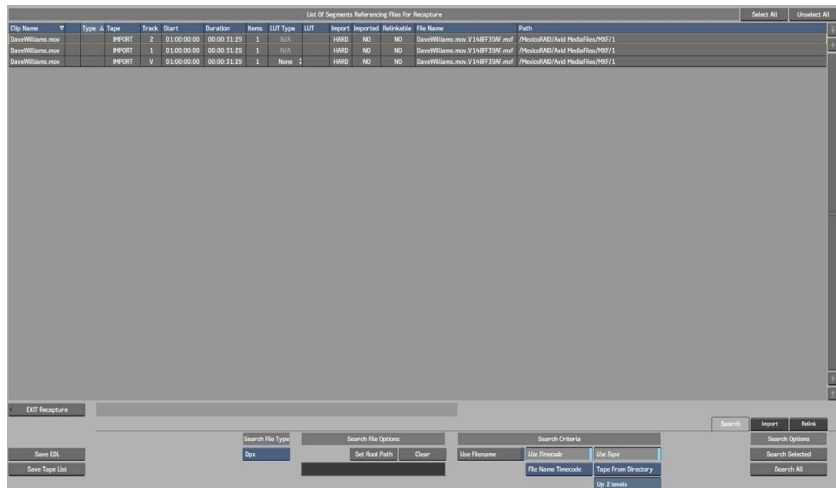
Verify that the media files you are relinking to are supported in Backdraft Conform. See [Supported File Formats](#) on page 220.

You can relink imported AAF files to file-based video or audio media.

If you are importing an AAF file with Varicam support, it will be identified as such in the Source Type box.

To relink AAF to file-based media:

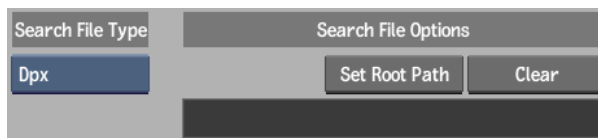
- 1 Swipe to the right to display the List of Segments Referencing Files For Recapture table across the full screen.



- 2 Use the Search Criteria to find the source media files.

When importing sequences (DPX) or streaming media (MXF, QT) that are referenced by AAF files, you can use the advanced Search feature to find and read these image sequences or streaming media, based on preset search rules and criteria. These media files are mostly arranged in hierarchical structures that can be identified and traversed through all the subdirectories from a given root destination. Providing additional criteria, such as file type, tape name, and timecode can help to narrow and pinpoint the search.

- 3 From the Search File Type box, select the file type to search for.



- 4 Click Set Root Path to select the root directory where the search will start.
- 5 Select the criteria that you want to match on.

Search Criteria		
Use Filename	Use Timecode	Use Tape
	File Name Timecode	Tape From File Header
		Up 2 levels

Select	To
Use Filename	Search for the exact file name referenced in the AAF.
Use Timecode	Read the metadata from found items to make sure that the starting timecode matches the one in the edit list. Select whether to read the timecode from the file header (MXF and QuickTime) or from the file name (DPX).
Use Tape	Read the metadata from found items to make sure that the tape name matches the one in the edit list. Select whether to read the tape name from the file header (MXF and QuickTime) or from the directory (DPX).

If DPX is selected as a format, Use Timecode and Use Tape are on, but Use Filename is turned off. If MXF or QuickTime is selected, Use Filename and Use Timecode are turned on, but Use Tape is off.

- Once all settings are made for the selected file type, click Search Selected or Search All.

A progress bar appears.

The results update the List of Segments Referencing Files For Recapture table. A checkmark appears in the Full Res column for each clip when the full-resolution version of a file is found. The Type column lists the file type/extension. The Tape and Path columns are also updated.

Clip Name	Full Res	Proxy	Type	Tape
00013W.MXF			MXF	IMPORT
0001QK.MXF	✓		MXF	IMPORT

- If files are not found, you can redo the search by deselecting match criteria. You can also run the search for a different file type. Data for all the previously found files is kept.

- 8 If the file search still does not find your media, you will have to enter the correct path names manually for each clip. To change the path, select the unfound media segments in the list, and then click the Path field.



File Name	Path
00013W.MXF	/Volumes/DarwinRAID/P2 Footage/
00010K.MXF	/Volumes/DarwinRAID/P2 Footage/

This opens the library browser where you can choose a different path.

- 9 If you want to soft-import the media files, click Select All or drag to select the segments in the list, and then, in the Import column, drag left or right to toggle between SOFT and HARD.



LUT Type	LUT	Import
None		SOFT
None		SOFT

NOTE Not all files can be soft-imported (for example, audio files at 44.1 kHz).

- 10 Optional: If you want to apply a LUT or gamma correction to your media files, click Select All or drag to select the segments in the list, and then, from the LUT Type column, select an option.



LUT Type	LUT	Import
None		HARD
None		HARD

If you selected 1D LUT or 3D LUT for LUT Type, click in the LUT column to choose a specific LUT name.



LUT Type	LUT
3D	LC 3DL_Kodak2
None	

The LUT file name appears in the LUT column.

- 11 Click the Import tab.
The Import File options appear.

File Type	Clip Media	Clip Metadata		
Dpx	RGB	Tape From Directory	File Name Timecode	No Keycode
			Start 00:00:00:00	No KC
		Up 2 levels	29.97 NDF	16/S16 mm / 1perf
				Scan First File

- 12 Set any options, as needed.

WARNING These options are provided here in case you are having trouble relinking certain media files. If the files are already found, changing any of these options may prevent them from relinking.

See [Clip Metadata Group](#) on page 231.

- 13 Optional: Change the name of the reel in the Library Reel Name field.

- 14 Click Import All Files.

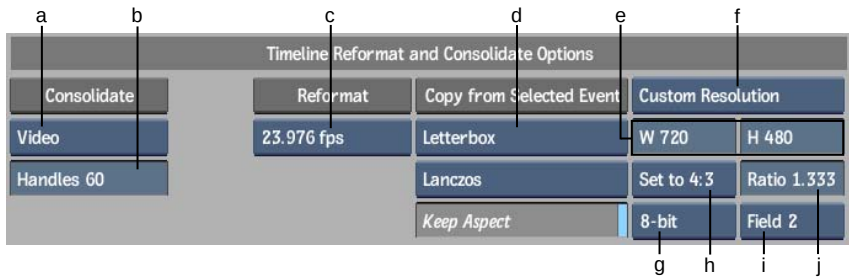
All the files should now be imported or soft-imported.

Import	Imported	Relinkable	File Name
SOFT	YES	YES	00013W.MXF
SOFT	YES	YES	0001QK.MXF

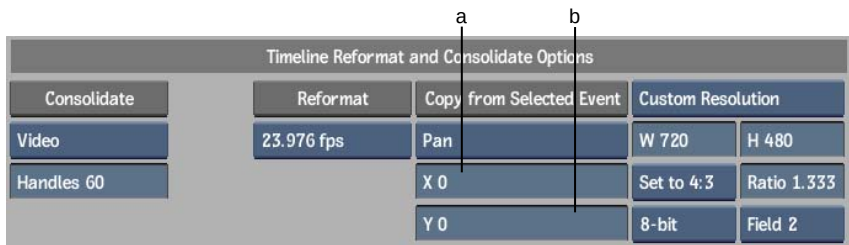
The Imported column indicates whether a file was imported or not. The Relinkable column displays whether the file is relinkable. A file can be imported and non-relinkable if a discrepancy exists between the resolution of the AAF and the found media. Also, the media may have already been imported previously, in which case this column would already be checked accordingly.

- 15 Click the Relink tab.

The Timeline Reformat and Consolidate options appear.



(a) Consolidate option box (b) Handles field (c) Frame Code Mode box (d) Fit Method box (e) Width and Height fields (f) Resolution Presets box (g) Bit Depth box (h) Aspect Ratio Presets box (i) Scan Mode box (j) Aspect Ratio field



(a) Pan Start X field (b) Pan Start Y field

See [Processing Group](#) on page 234.

- 16 Optional: To reformat the timeline to match the resolution of a given clip, specify the destination resolution by doing one of the following:
 - Click the Copy from Selected Clip button to copy the formatting information of a selected clip into the Resolution parameters.
 - Select a preset from the Resolution Presets box.
 - Specify the dimensions using the Width and Height fields.
- 17 From the Frame Code Mode box, set the frame rate and drop frame mode as needed.

If you have a clip that contains some linked media and some unlinked metadata, when you change the frame code mode such that the duration of the clip is affected, the unlinked metadata and linked media are treated differently. The linked media is timewarped to accommodate the new duration. For unlinked metadata, if more material is needed to accommodate the change in duration, it is input when the clip is

recaptured. Effects will look identical, although the timing of the clip will be adjusted.

- 18** Optional: Set the aspect ratio, bit depth, and scan mode.
- 19** Optional: If your clip contains video tracks or segments that still contain media (for example, module-processed shots), select a resize fit method from the Fit Method box.
- 20** Click Reformat and confirm the action. If there are multiple clips to confirm, you can click Confirm All to confirm them all or click Confirm for each clip.

The clip metadata for the timeline clips is updated to the specified values. Any existing media is also converted and resized using the specified fit method. You can now recapture the media associated with these clips in the appropriate format.

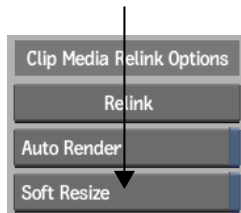
- 21** If consolidation was not performed in your Avid application, do it now.
 - 1** From the Consolidate box, select Audio, Video, or All Tracks.

This determines which tracks will be affected by the consolidate operation.
 - 2** In the Handles field, set the maximum number of head and tail frames that you want to retain after consolidating the clip.
 - 3** Click Consolidate and confirm the operation.

- 22** Ensure that all media files are relinkable. Click the Relinkable header to sort the list and group any NOs at the top.

Some files that are not relinkable may only need to be resized to be compatible. For example, the Soft Resize feature allows you to import Quicktime files, included with the AAF, at 720x480 instead of the usual NTSC 720x486.

- 23** For files that are not relinkable, enable Soft Resize, and then click Import Selected Files.



Soft resize is applied to all clips that need it.

If the files are still not relinkable then they cannot be soft-imported. Try to import the files normally, or check with your system administrator.

24 Click Relink.

A new reel with the AAF filename is created in the clip library for each imported AAF file. The assembled clip in the new reel has the same name as the original Avid sequence, and is placed in the same reel as the media.

25 Click Exit Recapture to end the session.

Recapturing Media From Tape

After importing an AAF file, you recapture the source material from the original tapes using the Recapture tool.

To recapture media from tape:

- 1** Recapture all the source material from the original sources as indicated in the tape list. See [Recapturing Media](#) on page 710.

NOTE If your assembled clip references media already recaptured, the material does not have to be recaptured again. As well, it is recommended to consolidate clips before recapturing. See [Optimizing the Recapture of Footage Referenced in AAF Files](#) on page 827.

- 2** After recapturing and relinking the sequence, exit the Recapture module to see the clip in the current clip library.

A new reel appears in the library. This reel is named the same as the AAF file with the added suffix *AAF Import*. Within the reel, the clip assembled from the AAF is named the same as the sequence in Avid.

NOTE If you load AAF files with the same name, the clips that are created from them are added to the same reel.

You can load the reassembled clip into the timeline and proceed to tweak the effects added in the Avid application.

Optimizing the Recapture of Footage Referenced in AAF Files

There are two methods that can help you achieve a more efficient workflow as you import projects from third parties via AAF. You can consolidate clips before recapturing to reduce the amount of extra footage, or you can relink clips to already captured media if multiple AAF files use the same footage.

Consolidating Clips

After importing an AAF file and prior to recapturing it, it is strongly recommended that you consolidate your clip in Backdraft Conform. This ensures that you do not capture all the extra media that was likely captured during the offline edit. This step should be performed even if a similar process was performed in the Avid application.

You can consolidate clips in the clip library. See [Consolidating Clips in the Clip Library](#) on page 322.

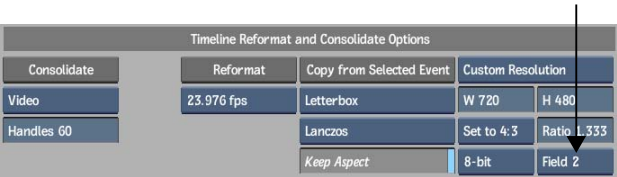
In general, it is recommended to use the All Tracks option, available from the Consolidate option box, to consolidate all segments of an unlinked clip. See [About Managing Media on the Timeline](#) on page 1033.

Relinking to Already Captured Material

If you import multiple AAF files that reference the same footage, you do not have to recapture the footage each time. Instead, you can relink the clip to media on the same reel.

To relink an imported AAF file to already recaptured clips:

- 1 After importing an AAF file, change the Library Reel to the reel where the media is located.



- 2 Click Relink.

The clip is linked to media on the reel that is referenced in the AAF file.

- 3 If necessary, recapture any missing media. See [Recapturing Media](#) on page 710.

Supported and Unsupported Transitions and Effects

The information in this section indicates how AAF data, transitions, and effects map to Backdraft Conform data, transitions, and effects. There are three levels of support that can be indicated for each:

- **Translated** Parameters from the AAF file are read and translated as Backdraft Conform Soft Effect Parameters.
- **Converted** The effect type is converted without parameters from the AAF file to a Backdraft Conform Soft Effect or Transition. Some effects are recreated with a similar effect. Some are only recreated as an empty effect.
- **Not supported** The effect is not supported and replaced by a comment or by a default transition or effect.

In addition, the following restrictions must also be taken into account:

- Only flattened Photoshop (.psd) files are supported (layered files will be imported as flattened in Backdraft Conform).
- Only RGB material is supported, not RGBA.
- Graphics files of resolutions bigger or smaller than the timeline are imported as Center/Crop mode only.
- AAF files that contain MP3 media files cannot be relinked on Backdraft Conform for Linux, since the MP3 file format is not supported on Linux.
- Nested effects are not supported.
- All video and audio tracks for each sequence must be imported.

General

The following tables describe how metadata and media are supported in Backdraft Conform.

Metadata

Avid	Backdraft Conform
All Video / Audio tracks	All Video / Audio tracks
Tape name	Tape name data
Source / Record Timecode	Source / Record Timecode
Drop / Non-Drop Timecode	Drop-Frame / Non-Drop-Frame
Mark In / Out	Not supported
Keycode	Supported
Video locator	Cue mark with locator text (no text data is translated)
23.976 / 29.97 timecode	23.976 / 29.97 timecode data provided (24p sequences are 23.976 for REC and 29.97 for SRC)

Media Import

Avid	Backdraft Conform
Video media (JPEG, TIFF, etc.)	Paths and filenames translated
Audio media (WAV, AIFF)	Paths and filenames translated
Embedded/Linked Video media data (OMF, MXF)	Not supported
Embedded/Linked Audio media data (WAV, AIFF)	Not supported

Media Export

Avid	Backdraft Conform
Video media (OMF, MXF)	Not supported
Audio media (WAV, AIFF)	Not supported

Sequence

Avid	Backdraft Conform
Video only	Video-only sequence
Audio only	Audio-only sequence
Video and audio	Video and Audio sequence

Video and Audio Transitions

The following tables describe how transitions are supported in Backdraft Conform.

Transitions marked with an * are also supported with the “Inverse” option set.

Blend

Avid	Backdraft Conform
Dip to colour	Translated to Dissolve with colour data value
Dissolve	Converted to Dissolve (linear animation)
Fade from colour	Supported; background is black only, reset manually
Fade to colour	Supported; background is black only, reset manually
Picture-in-picture	Not supported; replaced by Dissolve + cue mark

Film

Avid	Backdraft Conform
Film dissolve	Converted to Dissolve (hermite animation)
Film fade	Converted to Dissolve (linear animation)

Box wipe

Avid	Backdraft Conform
Bottom box*	Converted to SMPTE 025; softness not supported

Avid	Backdraft Conform
Bottom left to top right*	Converted to SMPTE 006; softness not supported
Bottom right to top left*	Converted to SMPTE 005; softness not supported
Left box*	Converted to SMPTE 026; softness not supported
Right box*	Converted to SMPTE 024; softness not supported
Top box*	Converted to SMPTE 023; softness not supported
Top left to bottom right*	Converted to SMPTE 003; softness not supported
Top right to bottom left*	Converted to SMPTE 004; softness not supported

Edge Wipe

Avid	Backdraft Conform
Horizontal*	Converted to SMPTE 001; softness not supported
Horz open*	Converted to SMPTE 021; softness not supported
Bottom left diagonal*	Converted to SMPTE 042; animation is inverted, softness not supported
Bottom right diagonal*	Converted to SMPTE 041; animation is inverted, softness not supported
Upper left diagonal*	Converted to SMPTE 041; softness not supported
Upper right diagonal*	Converted to SMPTE 042; softness not supported
Vert open*	Converted to SMPTE 022; softness not supported
Vertical*	Converted to SMPTE 002; softness not supported

Shape Wipe

Avid	Backdraft Conform
4 corners*	Converted to SMPTE 007; softness not supported
Horizontal bands	Not supported; replaced by Dissolve + cue mark
Horizontal blinds	Not supported; replaced by Dissolve + cue mark

Avid	Backdraft Conform
Vertical blinds	Not supported; replaced by Dissolve + cue mark
Center box*	Converted to SMPTE 101; softness not supported
Circle*	Converted to SMPTE 119; softness not supported
Ellipse*	Converted to SMPTE 120; softness not supported
Clock*	Converted to SMPTE 201; softness not supported
Diamond*	Converted to SMPTE 102; softness not supported
Sawtooth Wipe	
Avid	Backdraft Conform
Horizontal sawtooth*	Converted to SMPTE 071; softness not supported
Horz open sawtooth*	Converted to SMPTE 073; softness not supported
Vert open sawtooth*	Converted to SMPTE 074; softness not supported
Vertical sawtooth*	Converted to SMPTE 072; softness not supported
Matrix Wipe	
Avid	Backdraft Conform
Grid*	Not supported; replaced by SMPTE 008
One-way row	Not supported; replaced by SMPTE 001 + comment
Speckle	Not supported; replaced by SMPTE 001 + comment
Spiral	Not supported; replaced by SMPTE 001 + comment
Zig-zag	Not supported; replaced by Cue mark
Xpress 3D Effect	
Avid	Backdraft Conform
3D ball	Not supported; replaced by Cue mark
3D page fold	Not supported; replaced by Cue mark

Avid	Backdraft Conform
3D slats	Not supported; replaced by Cue mark
3D PIP	Translated to Soft Axis (Position / Scaling (ISO, Softness / Crop)
Miscellaneous	
Avid	Backdraft Conform
Conceal	Converted to Soft Axis (Conceal effect); softness not supported
L-Conceal	Converted to Soft Axis (L-Conceal effect); softness not supported
Squeeze	Converted to Soft Axis (Squeeze effect); softness not supported
Peel	Not supported; replaced by Dissolve + cue mark
Push	Not supported; replaced by Dissolve + cue mark
Spin	Not supported; replaced by Dissolve + cue mark
Video gap	Video gap
Video filler	Video gap
Video match frame edit	Match frame

Video and Audio Effects

The following tables describe how effects are supported in Backdraft Conform.

Blend

Avid	Backdraft Conform
Picture-in-picture	Supported
Superimpose	Translated to Soft Blend (transparency value is translated)

NOTE Scaling in AAF can be X and Y. Backdraft Conform only supports one value (X or Y) for both.

Film

Avid	Backdraft Conform
1.66 mask	Supported; bkg is black, no mask, horizontal position off
1.85 mask	Supported; bkg is black, no mask, horizontal position off
16:9 mask	Supported; bkg is black, no mask, horizontal position off
Anamorphic mask	Supported; bkg is black, no mask, horizontal position off
Mask	Supported; bkg is black, no mask, horizontal position off
Blowup	Supported

AVX Plugin

Avid	Backdraft Conform
Illusion FX	Not supported; replaced by Cue mark
AVX Plugins	Not supported; replaced by Cue mark

Image

Avid	Backdraft Conform
Avid Pan and Zoom	Not supported; replaced by Cue mark
Blur effect	Not supported; replaced by Cue mark
colour Correction	Converted to Soft CC (empty) + cue mark
colour Effect	Converted to Soft CC (empty) + cue mark
Flip	Converted to Soft Axis (Flip effect)
Flip-flop	Converted to Soft Axis (Flip-flop effect)
Flop	Converted to Soft Axis (Flop effect)
Mask	Supported; bkg is black, no mask, horizontal position off

Avid	Backdraft Conform
Resize	Supported; background is black, no left and right cropping
Scratch removal	Not supported; replaced by Cue mark
Submaster	Converted to Container

Reformat

Avid	Backdraft Conform
14:9 Letterbox	Not supported; replaced by Soft Axis + Cue mark
16:9 Letterbox	Not supported; replaced by Soft Axis + Cue mark
4:3 Sidebar	Not supported; replaced by Soft Axis + Cue mark
Pan and Scan	Not supported; replaced by Soft Axis + Cue mark

Titles

Avid	Backdraft Conform
Title	Not supported; only text string is available
Marquee Text	Not supported; only text string is available

Key

Avid	Backdraft Conform
Animate	Not supported; replaced by Cue mark
Chroma key	Converted to Soft Axis (empty)
Luma key	Converted to Soft Axis (empty)
Matte key	Converted to Soft Axis (empty)
RGB keyer	Not supported; replaced by Cue mark

Miscellaneous

Avid	Backdraft Conform
Timewarp	Converted to Soft TW; recreate the curve type
Motion Effect	Translated to Soft TW (Constant speed, no strobe effect)
3D PIP	Supported
Peel	Not supported; replaced by Dissolve + cue mark
Push	Not supported; replaced by Dissolve + cue mark
Spin	Not supported; replaced by Dissolve + cue mark
Squeeze	Not supported; replaced by Dissolve + cue mark
Video gap	Video gap
Video filler	Video gap
Video match frame edit	Match frame

General Audio

Avid	Backdraft Conform
Audio level	Audio gain
Audio dissolve	Audio dissolve
Audio fade in	Audio dissolve
Audio fade out	Audio dissolve
Audio gap	Audio gap
Audio filler	Audio gap
Audio match frame edit	Match frame splice

Audio Suite Plugin

Avid	Backdraft Conform
Chorus	Not supported; replaced by Cue mark

Avid	Backdraft Conform
D-verb	Not supported; replaced by Cue mark
Compressor	Not supported; replaced by Cue mark
Limiter	Not supported; replaced by Cue mark
Expander-gate	Not supported; replaced by Cue mark
Gate	Not supported; replaced by Cue mark
DeEsser	Not supported; replaced by Cue mark
1-band EQII	Not supported; replaced by Cue mark
4-band EQII	Not supported; replaced by Cue mark
Flanger	Not supported; replaced by Cue mark
Invert	Not supported; replaced by Cue mark
Duplicate	Not supported; replaced by Cue mark
Delay	Not supported; replaced by Cue mark
Multi-tap delay	Not supported; replaced by Cue mark
Normalize	Not supported; replaced by Cue mark
Gain	Not supported; replaced by Cue mark
Ping-pong delay	Not supported; replaced by Cue mark
Reverse	Not supported; replaced by Cue mark
DC offset removal	Not supported; replaced by Cue mark
Signal generator	Not supported; replaced by Cue mark
Time compression exp	Not supported; replaced by Cue mark
Pitch shift	Not supported; replaced by Cue mark

Importing and Exporting OMF Files

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Topics in this chapter:

- [About OMF Files](#) on page 839
- [OMF Project Workflow](#) on page 840
- [Importing OMF Files](#) on page 840
- [Exporting OMF Files](#) on page 842
- [Supported and Unsupported Transitions and Effects](#) on page 844

About OMF Files

Open Media Framework® (OMF®) Interchange® files make it possible to move projects with multiple video and audio tracks between systems. You can even include embedded audio media in the OMF file to facilitate the process of restoring a project on another system.

An OMF file is like an EDL with expanded capabilities. Essentially, you use an OMF file to recreate a timeline with all the tracks, effects, and events intact.

Without the benefit of an OMF file, moving a project can be a difficult process, particularly between different editing systems. For instance, when using EDLs to recreate your editing decisions, most formats support only one video track and up to four audio tracks per EDL. If your project contains multiple video

and audio tracks, you must create several sets of EDLs, and label each carefully to ensure that they are reassembled in the right order. Information about effects must be manually entered to be included in the EDL.

However, with OMF files, the timeline track and event structure is stored so that it can be rebuilt on another system. The audio media itself can even be included in the OMF file.

When you want to move a project with multiple tracks and effects, use the OMF import or export tools.

OMF Project Workflow

The following typical workflow illustrates how OMF files are used to move timeline metadata and audio media between systems at various stages in the post-production process.

- 1 Create an offline editing project using any Avid® offline editing application and export an OMF file with included audio media.
- 2 Import the OMF file into Backdraft Conform and recapture the media.
- 3 Finish in Backdraft Conform and perform any sound mixing.
- 4 If you want to use another audio tool such as Pro Tools® to complete the audio mix, then do the following:
 - Export the final timeline as an OMF file (with audio media).
 - Import the new OMF file into Digidesign Pro Tools® and complete the audio mix.
 - From Pro Tools, export the finished audio as WAV or AIFF.
 - Import the finished audio into Backdraft Conform and recombine it in the final timeline.
- 5 From Backdraft Conform, output to tape or export to another format.

Importing OMF Files

You can import an OMF file to the EditDesk to recreate the original video and audio track structure. Audio files embedded in the OMF file are imported into Backdraft Conform as clips. The audio does not need to be recaptured.

OMF files from the following applications are supported:

- Avid® Media Composer®
- Avid Symphony™
- Avid Xpress® PRO
- Avid Xpress DV

Only the EDL information (such as dissolve, timecode, tape name) and the audio media is supported (AIFF-C and WAV). No audio effects are translated (for example, audio gain, plug-ins).

When you import an OMF file with embedded audio media, the extracted audio files are saved in a new folder (with the OMF file name) located in the project EDL folder. Because audio media can take up a lot of space on the system drive, make sure that you manage the audio files and remove them after the project is done. The clips can be unlinked and relinked.

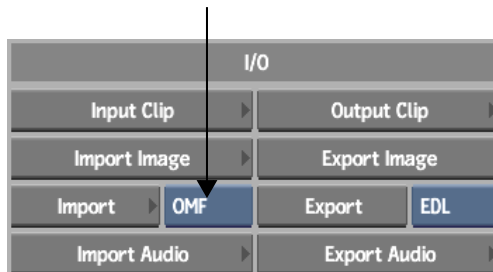
When importing OMF files created by third-party applications, the supported embedded sampling rates are 44.1 KHz and 48 KHz. Other sampling rates must be converted before the OMF file is created.

The supported resolution / framerates are NTSC 29.97 and PAL 25.

Source clips without tape names will be assigned IMPORT as a tape name.

To import an OMF file:

- 1 In the Clip Library menu, from the Interchange Format box, select OMF.



- 2 Click Import.
- 3 In the file browser, navigate to the OMF file.
- 4 Click Load.

The OMF file is loaded to the EDL module. EDLs are created for each track and layer in the OMF file. In addition, the audio media is extracted from

the OMF file and placed in a temporary location. See [About the Import EDL Menu](#) on page 622.

- 5 Select the events in the EDL module that reference audio media and click Import.

The audio media is imported as clips in the clip library.

Once the EDLs are in the EDL module, you assemble the EDLs as you would any other EDL. See [Assembling EDLs](#) on page 688.

Exporting OMF Files

When you export a clip as an OMF file, the file is saved in a directory in the filesystem. You can load an OMF file from the directory into another application, or transfer it to another platform.

To complete a project, you can also export an edited clip to an OMF file with embedded audio media. That way, any audio finishing systems supporting OMF format can read the file. Audio-only information and audio media is exported. You should limit the size of an exported file to 2 gigabytes.

The following applications can read an OMF file exported from Backdraft Conform:

■ Avid Media Composer	■ Avid Symphony
■ Avid Xpress DV	■ Avid Xpress PRO
■ Digidesign® Pro Tools	■ Steinberg Nuendo
■ Fairlight AV Transfer	■ Cubase™
■ Neve AMS	■ Merging Pyramix

The following information is exported:

■ Clips with multiple audio tracks	■ Up to 8 audio tracks per file
■ Cuts and linear dissolves	■ Audio patching information

The following information is not exported:

■ Video tracks	■ Audio animation
■ Audio soft effects	■ AudioDesk settings

■ EQ Desk settings

■ Audio timestretch

In addition, the following restrictions must also be taken into account:

- Before exporting, make sure that the source tape name or timecode is unique.
- Subframe editing is not supported. Subframes will create offsets in the exported OMF files.

To export an OMF file:

- 1 In the clip library, select the clip or clips that you want to export.
- 2 In the Clip Library menu, from the Export Interchange Format box, select OMF.

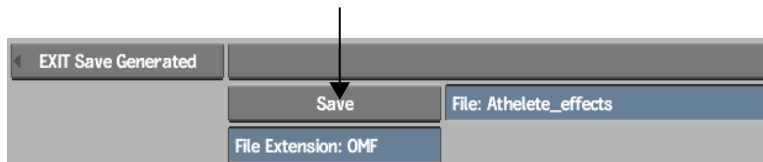


- 3 Click Export.
- The Export EDL menu appears.



(a) Track table (b) Clip List (c) Audio Sample Rate box (d) Limit Handles field

- 4 Select the clip to export in the Clip List.
- 5 Enable the tracks to export in the Track table. See [Track Table](#) on page 723.
- 6 Optional: enable Generate Audio Media.
The audio is saved as a separate file.
- 7 Optional: enable Limit Handles to export the source clip with a specified maximum number of frames before and after the edit.
Enter a value for the number of frames used before and after the edit in the Limit Handles field.
- 8 Click Generate.
The file browser appears.
- 9 Specify the location of the exported file and the filename, and then click Save.



NOTE To avoid file name compatibility issues upon export, underscores will be substituted in your file name in place of any of the following characters:
 ` # ~ @ \$ % ^ & * () [] { } < > \ | / ! ? , ; : ' "

The OMF file is exported to the specified location.

Supported and Unsupported Transitions and Effects

The following sections describe how Backdraft Conform translates the video contents of an imported OMF file into clips.

Supported Decisions and Transitions

The OMF Converter Utility translates the following information:

- Clips on multiple video and audio tracks
- Cuts and dissolves

- Speed changes
- Clip and subclip names
- Audio patching information
- Wipe transitions (As available in Backdraft Conform. See [Transitions Translation](#) on page 845.)
- Wipe effects (As available in Backdraft Conform. See [Effects Translation](#) on page 850.)

The information in this section describes how OMF transitions and effects map to Backdraft Conform transitions and effects. There are two levels of support that can be indicated for each:

- The effects are translated without effect parameters. A default effect is applied.
- The effects are ignored if they cannot be translated into Backdraft Conform.

Transitions Translation

Avid transitions are translated as follows when importing an OMF file into Backdraft Conform.

Blend

Avid	Backdraft Conform
Dip to Color	Dissolve (no colour information)
Dissolve	Dissolve
Fade From Color	Dissolve (no colour information)
Fade to Color	Dissolve (no colour information)
Picture-in-Picture	Not supported
Superimpose	Not supported; replace by SMPTE WIPE 001

Box Wipes

Avid	Backdraft Conform
Bottom Box	SMPTE WIPE 025
Bottom Left to Top Right	SMPTE WIPE 006
Bottom Right to Top Left	SMPTE WIPE 005
Left Box	SMPTE WIPE 026
Right Box	SMPTE WIPE 024
Top Box	SMPTE WIPE 023
Top Left to Bottom Right	SMPTE WIPE 003
Top Right to Bottom Left	SMPTE WIPE 004

Conceal

Avid	Backdraft Conform
Bottom Left to Top Right	Not supported; replace by SMPTE WIPE 001
Bottom Right to Top Left	Not supported; replace by SMPTE WIPE 001
Bottom to Top	Not supported; replace by SMPTE WIPE 001
Left to Right	Not supported; replace by SMPTE WIPE 001
Right to Left	Not supported; replace by SMPTE WIPE 001
Top Left to Bottom Right	Not supported; replace by SMPTE WIPE 001
Top Right to Bottom Left	Not supported; replace by SMPTE WIPE 001
Top to Bottom	Not supported; replace by SMPTE WIPE 001

Edge Wipes

Avid	Backdraft Conform
Horizontal	SMPTE WIPE 002
Horizontal Open	SMPTE WIPE 022

Avid	Backdraft Conform
Lower Left Diagonal	SMPTE WIPE 042
Lower Right Diagonal	SMPTE WIPE 041
Upper Left Diagonal	SMPTE WIPE 041
Upper Right Diagonal	SMPTE WIPE 042
Vert Open	SMPTE WIPE 021
Vertical	SMPTE WIPE 001

L-Conceal

Avid	Backdraft Conform
Bottom Left	Not supported; replace by SMPTE WIPE 001
Bottom Right	Not supported; replace by SMPTE WIPE 001
Top Left	Not supported; replace by SMPTE WIPE 001
Top Right	Not supported; replace by SMPTE WIPE 001

Matrix Wipes

Avid	Backdraft Conform
Grid	SMPTE WIPE 008
One-Way-Row	Not supported; replace by SMPTE WIPE 001
Speckle	Not supported; replace by SMPTE WIPE 001
Spiral	Not supported; replace by SMPTE WIPE 001
Zig Zag	Not supported; replace by SMPTE WIPE 001

Peel

Avid	Backdraft Conform
Bottom Left Corner	Not supported; replace by SMPTE WIPE 001
Bottom Right Corner	Not supported; replace by SMPTE WIPE 001

Avid	Backdraft Conform
Left To Right	Not supported; replace by SMPTE WIPE 001
Right to Left	Not supported; replace by SMPTE WIPE 001
Top Left Corner	Not supported; replace by SMPTE WIPE 001
Top Right Corner	Not supported; replace by SMPTE WIPE 001
Top to Bottom	Not supported; replace by SMPTE WIPE 001

Push

Avid	Backdraft Conform
Bottom Left to Top Right	Not supported; replace by SMPTE WIPE 001
Bottom Right to Top Left	Not supported; replace by SMPTE WIPE 001
Bottom to Top	Not supported; replace by SMPTE WIPE 001
Left to Right	Not supported; replace by SMPTE WIPE 001
Right to Left	Not supported; replace by SMPTE WIPE 001
Top Left to Bottom Right	Not supported; replace by SMPTE WIPE 001
Top Right to Bottom Left	Not supported; replace by SMPTE WIPE 001
Top to Bottom	Not supported; replace by SMPTE WIPE 001

Sawtooth Wipes Transitions

Avid	Backdraft Conform
Horizontal Sawtooth	SMPTE WIPE 074
Horizontal Open Sawtooth	SMPTE WIPE 072
Vertical Open Sawtooth	SMPTE WIPE 071
Vertical Sawtooth	SMPTE WIPE 073

Shape Wipes Transitions

Avid	Backdraft Conform
4 Corners	SMPTE WIPE 007
Center Box	SMPTE WIPE 101
Circle	SMPTE WIPE 119
Clock	SMPTE WIPE 201
Diamond	SMPTE WIPE 102
Ellipse	SMPTE WIPE 120
Horizontal Bands	Not supported; replace by SMPTE WIPE 001
Horizontal Blinds	Not supported; replace by SMPTE WIPE 001
Vertical Blinds	Not supported; replace by SMPTE WIPE 001

Spin Transitions

Avid	Backdraft Conform
X Spin	Not supported; replace by SMPTE WIPE 001
Y Spin	Not supported; replace by SMPTE WIPE 001
Z spin	Soft Axis (Z spin Effect)

Squeeze Transitions

Avid	Backdraft Conform
Bottom Centered	Not supported; replace by SMPTE WIPE 001
Bottom Left	Not supported; replace by SMPTE WIPE 001
Bottom Right	Not supported; replace by SMPTE WIPE 001
Bottom to Top	Not supported; replace by SMPTE WIPE 001
Centered Zoom	Not supported; replace by SMPTE WIPE 001
Horizontal Centered	Not supported; replace by SMPTE WIPE 001

Avid	Backdraft Conform
Left To Right	Not supported; replace by SMPTE WIPE 001
Right Centered	Not supported; replace by SMPTE WIPE 001
Right to Left	Not supported; replace by SMPTE WIPE 001
Top Centered	Not supported; replace by SMPTE WIPE 001
Top Left	Not supported; replace by SMPTE WIPE 001
Top Right	Not supported; replace by SMPTE WIPE 001
Top to Bottom	Not supported; replace by SMPTE WIPE 001
Vertical Centered	Not supported; replace by SMPTE WIPE 001

Effects Translation

Backdraft Conform does not support Timewarp effects in OMF files. These effects are converted to a linear Timewarp. The resulting timeline will have the correct duration with the correct Source In/Out timecode, but the speed will be incorrect. You will need to manually replicate the animation Timewarp effect.

Audio EQ is not supported if you import an OMF file with EQ. The audio clip on which the EQ effect was applied will be replaced with a gap. The remainder of the OMF file will be loaded correctly.

Wipes imported through OMF as effects are always animated.

Avid effects are translated as follows when importing an OMF file into Backdraft Conform.

Blend

Avid	Backdraft Conform
Picture-in-Picture	Soft Axis (50% scale down)
Superimpose	Soft Blend (50% blend)

Box Wipes

Avid	Backdraft Conform
Bottom Box	Not supported; replace by SMPTE WIPE 001
Bottom Left to Top Right	Not supported; replace by SMPTE WIPE 001
Bottom Right to Top Left	Not supported; replace by SMPTE WIPE 001
Left Box	Not supported; replace by SMPTE WIPE 001
Right Box	Not supported; replace by SMPTE WIPE 001
Top Box	Not supported; replace by SMPTE WIPE 001
Top Left to Bottom Right	Not supported; replace by SMPTE WIPE 001
Top Right to Bottom Left	Not supported; replace by SMPTE WIPE 001

Conceal

Avid	Backdraft Conform
Bottom Left to Top Right	Soft Axis (Bottom Left to Top Right)
Bottom Right to Top Left	Soft Axis (Bottom Right to Top Left)
Bottom to Top	Soft Axis (Bottom to Top)
Left to Right	Soft Axis (Left to Right)
Right to Left	Soft Axis (Right to Left)
Top Left to Bottom Right	Soft Axis (Top Left to Bottom Right)
Top Right to Bottom Left	Soft Axis (Top Right to Bottom Left)
Top to Bottom	Soft Axis (Top to Bottom)

Edge Wipes

Avid	Backdraft Conform
Horizontal	SMPTE WIPE 001
Horizontal Open	SMPTE WIPE 021

Avid	Backdraft Conform
Lower Left Diagonal	SMPTE WIPE 041
Lower Right Diagonal	SMPTE WIPE 042
Upper Left Diagonal	SMPTE WIPE 041
Upper Right Diagonal	SMPTE WIPE 042
Vert Open	Not supported; replace by SMPTE WIPE 001
Vertical	SMPTE WIPE 002

Film

Avid	Backdraft Conform
1:1.66 Mask	Soft Resize (1.66 Mask)
1:1.85 Mask	Soft Resize (1.85 Mask)
1:2.35 Mask	Soft Resize (2.35 Mask)
16 x 9 Mask	Soft Resize (1.77 Mask)
Blowup	Soft Resize (125% blowup)
Film Dissolve	Dissolve
Film Fade	Dissolve
MASK	Soft Axis (Default values)

Image

Avid	Backdraft Conform
Avid Pan & Zoom	Not supported
Color Correction	Not supported
Color Effect	Soft CC (Default Values)
Flip	Soft Axis (Flip effect)
Flip-Flop	Soft Axis (Flip-Flop effect)

Avid	Backdraft Conform
Flop	Soft Axis (Flop effect)
Mask	Soft Resize
Region Stabilize	Unsupported
Resize	Soft Resize
Submaster	Container with Soft Effects

Key

Avid	Backdraft Conform
AnimAtte	Not supported
Chroma Key	Soft Axis (Default RGB Key)
Luma Key	Soft Axis (Default LUM Key)
Matte Key	Soft Axis (Default Value)
RGB Keyer	Not supported

L-Conceal

Avid	Backdraft Conform
Bottom Left	Not supported; replace by SMPTE WIPE 001
Bottom Right	Not supported; replace by SMPTE WIPE 001
Top Left	Not supported; replace by SMPTE WIPE 001
Top Right	Not supported; replace by SMPTE WIPE 001

Matrix Wipes

Avid	Backdraft Conform
Grid	SMPTE WIPE 008
One-Way-Row	Not supported; replace by SMPTE WIPE 001
Speckle	Not supported; replace by SMPTE WIPE 001

Avid	Backdraft Conform
Spiral	Not supported; replace by SMPTE WIPE 001
Zig Zag	Not supported; replace by SMPTE WIPE 001
Motion	
Avid	Backdraft Conform
0% to 100%	Not supported; replaced by a fit-to-fill soft TW from in & out material
100% to 0%	Not supported; replaced by a fit-to-fill soft TW from in & out material
Pulldown Insertion	Not supported; replaced by a fit-to-fill soft TW from in & out material
Pulldown Removal	Not supported; replaced by a fit-to-fill soft TW from in & out material
Reverse Motion	Not supported; replaced by a fit-to-fill soft TW from in & out material
Speed Boost	Not supported; replaced by a fit-to-fill soft TW from in & out material
Speed Bump	Not supported; replaced by a fit-to-fill soft TW from in & out material
Timewarp	Not supported; replaced by a fit-to-fill soft TW from in & out material
Peel	
Avid	Backdraft Conform
Bottom Left Corner	Not supported; replace by SMPTE WIPE 001
Bottom Right Corner	Not supported; replace by SMPTE WIPE 001
Left To Right	Not supported; replace by SMPTE WIPE 001
Right to Left	Not supported; replace by SMPTE WIPE 001

Avid	Backdraft Conform
Top Left Corner	Not supported; replace by SMPTE WIPE 001
Top Right Corner	Not supported; replace by SMPTE WIPE 001
Top to Bottom	Not supported; replace by SMPTE WIPE 001

Push

Avid	Backdraft Conform
Bottom Left to Top Right	Not supported; replace by SMPTE WIPE 001
Bottom Right to Top Left	Not supported; replace by SMPTE WIPE 001
Bottom to Top	Not supported; replace by SMPTE WIPE 001
Left to Right	Not supported; replace by SMPTE WIPE 001
Right to Left	Not supported; replace by SMPTE WIPE 001
Top Left to Bottom Right	Not supported; replace by SMPTE WIPE 001
Top Right to Bottom Left	Not supported; replace by SMPTE WIPE 001
Top to Bottom	Not supported; replace by SMPTE WIPE 001

Sawtooth Wipes

Avid	Backdraft Conform
Horizontal Sawtooth	SMPTE WIPE 071
Horizontal Open Sawtooth	SMPTE WIPE 021
Vertical Open Sawtooth	Not supported; replace by SMPTE WIPE 001
Vertical Sawtooth	SMPTE WIPE 072

Shape Wipes

Avid	Backdraft Conform
4 Corners	SMPTE WIPE 007
Center Box	SMPTE WIPE 101

Avid	Backdraft Conform
Circle	SMPTE WIPE 119
Clock	SMPTE WIPE 201
Diamond	SMPTE WIPE 102
Ellipse	SMPTE WIPE 120
Horizontal Bands	Not supported; replace by SMPTE WIPE 001
Horizontal Blinds	Not supported; replace by SMPTE WIPE 001
Vertical Blinds	Not supported; replace by SMPTE WIPE 001

Spin

Avid	Backdraft Conform
X Spin	Not supported; replace by SMPTE WIPE 001
Y Spin	Not supported; replace by SMPTE WIPE 001
Z spin	Soft Axis (Z spin Effect)

Squeeze

Avid	Backdraft Conform
Bottom Centered	Soft Axis (Squeeze Bottom Centered)
Bottom Left	Soft Axis (Squeeze Bottom Left)
Bottom Right	Soft Axis (Squeeze Bottom Right)
Bottom to Top	Soft Axis (Squeeze Bottom to Top)
Centered Zoom	Soft Axis (Squeeze Centered Zoom)
Horizontal Centered	Soft Axis (Squeeze Horizontal Centered)
Left To Right	Soft Axis (Squeeze Left To Right)
Right Centered	Soft Axis (Squeeze Right Centered)
Right to Left	Soft Axis (Squeeze Right to Left)

Avid	Backdraft Conform
Top Centered	Soft Axis (Squeeze Top Centered)
Top Left	Soft Axis (Squeeze Top Left)
Top Right	Soft Axis (Squeeze Top Right)
Top to Bottom	Soft Axis (Squeeze Top to Bottom)
Vertical Centered	Soft Axis (Squeeze Vertical Centered)

Text Tool

Text is unsupported. Text is replaced on the timeline by comments.

Part 7: Editing

Part 7 includes these chapters:

- [Editing Essentials](#) on page 861
- [Navigating the Timeline](#) on page 875
- [Editing to the Timeline](#) on page 929
- [Vertical Editing](#) on page 955
- [Trimming](#) on page 969
- [Dissolves and Wipes](#) on page 993
- [Soft Effects](#) on page 1003
- [Timewarps](#) on page 1023
- [Managing Timeline Media](#) on page 1033
- [Audio](#) on page 1045



Image courtesy of BskyB Creative Services

Topics in this chapter:

- [Introduction](#) on page 861
- [Editing Workflow](#) on page 862
- [Basic Editing Concepts](#) on page 862
- [Record Area View Modes](#) on page 867
- [Editing Cursors](#) on page 873

Introduction

This chapter introduces a typical editing workflow and points you to the chapters that explain the various editing operations. Basic editing concepts used in Backdraft Conform are described, as are some editing interface elements and instructions for using tools that will come in handy during the editing process.

Editing Workflow

The following table outlines one way of editing. You may perform the steps in a different order, or you may not even need to use all the steps in your project.

Step:	Refer to:
1. Splice video and audio clips together to create a rough approximation of the final project.	Editing to the Timeline on page 929.
2. Add dissolves and wipes to the clips.	Dissolves and Wipes on page 993.
3. Refine the content of the clips by trimming frames.	Trimming on page 969.
4. Adjust the playback rate of clips, reverse playback, or freeze frames.	Timewarps on page 1023.
5. Edit to additional tracks or layers on the timeline to lay the foundation for compositing or audio mixing.	Vertical Editing on page 955.
6. Create a final audio mix.	Audio on page 1045.

Basic Editing Concepts

This section describes some concepts that apply when editing in Backdraft Conform.

Gestural Editing

Editing operations in Backdraft Conform are done through the combination of hotkeys and pen/mouse gestures. Gestures include dragging and dropping, clicking buttons, and selecting items. In many cases, gestural edits are enhanced when combined with keyboard entries.

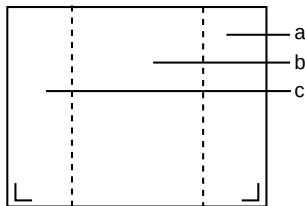
NOTE Virtually all pen functions have mouse equivalents.

You can manipulate clips and timeline elements on the EditDesk using drag and drop gestures. You can drag clips between the Source Area and Record Area, rearrange clips in the Record and Source Area, and edit clips in the Record Area.

As you drag a source clip across the destination clip in the Record Area in Storyboard or Collapsed view, the cursor changes shape. The cursor shape depends on the type of reel view you are in, the location over the frame's "hot spot," and the type of edit you are performing. The edit is made when you release the pen. In Timeline view, the clip is placed on the track directly beneath the cursor.

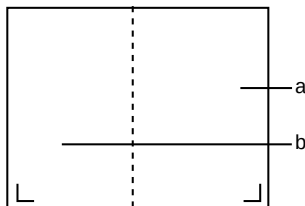
Hot spots are the areas of the frame in the Record Area that determine what type of edit takes place when you drop the source clip. Hot spots apply to clips in Storyboard view and Collapsed view.

In Storyboard view, you can use the following hot spots.



(a) Splice after transition (b) Replace (c) Splice before transition

In Collapsed view, you can use the following hot spots.



(a) Splice after transition (b) Splice before transition

Although Backdraft Conform employs an extensive gestural editing interface, most editing features have keyboard equivalents. For a description of the Backdraft Conform hotkeys, refer to the *Hotkey Reference Guide* for your application.

Soft Edits

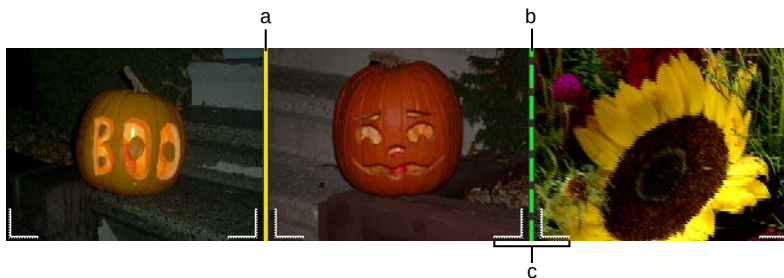
The edits you make in Backdraft Conform are known as *soft edits* because you can modify them later. A soft edit "remembers" the source clips and processes you used. This way, you can modify your edit easily, without having to start

from scratch. The insert, overwrite, ripple replace, and replace edits all generate soft edits.

Transitions

The place where an edit takes place in an edit sequence is called a *transition*. Transitions are the junctions between clips and are composed of an outgoing shot and an incoming shot. In a dissolve, the outgoing shot is the shot that fades out, and the incoming shot is the shot that fades in. The outgoing shot, incoming shot, and the blending transition are all elements of the edit sequence.

When you view a clip in the Record Area, information on each element of each clip indicates transition handles. In Storyboard, Head/Tail, or Frames view, transition handles mark the focus point of a transition from one clip to the next. A yellow bar indicates a non-blending transition such as a cut on a focus layer. A green dotted bar indicates a blending transition such as a dissolve or wipe on a focus layer. In Frames view, green brackets also mark the start and end of a blending transition. For more information, see [Identifying Cuts and Transitions](#) on page 937.

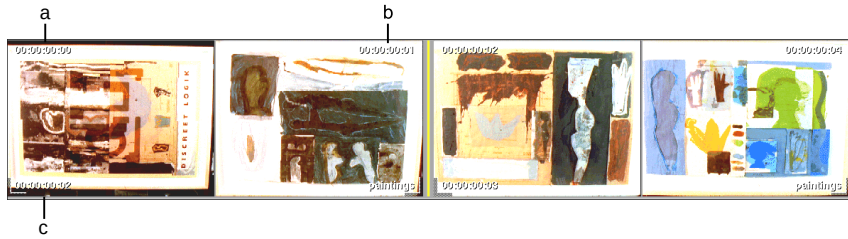


(a) Non-blending transition (cut) on focus layer (b) Blending transition on focus layer
(c) Transition handles

Timecode

The timecode for the source clip is used in a soft edit. A source clip is loaded from a VTR, is an imported file, or is created in Backdraft Conform. Source clips loaded from a VTR start with the timecode from the VTR cassette.

The following illustration shows an edit sequence composed of two five-frame clips with no head or tails displayed in Head/Tail view. The record in point, record out point, and clip duration timecodes are indicated.



(a) Record in point (b) Record out point (c) Record clip duration

If you are working with clips at a different playback rate, you can view the timecode in any timecode mode. For example, if you are editing HD images, you may want to view the timecode for the HD standard in which you are working instead of the NTSC or PAL timecode. The following timecodes are expressed one frame before roll-over (adding one frame to the timecode will roll the time count to the next second).

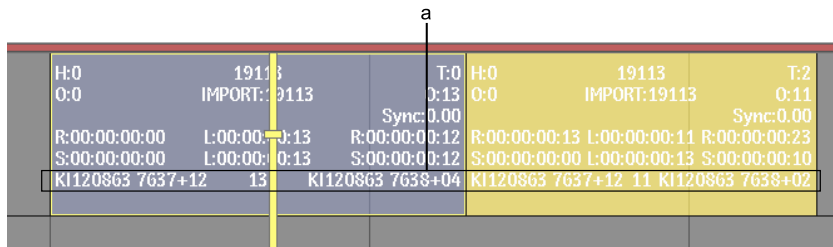
Framerate	Timecode Format
24	00:01:29+23
25	00:01:29:24
30 Non-drop	00:01:29:29
30 Drop	00;01;29;29
50	00:01:29#49
60	00:01:00#59
60 Drop	00;01;00#59

Keycode

Keycode contains reference numbers printed on the negative film at regular intervals by the manufacturer. It indicates the manufacturer name and film emulsion type. It identifies each frame by means of frame, footage, and unique reel number. Keycode can be used to track frames of film as it is digitized and moves through the post-production pipeline—including through other Autodesk Visual Effects and Finishing products.

As you edit, the keycode for frames used in your composition can be monitored on clip proxies, in the Player, and in the timeline.

The following illustration shows keycode displayed in the timeline for two segments of a clip.



(a) Keycode data for timeline segments

For more information on keycode, see [Timecode and Keycode](#) on page 731.

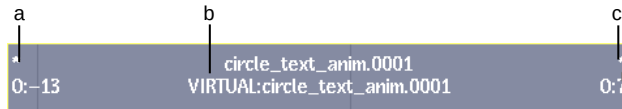
Virtual Sources

A virtual source is a clip consisting of a single frame that behaves as if it were repeated indefinitely. When edited into the timeline, it can be trimmed, slipped, or slid to any extent—the virtual source automatically generates new frames on an as-needed basis. Head and tail frame counts are usually numeric, but because virtual sources have unlimited heads and tails, these are indicated by an asterisk (“*”).

You can create a virtual source in any of the following ways:

- Using the Colour Source command in the A/V Tools menu. (The Noise and Colour Noise frame types do not produce virtual sources because each frame is distinct.)
- Using the Repeat command, with the Frame option, in the A/V Tools menu.
- By creating a single-frame clip in any tool or module.
- When importing a still image (with or without the Repeat option).

To view information about a virtual source clip, zoom in on the timeline or **Alt**-click the timeline element.



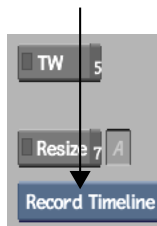
(a) Asterisk indicates unlimited head frames (b) Virtual source (c) Asterisk indicates unlimited tail frames

Record Area View Modes

There are many ways to view material on the work reel in the Record Area. Some views are particularly well suited for certain types of editing. Timeline view, for example, is the main view for editing and is used for roughing out organizational edit sequences, for vertical editing, and for creating soft effects. Head/Tail and Trim views are both suited for trimming. Storyboard view is best for basic splicing.

To select a Record Area view mode from the View Modes box:

- Select an option from the View Modes box.



To select a Record Area view mode using hotkeys:

- Do one of the following.

Press:	To display:
F1	Storyboard view.
Shift+F1	Frames view.
F2	Head/Tail view.
F3	Collapsed view.
F4	Trim view.

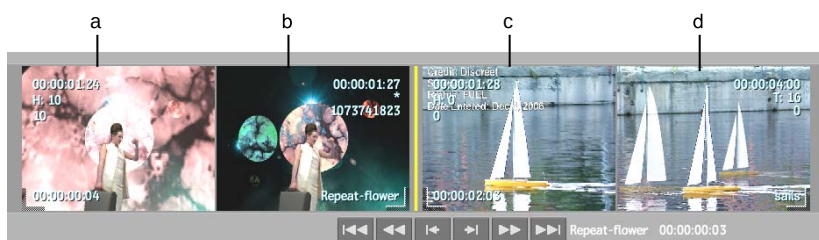
Press:	To display:
F5	Record Timeline view. Shift+F5 displays Large Record Timeline view.
Ctrl+F5	History view. Ctrl+Shift+F5 displays Large History view.
F6	Source Timeline view. Shift+F6 displays Large Source Timeline view.

Head/Tail View

In Head/Tail view, the first and last frames of each clip are displayed. If the work reel contains a sequence of clips, the head and tail frames of each clip in the sequence are displayed. Shuttle through the sequence by dragging the cursor across the bottom of any frame.

If the clip contains just one frame, two frames are displayed to indicate the in point and out point of the clip.

Head/Tail view is used most often when performing trims. See [Trimming](#) on page 969.



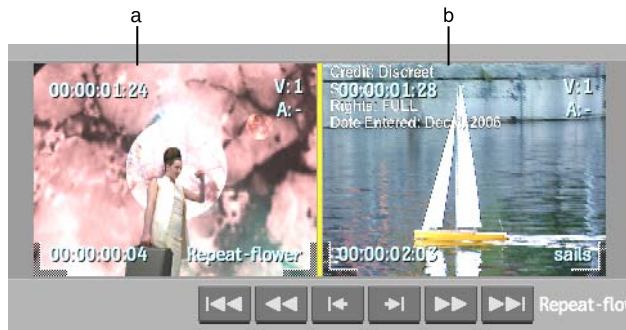
(a) First frame of first clip (b) Last frame of first clip (c) First frame of second clip (d) Last frame of second clip

Image courtesy of Behavior Communications Inc., Das Werk

Storyboard View

In Storyboard view, only the first frame of each clip in the edit sequence is displayed. Shuttle through the sequence by dragging the cursor across the bottom of any frame.

Storyboard view provides a quick overview of all the elements that go into a sequence and is useful for fast scene insertion, deletion, reordering, and picture-only editing.



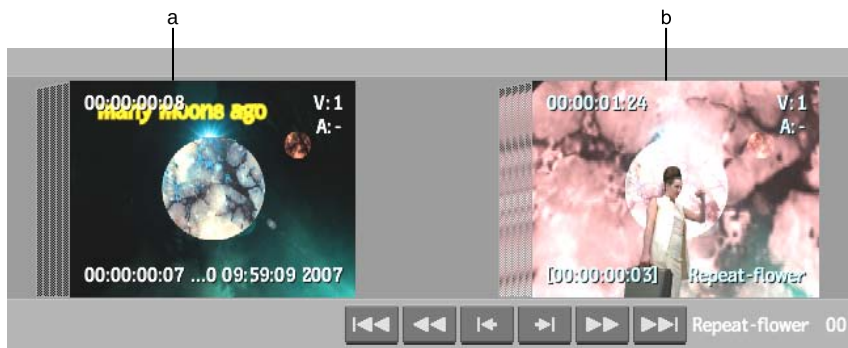
(a) First frame of first clip (b) First frame of second clip

Image courtesy of Behavior Communications Inc., Das Werk

Collapsed View

In Collapsed view, only the current frame of each edit sequence is displayed. The edit sequence appears in the form of a stack. Shuttle through the sequence by dragging the cursor across the bottom of the frame. When you release the cursor, the frame that is displayed becomes the current frame and remains in view. This helps give you a reference image for the clip when all other frames are collapsed.

Collapsed view is most useful for organizing multiple Record Area clips.



(a) Current frame of first sequence (b) Current frame of second sequence

Image courtesy of Behavior Communications Inc., Das Werk

Frames View

In Frames view, every frame in the edit sequence is displayed. Although you cannot edit in this mode, it is useful for viewing your entire edit.



(a) Frame number

Image courtesy of Das Werk

Timeline View

Timeline view organizes video and audio tracks into a timeline format with a positioner at the location of the current frame. You can view a timeline for a source or record clip although you can only edit a record clip timeline. You can view the regular timeline simultaneously with the Player, or you can use Large Timeline view to see more video and audio tracks at the same time.

Video tracks appear in grey; audio tracks appear in green. Use the scroll bars and pan and zoom buttons to move around the timeline. Rearrange video and audio elements on the timeline by dragging and dropping.

Timeline editing is useful for roughing out edit sequences, multitrack editing, and audio editing. For editing features that are specific to Timeline view, see [Navigating the Timeline](#) on page 875.



(a) Video track (b) Audio track

Containers View

In Record Timeline view, you can remove clutter from the timeline by grouping elements together into containers. You can work with the elements in a container as one unit and as separate elements. You can view the container

timeline at the same time as the master timeline. See [Working with Containers](#) on page 961.

Trim View

When trimming, it can be useful to view the edit sequence simultaneously in Head/Tail view and Timeline view. With Trim view, the Timeline view is displayed in its normal location, and the Head/Tail view appears above it, in what is normally the Source Area.

NOTE You can display the Player while in Trim view. The Player replaces the record reel above the timeline.

See [Trimming](#) on page 969.

Record Area List View

List View mode displays a list of objects that make up the timeline. For example, the list gives information about each track, layer, element, cut, gap, container, and cue mark. You can see element names, whether the elements contain soft effects, when they start and end (using timecode), and how long they last.

You can display either the contents of the Record Area or the Source Area in List View.

The entries in the Type column contain a hierarchical representation of the media and metadata that make up a timeline. You can expand or collapse an entry to show or hide its contents.

Column:	Displays:
Head	Number of available head frames.
Tail	Number of available tail frames.

The selection state of elements in Record Area List View does not change when going back and forth between other view modes and Record Area List View.

History View

Clip history presents a schematic or list representation of the majority of operations performed on a clip or timeline element. Although you can view the history of a clip, you cannot adjust its settings or make any changes.

Clips and elements that have an associated history are indicated in the clip library, EditDesk, and timeline by an H icon. Before you can view clip history, you must enable it in the Preferences menu. See [History](#) on page 520.

Editing Cursors

When you drag a clip over an edit point in the Record Area in Storyboard or Collapsed view, one of the following cursors appears. The cursor indicates what type of edit will occur (insert or overwrite), and how the Ripple mode will affect the edit.

Cursor	Description
  End Start	These insert cursors indicate that the source clip is properly positioned over a transition on the record clip, ready to be inserted before the transition. The cursors also indicate if Ripple is set to Start or End (Ripple is enabled).
  End Start	These insert cursors indicate that the source clip is properly positioned over a transition on the record clip, ready to be inserted after the transition. The cursors also indicate if Ripple is set to Start or End (Ripple is enabled).
	This insert cursor indicates that the source clip is properly positioned over the record clip, ready to swap with the clip beneath the cursor (Ripple is enabled). See Ripple Replace Edits on page 947.

Cursor	Description
	This overwrite cursor indicates that the source clip is properly positioned over a transition on the record clip, ready to overwrite the clip before the transition (Ripple is off).
	This overwrite cursor Indicates that the source clip is properly positioned over a transition on the record clip, ready to overwrite the clip after the transition (Ripple is off).
	This overwrite cursor indicates that the source clip is properly positioned over the record clip, ready for a replace edit (Ripple is off). See Replace Edits on page 949.

Navigating the Timeline

36

Topics in this chapter:

- [About Timelines](#) on page 875
- [Accessing Timelines](#) on page 876
- [Timeline Interface](#) on page 877
- [Manipulating the Timeline](#) on page 878
- [Playing the Timeline](#) on page 882
- [Track Basics](#) on page 885
- [Element Basics](#) on page 892
- [Searching for Timeline Elements](#) on page 897
- [Maintaining Sync between Elements](#) on page 900
- [Patching Video and Audio Channels](#) on page 906
- [Setting In Points and Out Points](#) on page 914
- [Marking Frames of Interest](#) on page 918
- [Creating a Cut](#) on page 922
- [Swapping Timeline Elements](#) on page 924
- [Matching Clips with Their Source Clip](#) on page 926

About Timelines

The timeline environment enhances the editing process by providing tools that allow you to work with all the video and audio elements of your sequence.

There can be multiple video tracks and audio tracks on the timeline. Each video track can consist of multiple layers. Arranged vertically, a multilayer video track provides the framework for timeline compositing in Smoke.

When editing to the timeline, you are not restricted to using video or images of a particular frame rate or resolution. When you record a clip in a non-native project resolution to the timeline, the clip is automatically resized. You can continue to apply Resize options such as letterbox or cropping.

Also see [Working with Audio in the Timeline](#) on page 1051.

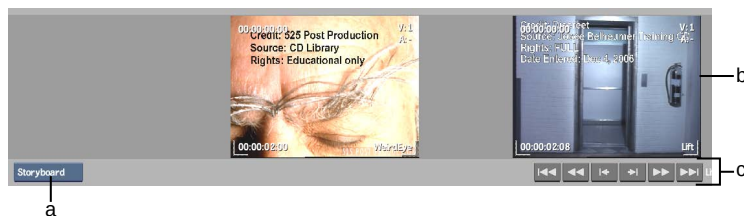
Accessing Timelines

You can access the timeline of any source or record clip. If your Source or Record Area contains more than one clip, you must make a clip the current clip before you can display its timeline.

Only EditDesk record clip timelines can be edited. You can view the soft edits of a source clip's timeline but you cannot modify the clip until it becomes the record clip.

To access the timeline of a record clip:

- 1 If you have more than one record clip, select Storyboard view from the View Modes box (or press **F1**). Otherwise, go to step 3.



(a) View Modes box (b) Current clip (c) Scroll buttons

Image courtesy of 525 Post Production

- 2 Make a record clip the current clip by dragging it over the Scroll buttons.
- 3 Select Record Timeline from the View Modes box (or press **F5**).
The timeline of the current record clip is displayed.

To access the timeline of a source clip:

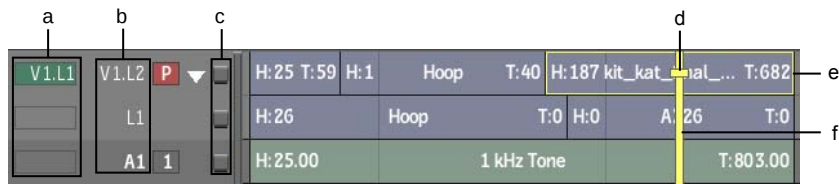
- 1 Select a clip in the Source Area.
- 2 Select Source Timeline from the View Modes box (or press **F6**).

The timeline of the current source clip is displayed.

Timeline Interface

Timelines can contain multiple video and audio tracks. An edit sequence on a track is made of segments and transitions. Video and audio segments appear as a series of rectangles on their associated tracks. Transitions appear as cuts or icons between segments.

Video tracks can be made up of multiple layers. Layers are used to stack video vertically to create composite effects and transitions. If you have more than one layer or track, the positioner's focus point indicates which one is current.



(a) Patch identifiers (b) Track identifiers (timeline contains one video track made up of two layers and one audio track) (c) Selector icons (d) Focus point (e) Bounding box (f) Positioner

Positioner Is the “playhead” for playing the clip. The frame directly beneath the positioner is displayed in the Player or is the current location for an edit such as a dissolve or cut.

Bounding box A yellow bounding box around a timeline segment indicates there is an implicit selection by the positioner. Any editing operations you perform, for example, cuts or soft effects, will occur at the positioner location. If there is no bounding box at the positioner location and you have not explicitly selected the segment, this means there is an explicit selection elsewhere on the timeline. Any editing operations will occur at the explicit selection, not at the positioner location.

Having the visual cue of a bounding box around a segment can help you confirm that you are editing the correct segment. This is especially useful in long- form timelines where you might not see all the segment selections.

Focus point Indicates the current track. In vertical editing, the positioner's focus point indicates the top layer (focus layer) in the vertical edit.

Patch and track identifiers Indicate patching for video and audio tracks. See [Patching Video and Audio Channels](#) on page 906.

Selector icon Click to select a layer or track.

Track Contains the segments and transitions that you edit together.

Layer Used for vertical editing and timeline compositing. See [Vertical Editing](#) on page 955.

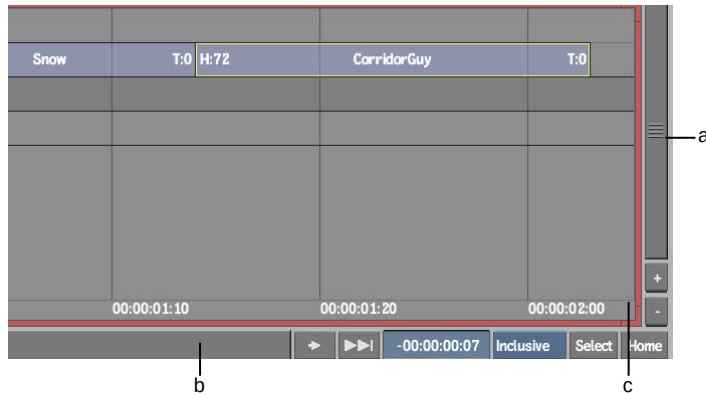
Element Refers to the video segments, audio segments, and transitions that make up an edit sequence. Elements are colour coded to make them easier to identify, as illustrated in the following table. Coloured bars on top of the elements indicate their process and lock status. See [Identifying the Status of Soft Effects](#) on page 1034.

This interface component: Is:

	A video segment. By default, this segment is pale blue. It represents a video clip in the edit sequence.
	A container. By default, this element is dark blue. It represents a container in the edit sequence.
	A segment containing a BFX setup. By default, this element is pale magenta.
	An audio segment. By default, this segment is pale green. It represents an audio clip in the edit sequence.
	An element with unlinked audio.
	A dissolve transition.
	A wipe transition.

Manipulating the Timeline

As the complexity of your timeline increases, you can control the area displayed by panning, zooming, and scrolling. As well, you can display an enlarged view of the timeline.



(a) Vertical scroll bar (b) Horizontal scroll bar (c) Right timeline viewing area

Moving the Timeline Display

Move to a particular area of the timeline by panning or scrolling.

To scroll left or right:

- Do one of the following:
 - Drag the horizontal scroll bar in the direction you want to scroll.
 - Hold the positioner against the right or left side of the timeline viewing area.

TIP You can change the speed at which the timeline scrolls when you hold the positioner against either side of the timeline. See [Navigation](#) on page 531.

To scroll up or down:

- Drag the vertical scroll bar in the direction you want to scroll.

To pan:

- 1 Hold down **spacebar**.
- 2 Drag the hand cursor in the direction you want to pan.

Zooming the Timeline

Zoom in or out of the timeline to control the level of detail displayed.

To zoom in horizontally:

- Do one of the following:
 - Drag the horizontal scroll bar up.
 - Hold down **Alt+E** and drag the magnifying glass cursor to the left.

To zoom in vertically:

- Do one of the following:
 - Click the  zoom control.
 - Drag the vertical scroll bar to the left.

To zoom out horizontally:

- Do one of the following:
 - Drag the horizontal scroll bar down.
 - Hold down **Alt+E** and drag the magnifying glass cursor to the right.

To zoom out vertically:

- Do one of the following:
 - Click the  zoom control.
 - Drag the vertical scroll bar to the right.

To zoom into a selected area:

- Do one of the following:
 - Hold down **Alt+R** and draw a box around the area of interest with the magnifying glass cursor.
The view zooms into the area inside the box.
 - Select an area or move the positioner over the area you want to zoom and then click Select.

The view zooms in horizontally on the current selection.

TIP To return to the previous settings, click Select a second time.

To return to the default timeline coordinates:

- Do one of the following:
 - To reset the entire timeline, click Home.
 - To reset only the horizontal scale of the timeline, press **Shift** and click Home.
 - To reset only the vertical scale of the timeline, press **Ctrl** and click Home.

TIP To return to the previous settings, click Home a second time.

Displaying a Large Timeline View

If you have more tracks or layers than can be displayed simultaneously, you can display a large view of either the source or record timeline.

To display a large view of the timeline:

- Do one of the following:
 - To display a large view of the record timeline, press **Shift+F5** or select Large Record from the View Modes box.
 - To display a large view of the source timeline, press **Shift+F6** or select Large Source from the View Modes box.
 - To display a large view of the current timeline, hold **Ctrl** and swipe the bar at the bottom of the screen.



(a) Swipe bar

The Source Area is resized to fit into the remaining space at the top of the EditDesk.

Playing the Timeline

You can control how the timeline plays back. For example, frame-step through a shot to isolate a frame or jump to the start of an element to play a specific shot. The image window updates as the positioner moves on the timeline.

If the Player is displayed, you can use any of the playback controls to move through the timeline. See [Controlling Playback in the Player](#) on page 78.

To play the timeline:

- Press **V**.

NOTE If you enabled Scroll During Playback in the Timeline section of the Preferences menu, frames might be dropped.

To control playback speed:

- Press **V** and then press the **down arrow** to decrease the speed or the **up arrow** to increase the speed.

To stop playback:

- Press **spacebar**.

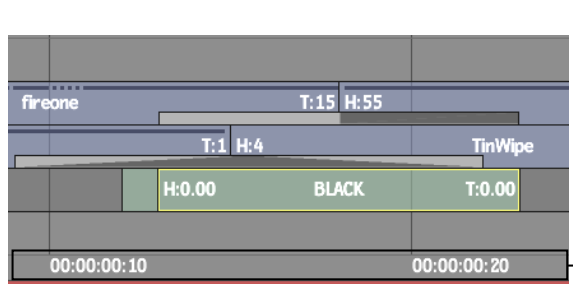
Scrubbing the Timeline

Use the scrub area to move quickly to any location on the timeline.

You can also scrub audio. See [Scrubbing Audio in the Timeline](#) on page 1053.

To scrub the timeline:

- Drag left or right in the scrub area.

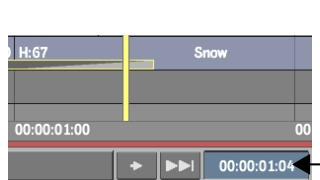


Jumping to a Particular Location

If you want to go to a particular timecode or frame, you can have the positioner jump to that location on the timeline.

To jump to a particular location:

- Do one of the following:
 - Click the scrub bar at a particular location.
 - Enter a value in the Current Timecode field.



NOTE To enter a frame number instead of timecode, click the field to bring up the numeric keypad. Click TC to change to FRM, and then enter a frame number.

Frame-Stepping the Timeline

To isolate a specific frame, move the positioner frame by frame through the timeline.

To frame-step the timeline:

- Press the **left** or **right arrow** key.

TIP To frame-step a specific number of frames, enter a number in the numeric keypad and then press the **left** or **right arrow** key.

Replaying the Timeline

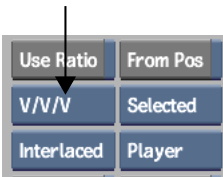
You can replay a shot with a specified number of preroll and postroll frames. You can also view a shot in context with the outgoing and incoming shots.

To replay the timeline:

- 1 Set the Replay Preroll and Postroll values in the Player section of the Preferences menu.

NOTE As an alternative to using Replay Preroll, enable the From Pos button in the Player to start Replay at the positioner.

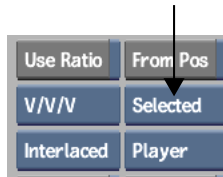
- 2 In a timeline view, select the elements you want to replay by doing one of the following:
 - With no elements selected, move the positioner to the element you want to replay.
 - Select multiple elements on the track you want to replay.
- 3 Display the Player and select a replay mode.



Select:	To replay:
V/B/V	Video for the preceding shot, Black for the current shot, and Video for the following shot.
V/V/V	Video for the preceding shot, Video for the current shot, and Video for the following shot.

Select:	To replay:
B/V/B	Black for the preceding shot, Video for the current shot, and Black for the following shot.

- 4 Select a playback mode to define the material to include in the replay.



Select:	To:
Track	Replay the entire track under the focus point.
Selected	Replay the selected elements on the timeline.
Centred	Use the positioner as the centre point for the replay. Postroll and preroll values are calculated from the positioner. Set the Replay Preroll and Postroll values in the Player section of the Preferences menu.
In/End	Replay all material from the in point to the end of the clip.
Start/Out	Replay all material from the start of the clip to the out point.
In/Out	Replay all material between the in and out points.

- 5 Do one of the following:
- Press **T** to replay the shot.
 - Press **Shift+T** to replay the shot backwards.

Track Basics

The timeline supports multiple video and audio tracks. Having multiple video tracks on the same timeline is useful for quick access to different versions of your work.

For information on audio tracks, see [Working with Audio in the Timeline](#) on page 1051.

Adding Tracks

You can add as many audio and video tracks to a timeline as you want. Video tracks can have multiple layers.

To add a track to the timeline:

- Do one of the following:
 - To add a video track above the current track, click .
 - To add a video track below the current track, **Ctrl**-click .
 - To add an audio track, click .
 - Drag a clip below the last track on the timeline.

TIP To add multiple tracks, type the number of tracks you want to add in the numeric keypad before clicking the V+ or A+ buttons. You can add up to ten tracks at a time using this method.

To remove a track from the timeline:

- Click the Selector icon, drag it to the bottom of the screen and release when the cursor changes to a green recycling icon.



NOTE To remove all tracks, select Record Area from the Item box and then click the Clear button.

To move a track to another location on the timeline:

- Drag the Selector icon to a new location on the timeline.

Activating a Track's Output

You can add as many audio and video tracks as you want. However, only one video track can have an active output channel. Up to 32 audio tracks can be mapped to input strips on the AudioDesk.

To activate a track's output:

- Click the respective track's output indicator.



The inactive symbol (--) changes as follows:

- If you activated a video output channel, a “P” appears indicating it is the Primary video track. The previously active video output channel is deactivated.
- If you activated an audio track's output indicator, a number from 1 through 32 appears. You can assign an audio track to any of the 32 input strips on the AudioDesk by clicking the indicator and dragging left or right.

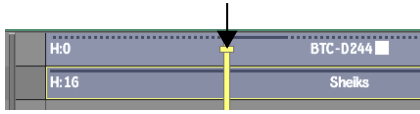
Changing the Current Track

Editing operations are performed on the current track. In Timeline view, the current track is indicated by the positioner's focus point and by patch identifiers.

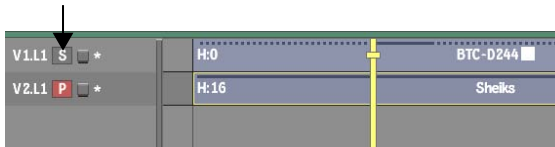
If you do not see the output of the correct track in Timeline view as you change tracks, you may need to reassign the track as the primary track. In other Record Area views, you do not need to reassign a track as the primary track to see its output. For more information, see [Navigating Edit Sequences](#) on page 935.

To change the current track in Record Timeline view:

- 1 Use the **up arrow** or **down arrow** to move the focus point to the track you want to edit.



- 2 If you do not see the output of the track, click the track's channel indicator.



The channel indicator changes to P indicating it is the primary track, and the result clip is displayed in the image window.



(a) Primary track channel indicator

Selecting Tracks

You can select one track at a time, multiple tracks, or all tracks. Selected tracks are yellow and their associated Selector icon appears recessed.

To select a track:

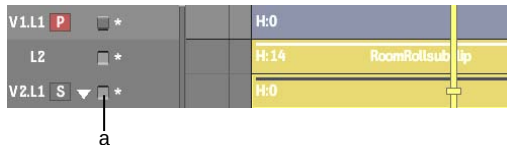
- Do one of the following:
 - If the track has only one layer, click the Selector icon.
 - If the track has multiple layers, click the Collapse arrow and then click the Selector icon, or **Ctrl-click** each layer's icon.



(a) Collapse arrow (b) Selector icon for V1.L1

To select multiple tracks:

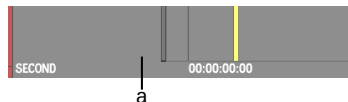
- Do one of the following:
 - To select a range of tracks, **Shift**-click the Selector icon of the first and last tracks.
 - To select individual tracks, **Ctrl**-click the Selector icon of each layer.



(a) Selector icon for V2.L1

To select all tracks:

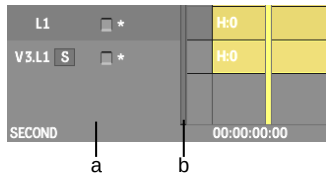
- Click the element selection hot spot.



(a) Element selection hot spot

To deselect tracks:

- Do any of the following:
 - Press * on the numeric keypad.
 - **Alt**-click the element selection hot spot.
 - Click in the empty space of the timeline to the right of the slider bar.



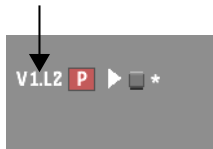
(a) Element selection hot spot (b) Slider bar

Locking Tracks

Lock tracks to prevent further editing operations from being performed on them.

To lock a track:

- Click the track identifier.



The track identifier turns black.

To unlock a track:

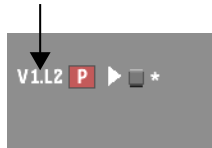
- Click the track identifier.
The track identifier turns white.

Resizing Tracks

Resize tracks to display additional information about its elements.

To resize a track:

- Drag the track identifier down to increase the height of the track or up to decrease its height.

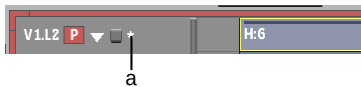


Naming Tracks

You can name any track. Tracks are named “*” by default.

To name a track:

- 1 Place the focus point on the track you want to name.



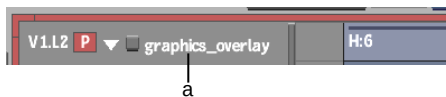
(a) Default track name

- 2 Select Layer from the Item box.



(a) Item box (b) Name field

- 3 Type a name in the Name field and press **Enter**.
The new name replaces the default track name.



(a) Track name

NOTE If you cannot see the complete track name, drag the slider bar to the right.

Element Basics

Video segments, audio segments, and transitions all make up the elements of a timeline sequence. You can easily control how you work with any of these elements.

Selecting Elements

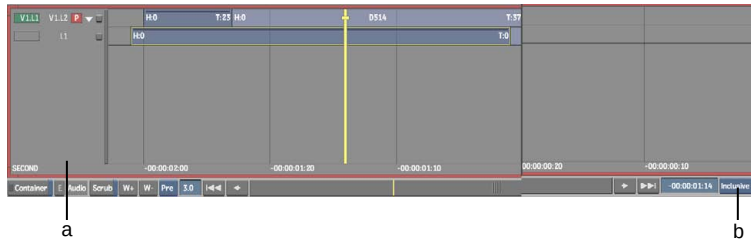
You can select a single element or any number of elements.

For information on selecting cuts, see [Selecting a Cut](#) on page 994.

To select elements on the timeline:

- 1 Do any of the following.

To select:	Do this:
An element	Click the element.
Multiple elements	Press Ctrl while clicking each element. To add or subtract from multiple selections, hold Ctrl and select the element to be added or removed.
A range of elements on a layer or track	Click the first element, hold Shift and click the last element. All elements between the elements you clicked are selected.
A range of frames on the current track	Hold Ctrl and drag the positioner. The frames on all layers of a track that the positioner passes over are selected.
A range of frames on all tracks	Hold Shift and drag the positioner. The frames on all layers of each track that the positioner passes over are selected.
All elements	Click the element selection hot spot or press / on the numeric keypad.
Any range of frames or elements	Select an option from the Selection Method box (see step 2) and then drag to draw a rectangle or bounding box around the elements that you want to select.



(a) Element selection hot spot (b) Selection Method box

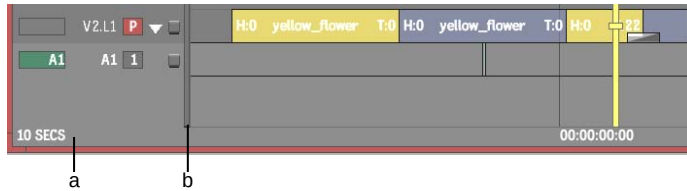
- 2 If you want to use the cursor to draw a rectangle or bounding box, select which elements to include in the selection from the Selection Method box.

Select:	To select:
Inclusive	All elements that are partially or entirely included in the bounding box.
Partial	Only the portions of the elements that fall within the bounding box. Audio is selected on a sub-frame basis if Sub-frame Positioner is selected in the Timeline section of the Preferences menu.
Partial A/V	Only the portions of the elements that fall within the bounding box. Audio is selected on a frame basis even if Sub-frame Positioner is selected in the Timeline section of the Preferences menu.
Bounded	Only elements that are fully in the bounding box.

NOTE More than half the height of an element must be included in the bounding box for the element to be selected. If elements are so tightly spaced that you cannot draw a bounding box without selecting an unwanted element, press **Alt+W** before drawing the rectangle.

To deselect elements on the timeline:

- Do any of the following:
 - Press * on the numeric keypad.
 - **Alt**-click the element selection hot spot.
 - Click in the empty space of the timeline to the right of the slider bar.



(a) Element selection hot spot (b) Slider bar

Naming Elements

You can name video elements, audio elements, and transitions.

To name an element:

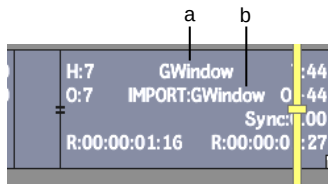
- 1 In Timeline view, select an element.
- 2 Select Element from the Item box.



(a) Item box (b) Name field

- 3 Type a name in the Name field and press **Enter**.

The element information on the timeline is updated. The original source name is displayed on the bottom, and the new name is displayed above the source name.



(a) Renamed element (b) Source name

NOTE If you do not see the name on the element, drag its track identifier down.

Adding Comments to Elements

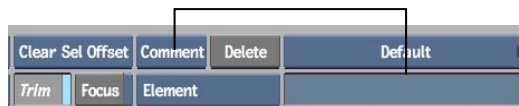
You can add comments to the individual elements that make up a clip.

To add a comment to an element:

- 1 Select an element on the timeline.
- 2 Select Element from the Item box.



- 3 Toggle the Name button to Comment and then enter a comment in the Name field.



The element on the timeline is updated with the comment.

Displaying Element Information

You can display information about elements on the timeline by resizing tracks in any Timeline view. You can also display a clip information overlay in most Record Area views.

The information displayed when resizing tracks depends on the settings in the Preferences menu (see [General](#) on page 517). When you display a clip information overlay of video or audio segments, the following information appears:

- The number of heads and tails associated with the element
- The source name and offsets

- The Sync Offset
- The record in/out points
- The source in/out points
- The type of soft effects applied to the element
- A BFX indicator if the segment contains any Batch FX
- The audio gain status and frame code mode on audio elements
- Element length (appears between source in and out points)
- Comments
- A clip proxy that displays the source media of the first frame used in the segment. The proxy appears in Record, Source, and Container Timeline views.

To display element information:

- Do one of the following:
 - To increase the size of a track, drag the track identifier down or drag the vertical scroll bar towards the left.
Information about each element on a track appears.

	T:1	H:0	rings_gold	T:0
	0:85	0:0	IMPORT:rings_gold	0:0
Sync:0.00				Sync:0.00
0:0:01:07	R:00:00:01:08	L:00:00:01:15		R:00:00:02:22
0:0:02:24	S:00:00:00:00	L:00:00:01:15		S:00:00:01:14

- To display a clip information overlay, **Alt**-click an element, transition, or cue mark.

An overlay of the selected element containing element information and the clip proxy appears.

Alt-click Overlay Source: rings_gold Status: Full Render: Rendered - Dec 11, 2015	H:0	Snow	T:0
	0:0	IMPORT:Snow	0:86
			Sync:0.00
		720 x 486 @ 8-bit (1.333)	
		29.97 fps NDF (F1)	
	R:00:00:00:00	L:00:00:02:26	R:00:00:02:25
	S:00:00:00:00	L:00:00:02:26	S:00:00:02:25

Removing Elements from the Timeline

You can remove elements from the timeline without removing their track.

To remove elements from the timeline:

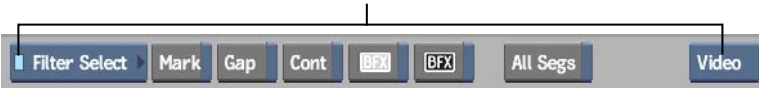
- Select the elements, drag them to the bottom of the screen and release when the cursor changes to a green recycling icon.
The selected elements are deleted. Unselected elements remain on the track.

Searching for Timeline Elements

Although you can search for elements by scrolling the timeline and displaying information about each element, Filter Select options make it easier to find specific elements. You can also refine your search when searching specifically on segments.

To search for video elements:

- 1 Select and enable Filter Select from the Menu Priority box and then select Video.



- 2 Enable any of the following filter options.

Enable:	To select:
Mark	Cue marks.
Gap	The gaps that exist between elements. You can then choose to filter only gaps, only gap effects, or both gaps and gap effects.
Cont	Container elements.
Pale grey BFX icon	Clips brought into a BFX level with the Pre option.
Black BFX icon	Clips brought into a BFX level with the Post option.
All Segs	The clip elements (regular audio or video frames).

Enable:	To select:
Axis	Elements with Axis soft effects.
Wipe	Elements with Wipe soft effects.
Spark	Elements with Sparks soft effects.
CC	Elements with Colour Correction soft effects.
TW	Elements with Timewarp soft effects.
Blend	Elements with Blend soft effects.
Resize	Elements with Resize soft effects.
Text	Elements with Text soft effects.
Cut	Cuts.
Dissolve	Dissolves.
WipeTn	Wipe transitions.
AxisTn	Axis transitions.
If you selected an option that searches segments, the following segment filter options appear.	
This option:	Filters segment with:
Tape	The tape name you specify.
Source Clip	The source name you specify.
Element	The element name you specify.
Comment	The comment you specify.
From/To	The source or record timecode you specify.
MixedRes Seg	Sources not of the same resolution as the master clip.
MixedRes Hist	Sources not of the same resolution as the master clip in their history.
Soft-Import	Soft imports.

This option:	Filters segment with:
Has History	Clip history.
Unlinked	Unlinked media.
Locked	Locked soft effects.

- 3 To filter only on segment selections, enable the appropriate filter option and enter filtering information in the associated field. For the Tape, Source Clip, Element, and Comment fields, enter wildcards such as * to match any number of characters before or after the string. Enter ? to replace a specific character.

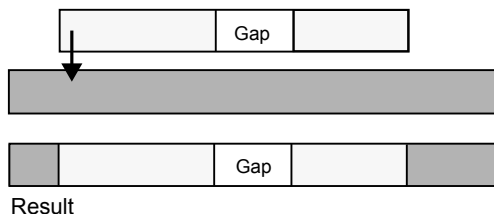
For example, to search for all clips whose names end with *rings* such as *blue_rings* and *red_rings*, you would enter **rings* in the Source Clip field. To search for all clips whose names end in a different letter such as *clipA* and *clipB*, you would enter *clip?* in the Source Clip field.

NOTE You can also populate segment information directly into the appropriate fields by pressing **Alt+T** and clicking a segment, and then refine your search accordingly.

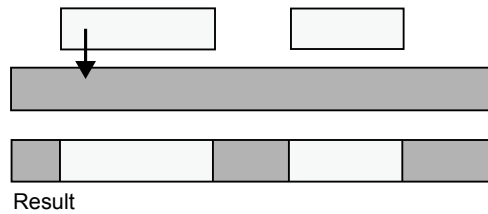
- 4 Draw a bounding box around elements on the timeline, click the element selection hot spot, or press / on the numeric keypad.

The specified elements are selected.

If you disabled Dissolve and Wipe, you can select a group of elements excluding the transitions that occur within the selection. Similarly, if you disabled Gap, you can select a group of elements excluding any gaps between them. For example, if you move a selection of elements from one track and use them to overwrite the elements in another track, the space between the incoming elements does not overwrite the material where it is placed. If Gap is enabled, the original material is overwritten with the gaps.



If Gaps is disabled, the original material is not overwritten, as shown in the following illustration.



To search for timeline audio elements:

- 1 Select and enable Filter Select from the Menu Priority box and then select Audio.



- 2 Enable any of the audio filter options that appear.
- 3 To filter only on segment selections, enter filtering information in the associated fields that appear.
- 4 Draw a bounding box around elements on the timeline, click the element selection hot spot, or press / on the numeric keypad.
The specified elements are selected.

Maintaining Sync between Elements

Create edit sync groups to preserve the relationship between video and audio elements. For example, if you have a video clip with two tracks of audio, you can create an edit sync group for all tracks. When you edit one segment that is part of an edit sync group, all segments in the group are edited in the same way.

You can also create an edit sync group to maintain the timing for multiple video elements. For example, if you have a multitrack that contains front and matte elements, you can create an edit sync group for all related elements so that the sync relationship between front and matte is maintained if you trim or slip one of the elements.

When you create an edit sync group, you define a master element and all child elements to include in the edit sync group. The master element is the reference element that defines the original sync.

When the edit sync group is enabled, any edit you perform to any element in an edit sync group affects all elements within that group. When the group is disabled, you can edit all tracks independently, regardless of the edit sync group.

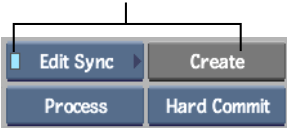
Elements in an edit sync group have one of the following symbols.

Symbol	Description
m	This is the master element of the edit sync group.
=	This is a child of the master element and it is in sync.
+	This is a child of the master element and it has lost sync to the right. To regain sync, edit the element until the = sign appears, or use the Resync option.
-	This is a child of the master element and it has lost sync to the left. To regain sync, edit the element until the = sign appears, or use the Resync option.

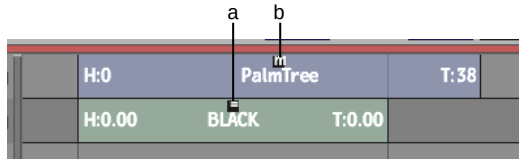
You can create edit sync groups manually, or have Backdraft Conform create them automatically during clip input or EDL assembly. See [Setting Video Input and Output Engineering Menu Controls](#) on page 172.

To create an edit sync group:

- 1 Select the video or audio elements to include in the edit sync group. The first element you select is the master sync element; the others are children.
- 2 Do one of the following:
 - Press **Shift+Ctrl+left arrow**.
 - Select and enable Edit Sync from the Menu Priority box, and then click Create in the Edit Sync menu that appears.



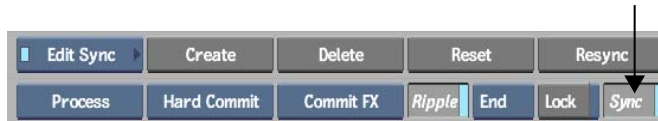
The edit sync group is created.



(a) Child sync element in sync with master element (b) Master sync element

To work with an edit sync group:

- 1 Enable Sync in the EditDesk menu.



- 2 Select any element in the edit sync group.
All elements in the edit sync group are selected.
- 3 Edit the element.
All elements in the edit sync group are edited by the same amount.

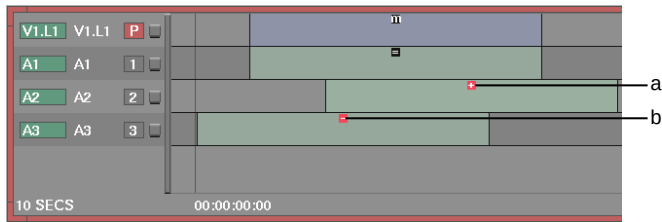
Regaining and Resetting Sync

If an editing operation removes the sync for a track in an edit sync group, a red plus (+) or minus (-) symbol appears in the element and the Sync offset appears on the element.

You can either resync the elements or reset the offsets, creating a new sync relationship based on the current position of the segments.

To regain sync:

- 1 Select the element that is out of sync.



(a) Child out of sync to the right (b) Child out of sync to the left

- 2 Click Resync in the Edit Sync menu.

The element is re-synced, if possible, and the out-of-sync symbol turns to an “=” sign.

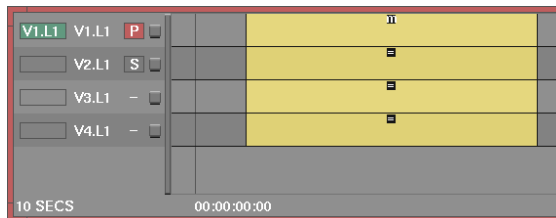
To reset sync offsets:

- 1 Select any element in the edit sync group.
- 2 Click Reset in the Edit Sync menu .

The segments remain in their current positions. The sync offsets are removed creating a new edit sync group.

Creating Edit Sync Groups for Multiple Video Tracks

You can include elements from multiple video tracks in an edit sync group. The following illustration shows a multitrack that includes front and matte elements for two layers and a background. Create an edit sync group for both layers so that any edit you perform to a front, for example, does not throw off the timing of the corresponding matte. By creating an edit sync group for V1, V2, V3, and V4, you maintain the timing for the front and matte layers while working on the timeline.



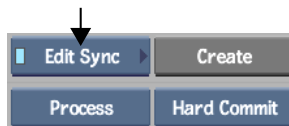
If you are manually creating edit sync groups, the first element you select becomes the master sync element. If the edit sync groups were created

automatically during input, the element used as the master sync element depends on the assignment of Primary and Secondary video tracks:

- If a track to be included in the edit sync group is assigned as the Primary video track, the first element on the Primary video track automatically becomes the master sync element for the edit sync group.
- If a track to be included in the edit sync group is assigned as the Secondary video track, and no other track is assigned as the Primary video track, the first element on the Secondary video track automatically becomes the master sync element.
- If no tracks to be included in the edit sync group are assigned as either Primary or Secondary video tracks, the first element on the highest video track in the stack becomes the master sync element.

To create an edit sync group with multiple video tracks:

- 1 Select and enable Edit Sync in the Menu Priority box.



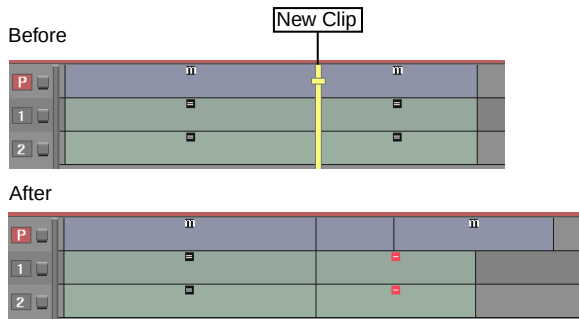
- 2 Select the element you want to use as the master sync element.
- 3 Hold down **Ctrl** and click the other video elements that you want to include in the sync group.
- 4 Click Create.

The sync group is created.

Using Edit Sync for Insert and Overwrite Edits

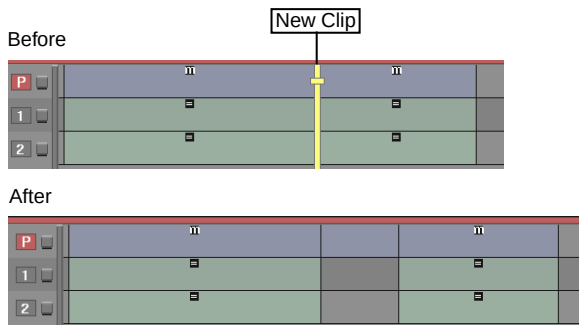
Edit sync groups can also maintain video and audio sync while you perform insert and overwrite edits. When the Sync button is enabled, you can perform any insert or overwrite edit without removing the sync for the video and audio tracks. When the Sync button is disabled, insert and overwrite edits remove the sync for video and audio tracks.

The following example illustrates what happens when you insert a video clip onto the timeline with Sync disabled.



The following example shows what happens when you insert a video clip onto the timeline with Sync enabled.

NOTE A cut is placed on A1 and A2 to maintain sync.



Deleting and Disabling Edit Sync Groups

When you delete an edit sync group, the sync is removed from all elements that were part of the edit sync group. You can also temporarily disable an edit sync group.

To delete an edit sync group:

- 1 Select one of the elements that make up the edit sync group.
All edit sync group elements are selected.
- 2 Do one of the following:
 - Press **Shift+Ctrl+right arrow**.
 - Click Delete in the Edit Sync menu.

To remove edit sync temporarily:

- 1 Disable Sync.
- 2 Select an element in the edit sync group.
No other elements in the edit sync group are selected.
- 3 Edit the selected element.
No other elements in the edit sync group are affected. A red plus (+) or minus (-) symbol appears on every element that is out of sync with the master sync element.

Patching Video and Audio Channels

When you record a source clip to the Record Area, you must decide what source clip channels you want to use, and to which tracks in the Record Area you want to record them. To connect the source channels to the timeline tracks, you use patching. You can use the patch identifiers on the timeline or you can use the patch panel.

For instance, assume that you have a source clip with one video channel and two audio channels. You want to record it to a timeline that has two video tracks and eight audio tracks. Use patching to point the source channels to the destination timeline tracks. Perhaps you usually insert video on track V1 and audio on tracks A1 and A2, but now you want to switch destination tracks to V2, A3, and A4. Patching allows you to do this.



Source patched to V1, A1, and A2.



Source patched to V2, A3, and A4.

When you use the patch identifiers, patching information is kept with the record clip. If you patch a source clip, then add a new layer to the timeline, the source clip follows the track to which it was originally patched. This allows for a natural workflow of setting up the patch for a source clip, adding a new layer, then setting up the patching for another source clip. For a protocol in which the source does not move with its destination track, use the patch panel instead.

Patching on the Timeline

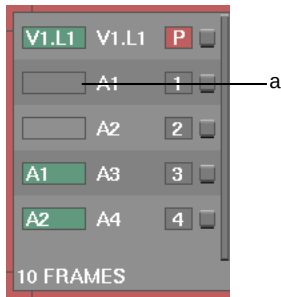
Use the patch identifiers on the timeline to quickly and easily connect source channels to record tracks. When you select a source clip, patch identifiers indicate what channels you can record from the source to the timeline.

In the following example, a clip has one video track and two audio tracks. When you select the clip, green patch identifiers appear next to the V1.L1, A1, and A2 tracks on the timeline. If you record the selected clip to the timeline, it is edited to the indicated tracks.



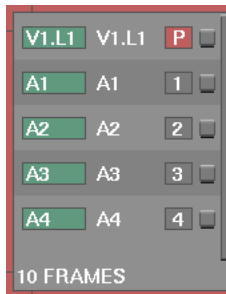
(a) Patch identifiers (b) Track identifiers

You can adjust the patching to record the source audio channels to A3 and A4. You would then see the following patch identifiers. Empty grey patch identifiers next to a track indicate that nothing is patched to that track.



(a) Unpatched track

In the next example, the selected source clip has one video track (patched to V1.L1) and four audio tracks (patched to A1, A2, A3, and A4).



NOTE If the source clips have more tracks than the record clip, add video/audio tracks to the timeline to see the patching of the “hidden” source tracks.

If you disable source channels, in the Player, the disabled tracks appear in the patch identifiers as dark grey boxes. They show that the source contains channels, but these channels are not recorded to the timeline. Similarly, you can disable a track on the timeline so that a record operation does not affect the track.



(a) Disabled source channel/disabled track

To patch a source channel to a record track:

- 1 Select a source in the Source Area.

Source track patch identifiers appear in the Record Area for each channel in the source.



(a) Source track patch identifiers

- 2 Create the patch:

- Drag left on the source track patch identifier to decrease the source track number, or drag right to increase it.
- Type a source track number using the keypad and then click a record track patch identifier to create the patch. Assigning a value of zero unpatches the track.
- Click a patch identifier to lock the patch; that is, to prevent the patch from occurring when you record the clip to the Record Area.

- 3 Drag right on grey patch identifiers to record channels to unpatched tracks.



To disable a track:

- Click the patch identifier.
The patch identifier turns black indicating you cannot record to it.

TIP Click again to enable the track.

Keyboard Patching on the Timeline

You can set up video and audio patching using the keyboard. When patching to a video track with the keyboard, you are always patching to the Primary video track.

To patch a source video channel to a record track using the keyboard:

- 1 Press the number on the numeric keypad that corresponds to the source channel (in most cases this is 1 for source video channels).
- 2 Press the **Video** key (**Tab**).
The Patch identifier is routed to the Primary video track.

To patch a source audio channel to a record track using the keyboard:

- 1 Press the number on the numeric keypad that corresponds to the source channel.
- 2 Do one of the following.

Press:	To patch the selected channel:
Q	To record track A1.

Press:	To patch the selected channel:
W	To record track A2.
E	To record track A3.
R	To record track A4.

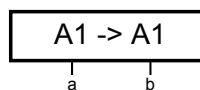
The specified source channel is patched to the appropriate record track.

Using the Patch Panel

Use the patch panel to “lock” video and audio signals between the Source Area and the Record Area. Normally, when a source clip is used in an editing operation, the Primary video track in the source clip is applied to the Primary video track in the record clip; the first audio track in the source clip is applied to the first audio track in the record clip, and so on. You can change this default mapping in the patch panel.

The maximum number of audio tracks that you can patch simultaneously depends on your system configuration.

Each field in the patch panel shows the Source track and the Record track.



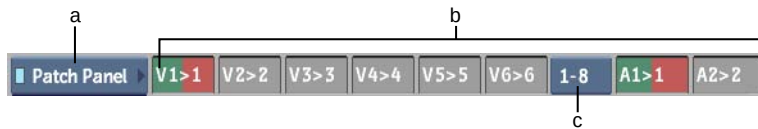
(a) Source output channel (b) Record output channel

Patch panel fields are colour coded according to the availability of tracks on the record clip.

Colour:	Indicates:
Light grey	The track does not exist.
Dark grey	The track exists but is locked.
Blue	The track is unlocked.

To display the patch panel:

- Select and enable Patch Panel from the Menu Priority box.



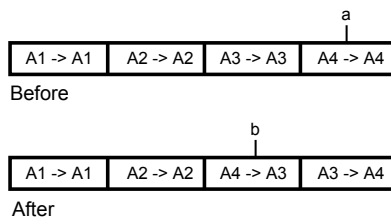
(a) Menu Priority box (b) Patch panel (c) Audio Track Selection box

To use the patch panel:

- 1 Display the patch panel.
- 2 Make sure that the appropriate Record Area tracks exist and are unlocked. For example, if you want to reassign source track A4 to record track A8, make sure that the record clip has an A8 track, and it is unlocked.
- 3 Use the Audio Track Selection box to switch between the following groups of audio tracks:
 - 1-8
 - 9-16
 - 17-24
 - 25-32
- 4 Click the field that contains the track you want to change, and set the new path. Note that the corresponding field updates automatically.

NOTE Always modify the destination and not the source. For example, if you want to reassign A3->A4, click in the box that has A4 as the record and then drag until A3 is the source.

The following figure illustrates patching source track A3 to record track A4.



(a) Enter the new track in this field (b) Corresponding field updates

- 5 Insert or overwrite the source clip onto the record clip.

When you perform the edit, the video and audio signals are routed using the assignments in the patch panel.

NOTE Patch panel settings are global and not based on individual clips. When you reassign tracks using the patch panel, the new settings apply to all edits until the patch panel is reset. You can reset to the default assignments by clicking the Reset button. Keep in mind that resetting the patch panel does not affect clips with track assignments that have already been modified.

Patching in the Player

Reassign video and audio signals between the Source Area and the Record Area using the patch controls in the Player. When a source clip is used in an editing operation, the Primary video track in the source clip is applied to the Primary video track in the record clip. You can change which track is assigned as the Primary video track in the Player.

The top row of patch boxes corresponds to the video and four or eight audio tracks of the source clip. Source tracks are green. The bottom row corresponds to the record tracks and is red. Grey fields represent deactivated channels. In the Player, the source Primary video track is mapped to the Primary video track on the timeline. The Primary source and video tracks can be any existing video track.

NOTE The patch panel overrides all patching in the Player.

To patch in the Player:

- 1 Display the Player.
- 2 Make sure that the appropriate Record Area tracks exist and are unlocked. For example, to reassign source track A4 to record track A8, make sure that the record clip has an A8 track, and it is unlocked.
- 3 Specify how the tracks are recorded using the patch boxes to the left of the Player.



(a) Source Primary video track (b) Patch boxes (c) Record Primary video track

- 4 Press the appropriate edit hotkey to record the source clip to the timeline.

Setting In Points and Out Points

Use in points and out points to determine where and how edits are inserted on the record clip. In and out points also determine what part of a source clip is used when inserting or overwriting material.

Assume you have a 200-frame source clip, but are only interested in frames 50-125. By marking an in point at frame 50 and an out point at frame 125, only frames 50-125 will be visible in your edit. The remaining frames will still be available as head and tail frames, which can be used for trimming or creating transitions.

In points and out points appear both on the timebar under the Player's image window and on the timeline. An in point appears as a white left square bracket and an out point appears as a white right square bracket.

The timeline positioner acts as an implicit in point when performing overwrite and insert edits. If there is no in or out point in the record clip, the positioner in the record clip is used as an implicit in point. The new material from the source clip is inserted at the frame where the positioner is located.

If there is no in point or out point in the source clip, the positioner in the source clip is used as an implicit in point. If there is an in point and/or an out point in the source clip, the positioner is ignored.

From the Src/Rec Player, you can create a subclip from the material between the in and out points. The subclip appears in the Source Area. See [Viewing Clips in the Source/Record Player](#) on page 91.

Marking In and Out Points

Mark in and out points directly on the timeline, or on the clip itself using the cueing controls found in the Player.

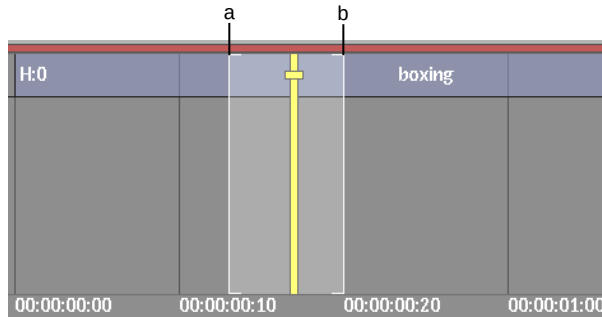
In the Player, the timecode for the in and out points appears in the fields next to the In and Out buttons. The duration between the in and out points appears in the Duration field.

On the timeline, the material between the in and out points is highlighted.

To mark in points and out points on the timeline:

- 1 Display the frame where you want to insert the in or out point.
- 2 Do any of the following:
 - To mark an in point, press **Alt** (right side of keyboard).
 - To mark an out point, press **Ctrl** (right side of keyboard).

In points and out points appear on the timeline.



(a) In point (b) Out point

TIP You can also add in points and out points while the clip is playing.

To mark in and out points based on the current timeline selection:

- 1 Make a selection on the timeline.
- 2 Press **Shift + /**.

The incoming frame of the selection is marked with an in point and the outgoing frame is marked with an out point.

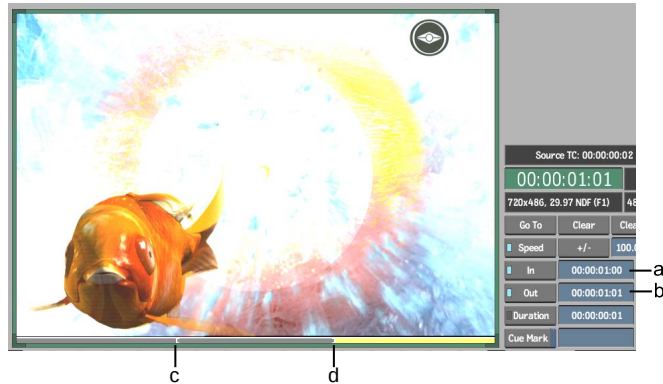
To mark in and out points using the Player:

- 1 In the Player, display the frame where you want to mark the in point.
- 2 Click In.

An in point is added at the current frame in the timebar and timeline. The blue LED indicates that the field is constrained; the in point will not change regardless of any changes made to the out point or duration.
- 3 Display the frame where you want to mark the out point.

4 Click Out.

An out point is added at the current frame in the timebar and timeline. The blue LED indicates that the field is constrained. You cannot change the duration now that both the in point and out point are constrained.



(a) In point timecode (b) Out point timecode (c) Timebar in point (d) Timebar out point

Image courtesy of Quietman

To toggle the constraint for any field on or off:

- **Ctrl-click** the label.

NOTE The In and Out buttons can be constrained. When two of the three buttons are constrained, the unconstrained one cannot be modified. Constraining in points and out points is useful when creating timewarps.

To edit in and out points:

- Do one of the following:
 - In the Player, drag the cursor in the In and Out fields to the right of the In and Out buttons.
 - In the Player, click the In, Out, or Duration field to open the numeric keypad and then enter a timecode.
 - On the timeline, move the positioner to a new location and then press **Alt** to move the in point or **Ctrl** to move the out point.

The original in or out point is replaced by the one at the new location.

Deleting In Points and Out Points

You can delete in and out points individually or all at the same time.

To delete in or out points:

- Do one of the following:
 - In the Player, click Clear and then click the In or Out button.
 - On the timeline, press **spacebar+Alt** to delete the in point or **spacebar+Ctrl** to delete the out point.

The in point or out point is deleted.

To delete in and out points:

- 1 Click Clear All in the Player.
 - 2 Click the In, Out, or Duration button.
- The in points and out points are deleted.

Enabling Phantom Marks

When explicit in and out points are not set, you can have phantom marks appear either on the source clip or on the timeline.

Phantom marks on the timeline indicate the result of an overwrite edit before the edit is performed. Phantom marks in the source clip indicate the material that will be used for an overwrite edit.

For example, if your source clip has both an in and out point, and the currently selected record clip has an in point, a phantom out point appears on the timeline. If you change the in point of the source, the phantom out point updates to reflect the same duration as the source duration between in and out points.

Phantom marks appear as a light pink bracket.

To enable phantom marks:

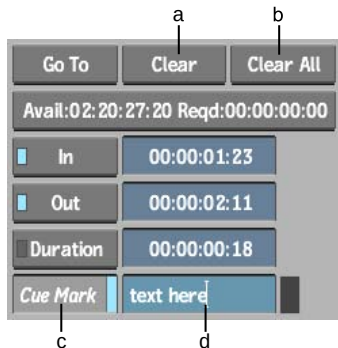
- Do one of the following:
 - Press **Alt+H**.
 - In the General section of the Preferences menu, enable Display Phantom Marks in the EditDesk group.

Marking Frames of Interest

Use cue marks to mark frames of interest on a clip. You can then quickly go to the marked frames. Cue marks are for reference purposes only; they do not affect the clip and are not used in any editing operations.

You can add a mark to all tracks (*cue mark*) or to a single track or layer (*segment mark*) on the timeline. Segment marks move on the timeline as you trim, slip, or slide a clip whereas cue marks stay at the same position on the timeline.

You can also add cue marks and cue mark comments using the cueing controls in the Player, shown in the following example.



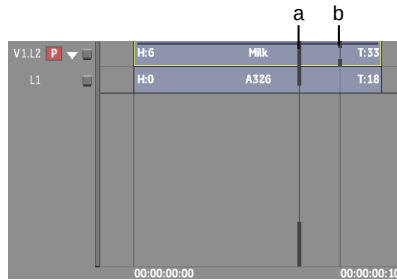
(a) Clear button (b) Clear All button (c) Cue Mark button (d) Comment field

To insert marks:

- 1 Go to the frame where you want to insert the cue mark.
- 2 Add a mark by doing one of the following:
 - Enable Cue Mark in the Player to insert a cue mark on the clip.
 - Press **Shift+Alt** (right side of keyboard) to insert a cue mark on the entire timeline.

- Press **Shift+Ctrl** (right side of keyboard) to insert a segment mark on the current track or layer.

Cue marks set on the entire timeline appear on the timebar and on the timeline. Segment marks set on a track or layer appear only on the timeline.



(a) Cue mark on entire timeline (b) Segment mark on V1.L2

NOTE You can add marks while the clip is playing.

To move between marks:

- Do any of the following:
 - Press **Alt+S** to move to the next cue mark on the clip.
 - Press **Alt+A** to move to the previous cue mark on the clip.
 - Press **Shift+Alt+S** to move to the next segment mark on the current track or layer.
 - Press **Shift+Alt+A** to move to the previous segment mark on the current track or layer.

NOTE You can also use playback controls to move between marks.

To delete a cue mark:

- 1 Go to the marked frame.
- 2 Do one of the following:
 - In the Player, click Clear and then disable Cue Mark.

- Press **Shift+spacebar+Alt** (right side of keyboard).
- Drag the cue mark to the bottom of the screen.

To delete a segment mark:

- 1 Go to the marked frame.
- 2 Holding down **spacebar+ Shift**, press **Ctrl** (right side of keyboard).

To delete all cue and segment marks:

- Do one of the following:
 - In the Player, click Clear All and then disable Cue Mark.
 - Hold down **spacebar+ Shift** and press **Alt+Ctrl** (right side of keyboard).
- All cue marks in the clip are deleted.

Lifting Cue and Segment Marks

You can lift segment and cue marks with a clip. To lift cue marks, either select them or have an in or out point in the record clip before you perform the lift operation.

To lift marks:

- Do one of the following:
 - To lift only segment marks, select the element you want to lift and press the Lift hotkey (>).
 - To lift cue marks and segment marks, select the cue marks, select the element you want to lift, and then press the Lift hotkey (>).
Alternatively, set in and out points on the record clip.

Adding Comments to Cue and Segment Marks

You can add comments to cue marks and segment marks to provide yourself or another editor with notes about the clip. For example, add a comment about a shot that you want to insert at a particular frame.

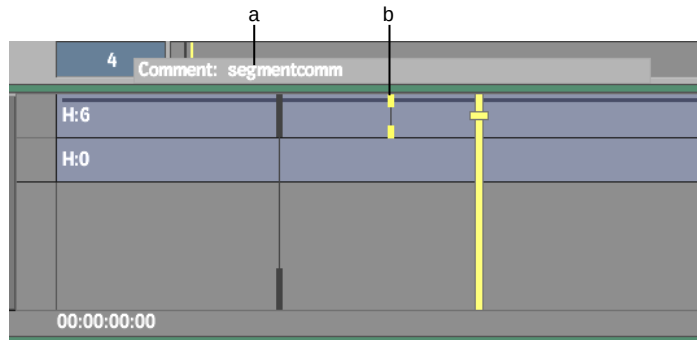
To add comments to marks:

- 1 Go to the mark.
- 2 In the Player, type a note in the Comments field and press **Enter**.



To view comments on marks:

- Hold **Alt** and click the mark.



(a) Comment for selected segment mark (b) Segment mark

To remove comments from marks:

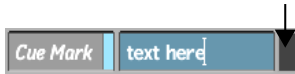
- 1 Go to the mark.
- 2 Erase the text in the Comments field in the Player and press **enter**.

Setting Cue and Segment Mark Colours

You can customize the colour of cue and segment marks.

To set the colour of a mark:

- Click the cue mark colour box and set a colour.



To change the colour of an existing mark:

- 1 Display the Player, or select and enable Editing from the Menu Priority box.
- 2 Select the mark.
The colour selector appears.



- 3 Set the colour, and then click Set Mark.
The mark changes colour.
- 4 To reset a mark to its default colour, click Reset and then click Set Mark.

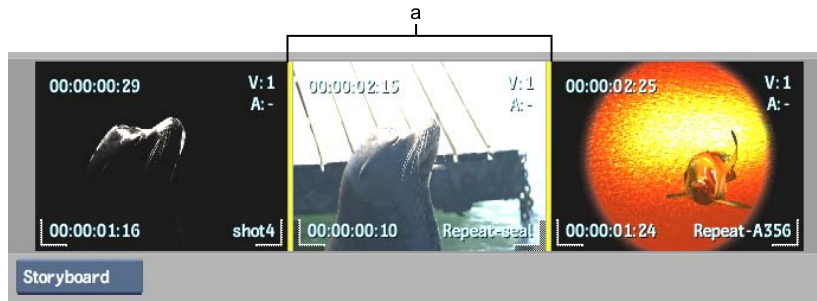
Creating a Cut

When you splice clips together, the location at which one clip changes to another is called a cut. A cut is useful when you want to extract part of an element or end a shot at a given frame.

You can make a cut at any point on the record clip. A cut creates a transition with a head equivalent to the duration of the segment before the cut and a tail equivalent to the duration after the cut. For example, if you make a cut after the 5th frame in a 10-frame clip, the cut has a tail of 5 frames and a head of 5 frames.

In a match frame cut, the outgoing and incoming shots are from the same source and the outgoing and incoming frames are consecutive. Match frame cuts are indicated by an “=” on the cut point.

In Storyboard view, cuts are indicated by yellow lines if they are on the focus layer, and grey lines if they are on the non-focus layer. See [Identifying Cuts and Transitions](#) on page 937.

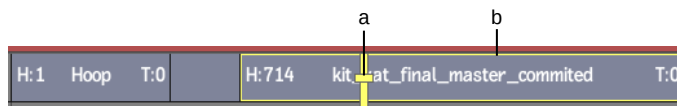


(a) Cuts between clips on focus layer

Image courtesy of Quietman

To add a cut on the timeline:

- 1 Move the positioner over the frame where you want to add a cut. Make sure:
 - The element is explicitly selected (yellow) or implicitly selected (surrounded by a yellow bounding box). If the element is neither yellow nor surrounded by a yellow bounding box, another element, cut, or transition is selected on the timeline and the cut will not occur at the positioner location.
 - The focus point is over the appropriate track.

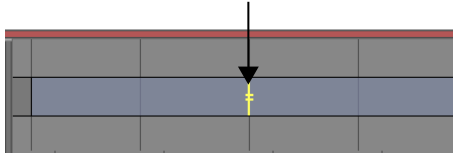


(a) Focus point (b) Yellow bounding box indicates implicit selection by positioner

- 2 Press **Delete**.

A match frame cut is added at the specified location.

TIP You can also add cuts while the clip is playing by pressing **Delete**. To make it easier to add the cuts, first decrease the playback speed by pressing **V** and then the **down arrow**.



- 3 To add a cut to all tracks at the same frame, press **Shift+Delete**.

To remove a match frame cut:

- 1 Select the element on both sides of the match frame edit or select the cut.
- 2 Press **Ctrl+Delete**.
The cut is removed and the two elements are joined together.

Swapping Timeline Elements

You can quickly swap elements on a timeline. If segments contain soft effects, they are swapped as well.

You can swap the following elements:

- Video segments
- Audio segments
- Video containers
- Audio containers
- Tracks
- Layers
- Contiguous sequences of elements
- Video transitions (unless they start or end a contiguous sequence of elements)
- Audio transitions
- Gap effects

Elements must be compatible to be swapped. Compatible elements are:

- Video: video segments, video containers, gap effects
- Audio: audio segments, audio containers
- Video transitions
- Audio transitions
- Tracks and layers

The following elements cannot be swapped:

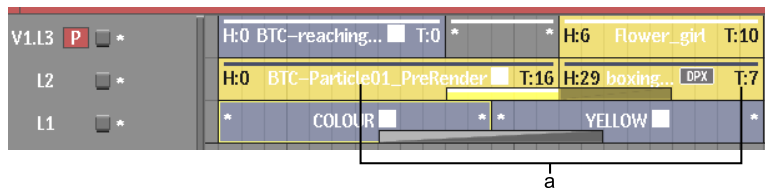
- Gaps (unless they are between elements in a contiguous sequence)
- Cuts
- Cue marks
- Individual soft effects

To swap timeline elements:

- 1 Select two elements belonging to the same family.

A contiguous sequence of elements is treated as a single element as long as the transition between the elements is selected. A gap can be part of a contiguous element as long as it is not at the beginning or end of the sequence.

In the following example, both elements on L2 are considered a single element because the transition between them is also selected



(a) Elements on L2

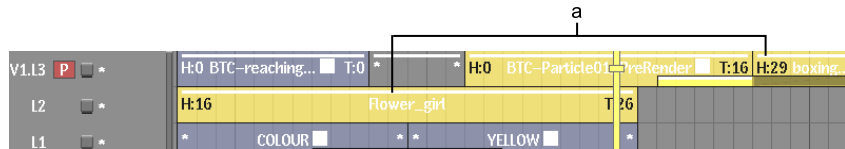
- 2 Press **Shift**+' (apostrophe).

The elements are swapped according to the ripple setting. If the segments contain any soft effects, they are swapped as well.

If Ripple is disabled, the segments are timewarped using a Constant Fit-to-Fill timewarp to fill each other's location. If there is already a timewarp on the segment, the timewarp is replaced by the Constant Fit-to-Fill timewarp. Gap effects, Matte containers, and contiguous sequences ripple regardless of Ripple status because they cannot be timewarped.

Transitions keep their alignment but their duration changes based on the head and tail frames of the destination segments.

In the following example, Ripple End is enabled. The segment on L2 ripples according to this setting. Elements on L3 ripple regardless of the Ripple setting because contiguous elements cannot be timewarped.



(a) Selected elements are swapped.

Matching Clips with Their Source Clip

You can match a clip in the Record Area with its source clip. If a match is found, a copy of the clip is put in the Source Area.

You can also match a Source Area clip with an element in the Record Area.

In the Preferences menu, the Match option in the Editing group of the Timeline section determines where Backdraft Conform looks for the source clip.

NOTE Backdraft Conform has one level of Match. If you process a source clip, the new clip becomes the source clip, which can be found with the Match command. It is therefore a good idea to always keep a copy of the un-edited original material.

To match a clip with its source clip:

- 1 Select the elements that you want to match in the Record Area.

TIP If you do not make a selection and the Record Area is set to Record Timeline view, the clip under the positioner's focus point is matched.

2 Do one of the following:

- Press **/** to create a matching source clip with trimmed head and tail. The matching source clip appears in the Source Area, including all handles. If your selection included transitions, the source clips and handles are included in the match results.
- Press **Ctrl+ /** to create a matching source clip with in and out points that mark the section of the source used in the Record Area. The matching source clip appears in the Source Area, without handles. If your selection included transitions, only those frames that are used by the transition are included in the match results.

To match a source clip to a timeline element (Reverse Match):

- 1** Select the source in the Source Area.
- 2** Press **Ctrl+Shift+ /**.
The instance of the selected source is highlighted on the timeline.

Editing to the Timeline

37

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- [Adding Clips to an Empty Record Area](#) on page 930
- [Setting the Ripple Mode](#) on page 931
- [Setting Snap Options](#) on page 932
- [Dragging Clips to the Timeline](#) on page 933
- [Previewing the Placement of Shots on the Timeline](#) on page 934
- [Navigating Edit Sequences](#) on page 935
- [Inserting Clips into an Edit Sequence](#) on page 939
- [Overwriting Clips in an Edit Sequence](#) on page 943
- [Inserting or Overwriting on Dissolves and Wipes](#) on page 946
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- [Performing a Four-Point Edit](#) on page 952
- [Removing Elements from an Edit Sequence](#) on page 953

About Editing to the Timeline

Editing clips to the timeline allows you to stack video vertically to create composite effects and transitions. You can also create audio mixes where similar types of audio are grouped together by track. You can conform to an offline

version as well as load clips to and from other Visual Effects and Finishing products with all edits and effects preserved.

There are several ways to edit clips to the timeline. You can perform insert edits where the timeline changes length to accommodate new material. You can overwrite existing material with new material such that the timeline duration does not change. You can edit entire clips as well as specific frames to any location on the timeline.

For some edits, you can be in a view other than Record Timeline view when working from the EditDesk, but your results will still appear in the affected clip's timeline. Edits that involve multiple layers or tracks can only be done in Record Timeline view.

You can edit clips to the timeline gesturally, using hotkeys, or using Player buttons. When you use hotkeys, the Ripple mode is implicit in the editing function. For example, the timeline always ripples with the insert hotkey (**G**) and never ripples with the override hotkey (**H**) regardless of the status of the Ripple mode button.

When you edit using the Player buttons, you must be in Src/Rec (Source/Record) view.

When you edit gesturally, note the following:

- When dragging clips to the Record Area, the edit cursors appear only in Storyboard and Collapsed view.
- The Ripple mode determines whether gestural edits are performed as inserts (Ripple button is enabled) or as overwrites (Ripple button is disabled).
- The edit cursors are green when Ripple is disabled and red when Ripple is enabled.
- Edits that involve using in and out points such as three-point and four-point edits cannot be done with gestural editing.
- Patch panel settings are not observed when dragging to the timeline.
- You must use Snap options to align gestural edits on the timeline.

Adding Clips to an Empty Record Area

You can add as many clips to the Record Area as you need. You can then select any clip and edit its timeline as well as switch between timelines to work on

multiple versions of clips. When the Record Area is empty, you are automatically in Storyboard view.

To copy a source clip to an empty Record Area:

- 1 Do one of the following from Storyboard view:
 - F-drag a source clip from the Source Area, the regular Player, or the Src/Rec Player to the Record Area.
 - Select a source clip and press **G**.
 - Select a source clip from the Source History box in the Src/Rec Player and click Insert.
 - Load a source clip from a clip library. See [Loading Clips to the EditDesk](#) on page 407.
- 2 Add subsequent clips. If you use the **G** hotkey and want to build a new edit sequence, make sure you first drag the clip in Storyboard view to the right until the Record Viewer is no longer displayed. Otherwise, the clip will be added to the timeline of the current clip.

To move a source clip to an empty Record Area:

- 1 Do one of the following from Storyboard view:
 - Drag a source clip from the Source Area to the Record Area.
 - Select a source clip from the Source History box in the Src/Rec Player and click Insert (Delete Source).
- 2 Add subsequent clips.

Setting the Ripple Mode

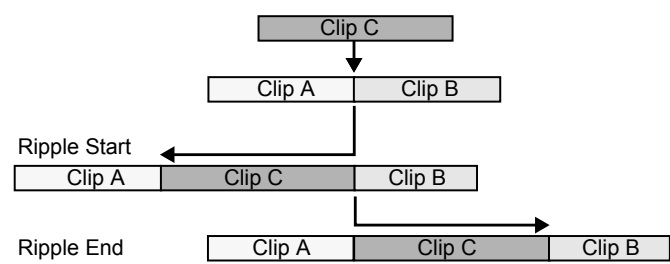
When you gesturally insert new material into a timeline or overwrite existing material with new material, you determine whether the edit sequence changes duration with the Ripple mode.

When Ripple is on, the overall length of the edit sequence is affected when you add a clip to the edit sequence. The duration increases (“ripples”) to accommodate the added material.

When Ripple is off, the overall length is not affected when you add a clip to the edit sequence. The timecode and frame count are unaffected. Depending

on the type of edit, the new clip either overwrites the underlying clip, or the new clip is timewarped (expands or contracts) to fill the same number of frames as the clip it is replacing.

The Ripple mode also affects what happens when you remove material from the edit sequence. When Ripple is on, the edit sequence collapses to fill the gap left by the removed clip. When Ripple is off, removing a clip leaves a gap.



To enable Ripple mode:

- 1 Select Editing from the Menu Priority box and then enable Ripple.



- 2 Select an option from the Ripple Direction box.

Select:	To:
Start	Ripple all clips preceding the selected clip or transition. The clips following the selected clip or transition are unaffected.
End	Ripple all clips after the selected clip or transition. The clips preceding the selected clip or transition are unaffected.

NOTE You only need to enable Ripple mode when editing gesturally. If you edit using hotkeys, the hotkey determines whether your edit ripples regardless of the status of the Ripple button.

Setting Snap Options

To properly align gestural edits on the timeline, select a Snap option.

To set up the alignment of shots on the timeline:

- Select one of the following Snap options (or press **Alt+M** to cycle through the options).



Select:	To snap:
Snap Closest	To the closest of the following: transition, positioner, in point, out point. The cursor must be within a given range of these elements on the timeline for this option to work.
Snap Marks	To the closest in or out point.
Snap Positioner	To the positioner.
Snap Transition	To the closest transition.

NOTE To drop the clip at the current location on the timeline, select Snap Off. If you selected Snap Transition and you want to snap to the closest transition on all layers and tracks, press **Ctrl** as you drag to the timeline.

Dragging Clips to the Timeline

When you drag a source clip to the timeline, the clip is placed on the track directly beneath the cursor. If you drag a clip below the last track on the timeline, a new track is created.

You can edit entire clips to the timeline as well as specific frames of a clip by setting in and out points on the source clip.

To drag a source clip to the EditDesk record timeline:

- 1 Set a Ripple mode.
- 2 Select a Snap option.
- 3 Do one of the following:
 - To move the source clip, drag it to the timeline.

- To copy the source clip, press **F** and drag the copy to the timeline.

NOTE If you are in a Player view, you can only copy a source clip.

- 4 Release the cursor when it is over the appropriate location on the timeline.
The source clip snaps to the specified location.

To drag specific frames of a source clip to the EditDesk record timeline:

- 1 Set in and out points around the material in your source clip that you want to place on the timeline.
- 2 Set a Ripple mode.
- 3 Select a Snap option.
- 4 Press **F** and drag a copy of the subclip to the timeline.
- 5 Release the cursor when it is over the appropriate location on the timeline.
The subclip snaps to the specified location. The material beyond the in and out points is also moved but as head and tail frames. These frames can be retrieved by trimming.

Previewing the Placement of Shots on the Timeline

When you drag a source clip to an existing track or drag a segment to another location on an existing track, you can preview where it will be placed by displaying a phantom segment. The phantom segment appears in all Snap modes including when Snap is off.

To preview the placement of shots:

- 1 In the Timeline section of the Preferences menu, enable Phantom Inserts in the Display group.
- 2 Select a source clip or a segment on the timeline and drag until the cursor is close to where you want to make an insertion. The location of the cursor on the timeline determines whether your shot's head or tail snaps to the element.

The segment turns pink as a preview of where it will go after you release the cursor.



(a) Tail of shot will snap to segment

- 3 Release the cursor when you are satisfied with the location of the phantom segment.

The timeline is updated with the new material.

Navigating Edit Sequences

You can easily navigate through a clip's edit sequence directly on the EditDesk and have the Player or EditDesk proxy automatically update as you change location. You can navigate between cuts and transitions on all layers and tracks. You can also navigate between tracks and layers and change the clip's focus.

When you navigate between tracks in any view except Timeline view, the track you navigate to becomes the Primary video track. You do not have to manually change the Primary track of the clip's timeline to see the results of the new track.

When navigating to a new track, you go to the topmost layer of the track.

When you navigate between layers and tracks, only the video tracks and video layers cycle unless you are in a Timeline view. In a Timeline view, navigating between layers and tracks also cycles the audio tracks.

When you have navigated to the topmost or bottommost layer or track, the tracks and layers keep cycling in the same order.

To retain the same video clip length regardless of focus as you navigate, black frames are added to make each layer the same length as the video clip duration. Video on the next layer down is always seen through a gap.

Clips appear in realtime. If soft effects cannot be displayed, the words "Unrendered Frame" appear on the applicable frames.

You can navigate the layers of a source clip, a record clip, or a container as long as you set the correct focus.

To navigate clips:

- 1 Select a focus area from the Focus box for the clip you want to navigate.

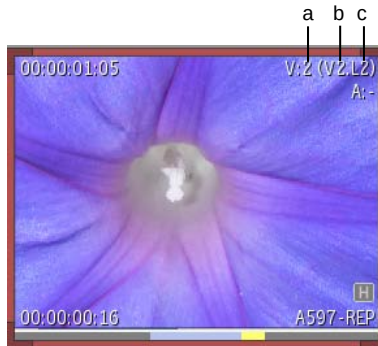


- 2 Do any of the following.

NOTE If you want to see visual markers in the Record Area as you navigate from cut to cut, display Frames view.

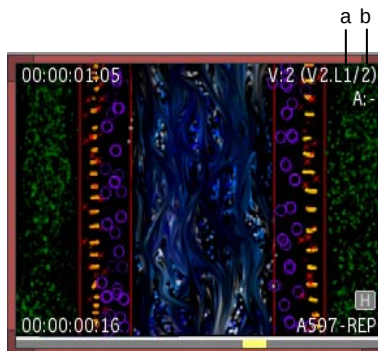
To go to:	Press:
The next cut or transition on the current layer	X
The previous cut or transition on the current layer	Z
The next cut or transition on any layer or track	Shift+X
The previous cut or transition on any layer or track	Shift+Z
The start of the current element	Ctrl+Alt+A
The end of the current element	Ctrl+Alt+S
The next layer or track down in the vertical edit	down arrow
The next layer or track up in the vertical edit	up arrow
The next video track down	Ctrl+Alt+down arrow
The next video track up	Ctrl+Alt+up arrow

As you navigate between layers and tracks, information on the EditDesk proxy and the frame in the Record Area update to reflect which track and layer you are on. In the following example, there are two video tracks. The focus is on the topmost layer—L2— of track V2.



(a) Total number of video tracks (b) Focus is on track V2 (c) Focus of track V2 is on topmost layer, L2

In the next example, the focus is on the next layer down, L1, of the same track. When the focus is not on the topmost layer, the clip information reflects the total number of layers in addition to the focus layer.



(a) Focus layer (b) Total number of layers on track V2

Identifying Cuts and Transitions

As you navigate an edit sequence, visual markers can help you identify the location where one element ends and another begins.

In Head/Tail, Frames, and Storyboard views, cuts and transitions appear as follows:

- Cuts between clips on the focus layer in an edit sequence appear as yellow lines.

- Transition focus points on the focus layer appear as dotted green lines.

In Frames view, additional colours appear for cuts and transitions on non-focus layers as long as they are visible from the focus layer:

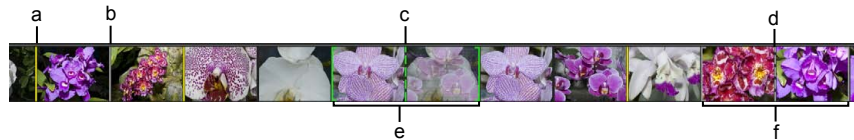
- Cuts between clips on non-focus layers appear as grey lines.
- Transition focus points on non-focus layers appear as dotted grey lines.

The following examples show the cuts and transitions of a two-layer clip. The first illustration is of the clip displayed in Timeline view.



(a) Focus layer (L2) (b) Cut on L1 seen through gap of focus layer (c) Cut on L1 not seen through focus layer (d) Transition on L1 seen through gap of focus layer

The next illustration shows the same clip displayed in Frames view. The focus is still on the topmost layer, L2. Notice how the cuts and transitions on the timeline in the previous example are colour coded depending on which layer they are on. The only cut not displayed is the one not visible from the focus layer: (c) in previous example.

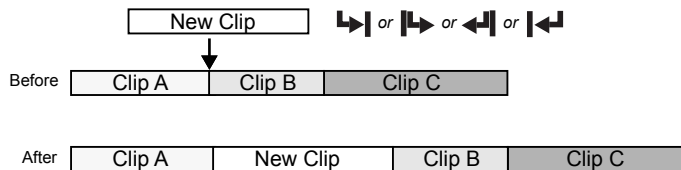


(a) Cut on focus layer (b) Cut on non-focus layer (L1) (c) Transition focus point on focus layer (d) Transition focus point on non-focus layer (L1) (e) Start and end of transition on focus layer (f) Start and end of transition on non-focus layer (L1)

In addition to the video and layer information on the clip updating as you navigate, the frame count of the clip displayed in Frames view also changes colour. The colour of the frame count on layers lower down from the result layer change to a dimmed version of its original colour. For example, a blue frame count for a mixed resolution layer appears a dimmer blue if the focus is on a layer lower down from the result layer.

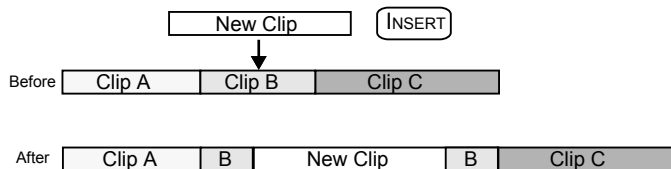
Inserting Clips into an Edit Sequence

When you insert material between existing material in a record clip, the overall length of the record clip may be modified. The result of the insert depends on how you perform the edit. In the following illustration, New Clip is inserted gesturally at the transition between Clip A and Clip B. Everything after the transition is moved ahead in order to make room for New Clip.



You can insert a source clip anywhere in a record clip—append it to the end of a clip or insert it at any frame of an element. You can also insert a video clip at a predefined point in the timeline where you want it to sync with an audio clip.

The following illustration demonstrates the result of inserting New Clip at a frame in the middle of Clip B. Every frame after the edit point is moved ahead to accommodate New Clip.



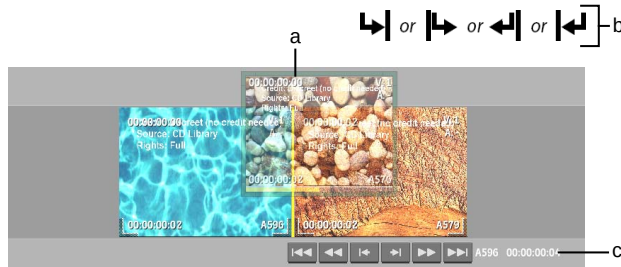
To insert a source clip gesturally in the Record Area:

- 1 Enable Ripple and set the ripple direction.
- 2 View the edit sequence in Storyboard view.

NOTE In Storyboard view, use the edit cursors to guide where your clip will go.

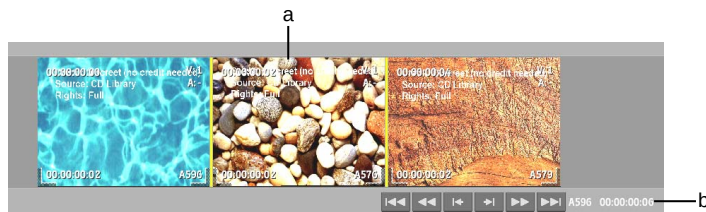
- 3 Scroll the edit sequence until you see the transition where you want to insert the clip.

- 4 Select a source clip and drag it over the edit sequence. As you drag, the cursor changes shape depending on where it is in relation to the underlying clip.



(a) Source clip (b) Insert cursors (red) (c) Duration of sequence before the insert (00:00:00:04)

- 5 Drop the source clip at the transition where you want to insert it.



(a) Inserted source clip (b) Duration of sequence after the insert (00:00:00:06)

To insert a source clip in the Record Area using the hotkey or Src/Rec Player options:

- 1 Select a source clip.

NOTE To insert a source clip starting at a specific frame, move the source timeline positioner to the frame that you want to use as the beginning of the insert.

- 2 Scroll through the edit sequence until you reach the frame where you want to insert the clip, and then do one of the following:
 - Press **G** or click Insert in the Src/Rec Player.

NOTE If you have a multi-layer source clip with a gap on one of its layers and you want to fill the gap with the media on the corresponding layer, you can also press **G** or click Insert.

- If you have a multi-layer source clip with a gap on one of its layers and you want to insert the clip while preserving the gap, press **Shift+G** or select Insert (Keep Source Gaps) from the Insert dropdown list in the Src/Rec Player.
- If you want to delete the source clip from the Source Area once the copy is inserted into the timeline, select Insert (Delete Source) from the Insert dropdown list in the Src/Rec Player.

To append a clip to an edit sequence in the Record Area using the hotkey or Src/Rec Player options:

- Select the source clip in the Source Area, display the edit sequence in the Record Area, and then do one of the following:
 - Press **;** (semicolon) or click Append in the Src/Rec Player.
 - If you want to delete the source clip from the Source Area once the copy is appended to the record clip, select Append (Delete Source) from the Append dropdown list in the Src/Rec Player.

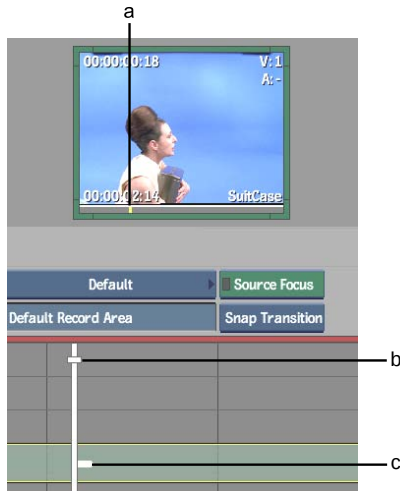
To prepend a clip to an edit sequence in the Record Area using the hotkey or Src/Rec Player options:

- Select the source clip in the Source Area, display the edit sequence in the Record Area, and then do one of the following:
 - Press **Shift + ;** (semicolon) or click Prepend in the Src/Rec Player.
 - If you want to delete the source clip from the Source Area once the copy is prepended to the record clip, select Prepend (Delete Source) from the Prepend dropdown list in the Src/Rec Player.

To perform an aligned edit of source and record clips in the Record Area using the hotkey or Src/Rec Player options:

- 1 Place the positioner in the source clip at the location where you want it synced with the record positioner.

- 2 Place the positioner in the record clip at the location where you want it synced with the source positioner.
- 3 Place the positioner focus point on the layer where you want to insert the video.



(a) Source clip positioner (b) Focus point (c) Record clip positioner

Image courtesy of Behavior Communications Inc.

- 4 Do one of the following:

- Press **L** or click Aligned Edit in the Src/Rec Player.

NOTE If you have a multi-layer source clip with a gap on one of its layers and you want to fill the gap with the media on the corresponding layer, you can also press **L** or click Aligned Edit.

- If you have a multi-layer source clip with a gap on one of its layers and you want to insert the clip while preserving the gap, select Aligned Edit (Keep Source Gaps) from the Aligned Edit dropdown list in the Src/Rec Player.
- If you want to delete the source clip from the Source Area once the copy is inserted into the timeline, select Aligned Edit (Delete Source) from the Aligned Edit dropdown list.

The source clip is inserted into the timeline such that the positioner of the source clip is aligned with the positioner of the record audio clip.

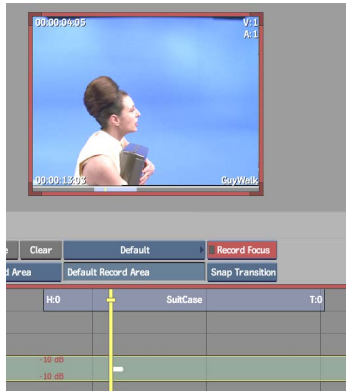
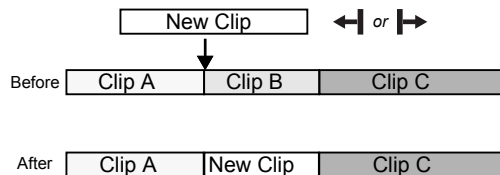


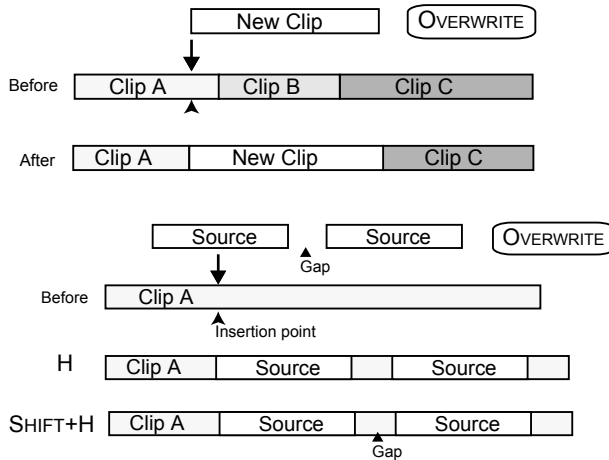
Image courtesy of Behavior Communications Inc.

Overwriting Clips in an Edit Sequence

When you overwrite existing material in the record clip with new material, the overall length of the record clip does not change. The result of the overwrite edit depends on how you perform the edit. In the following illustration, New Clip is edited gesturally at the transition between Clip A and Clip B. Clip B is overwritten. Clip A and Clip C are unaffected.



You can also edit a source clip into the record clip at any frame. The source will overwrite all existing material for its duration. In the following illustration, New Clip is edited into the record clip at a frame in Clip A. Frames after the insertion point are overwritten by New Clip. All of Clip B and some of Clip C are overwritten.

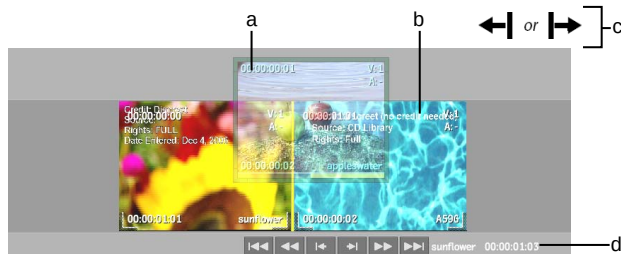


To overwrite a clip in the Record Area gesturally:

- 1 Disable Ripple.
- 2 View the edit sequence in Storyboard view.

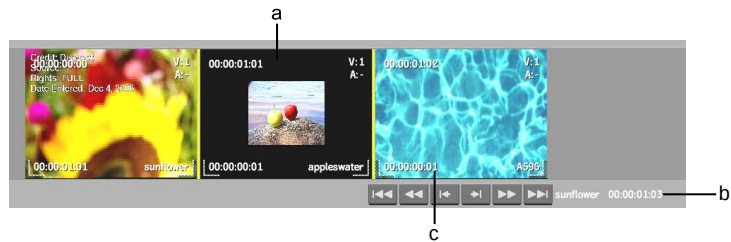
NOTE In Storyboard view, use the edit cursors to guide where your clip will go.

- 3 Scroll the edit sequence until you see the transition where you want to make the overwrite.
- 4 Select a source clip and drag it over the edit sequence. As you drag, the cursor changes shape depending on where it is in relation to the underlying clip.



(a) Source clip (1 frame) (b) Clip beneath cursor (2 frames) (c) Overwrite cursors (green) (d) Duration of sequence before overwrite (00:00:01:03)

- 5 Drop the source clip where you want to make the overwrite.
The edit sequence does not change duration to accommodate the new clip.



(a) Source clip (b) Duration of sequence after overwrite (c) One frame of clip is overwritten by source clip (00:00:01:03)

To overwrite a clip in the Record Area using the hotkey or Src/Rec Player options:

- 1 Select a source clip.

NOTE To overwrite with material that starts at a specific frame, move the source timeline positioner to the frame that you want to use as the beginning of the overwrite.

- 2 Scroll through the edit sequence until you reach the frame where you want to make the overwrite and then do one of the following:

- Press **H** or click Overwrite in the Src/Rec Player.

NOTE If you have a multi-layer source clip with a gap on one of its layers and you want to fill the gap with the media on the corresponding layer, you can also press **H** or click Overwrite.

- If you have a multi-layer source clip with a gap on one of its layers and you want to preserve the gap in the source clip, press **Shift+H** or select Overwrite (Keep Source Gaps) from the Overwrite pulldown list in the Src/Rec Player.

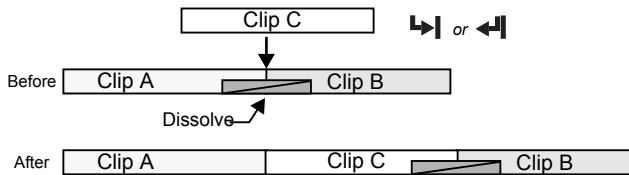
NOTE You will most likely fill gaps rather than preserve them.

- To delete the source clip from the Source Area once the copy is edited into the timeline, select Overwrite (Delete Source) from the Insert dropdown list in the Src/Rec Player.

Inserting or Overwriting on Dissolves and Wipes

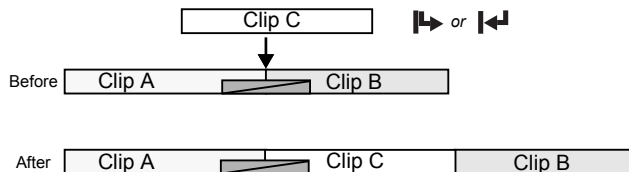
When an edit is made on a cut, there is no difference between an “Insert/Overwrite Before Transition” edit and an “Insert/Overwrite After Transition” edit.

However, when the transition contains a dissolve or wipe, editing before or after the transition does make a difference. The following illustration shows what happens to the dissolve when you insert Clip C *before* the cut between Clip A and Clip B.



After inserting the clip, Clip B and the dissolve are moved after Clip C. The dissolve takes place between Clips C and B.

The following illustration shows how the dissolve is affected when you edit Clip C to the timeline *after* the cut between Clip A and Clip B.



After inserting the clip, Clip B only is moved after Clip C. The dissolve takes place between Clips A and C.

Replacing Shots

When you replace shots on the timeline, you decide whether the edit sequence changes duration if the shot being replaced is of a different duration than the

shot replacing it. If the clip you are replacing contains soft effects, you can choose to keep the soft effects with the new clip.

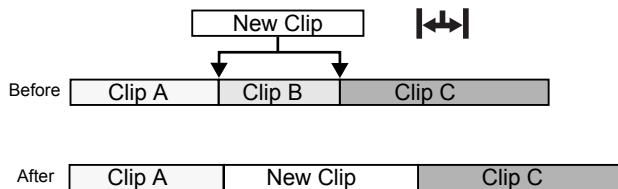
From the EditDesk, you replace shots gesturally in Storyboard view, with hotkeys in either Record Timeline or Storyboard view, or with options in the Src/Rec Player.

Ripple Replace Edits

A ripple replace is an insert edit in which an element that lies between two transitions is “swapped” for the incoming source clip. As the name implies, ripple replace edits ripple, meaning the edit sequence changes duration if the source clip is of a different length than the element it replaces.

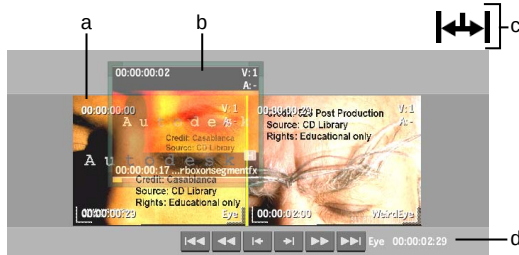
To ripple replace gesturally, Ripple must be on. The Ripple Replace hotkey and Ripple Replace option in the Src/Rec Player always ripple regardless of the Ripple mode.

In the following illustration, New Clip replaces Clip B. As New Clip is longer than Clip B, everything after Clip B is moved ahead to accommodate the duration of New Clip.



To ripple replace gesturally:

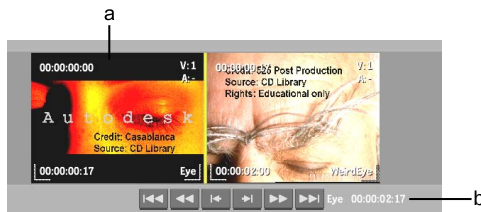
- 1 View the edit sequence in Storyboard view.
- 2 Enable Ripple.
- 3 Scroll the edit sequence until you see the shot you want to replace.
- 4 Drag the source clip to the middle of the shot in the edit sequence and release when you see the ripple replace cursor.



(a) Clip to be replaced (b) Source clip (c) Ripple replace cursor (red) (d) Duration of sequence before ripple replace (00:00:02:29)

Images courtesy of 525 Post Production and Casablanca

The edit sequence changes duration to accommodate the replaced clip.



(a) Source clip (b) Duration of sequence after ripple replace (00:00:02:17)

Images courtesy of 525 Post Production and Casablanca

To ripple replace using the hotkey or the Src/Rec Player option:

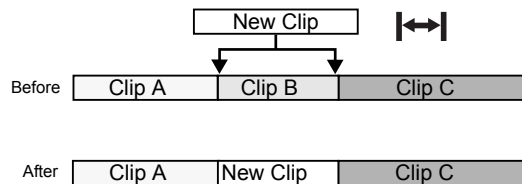
- 1 View the edit sequence in Storyboard or Record Timeline view.
- 2 Select the new source in the Source Area.
- 3 Select the element you want to replace:
 - In Storyboard view, centre the shot on the record reel.
 - In Record Timeline view, select the element, or move the focus point over the element.
- 4 Press **K** or select Ripple Replace from the Replace dropdown list in the Src/Rec Player.

Replace Edits

Replace is an overwrite edit where the edit sequence does not ripple. You can do a replace edit so that if the source clip is a different length than the element it replaces, the source clip is shortened or lengthened proportionally to fit the duration of the replaced element. This creates a timewarp effect with a mix value of 0.

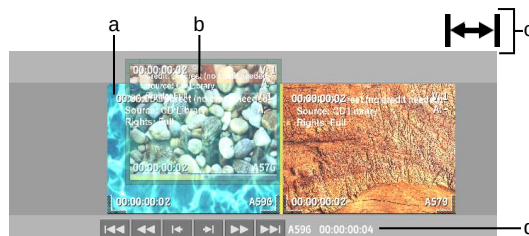
To replace elements gesturally, Ripple must be off. The Replace hotkey and the Replace option in the Src/Rec Player never ripple regardless of the Ripple mode.

In the following illustration, New Clip replaces Clip B. Although New Clip is longer than Clip B, the overwrite operation does not change the duration of the record clip. Only the exact number of frames in New Clip that are needed to fill Clip B are used.



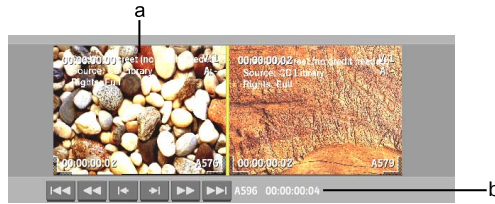
To replace a clip in the Record Area gesturally:

- 1 View the edit sequence in Storyboard view.
- 2 Disable Ripple.
- 3 Scroll the record clip until you see the shot you want to replace.
- 4 Drag the source clip to the middle of the shot in the record clip and release when you see the replace cursor.



(a) Clip to be replaced (b) Source clip (c) Replace cursor (green) (d) Duration of sequence before replace (00:00:00:04)

The edit sequence does not change duration to accommodate the new clip.



(a) Source clip (b) Duration of sequence after replace does not change (00:00:00:04)

To replace a clip in the Record Area using the hotkey or the Src/Rec Player options:

- 1 View the edit sequence in Storyboard or Record Timeline view.
- 2 Select the new source in the Source Area.
- 3 Select the element you want to replace:
 - In Storyboard view, centre the shot on the record reel.
 - In Record Timeline view, select the element, or move the focus point over the element.
- 4 Do one of the following
 - To replace by creating a timewarp, press **J**, or click Replace in the Src/Rec Player.
 - To replace by loading extra frames as tail frames or to replace the media in multiple selected elements, press **Ctrl+J**, or select Replace All (No Fit) from the Replace dropdown list in the Src/Rec Player.

Source-Only Replace Edits

You can replace only the source to the timeline without removing soft effects from the replaced shot. The soft effects are reapplied to the new source on the timeline.

To perform a source-only replace, the source shot must be as long as the record element being replaced.

To perform a source-only replace edit:

- 1 Select the new source in the Source Area and view the edit sequence in Record Timeline view.
- 2 Move the positioner over the element with soft effects you want to replace on the timeline.
- 3 Press **Shift+J** or select Replace Source Media from the Replace dropdown list in the Src/Rec Player.

The new source is replaced on the timeline, and the soft effects are retained. If you selected multiple elements on the timeline, they are all replaced.

Performing a Three-Point Edit

A three-point edit is one in which a source clip is marked with both in and out points and a record clip is marked with either an in or out point. The points on the source clip mark the shot that is to be brought into the record clip, and the point on the record clip marks where it will go. The remaining material in the source clip is entered into the record clip as head and tail frames.

If you mark an in point on the record clip, the edit goes forward from that point. If you mark an out point on the record clip, the edit back-times from that point.

You can perform a three-point edit as either an insert or an overwrite edit.

You can also do a three-point edit with in and out points marked on the record clip, and either an in point or an out point marked on the source clip. In that case, the length of the source clip insert or overwrite is determined by the length between the in and out points on the record clip.

To perform a three-point edit:

- 1 Mark an in point and an out point on the source clip.
- 2 Mark an in point on the record clip for a forward-timed edit, or an out point for a back-timed edit.

NOTE Instead of marking an in point on the record clip, you can place the positioner at the frame where you want the forward edit to start.

- 3 For an insert edit, see [Inserting Clips into an Edit Sequence](#) on page 939. For an overwrite edit, see [Overwriting Clips in an Edit Sequence](#) on page 943.

The source clip is recorded to the timeline.

Performing a Four-Point Edit

In a four-point edit, in and out points are marked on both the source clip and record clips. The in and out points on the source clip mark the material that will be used for the edit. The in and out points on the record clip mark where the source material will go.

You can perform a four-point edit as either an insert or an overwrite edit.

With an insert edit, if the source material differs in length from the marked duration of the record clip, the overall length of the record clip changes to accommodate the difference.

With an overwrite edit, the length of the record clip stays the same. The source material timewarps (expands or contracts) to fit into the space between the in and out points on the record clip.

If you do not want to create a timewarp when performing a four-point edit, disable the Auto Timewarp option in the Timeline section of the Preferences menu. Excess source clip frames are brought in as head and tail frames. If there are fewer source clip frames, the source selection only overwrites the equivalent number of frames in the record clip, essentially treating the edit as a three-point edit.

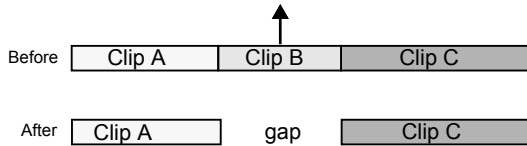
To perform a four-point edit:

- 1 Mark in and out points on the source clip.
- 2 Mark in and out points on the record clip.
- 3 For an insert edit, see [Inserting Clips into an Edit Sequence](#) on page 939. For an overwrite edit, see [Overwriting Clips in an Edit Sequence](#) on page 943.

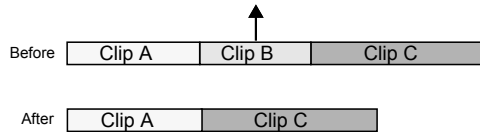
The material between the in and out point on the source clip is used in a fit-to-fill edit between the in and out points of the record clip. A timewarp is applied if their lengths are different.

Removing Elements from an Edit Sequence

When you remove an element from an edit sequence gesturally, the effect depends on whether Ripple is on or off. When Ripple is off, you *lift* an element, leaving a gap in place of the lifted element.



When Ripple is on, you *extract* an element, and the edit sequence collapses to fill the gap left by the extracted element.



You can lift or extract elements from the timeline independently of the Ripple mode using hotkeys.

To lift or extract an element from an edit sequence using hotkeys:

- 1 In Timeline view, select the element you want to lift or extract or mark in and out points around the material.
- 2 Do one of the following:
 - Press **Shift+.** (period) to lift the element from the timeline, leaving a gap in place of the lifted element.
The lifted element is placed in the Source Area.
 - Press **.** (period) to extract the element from the timeline and ripple the remainder of the timeline to fill the gap.
The extracted element is placed in the Source Area.

TIP To delete the element, hold down **Ctrl** when pressing the hotkey.

To gesturally remove an element from an edit sequence:

- 1 Do one of the following:
 - Turn off Ripple to lift.
 - Turn on Ripple to extract.
- 2 In Timeline view or Storyboard view, select the element that you want to lift or extract and drag it out of the Record Area.

NOTE You can also lift or extract gaps on the timeline.

To gesturally copy an element to the Source Area:

- Press **F** and drag the element to the Source Area.

Removing an Element That Is Part of a Dissolve or Wipe

When you lift or extract an element that is part of a dissolve or wipe, the dissolve or wipe either stays attached to the lifted or extracted element or remains attached to the record element depending on your preferences. In the Transitions section of the Preferences menu:

- Disable Link on Extract/Copy to have the associated dissolves remain on the timeline.
- Enable Link on Extract/Copy to lift the associated dissolves with the element that is lifted. The Link Transition button on the timeline must also be enabled.

Topics in this chapter:

- [About Vertical Editing](#) on page 955
- [Vertical Editing Interface](#) on page 956
- [Creating Layers](#) on page 957
- [Layer Basics](#) on page 958
- [Controlling the Transparency of Gaps](#) on page 961
- [Working with Containers](#) on page 961
- [Previewing Vertical Edits](#) on page 964
- [Using the Triptych Player with Vertical Editing](#) on page 964

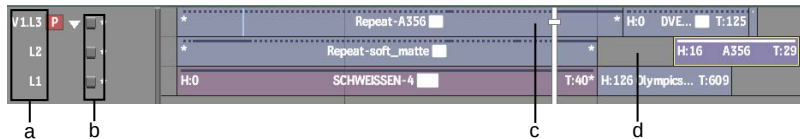
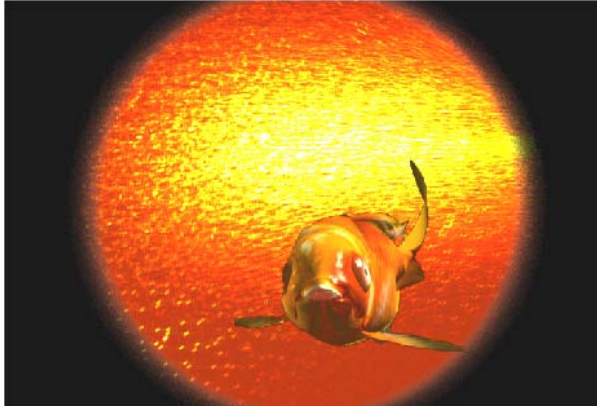
About Vertical Editing

With vertical editing, you combine multiple stacked layers of one timeline track into a single output. Arranged vertically, a multilayer video track provides the framework for timeline compositing in Smoke or colour grading in Lustre. Vertical editing can only be done between layers; it cannot be done between tracks.

All edits done with vertical editing are soft, so you can modify them at any time. By adding soft effects to your clips, you can create an entire edit without having to leave the timeline or process intermediate results.

Vertical Editing Interface

The following timeline interface components are specific to working with layers for vertical editing. In the example, a clip is made up of three layers with various effects applied. All layers are on track V1.



(a) Layer identifiers (b) Selector icons (c) Focus layer (d) Gap

Image courtesy of Quietman

Layer identifier Indicates the number of the layer and to which track it belongs.

Selector icon Selects a layer.

Focus layer Indicates the layer that has focus. All layers below the focus layer are included in the vertical edit. To change the focus layer, use the **up arrow** and **down arrow** to move the focus point.

Gap By default, all gaps are transparent. Clips on lower layers become visible in the edit. If you do not want to see through a gap, you can make it opaque. Opaque gaps are a light shade of grey.

Track shading To make it easier to identify groups of tracks and layers, the shading of tracks alternates between light and dark grey.

Creating Layers

Create as many layers as you need for vertical editing. Vertical editing works from the top layer to the bottom layer. Assign the topmost layer as the focus layer for it and all layers below it to be visible in the output.

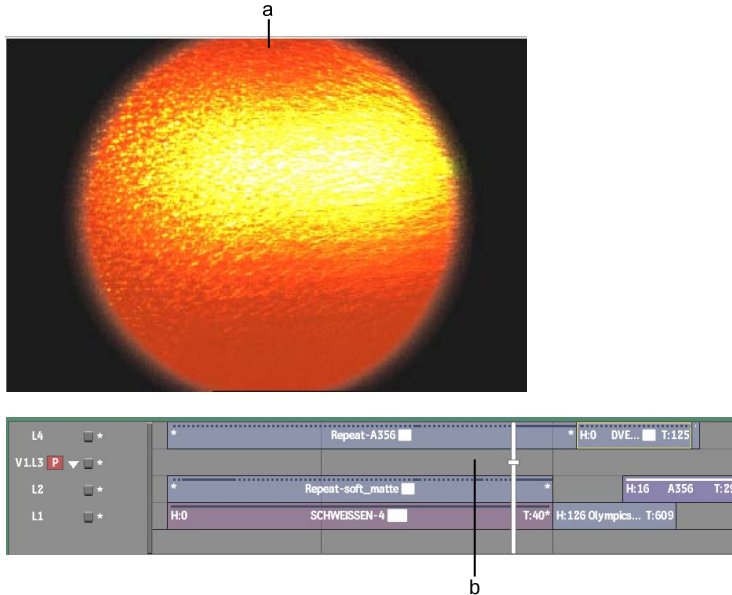
To create a layer for vertical editing:

- 1 From a record timeline, do one of the following:
 - To add a layer above the current layer, click the L+ button.
 - To add a layer below the current layer, **Ctrl**-click the L+ button.



NOTE If you do not see the L+ button, make sure that Editing is selected and enabled from the Menu Priority box.

An empty layer is created and it becomes the focus layer. Only the layers below it on the same track are visible in the output. In the following example, an empty layer is added above L2. Only the output below the new layer, L3, is visible in the output. The fish layer is not visible.



(a) Output of L1 and L2 (b) New layer

2 Add a clip or soft effects to the empty layer.

3 Press the **up arrow** to move the focus point to the topmost layer.

The topmost layer becomes the focus layer, the channel indicator updates to the primary layer, and the image is updated.

If you want to change the focus point without updating the Player, hold **Ctrl** while moving the focus point.

Layer Basics

Collapse layers to help organize your timeline without affecting the results of your vertical edit. Mute layers to remove them temporarily from the vertical edit.

You can generate multilayer clips from EDLs and by importing AAF or FCP files created in third-party applications.

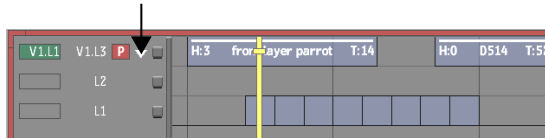
You make layers current as well as resize, select, name, and lock them in the same way as tracks. See [Track Basics](#) on page 885.

Collapsing Layers

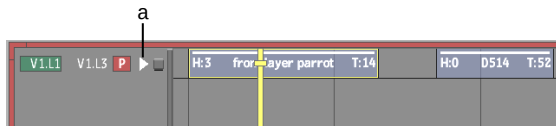
If you have a track with more than one layer, collapse the layers into a single element to remove clutter from your timeline. You can still cycle through layers when they are collapsed.

To collapse a group of layers:

- 1 Click the Collapse arrow.



All layers are collapsed into a single track. The Collapse arrow changes to an Expand arrow to indicate the track contains collapsed layers.



(a) Expand arrow

- 2 To cycle through each layer, click the Layer Selection icon to select all the layers and then press the **up** or **down arrow** key.

The timeline and image window update to reflect the current layer.

NOTE To uncollapse the layers, click the Expand arrow.

Hiding Layers

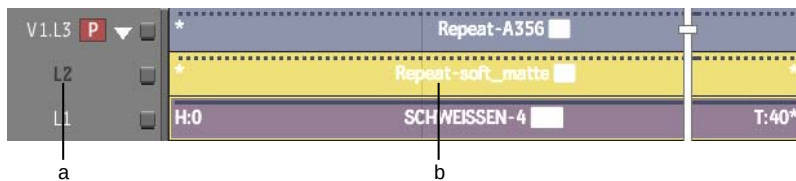
Mute layers to hide them temporarily from the vertical edit. You can mute any layer except the topmost layer.

To mute a layer:

- Do one of the following:
 - To mute one layer, **Ctrl-click** the Layer identifier.

- To mute all layers in a track (except the topmost one), **Shift+Ctrl**-click a Layer identifier.

The identifiers of the muted layers turn black and the layers are removed from the output. In the following example, the output from L2 is muted, revealing the output from the next layer down—L1.



(a) Black identifier for muted layer (b) Layer hidden from output

Image courtesy of Quietman

NOTE To make layers visible again, **Ctrl**-click or **Shift+Ctrl**-click the Layer identifier.

Creating Multilayer Clips

You can automatically generate a multilayer clip using the multi-assemble options in the EDL module. You can load multiple EDLs and assign each EDL to a layer before assembly. See [Importing EDL Files](#) on page 621.

You can also create multilayer clips by importing AAF or FCP files from third-party applications. See [Importing AAF Files](#) on page 813 and [Importing Final Cut Pro XML](#) on page 759.

Controlling the Transparency of Gaps

Gaps are spaces in a layer that do not contain media. Create gaps to see through one layer to another or to apply soft effects to the layers below the gap. If a gap exists in a layer, the next layer that contains video media is included in the edit as long as it is also below the focus layer.

By default, all gaps are transparent. However, you can make a gap opaque if you do not want to see through to the next layer. You can only make gaps that do not contain soft effects opaque.

Also see [Creating Gap Effects](#) on page 1011.

To make a gap opaque:

- 1 Select the gap or move the positioner's focus point over the gap.
- 2 Enable Opaque.



Working with Containers

Containers are a convenient way to remove clutter from the timeline by grouping elements together. The elements, which can come from different layers or tracks, are treated as one unit yet remain individually editable. Containers behave like any other element but they appear on a separate timeline when you enter their editor. You can add an unlimited number of containers to a container.

You set the Player to reflect the contents of the container timeline or of the record timeline.

To set preferences that affect container behaviour, see [Containers](#) on page 528.

NOTE You cannot contain audio across tracks, but you can contain adjacent audio elements.

To create a container:

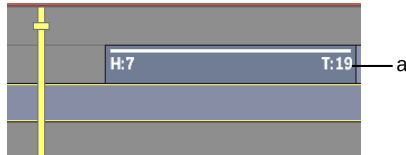
- 1 Select all the tracks or layers on the timeline that you want to collapse into the same container.

NOTE The bottom layer is always trimmed out so that you can dissolve from an element to a container.

- 2 Enable Container (or press **Alt+' [tilde]**).



All the selected elements are collapsed into a container and the element changes to a dark blue. If you did not make any selections and you have in and out points, the container is created between the in and out points.

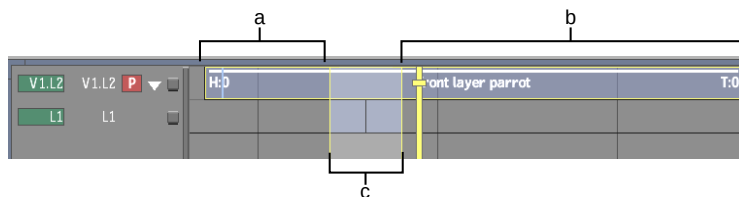


(a) Container

- 3 To edit the contents of the container individually, double-click the container, or click E beside the Container button.

TIP If you do not see the Container button, select the container.

The layers in the container appear on their own timeline. Yellow marks indicate the duration of the container.



(a) Head frames of front layer (b) Tail frames of front layer (c) Duration of layers in container

- 4 Select a display option for the container from the View Modes box. You can display both the container timeline and the record timeline or just the container timeline.

To navigate in a container from the record timeline:

- 1 To move to the beginning of the container, press **Ctrl+Shift+A**.
- 2 To move to the end of the container, press **Ctrl+Shift+S**.
- 3 If you are displaying both the record timeline and the container timeline, you can scrub with the positioners synchronized by pressing **Ctrl+Shift** while scrubbing.

To remove a container:

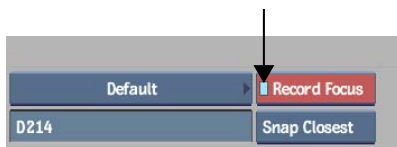
- 1 Select the container.
- 2 **Alt**-click the LED on the Container button.
The container is removed from the timeline and its contents are restored to the record timeline.

In-Context Editing

You can work in a container and see the results in context of the record timeline.

To edit a container in context of the record timeline:

- 1 From the record timeline, lock the Player focus to Record focus. First, select Record from the Focus box and then click the LED on the Record Focus button.



- 2 Make sure Preview FX is selected in the Player.
- 3 Double-click a container to enter it.
- 4 Add or edit soft effects or transitions.

The container's result is displayed in the Player in context of stacked layers in the record timeline.

Previewing Vertical Edits

As you create vertical edits, you can monitor your results in the Player. Due to hardware limitations, complex vertical edits may not play back in real time. If the system is unable to play results in real time, some frames may be dropped during playback in order to maintain sync. For information on the preview modes you can use in the Player, see [Setting Preview Options](#) on page 82.

Using the Triptych Player with Vertical Editing

The Triptych Player displays three windows simultaneously. It is useful for monitoring and editing several layers of a vertical edit. For example, you may be working with a multi-camera setup and need to monitor three different cameras at the same timecode to decide your cuts. You can view each layer in a different Triptych Player window. You can then move the focus points to different layers and perform editing operations to any layer by making a different Triptych Player window active.

You can also use the Triptych Player to monitor outgoing, current, and incoming shots simultaneously.

To display the Triptych Player:

- 1 From the record timeline, select Triptych from the Player Type box.



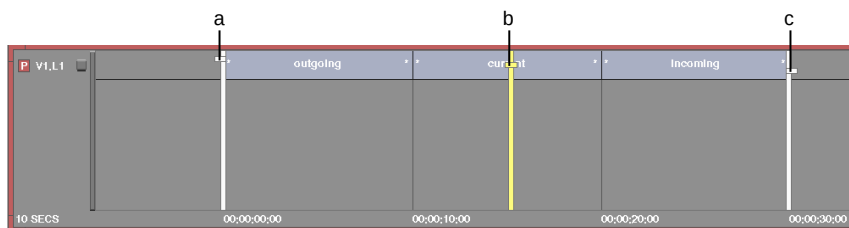
- 2 Select an option from the Triptych View Mode box to control the material displayed in the Triptych windows.



Use:	To view:
Prev/Next	The last frame of the previous clip and the first frame of the following clip.
In/Out	The first and last frames of the current element.
Free	Any clip at any point in time. Set the view by moving the positioners and focus points.
Locked	The positioners with fixed offsets as you move them through the timeline.
Aligned	All three focus points at the same timecode.

In Timeline view, three positioners appear, one for each Triptych Player window. In Free mode, each Triptych Player window has its own transport controls. In Lock or Aligned mode, only the centre Triptych Player window has transport controls. You can use Free mode to move each positioner independently, or Lock or Align mode to move all positioners simultaneously.

The focus point for the Triptych positioners is slightly different from that of the standard positioner. The focus point for the left Triptych Player window appears on the left side of the positioner. The focus point for the right Triptych Player window appears on the right side of the positioner.



(a) Focus point for left Triptych Player window (b) Focus point for centre Triptych Player window (c) Focus point for right Triptych Player window

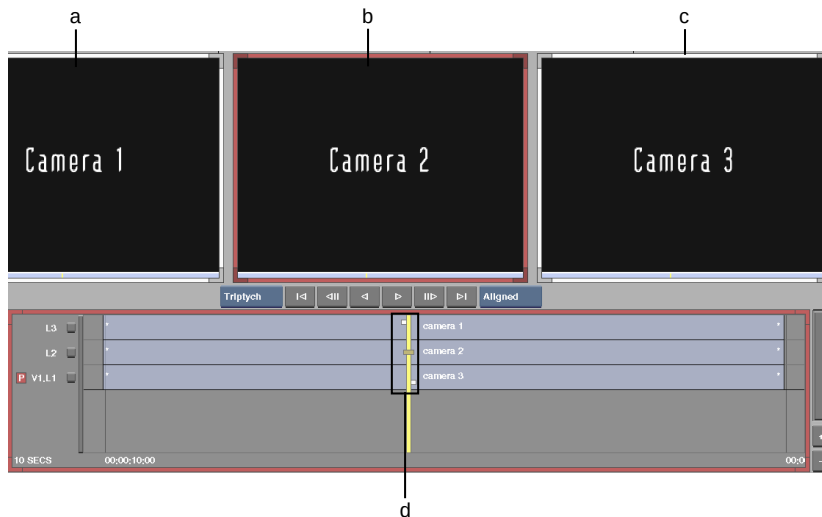
To move the focus point to another layer:

- 1 Make the positioner active by clicking it or by clicking anywhere in the Triptych Player window.
- 2 Use the **up** or **down arrow** to move the focus point to a new layer.
The focus point moves and the image updates in the Triptych Player window.

NOTE When you move the focus point with the **up** or **down arrow**, or by dragging it, the focus layer is also updated. Depending on the preview mode you are using, you may need to refresh the Player view for the entire vertical edit. To change the focus point without also updating the focus layer, hold **Ctrl** while using the **up** and **down arrows**.

Using the Triptych Player for Multi-camera Edits

If your timeline contains a multi-camera setup, use the Triptych Player to monitor three layers simultaneously to make your vertical edits. For example, if you have three layers, use the Triptych Player to monitor each camera in a different Player window to make your edit decisions.



(a) Left Triptych Player window (b) Centre Triptych Player window (active) (c) Right Triptych Player window (d) Focus points

To use the Triptych Player for multi-cam edits:

- 1 Display the Triptych Player.
- 2 Click anywhere in a Player window to make it active.
A red border appears.
- 3 Move the focus point to the layer you want to use by dragging it or using the **up** and **down arrows**.
- 4 Select Aligned in the Triptych View Mode box.
All three Triptych positioners snap to the same timecode.
- 5 Move the positioner.
All three positioners move and the image in each Player window updates.

Monitoring Multiple Elements Simultaneously

You can use the Triptych Player to monitor multiple elements simultaneously by locking all Triptych positioners together. For example, you can view the outgoing, current, and incoming shots simultaneously to see each shot in context. By locking the positioners, you can scrub through the timeline while each Triptych Player window updates. This is useful for seeing the results of edits to the current shot. For example, you may have dissolves at the head and the tail of the shot and want to see the result of slipping the current shot.

To use the Triptych Player to monitor elements on the same layer:

- 1 Display the Triptych Player.
- 2 Select Free in the Triptych View Mode box.
- 3 Click anywhere in a Player window to make it active.
A red border appears.
- 4 Move the focus point to the layer you want to use by dragging it or using the **up** and **down arrows**.
- 5 Select Locked in the Triptych View Mode box.
- 6 Move the positioner.
All three positioners move simultaneously and each Triptych Player window updates.

Trimming

39

Topics in this chapter:

- [About Trimming](#) on page 969
- [Viewing Head, Tail, and Offset Information](#) on page 971
- [Using the Trim Cursors](#) on page 973
- [Locking Clips While Trimming](#) on page 974
- [Viewing Frames While Trimming](#) on page 974
- [Linking Transitions and Cuts](#) on page 975
- [Hotkey Trimming](#) on page 976
- [Trimming Clips Gesturally](#) on page 978
- [Sliding a Clip Gesturally](#) on page 984
- [Sliding a Splice or Transition Gesturally](#) on page 985
- [Slipping a Clip Gesturally](#) on page 987
- [Trimming Animated Soft Effects](#) on page 988
- [Trim Cursor Review](#) on page 991

About Trimming

Trim a clip to add frames to, or remove frames from, a clip's head or tail. Slide a clip to trim the clips before and after it without changing the frames used in it. Slip a clip to offset the frames in a clip without trimming the clips before or after it. Backdraft Conform keeps track of the source material that goes into

trimmed shots, so you can go back and reintroduce material you had previously trimmed out.

You can trim using hotkeys or gesturally. Gestural trimming can only take place when the Trim button is enabled in the Editing menu. To trim from the Record Area, it must be displayed in one of the following views:

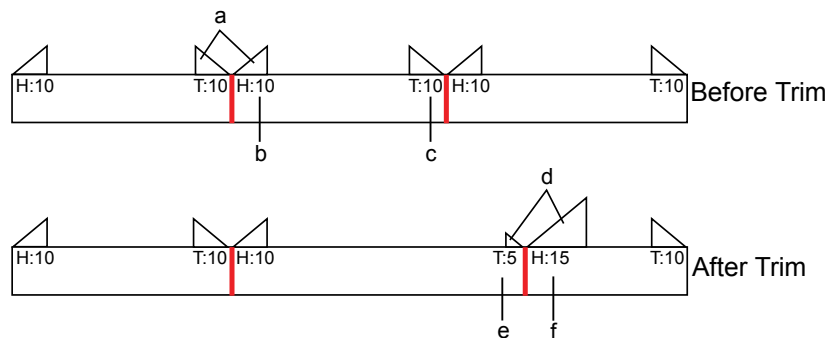
- Head/Tail
- Timeline
- Trim View

Hotkey trimming is available in Timeline, Head/Tail, and Trim View modes regardless of the status of the Trim button.

The viewing modes are described in [Editing Essentials](#) on page 861.

Trimming Examples in this Chapter

This chapter contains illustrations that demonstrate the effects of various five-frame trim operations. The numbers in the illustrations refer to the number of frames in the clip's head and tail. Before trimming, the clips in the edit sequences are numbered "H:10 - T:10," indicating that each clip has a 10-frame head and a 10-frame tail. Changes to the head and tail count are underlined>in the illustrations for emphasis. The visual indicators are for illustration purposes only.



(a) Visual indicator of head/tail size (b) Indicates 10 frames are in the head (c) Indicates 10 frames are in the tail (d) Visual indicator of the change in head/tail size (e) Result of 5 tail frames trimmed into clip (f) Result of 5 frames trimmed out of clip and into the head

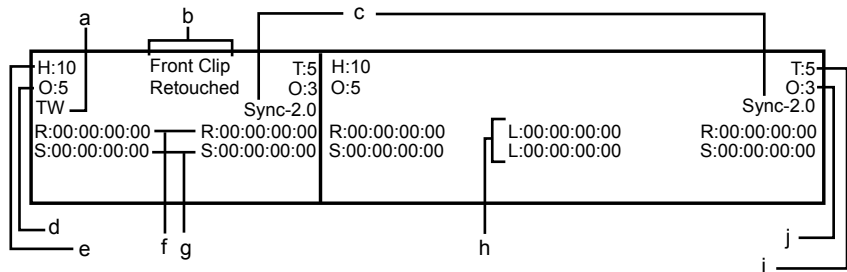
NOTE The illustrations in this chapter are representations of the timeline and are not meant to be exact reproductions of the Timeline view. Throughout the chapter, references are made to the video track, but the trim operations described work on any track.

There are several variables that affect what happens when you perform trim operations, for example, the status of the Link Transition and Link Cut buttons, the Ripple status, and the Lock status. Most illustrations show the effect of the trim operation both when ripple is on and off, and when Lock is on and off.

NOTE For the purpose of brevity, not all Link status variations are illustrated. Unless otherwise noted, assume that Link Transition is off and Link Cut is on. For more information on Link Transition and Link Splice, refer to [Linking Transitions and Cuts](#) on page 975.

Viewing Head, Tail, and Offset Information

Head, tail, and offset information is part of the clip information provided in Timeline, Trim, and Head/Tail views.



(a) Soft effect (b) Clip/element name (c) Edit sync offset (d) Head offset (e) Head frame count (f) Record timecode (head and tail) (g) Source timecode (head and tail) (h) Record and Source clip duration (i) Tail frame count (j) Tail offset

TIP To display clip information in any view, **Alt**-click an element. In Timeline and Trim view, you can also expand the layer on the timeline.

Head and tail frames are the soft properties of a clip. These frames are part of the original clip but are not used in the current edit. They can be used for blending transitions such as dissolves and wipes.

Offsets are reference numbers that indicate the change, in frames, that takes place when you trim. Offsets are displayed at both the head and tail of each

clip. Although Head and Tail numbers change correspondingly, offsets are easier to use for calculation and reference because they start at zero, and you can reset them to zero at any time.

Head offsets are created as follows.

Action	Result Offset
Trimming frames out of a clip's head	Negative
Trimming frames into a clip's head	Positive

Tail offsets are created as follows.

Action	Result Offset
Trimming frames out of a clip's tail	Positive
Trimming frames into a clip's tail	Negative

For example, if you trim 10 frames out of a clip's head, the offset at the head of that clip is -10. If you trim 10 frames into a clip's head, the offset at the head of the clip is 10.

To reset offsets:

- Select one of the following from the Offsets box:
 - To clear only the offsets for the currently selected elements, select Clear Sel Offsets.
 - To reset the Offset indicators to zero for all elements, select Clear Offsets.



To view additional timeline information:

- In the Timeline area of the Preferences menu, select an option from the Handles box.

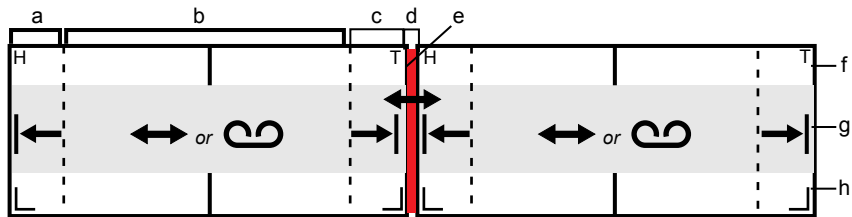
Select:	To display:
Handles	Handles values at the Head and Tail for timeline elements.

Select:	To display:
Offsets	Offset value above the Handles value.
No information	Only soft effects tags on timeline elements.

Using the Trim Cursors

You can trim using trim cursors in Timeline view, Head/Tail view, and Trim view. For a specific trim cursor to appear, it must be in the appropriate area for the trimming operation you want to perform.

The following illustration shows the trim cursors and the locations in Head/Tail view where they appear.



(a) Trim Head cursor (b) Slide or Slip cursor (c) Trim Tail cursor (d) Slide cursor (e) Transition (f) Clip Selection area (for moving the clip in the Record Area) (g) Trim Cursor area (h) Clip Shuttle area

NOTE The same cursors appear in the corresponding locations in Timeline and Trim view. In Head/Tail view, the trim cursors only appear when the cursor is in the Trim Cursor area.

To use the Trim Head and Trim Tail cursors, note the following:

- Drag in the direction of the arrow to add frames to the element.
- Drag away from the direction of the arrow to remove frames from the element.

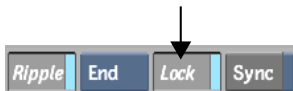
The frames are added to or removed from either the head or the tail of the clip, depending on the location of the cursor and whether the Lock is on or off.

Locking Clips While Trimming

Enable Lock to lock the clip or transition under the cursor to the cursor. Locking clips controls whether the head or tail frames are affected during trimming. This is useful if you want to trim without affecting transitions such as dissolves.

To enable locking:

- 1 Enable Lock.



- 2 Perform the trim operation.

Operation	Result
Trim Tail	The tail is locked, so the head of the clip is trimmed.
Trim Head	The head is locked, so the tail of the clip is trimmed.
Slide	The segment is slid, but the head and tail are not modified.
Slide Transition	The transition is slid, but the head and tail of the transition are not modified.
Slip	No effect.

The effects of using Lock are also described and illustrated in the trimming operations throughout this chapter.

Viewing Frames While Trimming

You can view frames while trimming.

To view the trimmed frames:

- 1 Switch to Timeline or Trim view.
- 2 Enable Focus.



As you trim, the positioner snaps to the transition and the image updates.

Linking Transitions and Cuts

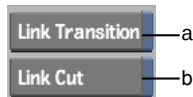
Use the Link Transition and Link Cut buttons to affect how transitions (dissolves and wipes) and cuts behave during slide and trim operations.

When Link Transition or Link Cut is enabled, the transition or cut is linked to the element you slide or trim. This is useful if you have transitions such as dissolves that you want to keep with the trimmed element. For examples of slide operations using Link Transition and Link Cut, see [Trimming Dissolves and Wipes](#) on page 983.

The Link Transition button also affects the result of hard committing a selection of adjacent elements. If you select adjacent elements and hard commit them with Link Transition enabled, the elements are committed into a single element and the handles are removed. If you select adjacent elements (without selecting their cut) and hard commit them with Link Transition disabled, the elements are committed into a single element and the handles are removed but the elements remain separate.

To enable Link Transition or Link Cut:

- Enable Link Transition or Link Cut.



(a) Link Transition button (b) Link Cut button

Hotkey Trimming

You can do most trimming operations with hotkeys (including trimming video, transitions, and audio). Hotkey trimming applies to the current element. When trimming with hotkeys:

- The Lock, Ripple, and Link settings have the same effect as in gestural trimming.
- In Head/Tail view, the transition that is closest to the centre of the Record Area is the one that is trimmed.
- You can trim by a preset number of frames or assign a frame number to the trim.

To trim a clip with hotkeys in Timeline, Trim, or Head/Tail view:

- 1 Select the timeline element in Timeline or Trim view, or put the cursor in the appropriate trimming hot spot in Head/Tail view.
- 2 To assign a value to the trim, enter a value in the numeric keypad.
- 3 Do one of the following.

To:	Press and hold:	Then press:
Trim the tail	B	left or right arrow key to add or subtract frames from the clip being trimmed.
Trim the head	N	left or right arrow key to add or subtract frames from the clip being trimmed.
Slide a transition	M	left or right arrow key depending on the direction you want to slide the transition.
Slip a clip	,	left or right arrow key depending on the direction you want to slip the clip.

TIP You can hold the arrow key to trim continuously.

- 4 Your clip is trimmed according to the value defined in the numeric keypad. For example, to trim the tail by 5 frames, enter 5 in the numeric key pad, hold the **B** key, and then press the **right arrow** key. Every time you press the **right arrow** key, the tail is trimmed by 5 frames.

To trim a clip with hotkeys in Timeline or Trim view:

- 1 Select the timeline segment in Timeline or Trim view.
- 2 Move the cursor until the Trim Head, Trim Tail, or Slide cursor appears, and then **Ctrl+Alt**-click the segment.
- 3 Enter a value in the numeric keypad.
- 4 Press the **left** or **right arrow** key depending on the direction of the trim. The clip is trimmed according to the value entered in the numeric keypad. For example, to trim the tail by 5 frames, **Ctrl+Alt**-click the tail of the segment, enter 5 in the numeric key pad, and then press the **right arrow** key. Every time you press the **right arrow** key, the tail is trimmed by 5 frames.

Trimming and Sliding to Marks

You can use hotkeys to trim or slide a clip to an in point, an out point, or to the positioner. It is trimmed or slid only if the element has enough handles.

To trim or slide to an in or out point:

- 1 Select the element you want to trim or slide.
- 2 Set an in or out point at the location where you want to trim or slide.
- 3 Use the trim hotkey for the operation you want to perform.

To:	Press:
Trim the head to the in point	N+Mark In
Trim the head to the out point	N+Mark Out
Trim the tail to the in point	B+Mark In
Trim the tail to the out point	B+Mark Out
Slide the element to the in point	M+Mark In
Slide the element to the out point	M+Mark Out

To trim or slide to the positioner:

- 1 Select the element you want to trim or slide.
- 2 Move the positioner to the location where you want to trim or slide.
- 3 Use the trim hotkey for the operation you want to perform:

To:	Press:
Trim the head to the positioner	N+spacebar
Trim the tail to the positioner	B+spacebar
Slide the element to the positioner	M+spacebar

Trimming Symmetrically

When trimming with hotkeys, you can trim both the head and tail of a transition at the same time.

To trim both the head and tail of a transition symmetrically:

- Hold **Shift+M** while trimming.

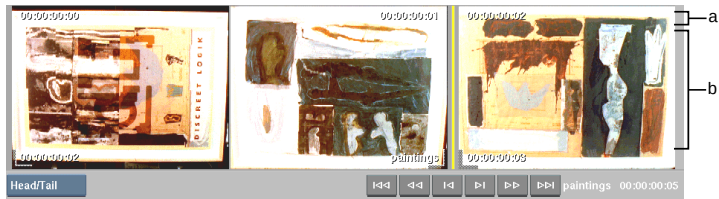
NOTE This does not work for gestural trims.

Trimming Clips Gesturally

The following section describes how to use the Trim Tail and Trim Head cursors for gestural trimming, both when Lock is on and when Lock is off. Gestural trim operations are the same in Timeline view, Head/Tail view, and Trim view.

You can also gesturally trim dissolves, wipes, and audio elements.

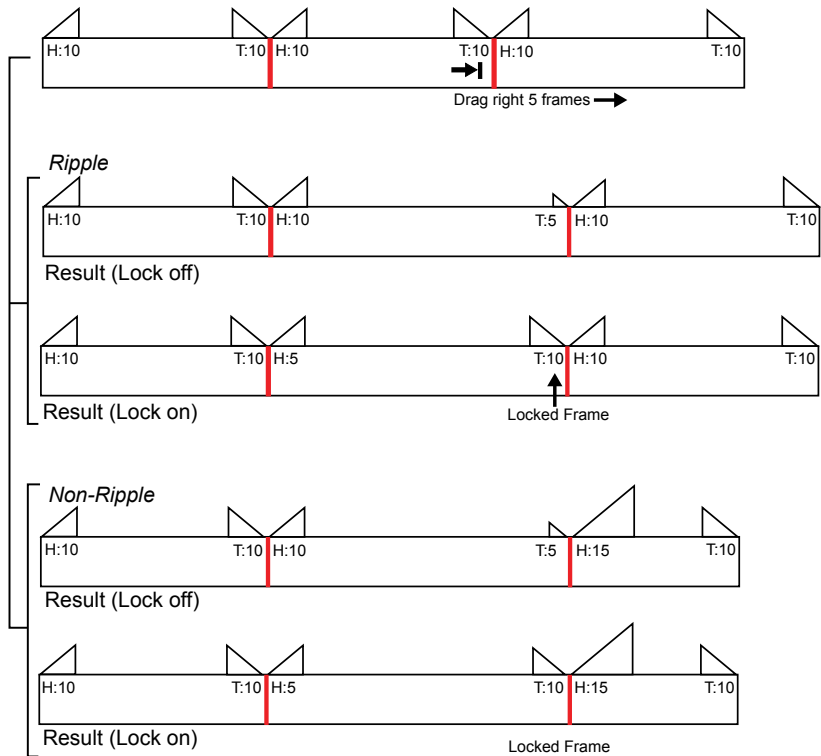
When the Record Area is in Head/Tail view and the Trim button is enabled, be careful when using the cursor to move the clip around the reel. The trim cursor appears over most of the Record Area, so you might inadvertently trim your shot. To move the clip around the reel, hold the cursor near the top of the frame in the Record Area to regain the normal EditDesk cursor.



(a) EditDesk cursor area (b) Trim cursor area

To trim five frames into a clip using the Trim Tail cursor:

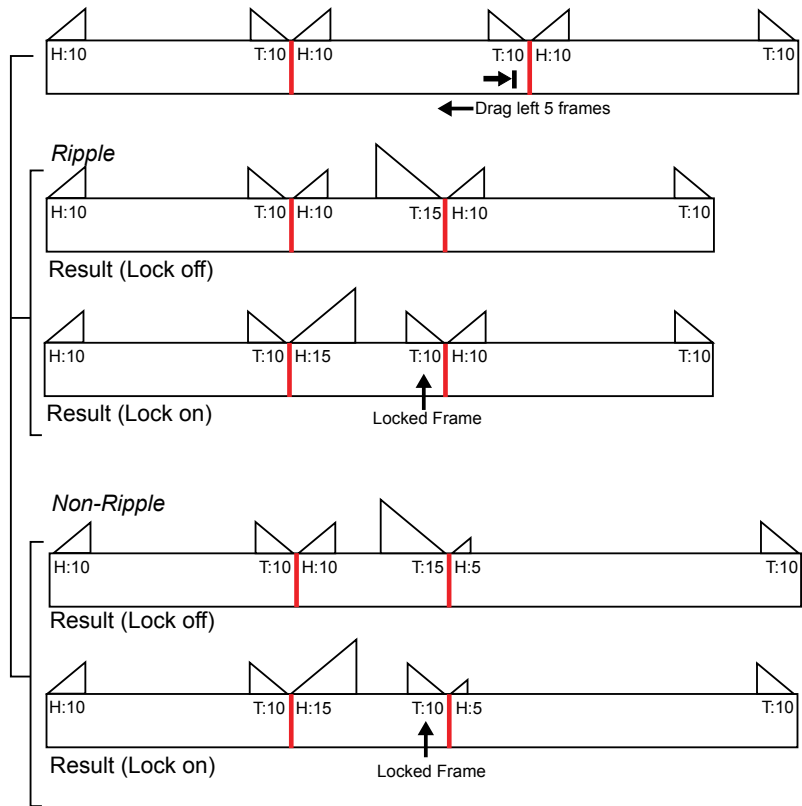
- 1 Enable Trim.
- 2 Position the cursor at the tail of the clip.
The Trim Tail cursor appears.
- 3 Drag right five frames.
The results, which vary according to how Lock and Ripple are set, are shown in the following illustration. Underlined numbers indicate trimmed heads and tails.



To trim five frames out of a clip using the Trim Tail cursor:

- 1 Enable Trim.
- 2 Position the cursor at the tail of the clip.
The Trim Tail cursor appears.
- 3 Drag left five frames.

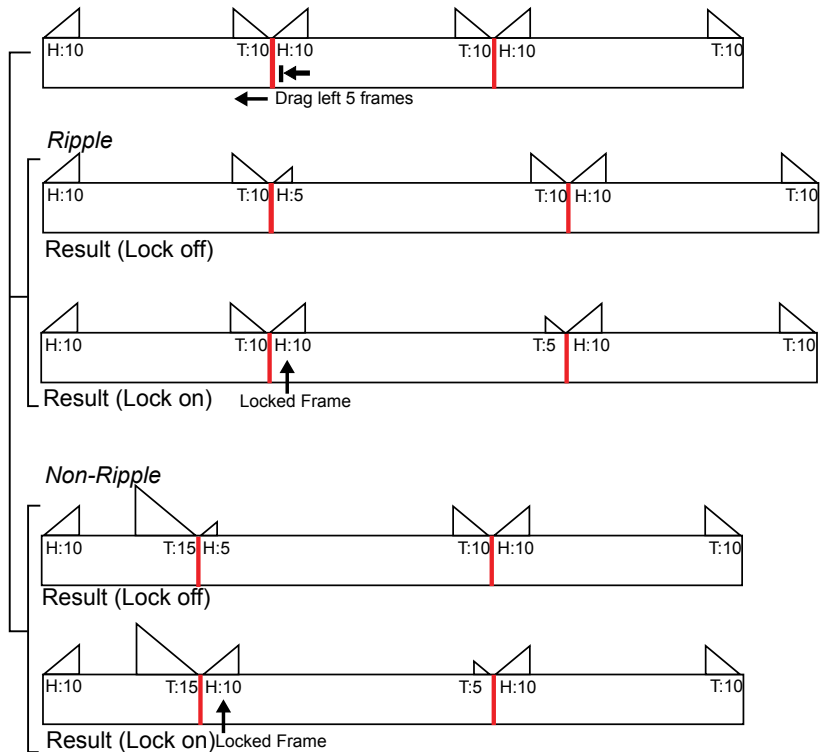
The results, which vary according to how Lock and Ripple are set, are shown in the following illustration. Underlined numbers indicate trimmed heads and tails.



To trim five frames into a clip using the Trim Head cursor:

- 1 Enable Trim.
- 2 Position the cursor at the head of the clip.
The Trim Head cursor appears.
- 3 Drag left five frames.

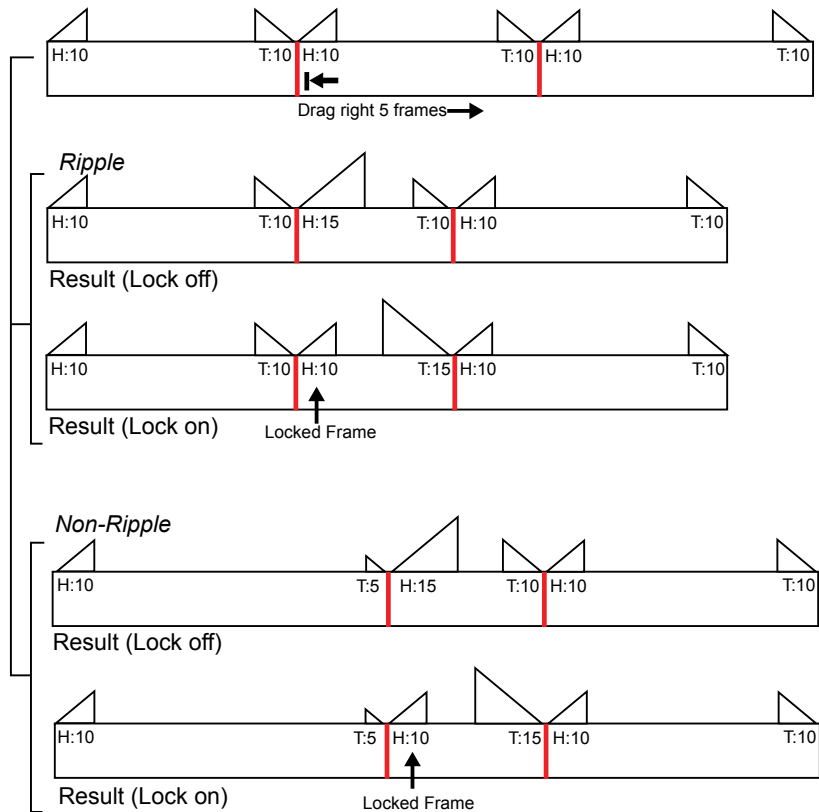
The results, which vary according to how Lock and Ripple are set, are shown in the following illustration. Underlined numbers indicate trimmed heads and tails.



To trim five frames out of a clip using the Trim Head cursor:

- 1 Enable Trim.
- 2 Position the cursor at the head of the clip.
The Trim Head cursor appears.
- 3 Drag right five frames.

The results, which vary according to how Lock and Ripple are set, are shown in the following illustration. Underlined numbers indicate trimmed heads and tails.



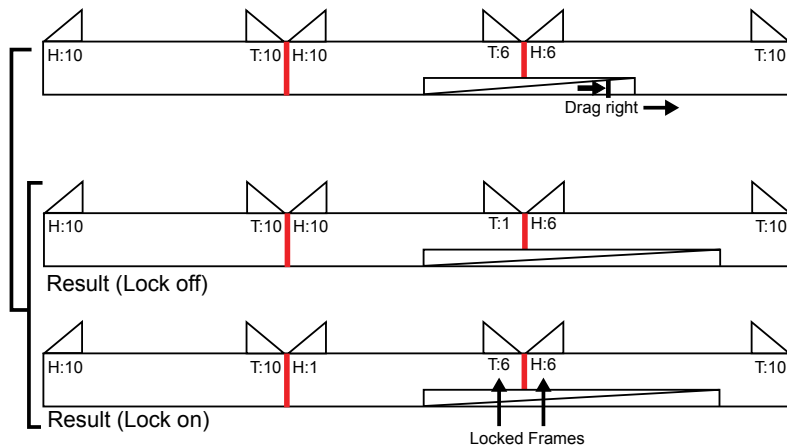
Trimming Dissolves and Wipes

You can trim transitions such as dissolves and wipes in Trim, Timeline or Head/Tail view.

In Timeline view and Head/Tail view, you can trim the clips on either side of the dissolve or wipe. In Timeline and Trim view, you can trim the dissolve or wipe itself (i.e., increase or decrease the duration of the dissolve or wipe). You cannot gesturally trim the dissolve or wipe itself in Head/Tail view.

For information on sliding dissolves and wipes, see [Sliding a Splice or Transition Gesturally](#) on page 985.

NOTE The examples in the following illustrations use the same three-clip sequence that is used throughout this chapter. In these cases, however, an eight-frame centred dissolve has been added to one of the transitions. As the dissolve uses 4 head and 4 tail frames, the head and tail on the surrounding clips in the “before” cases have been reduced from 10 to 6.



Edit sequence does not ripple when a transition is trimmed.

Link Transition and Link Cut have no effect when trimming a transition.

Trimming Audio Tracks

Audio tracks are divided into sub-frames. There are 100 sub-frames of audio for every frame of video. When trimming audio tracks, you can trim on a sub-frame level by holding down the **Shift** key while you trim.

NOTE You cannot trim on a sub-frame level when simultaneously trimming audio and video tracks.

Sliding a Clip Gesturally

Sliding changes a clip's position in the edit sequence. It simultaneously slides the clip under the cursor and trims the head and tail of the surrounding clips. With Lock off, the head and tail of the slid clip are trimmed. With Lock on, the head and tail of the slid clip are not trimmed.

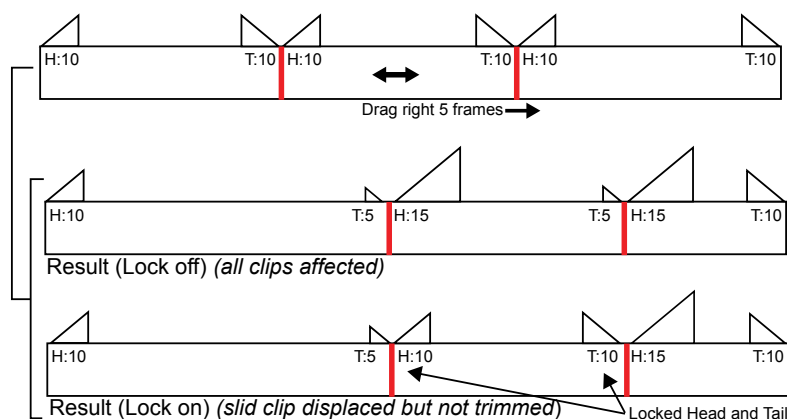
You can slide a video or audio element, a cut, or a transition.

NOTE Sliding is a non-rippling operation. The total length of the edit sequence does not change.

To slide a clip using the Slide cursor:

- 1 Enable Trim.
- 2 Position the cursor on the clip that you want to slide.
The Slide cursor appears.
- 3 Drag right or left.

The results of dragging right, which vary according to how Lock is set, are illustrated in the following example. Underlined numbers indicate trimmed heads and tails. Dragging left produces similar (but inverse) results.



Sliding a Splice or Transition Gesturally

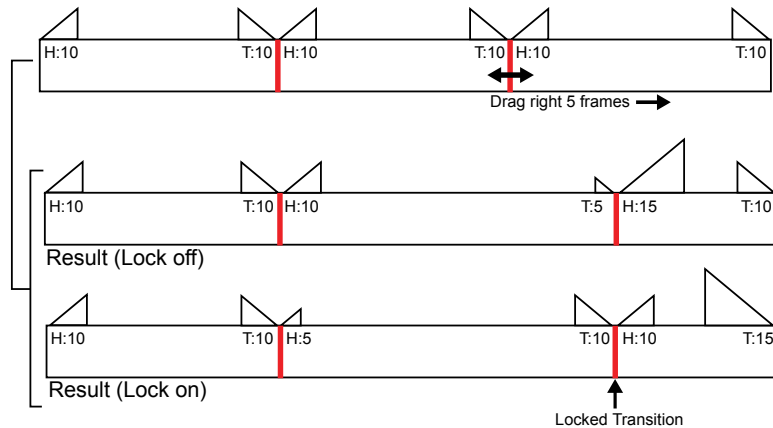
When you slide a splice or transition in Head/Tail view, the slide operation affects that splice or transition only, not the splices and transitions at either end of the clip.

To slide a splice or transition using the Slide cursor:

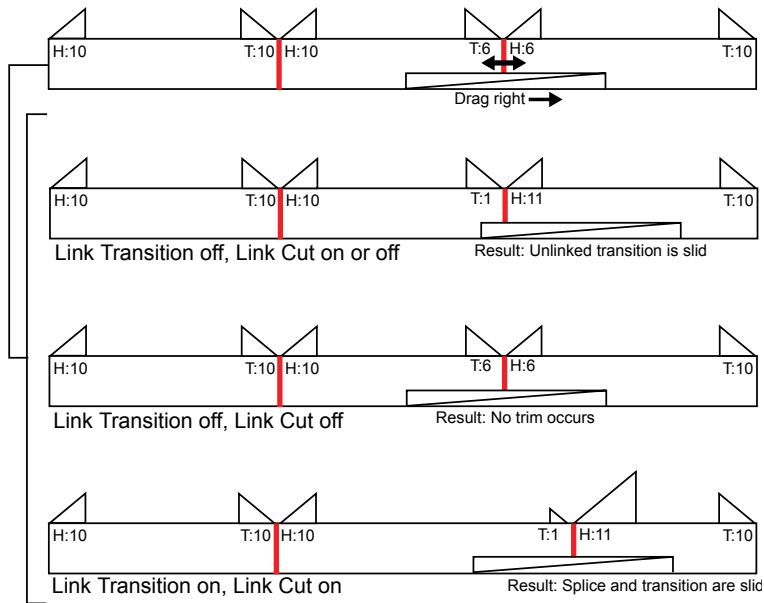
- 1 Enable Trim.
- 2 Position the cursor on the splice or transition that you want to slide.
The Slide cursor appears.

3 Drag right or left.

The results of dragging right, which vary according to how Lock is set, are shown in the following illustration. Underlined numbers indicate trimmed heads and tails. Dragging left produces similar (but inverse) results.



The following illustration shows the effect of sliding a dissolve five frames to the right. In this example, assume that both Ripple and Lock are off. Use the results as a guide when trying other combinations.



NOTE If you slide a dissolve or wipe with Ripple, Link Transition, and Link Cut all on, this combination of variables causes the same effect as a standard trim on the linked elements. The edit sequence ripples, as this is not a true dissolve or wipe slide.

Sliding Audio

You can slide audio elements on the timeline on a sub-frame basis by holding down the **spacebar** while sliding.

If you select a video element with a group of audio sub-frames, you cannot slide on a sub-frame basis.

Slipping a Clip Gesturally

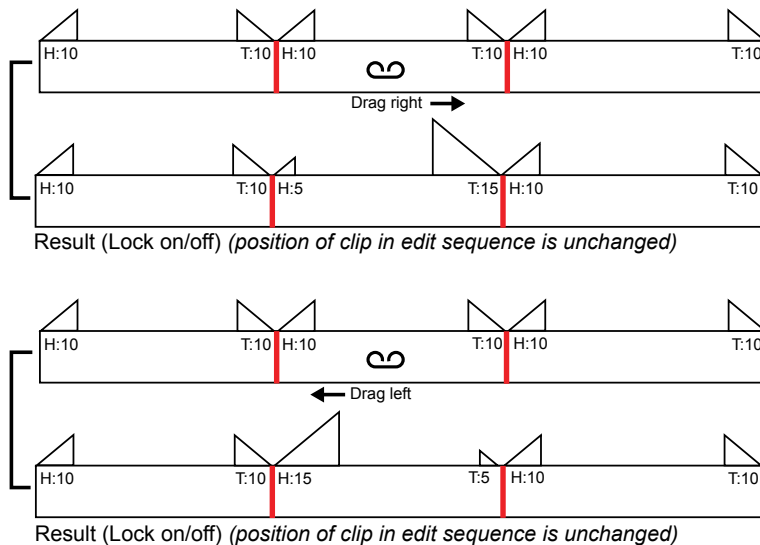
Slipping simultaneously trims the head and tail of the clip without changing its position in the edit sequence. The duration of the clip is not altered. Other clips in the edit sequence are not affected and the total duration of the sequence does not change.

You can slip video or audio elements.

To slip a clip with the Slip cursor:

- 1 Enable Trim.
- 2 Position the cursor on the clip that you want to slip.
The Slide cursor appears.
- 3 Hold down the , key.
The Slide cursor changes to a Slip cursor.
- 4 Drag right or left.
To perform sub-frame audio slipping, hold the **Shift** key while you slip.

The following illustration shows the result of slipping a clip to the left or right.

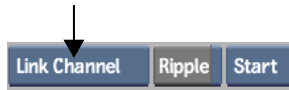


Trimming Animated Soft Effects

When you trim, slip, or slide an element that has animated soft effects, you specify how the animation channel is affected. You can choose to resize the animation channels, link them to the original frame numbers, or unlink them during the trim operation.

To indicate how animated soft effects are trimmed:

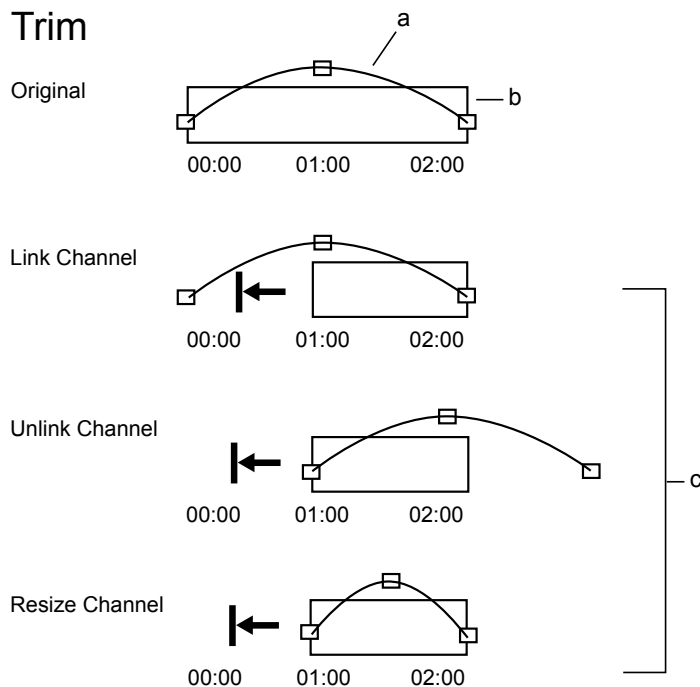
- In the EditDesk menu, select an option from the Trim Channel box.



Select:	To:
Resize Channel	Resize the channel as you trim. The animation channel is scaled to fit into the timeline element. This option has no effect when you slip or slide.
Link Channel	Link the keyframes to their original frame numbers. The animation channel moves to follow the original frames as you trim.
Unlink Channel	Unlink the keyframes from their original frame number. The animation channel remains with the timeline element as you trim.

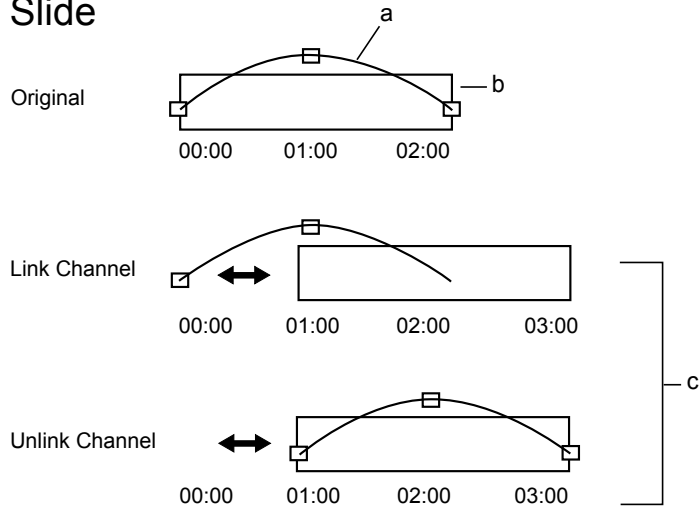
The following illustrations show the effect of the various options during trim, slip, and slide operations. The effect is the same regardless of the Ripple status.

Trim

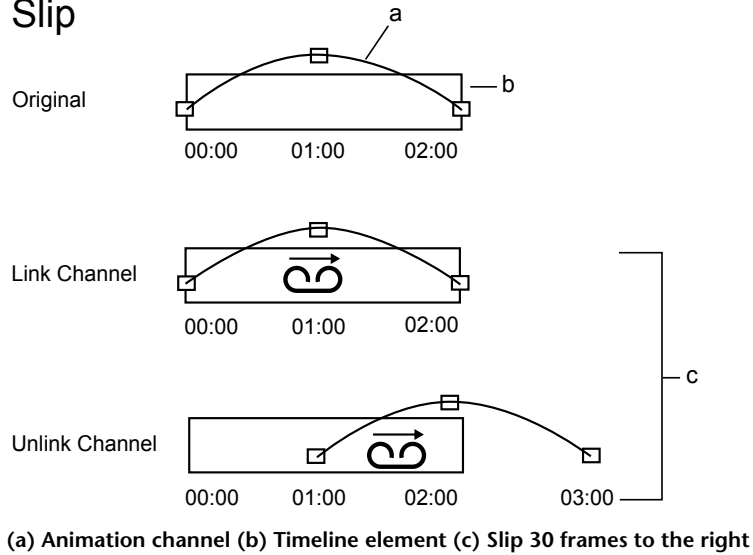


(a) Animation channel (b) Timeline element (c) Trim head 30 frames to the right

Slide



Slip



Trim Cursor Review

The following table illustrates the various cursors that appear with gestural trimming. If they do not appear, make sure the Trim button is enabled.

Cursor	Action
 Trim Tail	Drag <i>right</i> to <i>add</i> frames to the tail of a clip. Drag <i>left</i> to <i>remove</i> frames from the tail of a clip. (Locked) Drag <i>right</i> to <i>add</i> frames to the head of a clip. (Locked) Drag <i>left</i> to <i>remove</i> frames from the head of a clip.
 Trim Head	Drag <i>left</i> to <i>add</i> frames to the head of a clip. Drag <i>right</i> to <i>remove</i> frames from the head of a clip. (Locked) Drag <i>left</i> to <i>add</i> frames to the tail of a clip. (Locked) Drag <i>right</i> to <i>remove</i> frames from the tail of a clip.
 Slide	Drag <i>right</i> to slide a clip or transition <i>forward</i> . Drag <i>left</i> to slide a clip or transition <i>backward</i> .
 Slip	Drag <i>right</i> to slip a clip <i>forward</i> . Drag <i>left</i> to slip a clip <i>backward</i> . Hold down the , key to turn the Slide cursor into the Slip cursor.
 Symmetrical Trim	Drag left or right to trim the same amount from the head and tail of a transition. (Hold Shift+M to see this cursor.)

Dissolves and Wipes

40

Topics in this chapter:

- [About Dissolves and Wipes](#) on page 993
- [Transitions Workflow](#) on page 994
- [Creating Dissolves](#) on page 996
- [Adding a SMPTE Wipe](#) on page 998
- [Using Templates for SMPTE Wipes](#) on page 1000
- [Removing Transitions](#) on page 1001
- [Copying Transitions](#) on page 1001

About Dissolves and Wipes

Dissolves are blending transitions between timeline elements in which the first clip fades out at the same time as the second clip fades in. Wipes are non-blending transitions that use masks to hide or reveal the outgoing and incoming shots.

You can create several types of transitions. To create a transition, you must have enough head and tail frames in the outgoing and incoming shots.

Create transitions from the EditDesk record timeline.

To create audio fades, see [Creating Audio Fades in the Timeline](#) on page 1056.

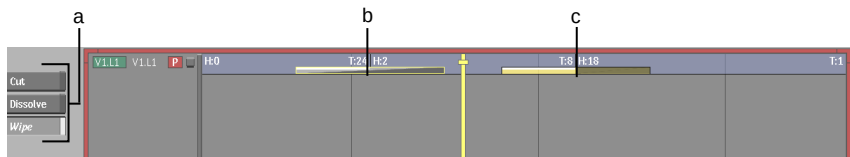
Transitions Workflow

Using hotkeys, you can create transitions in any Record Area view. To create a transition gesturally, you must be in Timeline view. The following is the basic workflow for creating transitions.

To create a basic transition:

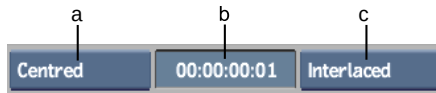
- 1 In any Record Area view, select a cut. See [Selecting a Cut](#) on page 994.
- 2 Click one of the Transition buttons or press the corresponding hotkey. See [Selecting the Transition Type](#) on page 995.

The corresponding transition icon appears on the timeline.



(a) Transition buttons (b) Dissolve icon (c) Wipe icon

- 3 Select a transition alignment from the transition's quick menu. See [Selecting the Alignment](#) on page 995.



(a) Alignment box (b) Duration field (c) Transition mode

- 4 Enter a transition duration. See [Entering a Transition Duration](#) on page 996.

Selecting a Cut

To change a cut into a transition, you first must select the cut.

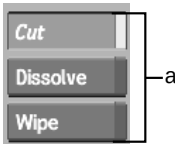
To select a cut:

- 1 In Record Timeline view, navigate to the cut where you want to create the transition.

- 2 Click the cut to select it or move the positioner over the cut.

TIP As you move the positioner over a cut, the element should be surrounded by a yellow bounding box. If the element is not surrounded by a yellow bounding box, another cut, transition, or element is already selected, and the transition will not occur at the positioner location.

The Transition buttons appear.



(a) Transition buttons

Selecting the Transition Type

After you select a cut or transition on the timeline, select the type of transition you want to create.

Click:	To create:
Cut (or press Delete)	A cut (a zero-length transition). The Cut button changes a blending transition to a cut; the Delete hotkey creates a new zero-length cut.
Dissolve (or press End)	A dissolve between two clips on the same track. See Creating Dissolves on page 996.
Wipe (or press Page Down)	A SMPTE or user-defined wipe from the incoming clip to the outgoing clip. See Adding a SMPTE Wipe on page 998.

Selecting the Alignment

Determine how a transition aligns with the cut, which is the focus point of the transition. Select the alignment from the Transition Alignment box.

Select:	To:
Up To Cut	Start the transition at the number of frames before the focus point, as indicated in the Duration field. The transition ends at the focus point.

Select:	To:
Centred	Centre the transition over the focus point with an equal number of frames before and after the transition. If the transition has an odd length, the extra frame is always placed after the focus point.
From Cut	Start the transition at the focus point and have it proceed into the incoming clip by the number of frames indicated in the Duration field.
Custom	Create an asymmetric transition that can be offset from the cut point.

Entering a Transition Duration

Define the number of frames over which a transition occurs. You set the number of frames in the Duration field. You cannot use a negative transition duration.

Because a transition uses frames from the tail of the outgoing clip and the head of the incoming clip, the duration of the edit sequence does not change.

Creating Dissolves

When adding a dissolve using the keyboard, the dissolve alignment depends on the location of the transition.

Transition Location	Resulting Dissolve
A cut between two elements	According to the default type and duration settings.
The beginning of the first element of a track, <i>or</i> a cut between a gap and a element.	A From Cut dissolve with the default duration. The result is a fade from black.
The end of the last element of a track, <i>or</i> a cut between a element and a gap.	An Up to Cut dissolve with the default duration. The result is a fade to black.

To create a dissolve:

- 1 Select the cut where you want to make the dissolve or place the positioner directly over the cut.

- 2 Click Dissolve or press **End**. You can also press **Shift+End** to put a dissolve on all tracks that have a cut at the point where the positioner is located. A dissolve icon is added to the timeline.

TIP You can type a value in the numeric keypad before pressing **End** to specify the duration for the dissolve on the record clip.

- 3 Select the dissolve mode. The dissolve mode determines how the pixels in the source clips are combined to create the transition.

Select:	To:
Additive	Add the colour value of a pixel in the first source clip to the colour value of the corresponding pixel in the second source clip. This value is assigned to the pixel in the resulting dissolve.
Non-Add	Evaluate the corresponding pixels in the first and the second source clips to determine which has the higher colour value. This value is assigned to the pixel in the resulting dissolve. Non-additive dissolves must be rendered in order to play them.
Inv Non-Add	Evaluate the corresponding pixels in the outgoing and incoming source clips to determine which has the lower colour value. The pixel in the resulting dissolve is assigned the lower of the two values. Inverse non-additive dissolves must be rendered in order to play them.

- 4 Select the alignment.
- 5 Set the duration.

Fading to Black or Fading from Black

You can create a fade to black (fade-out) by adding a dissolve at the end of the last segment or at the end of a segment followed by a gap.

The following procedure show how to create a fade to black. To create a fade from black, follow the same instructions but work at the head of the video clip instead of the tail.

To create a fade to black:

- 1 Move the positioner to the end of the timeline or before a gap.
- 2 Add a dissolve to the track by pressing **End**.

A dissolve is added using the default dissolve length specified in the Preferences menu. See [Transition Preferences](#) on page 531.

- 3 Adjust the dissolve length. The alignment is set automatically to Up to Cut.

NOTE You can add a fade to black to multiple tracks simultaneously by moving the positioner to the end of the timeline, then pressing **Shift+End**. All unlocked tracks that end at the same timecode will fade to black.

Dissolving to or from a Colour

Instead of fading to or from black, you can specify a custom colour for the dissolve. You can use a custom colour for fade-ins, fade-outs, and crossfades.

To dissolve to or from a custom colour:

- 1 Select the dissolve you want to modify.
Depending on the type of dissolve you selected, one of the following custom colour buttons appears in the quick menu:
 - If you selected a fade-in, a From Colour button appears.
 - If you selected a fade-out, a To Colour button appears.
 - If you selected a crossfade, a To/From button appears.
- 2 Click the custom colour button.
- 3 Select the custom colour with the colour picker.
- 4 The custom dissolve is created.

TIP If you selected a dissolve that is between two elements (not a fade-in or fade-out), the dissolve is split into a fade-out for the outgoing shot and a fade-in for the incoming shot.

Adding a SMPTE Wipe

Backdraft Conform contains a number of predefined SMPTE wipe patterns. When creating a wipe, you can choose a wipe pattern from the file browser or enter the SMPTE pattern number in the Pattern Number field.

To add a SMPTE wipe:

- 1 Select the transition where you want to create the wipe.
- 2 Click Wipe or press **Page Down**. You can also press **Shift+Page Down** to add a wipe on all tracks that have a cut at the point where the positioner is located.

The default wipe specified in the Preferences menu is added to the cut.

- 3 To change the default wipe, click Pattern.
The file browser appears.

NOTE If you know the identification number of a specific SMPTE wipe, you can enter that number in the Pattern Number field to apply the wipe to the selected transition.

- 4 Select a pattern from the list of available SMPTE wipes. Selecting a pattern causes you to exit the file browser.
- 5 Select the alignment.
- 6 Set the transition duration.

Adjusting the Global Axis of SMPTE Wipes

After adding a wipe to the timeline, you can modify its position, rotation, scaling, and softness in its quick menu.

The global axis gives you control over all masks that are created for any given SMPTE wipe. If you create a wipe that requires two separate masks, you can adjust them both simultaneously in the Player.

To adjust a wipe's global axis values from the Wipe quick menu:

- 1 Select the wipe icon on the timeline and display its quick menu.
- 2 Select an option from the Global Axis box.

Select:	To adjust:
Position	The position of the SMPTE wipe.
Motion	The rotation of the SMPTE wipe.
Softness	The edge softness of the SMPTE wipe.

Select:	To adjust:
Options	The scaling and blending options of the SMPTE wipe.

Using Templates for SMPTE Wipes

Templates are included with the preset SMPTE wipes that come with your application.

If you modify the start position or increase the duration for a SMPTE wipe, the interpolation for the transition may not be as even as it should be. For example, if you load a preset SMPTE pattern and change its default start position by a large number of frames, the transition may appear to jump at the last frame. Or, if you increase the duration of the transition by a large number of frames, the interpolation may also appear to jump between some frames. Use Adjust to fix this problem.

Adjusting a Preset SMPTE Wipe

If you modify the start position for the wipe, you can adjust the interpolation for the transition.

To adjust a preset SMPTE wipe:

- 1 Select the SMPTE wipe transition icon on the timeline and display its quick menu.
- 2 Click Pattern, and then select a wipe pattern in the file browser.
- 3 Move the positioner to the first frame of the transition.
- 4 Select Position from the Global Axis box, and then change the start position of the transition of the wipe using the X and Y Position fields. If you scrub the transition, you should see the wipe make a large jump at the last frame.
- 5 If the Adjust button is not greyed out, enable it.

NOTE If the Adjust button is greyed out, a template does not exist for the wipe and you must select a different pattern in order to use the Adjust feature.

The jump in the wipe should be gone and the interpolation for the wipe should be fairly even.

Removing Transitions

When you remove a transition from the timeline, it is turned into a cut.

To remove a transition:

- Select the transition on the timeline, and then do one of the following:
 - Drag it off the timeline.
 - Click Cut.
 - Press the **Delete** hotkey (or **Shift+Delete** for multiple tracks).
 - Select Element from the Item box and then click Delete.

Copying Transitions

As with any element, a transition icon can be lifted off the timeline and dragged to the Source Area. It can then be pasted on other cuts on the timeline. To copy a transition, press **F** and drag the icon to the Source Area.

Soft Effects

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Topics in this chapter:

- [About Soft Effects](#) on page 1003
- [Creating Soft Effects](#) on page 1004
- [Creating Timewarp Soft Effects](#) on page 1007
- [Creating Resize Soft Effects](#) on page 1008
- [Creating Colour Sources](#) on page 1008
- [Trimming Animated Resize Soft Effects](#) on page 1010
- [Creating Gap Effects](#) on page 1011
- [Linking Soft Effects](#) on page 1012
- [Slipping Soft Effects](#) on page 1012
- [Copying Soft Effects](#) on page 1014
- [Muting Soft Effects](#) on page 1020
- [Deleting Soft Effects](#) on page 1021

About Soft Effects

Using soft effects, you can modify elements directly in the timeline. All changes are made in-place to the media element. You can add timewarps directly to timeline segments, resize a segment to standardize its resolution with the project, as well as add a colour source to a gap.

If you want to reuse a soft effect created on a segment, you can copy it to other timeline segments, to the Source Area, or to other clips using the same media.

Soft effects are commonly applied to video and audio elements. They can also be applied to gaps in the timeline, including empty layers. Gap effects allow you to create an effect that spans more than one element. You can treat a gap effect just like any other element, trimming and moving it, or copying it to the Source Area for use in another timeline.

If proxies have been enabled for your project, you can switch between full resolution and proxy mode in the Player. Working with proxies speeds up processing time in projects with high-resolution images.

If an interface element is not described in this chapter, refer to the corresponding effect in the module chapter. For information on audio soft effects, see [Working with Audio in the Timeline](#) on page 1051.

Creating Soft Effects

You apply the Timewarp, Resize, and Colour Source soft effects through the soft effects quick menu. The quick menu provides access to the basic controls for each soft effect.

To create a soft effect:

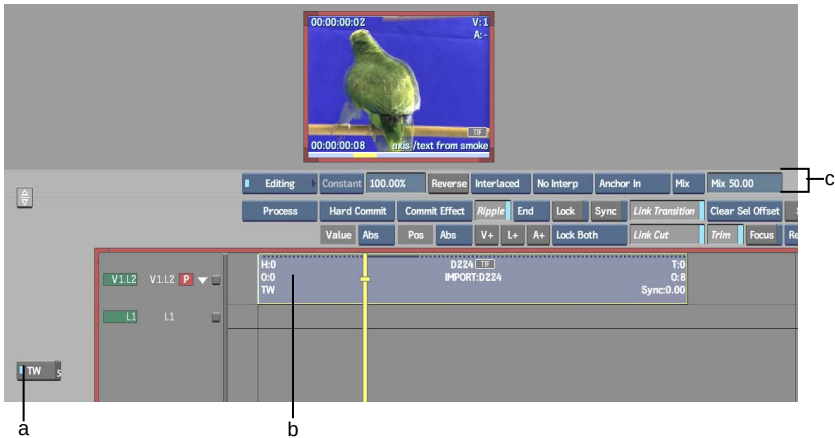
- 1 Select the element on the timeline.
- 2 Click the button of the soft effect you want to apply, or press **Alt** plus the corresponding hotkey.



NOTE On a 21-inch monitor, not all the soft effect buttons are displayed. Click the down arrow to view the second page of buttons.

Click:	To:
TW (or press Alt+5 or Home)	Apply a timewarp to a timeline element. You can also apply a timewarp to an audio element. See Creating Timewarp Soft Effects on page 1007.
Resize (or press Alt+7)	Resize a segment to standardize its resolution with the project. Resize can also be used to correct blanking problems and to add a soft letter-box (this is much faster than using the soft Axis). See Creating Resize Soft Effects on page 1008.
Colour Source	Modify the colour of a colour source directly on the timeline. See Creating Colour Sources on page 1008.

The soft effect quick menu is displayed, the LED on the soft effect button turns blue, and the soft effect indicator appears on the timeline segment.



(a) Timewarp LED (b) Timewarp soft effect indicator (c) Timewarp quick menu

Image courtesy of Quietman

Editing with Soft Effect Quick Menus

Access basic setups for a soft effect through its quick menu. If you applied the same soft effect to multiple elements, any changes you make to one element using the quick menu are applied to the other elements as long as the elements are selected.

You display the quick menu below the Player or the EditDesk.

To display the quick menu of a soft effect:

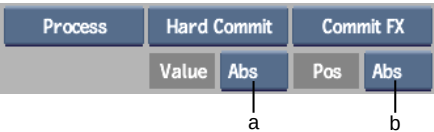
- 1 Do one of the following:
 - From the Player or the EditDesk, press **Shift+~**.
 - From the EditDesk, access the Player.
- 2 If you applied more than one effect to an element, click the applicable soft effect button so that it is locked (it turns light grey and its letters are italicized when locked).

To reset quick menu values:

- Click the name of the field or **Ctrl**-click inside a field.

To determine how soft effects are applied from the quick menu:

- Select from the following options.



(a) Value box (b) Position box

Select:	To apply:
Value Abs	A value directly to all soft effects.
Value Rel	A relative change from the previous value. The change will apply to all soft effects.
Pos Abs	The change on all soft effects at the current position of the positioner.

Select:	To apply:
Pos Rel	A change on all soft effects. The change is the frame difference from the start of the selected effect and the positioner. For example, if the positioner is at frame 10, all Resize soft effects will have a keyframe applied at frame 10.
Pos Prop	A change on all soft effects. The change is the proportional frame difference from the selected effect start and the positioner. For example, if the positioner is in the middle of the soft effect, all Resize soft effects will have a keyframe applied in their middle.

Soft Effect Mini Editor — Widescreen Only

When working in HDTV or film resolution, it is useful to have access to a mini editor for the soft effect to maximize your viewing area, especially to accommodate large formats.

You access the mini editor from the regular or full-screen Player.

To access the soft effect mini editor:

- 1 Select an element on the timeline that has a soft effect applied to it.
- 2 Open the full-screen Player.
The soft effect mini editor appears below the full-screen Player.

TIP Press **Ctrl+Esc** to display the soft effect's mini editor menu and the full-screen Player.

- 3 Click the Edit soft effect button (for example, Edit CC) to open the standard soft effect editor menu.

Creating Timewarp Soft Effects

Use the Timewarp soft effect to apply timewarps to elements in the timeline. There is a separate Timewarp soft effect button for video and audio elements.

To apply a Timewarp soft effect to video:

- 1 Select the video element.

- 2 Click the TW button (or press **Alt+5** or **Home** from the EditDesk record timeline).
The Timewarp quick menu appears.
- 3 Set the properties for the timewarp. See [Timewarps](#) on page 1023.

Creating Resize Soft Effects

A Resize soft effect is automatically applied to clips added to the timeline that do not have the same resolution or scan mode as the current clip on the timeline. You can easily perform pan and scans and animate the image position to achieve optimal resizing.

A soft Resize can also be applied to a same-resolution segment of the timeline and be used to correct blanking problems or to add a soft letterbox.

When you mix clips of different resolutions on the timeline, a soft Resize is automatically applied using the following attributes:

- Resolution
- Bit Depth
- Scan mode (field 1 and field 2 only)

If you apply a Resize soft effect to a container that has nested containers, the resize settings of the parent container are automatically applied to the nested containers as well. This ensures that all clips in the timeline and its nested containers are the same resolution.

To apply a soft Resize:

- 1 Select the element you want to resize.
- 2 Click the Resize soft effect button (or press **Alt+7** from the EditDesk record timeline).
- 3 Set the resize settings in the quick menu or use the editor for more control over the Resize soft effect. See [Resize Settings](#) on page 1110

Creating Colour Sources

Use the Colour Source controls to create and alter colour sources, including noise, colour bars and tones.

You create a colour source using the Video menu or hotkeys. You can only use the Colour Source soft effect button to create a colour source on a gap or empty layer.

The Colour Source soft effect button is available only from the EditDesk record timeline.

You can change the properties of a colour source directly in the timeline.

To create a colour source:

- 1 Do one of the following:
 - From the Player, select and enable the Effects option from the Menu Priority box.
 - From the EditDesk, make sure that the current option in the Menu Priority box is disabled or select and enable the Effects option.



- 2 Select and enable Video in the A/V Tools box.



- 3 Display the Colour Source controls:
 - Select Colour Source from the Video menu.
 - Press the Colour Source button (**F10**).
 - Press the Black Source button (**F11**).
 - Press the Bars and Tone button (**F12**).
- 4 Set the source type, colour, audio, duration and timecode.
- 5 Click in the Source Area or Record Area to create the clip.

To create a colour source directly on the timeline:

- 1 Select a gap or empty layer.
- 2 Click the Colour Source soft effect button.

TIP You may need to click the arrow on the Soft Effects menu to see the Colour Source soft effect button.

- 3 Set the source type, colour, audio, duration and timecode.

To change the properties of a colour source from the timeline:

- 1 Select the colour source in the timeline and display its quick menu.
- 2 The Colour Source controls appear.
- 3 Select the new colour and click Replace.

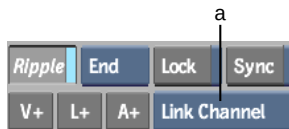


- 4 To return to the original colour, click Reset.

Trimming Animated Resize Soft Effects

When you apply animated Resize soft effects to timeline elements, you have three options for how animation channels are affected when trimming. Access these options from the soft effect's Channel box. The selected option applies to all animated Resize soft effects unless they are locked.

NOTE The trimming options do not apply to Timewarp soft effects.



(a) Soft Effect Channel box

Resize Channel Locks the animation relative to the element's duration. If you change the duration of the element by trimming, the animation and all its keyframes scale to fit the duration of the element after trimming.

Link Channel Links the animation to the media. When you trim, slip, or slide the element to which the soft effect has been applied, the animation moves with the media. Keyframes move with the media as well.

Unlink Channel Unlinks the animation and the media. When you trim, slip, or slide the element to which the soft effect has been applied, the media moves relative to the animation. In this case, keyframes retain their position relative to the beginning of the element. They do not move with the media.

Creating Gap Effects

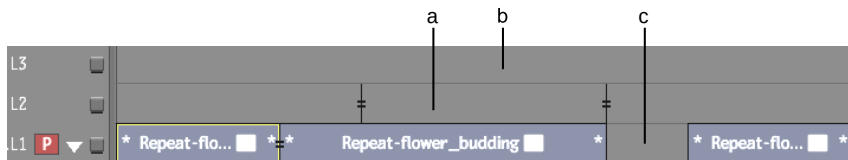
Gaps are the empty spaces between elements in an edit sequence. They can result from removing a portion of a clip with Ripple set to off. You can apply Resize soft effects to gaps. To create a gap effect, apply a soft effect to a gap.

A gap effect is similar to a soft effect on an element with media. However, while a soft effect is restricted to the clip to which it is applied, gap effects are independent of all media. They affect the media under them. You can, for example, create a Resize gap effect to add a border to an entire project.

NOTE Because a timewarp is closely tied to the media to which it is applied, you cannot apply a Timewarp soft effect to a gap.

Gaps can appear in different places in the timeline:

- The empty space between media elements on a video layer
- An empty video layer
- The space between splice points on an empty video layer. Splice points are useful for containing a gap effect applied to an empty video layer. The areas to either side of the splice points are also gaps.



(a) Space between splice points (b) Empty layer (c) Empty space between elements

Because a gap effect is not restricted by in points, out points, splices and transitions, it is easily trimmed, moved and duplicated. You can trim a gap effect over the entire duration of the video track regardless of the underlying splice points.

You can also freely edit splices and transitions between elements on video layers under the gap effect. You can splice an element, add a transition at the splice point, and then replace the incoming element without affecting the

gap effect. In addition, gap effects can be copied and placed over different media in the timeline, or copied to the Source Area for later use.

For information on creating gaps, see [Removing Elements from an Edit Sequence](#) on page 953.

To apply a Resize soft effect to a gap:

- 1 Determine the element to which you want to apply the soft effect and then do one of the following:
 - Move the positioner and its focus point over the gap.
 - Select the gap.
 - Select the entire video layer.
- 2 Click the Resize soft effect button or press **Alt+7**.

Linking Soft Effects

You can link multiple segments in order to apply or edit several segments at once.

To link soft effects:

- 1 Select multiple segments on the timeline.
- 2 Add a soft effect.
- 3 Edit the settings for the entire selection using the soft effect quick menu.

Slipping Soft Effects

When animating a soft effect, you can change its timing directly on the timeline. Slip soft effects by any amount and see the image update as you make changes.

You can slip the timing of one soft effect, several soft effects on one segment, or all soft effects on multiple segments. Slipping soft effects can be done on either segments or gaps. The entire soft effect is slipped; you cannot slip selected keyframes or selected channels.

When you animate a soft effect, keyframes appear in blue on the segment. Keyframes are displayed for one soft effect at a time. If your timeline contains

more than one soft effect, the keyframes of the currently selected soft effect are automatically displayed.

A soft effect can be slipped whether or not its keyframes are displayed as long as the soft effect is selected. You can change which soft effect's keyframes are displayed if you want to use them as a visual guide when slipping the effect.

To slip soft effects directly on the timeline:

- 1 Select the soft effects that you want to slip:
 - To select all soft effects on specific segments, select the desired segments.
The selected segments turn yellow.
 - To select all soft effects on all segments, press / on the numeric keypad or click the element selection hot spot.
All the segments turn yellow.
 - To select specific soft effects on one segment, expand the segment and **Ctrl**-click the soft effect indicator of each effect you want to slip. Alternatively, select a timeline segment or move the focus point of the positioner over a segment and then press **Ctrl** and the associated hotkey to select a particular soft effect. For example, press **Ctrl+1** to select the Axis soft effect.
The yellow square above the hotkey number on the soft effect button turns yellow. As well, the soft effect indicator turns yellow.

NOTE If a segment contains only one soft effect, you do not have to select the soft effect as long as the focus point of the positioner is over the appropriate segment.

- 2 To change which soft effect's keyframes are displayed, click its soft effect button so that it is locked (it turns light grey and its letters are italicized when locked).

TIP If a soft effect button is locked and you want to display the keyframes of a soft effect on another segment, you must select that segment before selecting the soft effect.

The timeline segment displays the keyframes of the selected soft effect and the corresponding quick menu appears. If you do not see the keyframes, make sure that either the segment is selected or the focus point of the positioner is over the segment. Segment selection has priority over the location of the focus point.

- 3 Slip the selected soft effects by doing one of the following:
 - Press **Shift+** , (comma) and drag inside the segment in the direction in which you want to slip the soft effect.
 - If you know the number of frames by which you want to slip the soft effect, enter the number in the numeric keypad, press **Shift+** , (comma) and then **left arrow** or **right arrow**, depending on the direction of the slip.

TIP You can undo any slip operation with the Slip Effect option in the Undo list.

The image in the image window updates interactively as you slip the selected soft effects and all values are updated in the corresponding soft effect editor. If you slip an effect outside of a segment, any visible keyframes turn white.

To navigate between keyframes on the timeline:

- 1 Display the quick menu for the appropriate soft effect.
- 2 With the Player showing, do any of the following:
 - To jump to the previous keyframe, press **Ctrl+Z** or click the navigation control  .
 - To jump to the next keyframe, press **Ctrl+X** or click the navigation control  .

Copying Soft Effects

If you want to reuse a soft effect in another element in an edit sequence, you can copy it as follows:

- From the EditDesk record timeline to the Source Area for use in another timeline
- From one segment to another for use in the same timeline
- From one clip to another if you are using the same source media

To replace a source to the timeline without removing soft effects from the replaced shot, see [Source-Only Replace Edits](#) on page 950.

Copying Soft Effects from the Timeline to the Source Area

You can copy multiple soft effects from the timeline to the Source Area at the same time as long as they are from the same segment. When you want to reapply the soft effect to a segment, you just have to drag the effect on top of the segment.

You can only copy soft effects created in Backdraft Conform; you cannot copy those created in Smoke.

You can preview a soft effect by loading it into the Player and viewing it in Preview Fx mode. See [Preview FX](#) on page 83. Alternatively, you can create the soft effect as a segment and then render it.

To copy a soft effect from the timeline to the Source Area:

- 1 Resize the video track containing the soft effect you want to copy.
- 2 Do one of the following:
 - Press **Ctrl** and drag the soft effect indicator to the Source Area.
 - Select a timeline element, press **Ctrl+#** to select a particular soft effect and then **Ctrl**-drag it to the Source Area. ((For example, press **Ctrl+5** to select the Timewarp soft effect.)

NOTE Soft effect indicators turn yellow when selected.

TIP You can press **Ctrl+#** and drag directly to the Source Area without expanding the segment.

The soft effect proxy appears in the Source Area. It displays the Front view of the effect, the effect you copied, and the name of the effect. If you copied multiple soft effects, they may appear as a single black proxy displaying the names of the soft effects.

If you save the soft effect to the clip library, it will be saved as a grey proxy displaying the name of the soft effect.



Image courtesy of Optimus

To apply a soft effect from the Source Area to a timeline element:

- Do one of the following:
 - To apply the soft effect and leave a copy in the Source Area, press **F** and drag the soft effect proxy to the appropriate timeline element.
 - To apply the soft effect and remove it from the Source Area, drag the soft effect proxy to the appropriate timeline element.

To create a soft effect as a segment:

- 1 Drag the soft effect proxy to an empty video track on a new timeline.
- 2 Process the segment.

The processed soft effect proxy displays the Front view of the effect, the effect you copied, and the name of the soft effect. If you save the processed soft effect to the clip library, the proxy appears with the same information.

Copying Soft Effects between Timeline Segments

Copying soft effects between segments on the same timeline can speed up your work since you do not have to recreate the soft effect for each segment. You can copy a soft effect from a video segment or from a gap.

To copy a soft effect between timeline segments:

- 1 Resize the video track containing the soft effect you want to copy.

2 Do one of the following:

- Press **Ctrl** and drag the soft effect indicator to any other element, or to a selection of elements, on the timeline.
- Select a timeline element, press **Ctrl+#** to select a particular soft effect and then **Ctrl**-drag it to any other element, or to a selection of elements, on the timeline. (For example, press **Ctrl+5** to select the Timewarp soft effect)

NOTE Soft effect indicators turn yellow when selected.

TIP You can press **Ctrl+#** and drag directly to another element without expanding the segment.

Copying Soft Effects between Clips

You can quickly copy soft effects from one clip to another as long as the sources used to create the soft effects are the same sources to which you want to copy the soft effect. This can speed up your work if you need to reapply soft effects to an updated offline or are working with multiple versions of a timeline since you do not need to copy each effect separately.

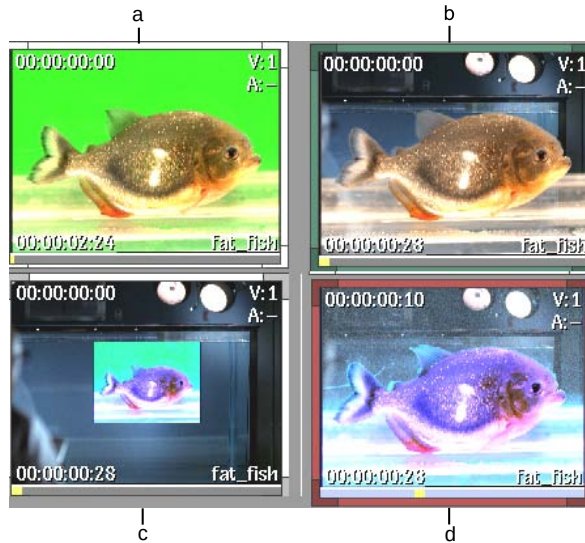
You can copy soft effects from a source clip in the Source Area to an entire record timeline, thereby copying all soft effects from matching sources. Or, you can limit which soft effects from matching sources you copy by selecting specific timeline elements instead of the entire record timeline.

If you are using EDLs, make sure you capture your material creating one clip per event. Select the source clip containing the soft effects you want to copy and then the record clip to which you want to apply the soft effects. If matching sources are found, the soft effects of the first instance of a source are automatically applied to the corresponding source in the record clip. For Backdraft Conform to be able to detect the same sources in source and record clips, the following information must be identical between sources:

- Tape Name
- Source Timecode In
- Source Timecode Out

The following attributes affect how soft effects are copied between matching sources:

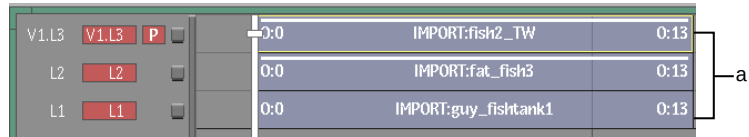
- All soft effects from the source clip are applied to the matching sources in the record clip. If the same type of soft effect exists on both the source and record clips, the source clip's soft effect overrides the record clip's soft effect. Any soft effects on the record clip that are not on the source clip will be preserved. This is illustrated in the following example.



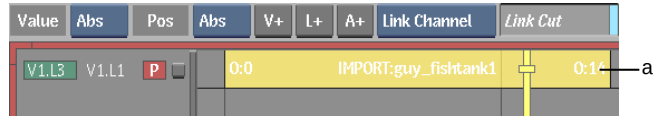
(a) Source clip (b) Source clip with imported Axis Key soft effect (c) Updated offline with Axis Resize and Colour Corrector soft effects (created in another application) (d) Record clip after copying source clip effect with Copy FX option. Axis Key from source clip is copied. Colour Corrector from updated offline is preserved. Axis Resize is not copied.

Image courtesy of Technicolor (formerly Toybox)

- If the source clip's timeline contains multiple layers and the record clip's timeline contains only one layer, elements that are above the source elements on the lowest matching layer of the source timeline are transferred to the record timeline such that their relationship to the media is maintained. This is illustrated in the following example.

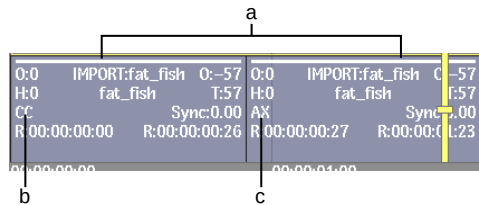


(a) Source timeline with three layers.

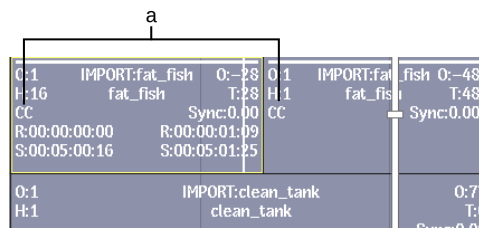


(a) Record timeline with one layer. All layers above the lowest matching layer—guy_fishtank1—from the source timeline will be transferred to the record timeline with the Copy FX option.

- If a source is used more than once in a source clip but with a different soft effect, the soft effect of the first instance of the source is the one copied, as shown in the following example.



(a) Two identical sources are used in source clip. (b) First instance of source uses imported Colour Corrector soft effect. (c) Second instance of source uses imported Axis soft effect.



(a) Soft effects from the source clip are copied to the new record clip. Only the soft effect from the first instance of the source—Colour Corrector—is copied to each instance.

- If a layer on a record clip is locked, no soft effects from the corresponding source clip's layer are transferred to it. However, any matching unlocked video elements above the locked layer are transferred.
- Timewarps and containers are copied.
- Matchframe edits are not copied.
- Basic transitions such as dissolves and wipes are not copied. Gap effects are not copied since they are not associated with sources.
- Audio is not copied.

To copy soft effects between clips:

- 1 Select the source clip whose soft effects you want to copy.
- 2 Select the record clip or timeline elements containing the sources to which you want to apply the copied soft effects.
- 3 Select Copy FX and confirm.



The selected element or every element on the primary video track of the record timeline is compared against every element on the primary video track of the source timeline. If a match is found, the source's soft effects are applied to the corresponding sources in the record clip. The soft effects are slipped such that their relationship to the media is maintained.

Muting Soft Effects

To remove a soft effect temporarily from the vertical edit, mute it. To put the soft effect back into the vertical edit, simply un-mute it. Muted soft effects are indicated by black LEDs on the soft effect button.

NOTE If you mute a Timewarp soft effect, only mix and trail values are muted. You cannot mute timing effects with the mute button.

To mute a soft effect:

- 1 Select the element that has the soft effect you want to mute.

- 2 Click the blue LED on the soft effect button.

The LED on the soft effect button and the soft effect indicator on the timeline turn black. The soft effect is temporarily removed from the vertical edit.

To enable a muted soft effect:

- 1 Select the element that has the muted soft effect.
- 2 Click the black LED.

The LED turns blue, and the soft effect is reapplied to the vertical edit.

NOTE From the EditDesk record timeline, you can also toggle Alt plus the corresponding hotkey number to cycle between muting and reenabling a soft effect.

Deleting Soft Effects

You can delete any soft effect from the timeline.

To delete a soft effect:

- Do one of the following:
 - **Alt**-click the blue LED on the left side of the soft effect button.
 - Resize the video track and **Ctrl**-drag the soft effect indicator to the bottom of the screen.

The soft effect is removed from the clip and the indicator from the segment.

Topics in this chapter:

- [About Timewarps](#) on page 1023
- [Creating Constant Speed Timewarps from the Timeline](#) on page 1024
- [Creating Timewarps in the Player](#) on page 1025
- [Creating Timewarps Using Fit-to-Fill](#) on page 1027
- [Constraining Source Clip Timewarp Values](#) on page 1028
- [Setting Interlace Interpolation Options](#) on page 1028
- [Reversing a Clip](#) on page 1029
- [Editing Constant Speed Timewarps](#) on page 1030
- [Trimming Timewarps](#) on page 1030
- [Removing and Resetting Timewarps](#) on page 1031

About Timewarps

A timewarp is an effect in which the speed of the action taking place appears faster or slower than when it was originally recorded. A freeze-frame effect, in which a single frame is repeated, is another form of a timewarp. Timewarps have a constant speed.

You can create timewarps in the EditDesk record timeline, the Player, or by performing fit-to-fill four-point edits.

Using the Player you can create a timewarp by adjusting the playback speed of a source clip explicitly. When you edit the clip to the Record Area, it appears as a timewarp soft effect.

A fit-to-fill four-point edit is one in which you set the in and out points of a clip in the Source Area and of its destination in the Record Area. When Ripple is off, this results in a fit-to-fill edit. Here, the timewarp is calculated implicitly based on the difference between the duration of the source clip and its destination. There is no need to explicitly set values. A fit-to-fill edit is a convenient means to create a freeze-frame effect.

To create a timewarp in the timeline, use the Timewarp quick menu to set the speed of the timewarp. You can also prevent specific frames from changing when modifying the speed of the timewarp or when trimming the timewarp.

Timewarps whose values have been set implicitly take precedence over explicit timewarps. In other words, if you fit-to-fill a source clip for which a timewarp has been specified explicitly, the explicit timewarp is ignored. For example, if you reduce the playback speed of a clip by 50% in the Player, and then drop it into the timeline using a fit-to-fill edit, the 50% reduction is ignored.

A constant timewarp does not change over the duration of the clip. A constant timewarp is commonly used to create a slow- or fast-motion effect. In addition, timewarps can have either positive or negative values. A negative value has the effect of reversing the clip.

A timewarped element's head and tail frames are determined by the speed and duration of the source. Note that only visible frames are processed. Head and tail frames are not.

Creating Constant Speed Timewarps from the Timeline

When creating constant speed timewarps from the record timeline, you select a timeline element and then apply a timewarp to it.

NOTE When timewarping a virtual source, there is no limit to how long a source can be.

To create a constant timewarp from the timeline:

- 1 Select the timeline element you want to timewarp.

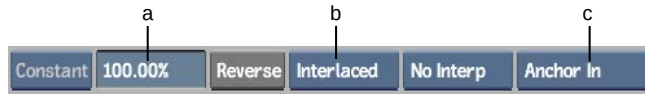
2 Do one of the following:

- Click the Timewarp soft effect button (or press **Alt+5** or **Home** from the EditDesk record timeline) and then enter the speed for the timewarp in the Speed field.

NOTE You can change the default timewarp speed from the Module / Soft FX section of the Preferences menu. The **Home** key is affected by the last or default speed preference.

- Enter a speed value in the numeric keypad and then enable the Timewarp soft effect button (or press **Alt+5** or **Home** from the EditDesk record timeline).

3 Adjust the timewarp parameters using the Timewarp quick menu.



(a) Speed field (b) Transition Render mode box (c) Anchor box

4 Click Process to process the timewarp.

Creating Timewarps in the Player

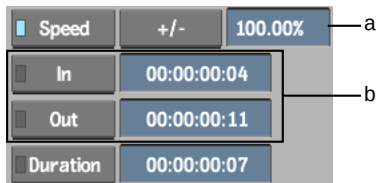
You can create a timewarp in a source clip using the Player by adjusting the speed of the source clip or the duration of the timewarp. You cannot adjust the speed of the source clip independently from the duration of the timewarp.

The timewarp is created when you edit the clip from the Source Area to the Record Area. When an edit is performed using a source clip with a speed change, the source clip is first timewarped according to the speed specified, then the edit is performed.

If you mark an in and out point on the source clip and in the Record Area, and then edit the clip to the timeline, a fit-to-fill edit occurs and the source clip is timewarped so that it fits into the specified region. You can also fit-to-fill a one-frame clip (without marking the source) into a marked region in the Record Area. The edit results in a freeze-frame.

To create a timewarp in the Player:

- 1 View the source clip in the Player.



(a) Speed field (b) In and Out Point fields

- 2 Set the in and out points for the timewarp.

NOTE The in point and out point frames of the source clip are not guaranteed to be exactly the same after an explicit timewarp. The amount of slippage is proportional to the change in the source after the speed change is applied.

- 3 Define the timewarp value:

- To change the speed of the source clip, enter a value in the Speed field.
- To change the duration of the timewarp, enter a value in the Duration field.

NOTE The result of editing the values in the Player depends on the constrain setting for each field. For example, if you constrain the Duration field, changing the value in the Speed field does not change the duration of the timewarp. See [Constraining Source Clip Timewarp Values](#) on page 1028.

- 4 To change the direction of the source clip, click the +/- button. The speed value is preceded by a negative sign (-) when the effect is in reverse.
- 5 Exit the Player.

A percentage speed value appears in the lower-right corner of the source clip indicating that a timewarp has been applied.

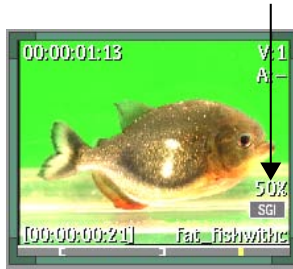


Image courtesy of Technicolor (formerly Toybox)

- 6 Edit the source clip to the Record Area.
The timewarp is created.

Creating Timewarps Using Fit-to-Fill

A fit-to-fill edit is a convenient means for quickly creating a timewarp that exactly fits a pre-determined space in the timeline. You mark in and out points in both the source clip and the record clip, and edit the clip into the timeline. The timewarp is calculated automatically based on the difference between the source and record durations.

If the source clip includes edits such as cuts or transitions, you must choose how you want them treated in the timewarp. To preserve the edits so you can continue to work with them, you create a container for the clip. The timewarp will be applied to the container, and the edits will be preserved. If you choose not to create a container, the resulting element in the timeline is a timewarped, hard-committed version of the source clip. See [Containers](#) on page 528. In either case, the heads and tails of the source clip are retained.

NOTE A fit-to-fill edit with a negative speed change can be achieved by reversing the in and out points in the source clip or by entering a negative value in the Player's Speed field.

To create a timewarp using a fit-to-fill edit:

- 1 Mark a source clip with an in and out point.
- 2 Mark a record clip with an in and out point.
- 3 Press **H** to edit the source clip into the timeline.

A timewarp is automatically applied to the source clip so that it fits inside the marked area in the timeline.

- 4 Click Process to process the timewarp.

To create a freeze-frame timewarp using a one-frame clip:

- 1 Select a one-frame clip in the Source Area.
- 2 Mark a record clip with an in and out point.
- 3 Press **H** to edit the source clip into the timeline.

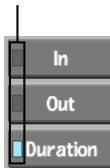
The source clip is timewarped to fit into the marked region of the timeline.

Constraining Source Clip Timewarp Values

Use the constrain boxes in the Player when creating a timewarp to prevent values from changing when you change other values. For example, if you do not want to change the duration of the timewarp, enable the Constrain button for the Duration field. When you edit the speed value, in point, or out point with the Duration field constrained, the duration of the timewarp does not change.

To constrain a field:

- Hold down **Ctrl** and click the Constrain box on the button you want to constrain.



Setting Interlace Interpolation Options

When creating timewarps in Interlaced mode, you can choose from five interpolation options. Interpolation helps remove field jitter artefacts that are produced when a reversal of fields occurs during the timewarp.

To set an interpolation option:

- 1 Display the Timewarp quick menu.
- 2 Select Interlaced from the Transition Render mode box.
- 3 Select an interpolation option from the Interpolation Mode box.



Select:	To:
No Interp	Create a timewarp with no field interpolation.
Half Interp	Create a timewarp in which interpolation only takes place on displaced fields.
Full Interp	Create a timewarp in which all fields are interpolated. Note that this option has the least aliasing, but you may notice some softening of the image due to the blending of the fields.
Shift Up	Shift the image up by a single line. This may help reduce artefacts that appear in reverse timewarps of 100%.
Shift Down	Shift the image down by a single line. This may help reduce artefacts that appear in reverse timewarps of 100%.

Reversing a Clip

Reverse a clip using the Player or the timeline.

To reverse a clip in the Player:

- 1 View a source clip in the Player.
- 2 Do one of the following:
 - Press the +/- button.
 - Enter a negative value in the Player's Speed field.

To reverse an element in the timeline:

- 1 Select an element in the timeline.

- 2 Enable the TW soft effect button (or press **Alt+5** or **Home** from the EditDesk record timeline).
- 3 In the Timewarp quick menu, enter a negative value in the Speed field or click Reverse.
- 4 Click Process to process the timewarp.

Editing Constant Speed Timewarps

When editing a constant timewarp, you can anchor a frame so that its timing is not affected. For example, to modify a timewarp without creating a bad match frame, anchor the in or out frame as you edit the timewarp. Select an anchoring option from the Anchor option box.



(a) Anchor option box

Select:	To:
Anchor In	Keep the in frame from changing when modifying timewarps. The element's out frame is adjusted accordingly to conform to the playback speed specified by the timewarp.
Anchor Out	Keep the out frame from changing when modifying timewarps. The element's in frame is adjusted accordingly to conform to the playback speed specified by the timewarp.
Anchor Pos	Keep the frame at the positioner from moving when modifying timewarps. The element's in and out frames are adjusted to conform to the playback speed specified by the timewarp.

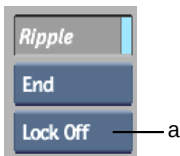
Trimming Timewarps

Trim a timewarp to change its length. This is useful if you change the speed of a timewarp, thereby changing the duration of the clip. You can then trim either the in or out point to include more or less of the timewarped material.

NOTE Trimming timewarps is the same as trimming any element. If you cannot trim all the repeating frames out of a timewarp that has been reset, it is likely due to a Ripple setting constraint. Change the Ripple setting, if necessary.

Trim must be on in the quick menu in order to trim gesturally.

Use the lock options to determine the effect of trimming.



(a) Lock option box

Select:	To:
Lock Off	Trim the in point or out point of the timewarp without locking any frames in position.
Lock One	Lock the frame on the current in point or out point when trimming a timewarp.
Lock Both	Lock the frames on both transitions when trimming the in point or out point of the timewarp. This is useful for changing the speed and duration of a timewarp while respecting the in point and out point.

Removing and Resetting Timewarps

You can remove timewarps or reset the speed to 100%.

To remove a timewarp:

- Do one of the following:
 - In the Player, click Clear and then click the Speed field to reset the speed to 100%.
 - Select the timewarped element, and then disable the Timewarp soft effect button.
 - Drag the soft effect indicator from the timeline element to the bottom of the screen.

To reset a timewarp:

- Click Rst Speed.

Topics in this chapter:

- [About Managing Media on the Timeline](#) on page 1033
- [Identifying the Status of Timeline Elements](#) on page 1034
- [Consolidating Elements on the Timeline](#) on page 1035
- [Committing Clips on the Timeline](#) on page 1036
- [Hard Committing Specific Soft Effects](#) on page 1037
- [Committing Batch FX](#) on page 1038
- [Merging Timeline Layers](#) on page 1038
- [Unlinking Clips on the Timeline](#) on page 1039
- [Locking Processed Timeline Elements](#) on page 1040
- [Compacting Soft Effects](#) on page 1041
- [Partial Processing of the Timeline](#) on page 1042

About Managing Media on the Timeline

You can manage timeline media in various ways as you process depending on your needs. For example, to free up space on the framestore, remove unused frames by consolidating timeline elements. Or, prevent intermediate renders from occurring while you work on the timeline by compacting effects.

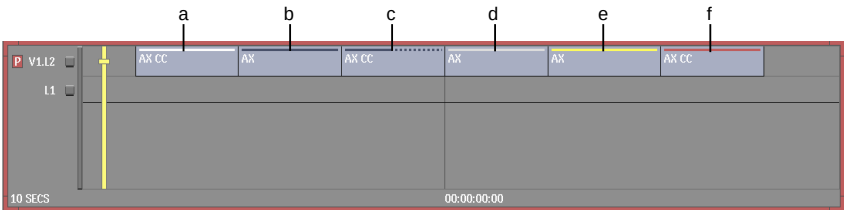
For information on processing from the timeline, see [Processing Soft Effects](#) on page 314.

Identifying the Status of Timeline Elements

When you apply soft effects to timeline elements, colour bars appear at the top of the elements to show the process and lock status.

As you create timeline effects, you may need to process if the effect is complex or involves many layers.

NOTE Complex vertical edits that involve many layers or soft effects may require processing for real-time preview. If this occurs, black frames might be played back, or, in the Player, frames might be dropped in order to maintain sync.



(a) Unprocessed element (b) Processed element (c) Partially processed element (d) Locked element (e) Locked element with invalidated media (f) Compacted element

Colour of Bar	Description
Black	Element is processed.
Solid and dotted black	Element is partially processed. Dotted line indicates how much of the element is unprocessed.
White	Element requires processing.
Grey	Element is processed and locked.
Dotted grey	Element is partially processed and locked.
Yellow	A locked effect with invalidated media.
Dotted yellow	Modified media under a partially processed locked element.
Red	Element contains a compact soft effect.
Orange	Element is proxy processed.
Dotted orange	A partially processed proxy.

Colour of Bar	Description
Dotted black and white	Element is sent to Burn.
Black and white checkered	Missing information; that is, processing submitted to Burn is incomplete.

Consolidating Elements on the Timeline

If you have video or audio elements on the timeline that have excessive handles, use the Consolidate option to remove head and tail frames. Consolidate your clip before archiving a project to avoid archiving a large number of unused frames. You can keep a specified number of head and tail frames when you consolidate. You can consolidate a single element or a selection of elements.

When you consolidate, a copy of the consolidated tracks is created. If you do not have enough space available for a copy, the tracks are not consolidated.

When you consolidate a container, all of its tracks are consolidated. You cannot consolidate a container composed of only one element. The length of the bottom layer of a container is used to determine the duration of the source clip. Elements on higher layers are consolidated, but not the element on the bottom layer.

To consolidate elements on the timeline:

- 1 Select the elements.
- 2 Select Consolidate from the Edit Mode box.



- 3 Enter the number of handles you want to keep in the calculator that appears.
The specified number of frames are kept; the remaining head and tail frames are removed from the selected segments.

Committing Clips on the Timeline

When you commit an edit sequence, it becomes one continuous clip. The soft properties of the sequence such as transitions, head and tail frames, and timewarp data are removed. The visual effects of the transitions and timewarps remain but you cannot edit them.

You can commit any selection of elements or tracks, or the entire timeline. Commit a portion of an edited sequence to simplify a timeline that is too complex or to recoup disk space. Committing renders any unrendered frames on the selected elements.

You cannot recapture or reimport committed clips.

The result of a hard commit on adjacent elements on the timeline depends on the status of the Link Transition button. If you select adjacent elements and hard commit them with Link Transition enabled, the elements are committed into a single element and their handles are removed. If you select adjacent elements (without selecting their cut) and hard commit them with Link Transition disabled, the elements are committed and their handles removed, but the elements remain separate.

The following rules apply to hard commits:

- Hard commits are permanent; however, they can be undone using the Undo button (as long as undos remain in the undo buffer). If you want to consolidate elements but have the ability to make changes at a later time, use containers.
- Hard commits cannot be restored—the commit is permanent.
- Hard commits force a render on the selected elements.

To commit an edit sequence:

- 1 Select the elements that you want to commit. If no elements are selected, the entire edit sequence is committed.
- 2 Select Hard Commit from the Edit Mode box.



The selected tracks or elements are committed.

a

H:0		T:0
0:0	COMMIT	0:0
		Sync:0.00
R:00:00:01:00	L:00:00:06:01	R:00:00:07:00
S:00:00:01:00	L:00:00:06:01	S:00:00:07:00

(a) Multiple segments committed into continuous clip

Hard Committing Specific Soft Effects

You can selectively commit soft effects. Soft effects are committed in the following order:

- Axis
- Wipe
- Sparks
- CC
- TW
- Blend
- Resize
- Text

You can commit soft effects at the bottom of the list without committing soft effects above it.

You can commit the Resize soft effect without committing the Timewarp soft effect.

To selectively commit soft effects:

- 1 Select the element you want to commit.
- 2 Lock the soft effect button for the topmost effect you want to commit.
- 3 Select Commit FX from the Effect Operations box.



Committing Batch FX

You can commit Batch FX imported from another application. Any soft effects on the timeline are preserved when you commit the Batch setups.

To commit Batch FX:

- 1 Select the timeline element with the BFX or BFXa setup that you want to commit.
- 2 Select Commit BFX from the Effect Operations box.



If you committed RGB results, the BFX element is committed. If you committed matte results, the BFXa element is committed into a container.

Merging Timeline Layers

Merging timeline layers is a quick way to generate a single layer from a multi-layer timeline.

Soft effects, including blends and wipes, are hard committed. You can then load the merged layer into Lustre, for example, and perform colour grading with the possibility of making editorial changes.

Depending on the option you select in the Preferences menu, soft transitions and clip handles may be preserved. See [Timeline Preferences](#) on page 527.

To merge layers:

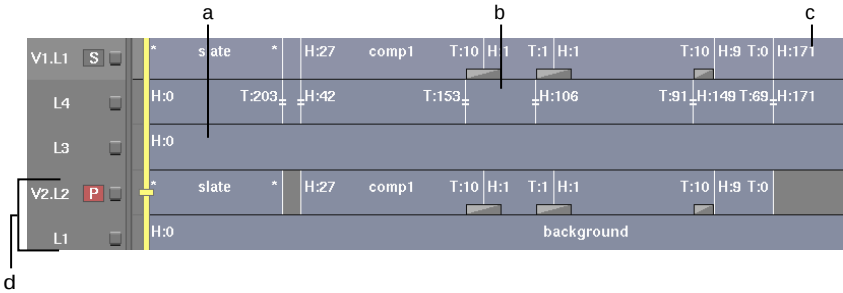
- 1 Select the uppermost layer of the set of layers that you want to merge.

TIP If you make no selection, the layer set as the Primary video track is used as the uppermost layer.

- 2 From the Edit Mode box, select Merge Layers.



A new layer containing the merge layer result appears.



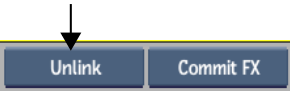
(a) Simple Merge result (b) Complex Merge result (c) Committed Merge result
(d) Merged layers

Unlinking Clips on the Timeline

Use the Unlink option to separate a clip's media from its metadata. This option is useful when you need to free up space on the framestore. You can then delete the media if there is no other clip referencing this media. After unlinking, you can use Recapture to get back the media.

To unlink the media for a timeline element:

- 1 Select the timeline elements.
- 2 Select an Unlink option from the Edit Mode box.



Select:	To break the link:
Unlink	Between an element's metadata and media.
Unlink High Res	Between an element's metadata and the high-resolution media. You can continue to work with the proxies, but the proxies cannot be output to a VTR.

- 3 Confirm.
- The selected clips are unlinked.



On the timeline, the element is greyed out as indicated in the following table.

Element Colour	Description
	Element with unlinked media
	Element with unlinked high-resolution media
	Element with unlinked audio

Locking Processed Timeline Elements

You can lock timeline elements so that they will not change even if you modify material on other layers. Locking elements creates a temporary soft clip that retains all material in that effect. The clip is not affected by editing operations you perform on the timeline. You can only lock processed timeline effects.

To update the timeline effect to new material or make changes in other layers, you must unlock the effect or force processing of the element.

Take care when processing and locking an effect that is part of a complex vertical. If the bottom part of the effect is moved, the effect will not be invalidated automatically. Nevertheless, the result may change once the effect is unlocked. In such cases, you can use the Timeline Force Process option.

To lock a timeline effect:

- 1 Make sure the effect you want to lock is processed.

- 2 With the positioner and focus point over the effect, or with the effect selected, select Lock FX from the Effect Operations box.



If a soft effect is locked, its corresponding quick menu is no longer displayed, even if Editing is selected from the Menu Priority box.

To unlock a timeline effect:

- With the positioner and focus point over the locked effect, or with the locked effect selected, select Unlock FX from the Effect Operations box.



Compacting Soft Effects

Use the Compact FX option to remove intermediate renders resulting from soft effects. When you build a vertical edit and begin stacking many effects, intermediate rendered versions are created. This optimizes the workflow when working on the timeline. You do not need to reprocess elements every time you make a change. However, intermediate renders take up additional space on the framestore and greatly increase the size of your archive. To avoid this, use the Compact FX option before archiving.

To have soft effects automatically compacted as you render, disable Keep Intermediate Result in the Module/Soft FX section of the Preferences menu.

To compact soft effects:

- 1 Select the timeline element.
- 2 Select Compact FX from the Edit Mode box.



Partial Processing of the Timeline

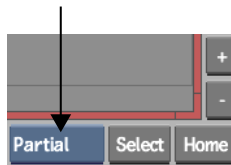
You can process selected frames of a video segment instead of the entire segment. When you later process the timeline, any frames already processed are not processed again.

If you use Preview FX mode to process soft effects of the current frame on-the-fly, any frames already processed are not processed again. The frames remain processed as long as you frame-step through the effects and do not drag the positioner. To process on the fly, make sure Cache Preview FX is enabled in the Rendering group of the Module/ Soft FX Preferences menu.

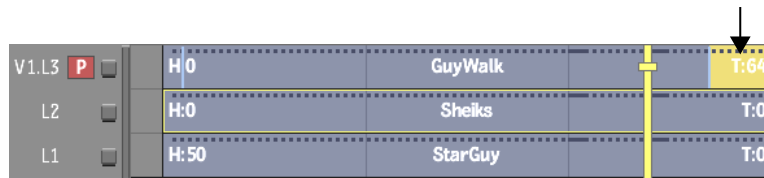
If you modify rendered frames that are part of a vertical composition in a timeline, only the modified frames, including those overlapping in the vertical composition, are invalidated.

To process selected frames of a timeline segment:

- 1 Place the timeline positioner at the frame where you want to start processing.
- 2 Do one of the following:
 - Select Partial from the Selection Method box, and then draw a bounding box around the frames that you want to process.

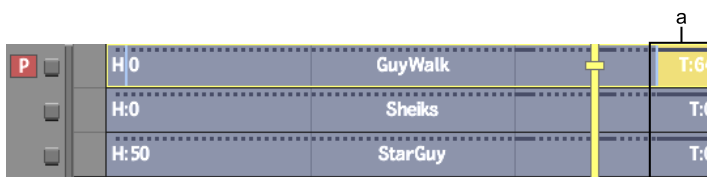


- Shift-drag the positioner over the frames that you want to process.



- 3 Select a Processing option. see [Processing Soft Effects](#) on page 314.
The frames you selected are processed, indicated by a solid black line. Any previously unprocessed frames not part of your selection remain unprocessed, indicated by a dotted black line. If you processed frames

that are part of a vertical edit, only the frames with soft effects that are below media with soft effects that have transparency are included in the processing.



(a) Processed frames on 3 segments of a vertical edit

Topics in this chapter:

- [About Working with Audio](#) on page 1045
- [About Working with Dolby E](#) on page 1048
- [Accessing the AudioDesk](#) on page 1049
- [About the AudioDesk Controls](#) on page 1050
- [Working with Audio in the Timeline](#) on page 1051
- [About Audio Soft Effects](#) on page 1060
- [Using Input Strips](#) on page 1068
- [About EQ Filter Effects](#) on page 1072
- [Adjusting EQ Settings on the EQ Desk](#) on page 1079
- [Animating AudioDesk Effects](#) on page 1086
- [About Auxiliary Effects](#) on page 1088
- [Adjusting Settings on the Auxiliary Effects Desk](#) on page 1092
- [Using Output Strips](#) on page 1093
- [Using the Audio Tools](#) on page 1095

About Working with Audio

Backdraft Conform contains a number of powerful tools that allow you to edit, mix, and master your audio. You can perform many of the same editing operations that you use to edit video, such as cutting, trimming, and adding

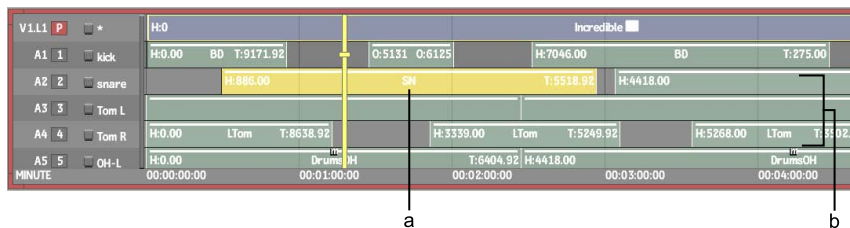
dissolves. A comprehensive set of audio effects tools is available in the timeline and AudioDesk for mixing and mastering your audio.

When working with audio, you can:

- In the clip library, import and export audio files using a variety of formats. See [Supported Audio File Formats](#) on page 221 and [Supported Audio File Formats](#) on page 269.
- In the timeline, synchronize audio with video, and apply audio dissolves and fades. You can cut, trim, slip, and slide audio tracks separately from video. You can use a variety of audio soft effects such as Modulation, Delay, Reverb, Gain, EQ Filters, Compression, Noise Gate, and Audio Timewarp. You can edit these on the fly while the clip is playing. You can also assign input strips to output strips. You can also assign audio tracks to AudioDesk input strips.
- In the AudioDesk, adjust Gain, Pan, Mute, Phase Shift, and Solo settings for up to 32 individual input strips. You can apply these on the fly while the clip is playing. You can also assign input strips to output strips.
- In the EQ Desk, apply and adjust High Shelf, Mid Notch, Mid Presence, and Low Shelf filters to input strips.
- In the Auxiliary Effects Desk, adjust global settings for the Modulation, Delay, and Reverb Auxiliary Effects.
- In the AudioDesk, adjust the output Gain and Limiting for output strips.
- In most modules you can scrub audio and view the waveforms.

The Audio Path

In Backdraft Conform, you can control the path for an audio signal and adjust audio parameters for the signal at various stages in the path. Along this path the audio signal picks up a few terms and definitions.

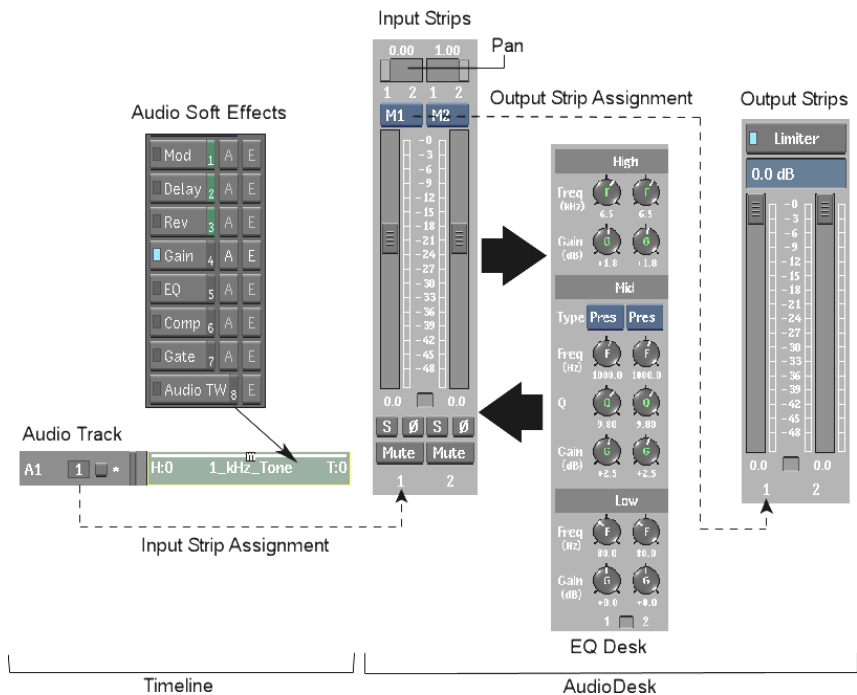


(a) Audio segment (b) Audio tracks

An *Audio Segment* refers to a discreet piece of audio. An *Audio Track* refers to a track on the timeline and may contain a number of audio segments. Audio tracks can be assigned to any of 32 *Input Strips* on the AudioDesk. Input strips can then be mixed down to a total of 16 *Output Strips* on the *AudioDesk*.

You can apply *Audio Soft Effects* on any audio segments in the timeline. You can also patch any number of audio segments to *Auxiliary Effects*, which are global effects modules that provide modulation, delay, and reverb audio effects for the entire sound mix. You can apply EQ effects as an audio soft effect on the audio segment or via the *EQ Desk* for an individual input strip.

The following figure illustrates a sample path for an audio signal.



If you are using the Yamaha® O2R console, you can use it to manipulate all the audio controls on the AudioDesk, as well as assign any hotkeys to the device. For complete information on obtaining and configuring the Yamaha O2R, refer to the installation guide for the respective device.

You must configure your audio system before you can use any audio features in Backdraft Conform. See [Audio Preferences](#) on page 538.

About Working with Dolby E

Dolby E is a professional audio coding system, developed by Dolby Laboratories, that allows you to distribute 8 channels of high-quality digital audio (plus metadata) over existing two-channel audio infrastructures (AES-3 pairs). Post-production facilities are able to provide a variety of sound mixes, including foreign language tracks and discrete 5.1 audio over the same pair.

The frame rate of Dolby E encoded audio matches that of the accompanying video, allowing you to insert or assemble edits in Backdraft Conform without audio pops or clicks and without having to use Dolby E encoders or decoders. This is very useful in cases where you need to modify a clip, for example to create a different version or to reformat for TV broadcast, and put the clips back on tape. Dolby E works with standard PAL and NTSC video frame rates of 24 and 23.98 fps at a sample rate of 48 kHz. A DP571 Dolby E Encoder or a DP572 Dolby E Decoder is only necessary if you need to create original content with Dolby E encoded audio, or to monitor the encoded tracks.

What You Can Do with Dolby E

When working with Dolby E encoded audio tracks in Backdraft Conform you can do the following:

- Play back Dolby E encoded audio from the timeline.
- Scrub Dolby E encoded audio from the timeline at standard playback speed.
- Create timelines with a mix of Dolby E encoded tracks and standard audio tracks.
- Edit Dolby E encoded audio at the frame level.
- Import Dolby E encoded audio as a file (such as AIFF 24-bits 48kHz or WAVE 24-bit 48kHz) without altering the Dolby E stream.
- Export Dolby E encoded audio as a file (such as AIFF 24-bit 48kHz or WAVE 24-bit 48kHz) without altering the Dolby E stream.
- Capture Dolby E encoded audio from a VTR while monitoring the decoded signal.
- Output Dolby E encoded audio to a VTR while monitoring the decoded signal.

Things to Consider When Working with Dolby E

When working with Dolby E encoded audio tracks in Backdraft Conform you must take into account the following considerations:

- A Dolby E audio stream must not be altered in any way during capture, output, or in the timeline. For example, there can be no gain, EQ, phase, or soft-effects applied to the encoded audio tracks.
- There can be no gaps between Dolby E encoded audio segments.
- Sub-frame editing is not possible.
- Scrubbing of Dolby E-encoded audio is only possible at normal playback speed.
- When working with a mix of Dolby E tracks and standard audio tracks, you must ensure that the microfades between the audio segments in standard audio tracks are set to 10 microseconds or less. This will avoid transition pops from occurring in the standard audio tracks without breaking the Dolby E stream.
- The Dolby E DP-571 Encoder and DP-572 Decoder each have a 1-frame audio delay between input and output. Therefore, editing of the Dolby E stream must be done accordingly.

Accessing the AudioDesk

To access AudioDesk from the Player:

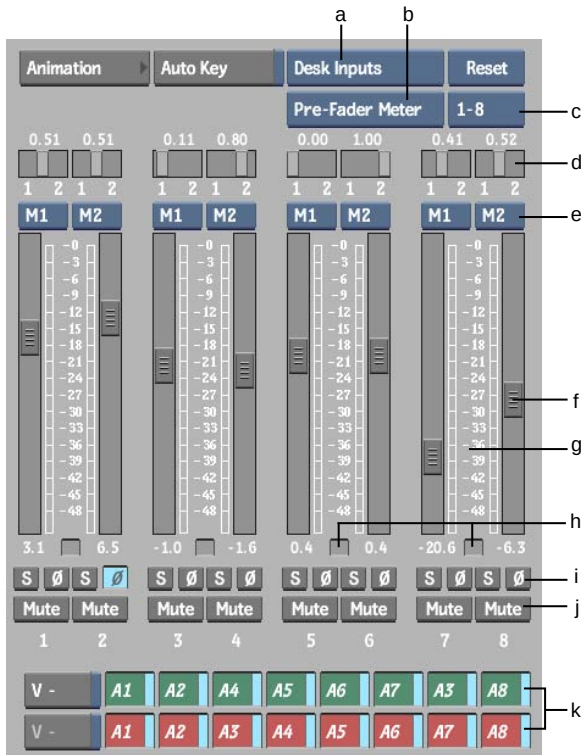
- 1 On the EditDesk, with the clip highlighted, tap the swipe bar.
The clip appears in the Player.
- 2 In the Player, select the Audio Desk tab.



The AudioDesk appears.

About the AudioDesk Controls

The AudioDesk includes a comprehensive set of audio tools for mixing and mastering audio. The AudioDesk appears as follows.



(a) Input/Output Strip option box (b) Pre-fader/Post-fader Meters option box (c) Input Strip Display selection box (d) Pan faders (e) Output Strip Assignment boxes (f) Gain Level faders (g) Input/Output Meters (h) Gain Fader Lock buttons (i) Solo and Phase buttons (j) Mute buttons (k) Audio Patch buttons

The AudioDesk controls are described as follows.

Input/Output Strip option box Toggles between Desk Inputs and Desk Outputs allowing you to see the AudioDesk input strips or the AudioDesk output strips.

Pre-fader/Post-fader Meters option box Toggles the faders to monitor audio prior to or following the application of AudioDesk and EQ Desk settings.

Input Strip Display selection box Select which set of Input Strips gets displayed.

Pan faders Pan the input strip signal between two output strips. You can adjust the pan values from 0.0 (left) to 1.0 (right).

Output Strip Assignment boxes Assign the audio signals from an input strip to an output fader. See [Using Output Strips](#) on page 1093.

Gain Level faders Control the gain for each strip.

Input/Output Meters Monitor the audio signal. For input strips, indicate the input level during recording or when in Monitor mode. When playing back a clip, the level meters indicate the playback level. For output strips, indicate playback volume. Adjust the percentage to control the volume when playing the audio track and when monitoring audio input before recording.

Gain Fader Lock buttons Move the faders individually or in pairs. See [Adjusting Gain for an Input Strip](#) on page 1068.

Solo button Temporarily mutes all input strips except the current one. See [Soloing an Input Strip](#) on page 1071.

Phase buttons Play the track with Phase inverted. For example, if phase errors are introduced, you can invert the phase for one track only. See [Phase-shifting an Input Strip](#) on page 1072.

Mute button Temporarily disables playback of the track. See [Muting an Input Strip](#) on page 1071.

Audio Patch buttons Indicate the track to which the audio I/O channel is assigned.

Auto Key button Enables audio keyframe animation. See [Animating AudioDesk Effects](#) on page 1086.

Animation button Displays the audio animation Channel Editor. See [Animating AudioDesk Effects](#) on page 1086.

Name field Displays the name of the clip.

Working with Audio in the Timeline

Once you load audio into the timeline in Backdraft Conform, you can perform many of the same editing operations as you use to edit video. You can sync audio with video, cut and trim audio segments, and add fades and crossfades. You can assign audio tracks to input strips in AudioDesk. You can also apply audio soft effects and scrub, mute, and solo individual audio tracks. You can apply these on the fly while the clip is playing.

There are more ways that you can work with audio in the timeline, such as:

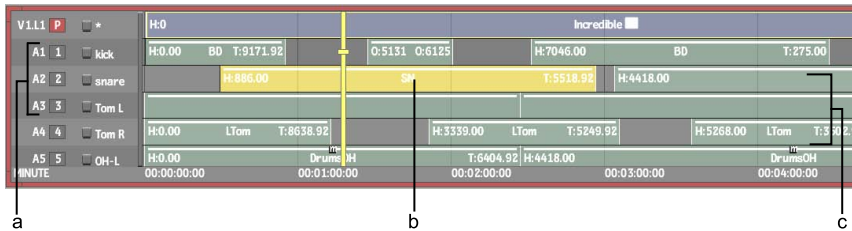
- You can edit your audio in the timeline. See [Editing to the Timeline](#) on page 929.
- You can create an edit sync group to keep audio and video in sync as you edit in the timeline. See [Maintaining Sync between Elements](#) on page 900.
- You can gesturally edit audio clips in the same way you gesturally edit video clips. See [Editing to the Timeline](#) on page 929.
- You can trim audio tracks on a frame, or sub-frame basis. See [Trimming Clips Gesturally](#) on page 978.

Assigning an Audio Track to an AudioDesk Input Strip

Assign an audio track on the timeline to an input strip on the AudioDesk to adjust audio levels and audio parameters as you edit clips on the timeline. You can assign only one track to each AudioDesk input strip.

To assign an audio track to an AudioDesk input strip:

- 1 In Timeline view, display the clip that you want to work with.



(a) AudioDesk input strip assignment (b) Audio segment (c) Audio tracks

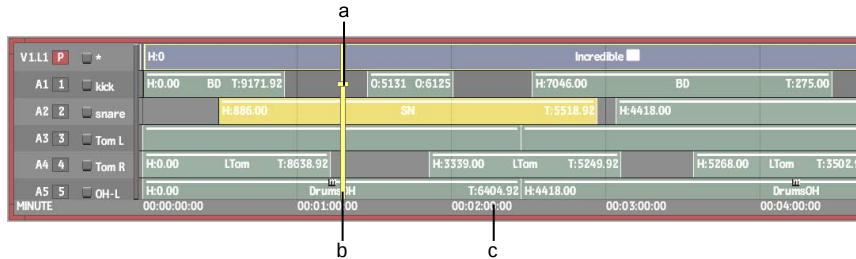
- 2 Select the input strip in the input strip assignment beside the track identifier.

Select:	To:
Any number	Assign the audio track to an input strip.
—	Leave the audio track unassigned. (This track is not heard.)

For more information, see [Patching Video and Audio Channels](#) on page 906.

Scrubbing Audio in the Timeline

You can scrub audio at any speed between -100% and +100% of real time (locked rate scrub) or do a free form scrub. You can scrub a single audio track or all audio tracks.



(a) Focus point (b) Positioner (c) Scrub bar

To scrub audio in the timeline:

- 1 Do one of the following:
 - To scrub all audio tracks, place the focus point on the video track.
 - To scrub a single track, place the focus point of the positioner on that track. See [Changing the Current Track](#) on page 887.
- 2 Click in the scrub bar at the location in the timeline where you want to scrub the audio. Continue to hold down the mouse button.
- 3 Do one of the following:
 - For a locked rate scrub, press **Alt +Ctrl** and drag the positioner left or right to scrub the audio. Dragging farther to the left or right increases the playback speed. You cannot scrub faster than real time. You can hear all the tracks by pressing **Alt +Ctrl+Shift**.
 - For a free form scrub, press **Alt** and drag the positioner left or right to scrub the audio. You can hear all the tracks by pressing **Alt +Shift**.

Dragging farther to the left or right increases the playback speed.

You can toggle between locked and unlocked scrub modes on the fly, by alternating between the **Alt** and **Alt +Ctrl** hotkeys.

TIP You can quickly scrub a single track without moving the focus point by dragging the positioner with the cursor positioned over that track.

- 4 To scrub one frame at a time, press **Ctrl+Shift+C** to go back one frame, and **Ctrl+Shift+V** to go forward one frame.

Viewing Audio Waveforms in the Timeline

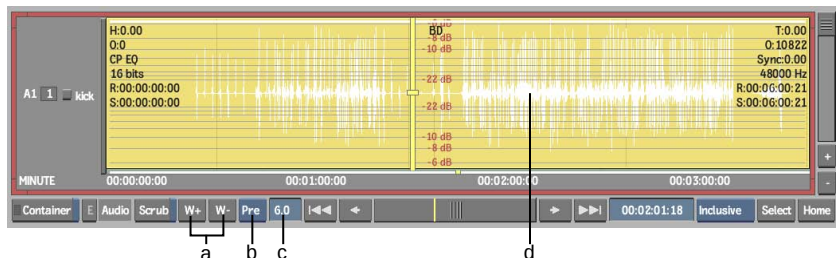
You can view or hide audio waveforms as you work with audio in the timeline.

NOTE Audio waveforms in the timeline are greyed out if they point to a deleted (or moved) soft-imported audio file.

To view audio waveforms in the timeline:

- 1 Access the timeline for the clip you want to view.
- 2 To build waveforms for specific elements, select them. If you want to build waveforms for all audio segments, make sure that no audio elements are selected.
- 3 Click the W+ button.

The waveforms appear in the audio tracks.



(a) W+ and W- buttons (b) Pre/Post button (c) Wave Zoom field (d) Waveform

- 4 To zoom the waveform, enter a value in the Wave Zoom field.
- 5 Toggle the Pre/Post button to see the waveform before or after applying the audio soft effects.
- 6 To turn off a waveform, select the element and click the W- button.

Applying Audio Soft Effects in the Timeline

You can apply audio soft effects to one or more audio segments in an audio track. To hear auxiliary send effects you need to mix down the audio prior to exporting the clip.

To apply an audio soft effect to an audio segment in the timeline:

- 1 Access the timeline of the clip containing audio tracks. See [Accessing Timelines](#) on page 876.
- 2 Select the audio segment to which you want to apply an effect.
- 3 Select an Audio Soft Effect that you want to apply to the audio segment.



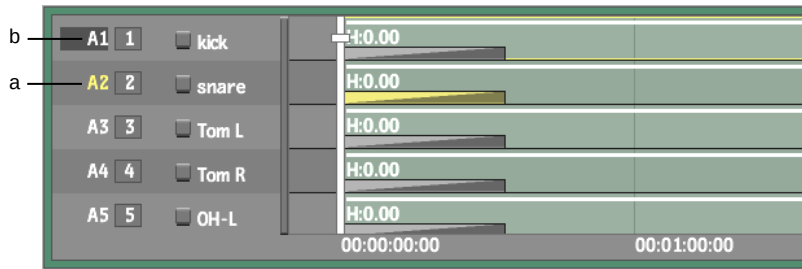
For information on how to use and adjust audio soft effects, see [About Audio Soft Effects](#) on page 1060.

Muting Audio Tracks in the Timeline

You can mute one or more audio tracks in the timeline.

To mute audio tracks in the timeline:

- Hold **Ctrl** and click the track identifier for the audio track or tracks that you want to mute.
The track identifier turns yellow.



(a) This track is muted (b) Track Identifier

Soloing Audio Tracks in the Timeline

You can solo one or more audio tracks in the timeline.

To solo audio tracks in the timeline:

- Hold **Ctrl+Shift** and click the track identifier for the audio track or tracks that you want to solo.

The track identifier turns red.



(a) These tracks are muted (b) This track is soloed (c) Track Identifier

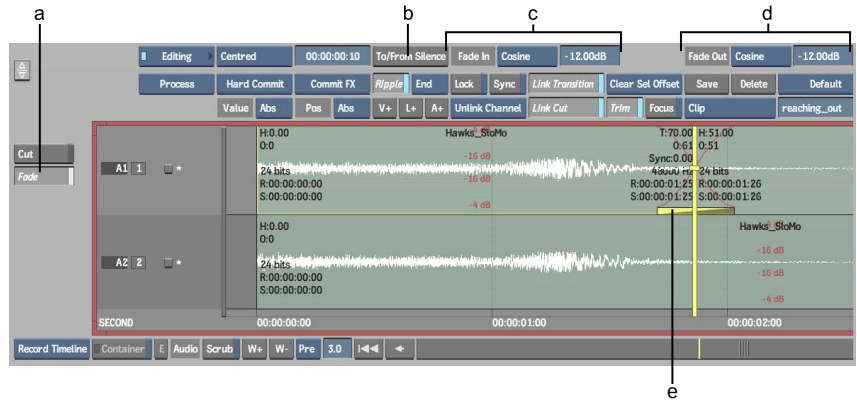
Creating Audio Fades in the Timeline

You can create an audio fade or crossfade in the same way you add a dissolve to video elements. When creating an audio fade, you specify the duration of the fade, the interpolation for the fade-in and fade-out, and the rate of the fade.

You can also create an audio fade to or from silence.

To create an audio fade:

- 1 Select the cut where you want to add the fade.
- 2 Click Fade (or press **End**).



(a) Fade button (b) To/From Silence button (c) Fade In controls (d) Fade Out controls (e) Fade icon

A fade icon is added to the timeline. If you enabled waveforms, the interpolation curves appear on the audio elements.

- 3 Select and enable Editing in the Menu Priority box.
- 4 Select the alignment.
- 5 Set the transition duration.
- 6 To create a fade that dips to silence then back, click To/From Silence. The fade icon is split into two separate fades. One fade ends at the cut and the other starts at the cut. You can control these fades separately.
- 7 Use the Fade-out and Fade-in controls to select the interpolation and fade rate for the fade-out and fade-in.

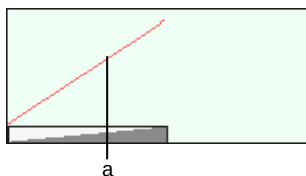
Select:	To:
Linear	Create a linear fade. The slope of the fade curve is constant. See Linear Fades on page 1058.

Select:	To:
Cosine	Create a a fade with a cosine curve. You can modify the shape of the curve by adjusting the Rate value. See Cosine Fades on page 1058.
Exponential	Create a fade with an exponential curve You can modify the shape of the curve by adjusting the Rate value. You can modify the direction of the curve by modifying the Alpha value. See Exponential Fades on page 1059.

Linear Fades

When you create a linear fade, the rate of the fade-in or fade-out is constant. This may make the fade sound abrupt because the human ear is very sensitive to changes in loudness level. If you want to make a fade sound more natural, try using a cosine curve instead.

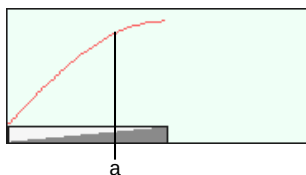
You can view the curve by selecting the dissolve icon and clicking W+. The curve appears on the audio element.



(a) Linear fade curve

Cosine Fades

When you create a cosine fade, the default rate of the fade-in or fade-out eases in and eases out. This gives a more natural sounding fade because the beginning and ending of the fade is not as noticeable to the human ear (the majority of the fade occurs at the middle of the curve.) You can view the curve by selecting the dissolve icon and clicking W+. The curve appears on the audio element.



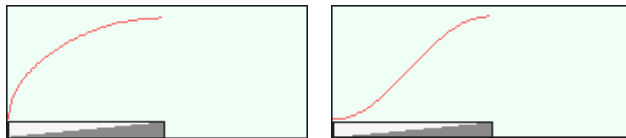
(a) Cosine fade curve

When you create a cosine fade, a Fade Curve Rate box appears in the Dissolve menu.



(a) Fade Curve Rate box

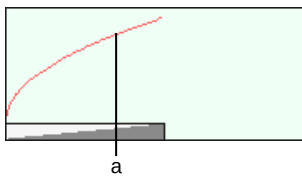
Use the Fade Curve Rate value to adjust the shape of the curve. The following illustrations show the difference between a cosine fade-in with a low curve rate, and a cosine fade-in with a high curve rate.



Fade Curve Rate = -0.01 dB Fade Curve Rate = -12.00 dB

Exponential Fades

When you create an exponential fade, the default rate of the fade-in or fade-out is rapid at the beginning, and slows down at the end of the fade. You can view the curve by selecting the dissolve icon and clicking W+. The curve appears on the audio element.



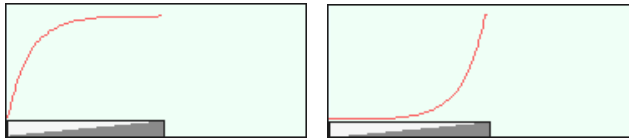
(a) Exponential fade curve

When you create an exponential fade-in, a Fade Curve Rate box and an Alpha box appear in the Dissolve menu.



(a) Alpha box

Use the Alpha value to adjust the shape of the curve. The following illustrations show the difference between an exponential fade-in with a negative alpha, and an exponential fade-in with a positive alpha.

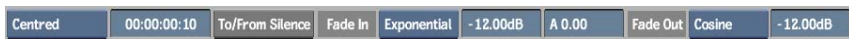


Alpha = -1.00 dB

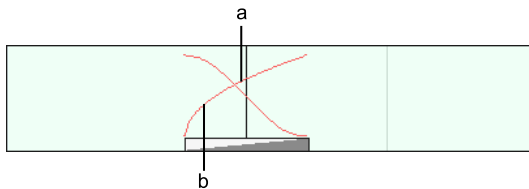
Alpha = 1.00 dB

Audio Crossfades

When you add a dissolve between two audio elements, you create a crossfade. When you add a crossfade, a Fade Curve Rate box and an Alpha box appear for both the fade-in and the fade-out. You can control the fade curve for each audio element independently.



The following diagrams show a crossfade with an exponential fade-in and a cosine fade-out.



(a) Cosine fade-out (b) Exponential fade-in

Experiment with different fade-in and fade-out types to achieve the most natural sounding crossfade. For example, if the two audio elements are at noticeably different loudness levels, adjust the fade curves to get an even transition between the loudness levels.

About Audio Soft Effects

Audio Soft Effects are effects that can be applied to audio segments in the timeline. All audio soft effects can be modified during playback and all audio soft effects, except Audio TimeWarp, are processed in real time. Audio soft effects can be animated. See [Animating AudioDesk Effects](#) on page 1086. Audio soft effects can also be searched for in the timeline using the Filter Select function. See [Searching for Timeline Elements](#) on page 897.

Modulation Send

Modulation Send is a soft effect that patches an audio segment to the Modulation Auxiliary Effect. All parameters for the Modulation Auxiliary Effect are set through the Auxiliary Effects panel (see [About Auxiliary Effects](#) on page 1088). You can route any number of audio segments through the Modulation Auxiliary Effect. The Modulation effect applies globally to the entire sound track and is output in stereo to a pair of output channels, combining the effect on all inputted audio segments. You can adjust the amount of modulation that can be applied to an individual segment by using the Mod Amount slider.

To apply the Modulation Send effect on a segment:

- 1 From the Record T/L, select the audio segment that you want to adjust.
- 2 From the Audio Soft-Effects menu, enable Mod.
- 3 Adjust the Mod Amount slider to any value between 0% to 100%.
This represents the percentage of the signal that will be split-off and routed to the Modulation Effect module.

Delay Send

Delay Send is a soft effect that patches an audio segment to the Delay Auxiliary Effect. All parameters for the Delay Auxiliary Effect are set through the Auxiliary Effects panel (see [About Auxiliary Effects](#) on page 1088). You can route any number of audio segments through the Delay Auxiliary Effect but the Delay effect is output in stereo to two separate output channels, combining the effect on all input segments. You can adjust the amount of delay that can be applied to an individual segment using the Delay Amount slider. You can also send the segment levels to the Left and Right Delay Channels independently using the Pan Delay slider.

To apply the Delay Send effect on a segment:

- 1 From the Record T/L, select the audio segment that you want to adjust.
- 2 From the Audio Soft-Effects menu, enable Delay.
- 3 Adjust the Delay Amount slider to any value between -96 dB and 24 dB.
This represents the amount of delay that will be applied to this segment.

Reverb Send

Reverb Send is a soft effect that patches an audio segment to the Reverb Auxiliary Effect. All parameters for the Reverb Auxiliary Effect are set through the Auxiliary Effects panel (see [About Auxiliary Effects](#) on page 1088). You can route any number of audio segments through the Reverb Auxiliary Effect but the Reverb effect is output in stereo to 2 separate output channels, combining the effect on all input segments. You can adjust the amount of reverberation that can be applied to an individual segment using the Reverb Amount slider.

To apply the Reverb Send effect on a segment:

- 1 From the Record T/L, select the audio segment that you want to adjust.
- 2 From the Audio Soft-Effects menu, enable Reverb.
- 3 Adjust the Reverb Amount slider to any value between -96 dB and 24 dB.
This represents the amount of reverb that will be applied to this segment.

Gain

Use the Gain soft effect to adjust the gain for individual segments in an audio track. Gain is the measure, in decibels, of how much a circuit amplifies a signal. You can set the segment gain to any value from -96.0 dB to +24.0 dB. The segment gain is combined with the input strip gain in the AudioDesk.

You can also animate the segment gain in the timeline, using a simplified version of the Channel Editor.

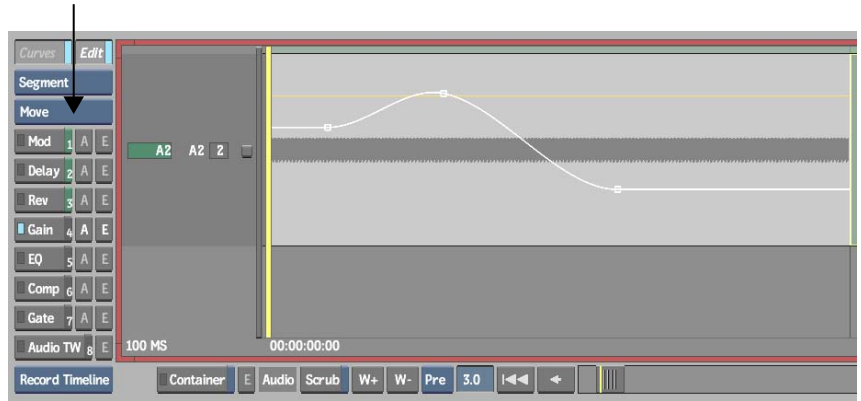
To adjust the segment gain:

- 1 From the Record T/L, select the audio segment that you want to adjust.
- 2 From the Audio Soft-Effects menu, enable Gain.
- 3 Enter the new gain level (from -96.0 dB to +24.0 dB) in the Segment Gain field that appears.

To animate the segment gain in the timeline:

- 1 From the Record T/L, select the audio segment that you want to adjust.
You can also change the segment gain curve of two (or more) audio segments simultaneously. Simply select all segments before tweaking the curve. The segments must all start at the same frame to do this.

- 2 From the Audio Soft-Effects menu, enable Gain.
The Edit button becomes active.
- 3 Enable Edit.
The segment turns grey. The segment gain level is represented by a white line, which you can modify just like in the Channel Editor, but with a limited set of functionality.
- 4 From the Edit Mode box, use the available options to edit keyframes on your segment gain level.



EQ

EQ is a soft effect that allows you to perform precise manipulation of the audio frequency content using the EQ Editor, which is based on a graphical display of EQ settings. For example, you can improve noisy audio tracks or enhance vocal tracks.

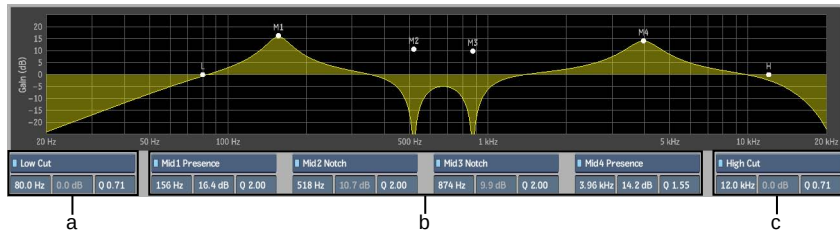
You can use any of six available filter or nodes: one Low node, four Mid nodes, and one High node. The Low node can be set to use either a Low Shelf filter or a Low Cut filter. The four Mid nodes can each be set to either a Mid Notch filter or a Mid Presence filter. The High node can use a High Shelf filter or a High Cut Filter.

These filters can have a dramatic effect on the audio so they should be used sparingly.

To apply EQ effects on a segment:

- 1 From the Record T/L, select the audio segment that you want to adjust.
- 2 From the Audio Soft-Effects menu, enable EQ.
- 3 Click E.

The EQ Editor appears.



(a) Low Shelf/Cut filter node (b) Mid Notch/Presence filter nodes (c) High Cut/Shelf filter node

- 4 Enable filters and make adjustments as necessary.

For information on how to set the different EQ filter effects, see [About EQ Filter Effects](#) on page 1072.

Compression

Compression is a soft effect that can be used to reduce the dynamic range of an audio signal from an audio segment. When you compress an audio signal, there is less of a difference between the lowest measured gain of the signal and the highest measured gain of the signal. Compression is useful if your audio signal has many different loudness levels that you want to play back at a similar perceived loudness level. For example, when recording voice-overs, you may want to maintain a constant perceived level of loudness in the actor's voice.

You can also compress an audio signal to attenuate portions of the signal that are too loud. For example, if your recording is at a consistent loudness level, but for some reason there is an unwanted peak in loudness level, you can compress the loud portion to give it the same perceived loudness as the rest of the recording.

Because compressing an audio signal could have a drastic effect on the overall dynamic range of the signal, it is not effective in every situation. For example, for a complex recording that has been mixed down from many other audio

sources, such as a vocal track with music and sound effects, the audio signal might have complex differences in loudness levels. If you compress a master audio signal such as this, you will lose many of the original qualities of the audio signal. In such cases, it is advisable that you compress the source audio track before mixing down.

The Compression soft effect has the following controls.

Control	Values	Description
Threshold	-60 dB - 0 dB	Determines the level above which signals are affected by the compression. Signals below the Threshold are not compressed. Signals above the Threshold are compressed based on the Ratio setting.
Ratio	1:1 - 20:1	Defines the amount of gain reduction applied to the signal above the Threshold level. For example, a Ratio of 2:1 means that for every 2 dB the input signal increases, the output signal will only increase by 1 dB. Gain reduction is displayed on the compression meter.
Attack	0.1 ms - 100 ms	Defines the speed at which the compression is applied once the signal has reached the Threshold level. A fast attack rate means that most of the signal is compressed. A slow attack rate means the early part of the signal will not be compressed. The result is more natural sounding than using a fast Attack.
Release	10 ms - 1000 ms or Auto	Defines the speed at which the compressed signal returns to its original value when the input signal level goes below the Threshold value. If Auto Release is enabled, the optimal value is automatically set.
Knee Width	0 dB - 40 dB	Defines the bend in the response curve. A low number gives a sharp angle and a high number gives a wider, rounded edge. A wider (or softer) knee width reduces the audible change from uncompressed to compressed. A higher knee width is most effective for higher ratios where the changeover is more noticeable.
Output Gain	-10dB - 24 dB	Defines the amount of gain to add to the output signal. For example, if you applied a lot of compression to the signal, you may want to add some output gain to set the output signal to its original overall loudness level.

Control	Values	Description
Auto Release		When enabled, the optimal Release time is automatically set according to the input signal.
Peak Detection / RMS Detection		Select Peak Detection to compress the signal based on the peak levels. Select RMS Detection to compress the signal based on its average level.

Noise Gate

Noise Gate is a soft effect that can be used to lower or remove the perceptible level of noise in an audio signal from an audio segment. A noise gate does not remove noise from the audio signal.

A noise gate is commonly used when the level of the desired signal generally stays above the level of the noise. In this case, the threshold is set above the level of the noise. When the level of the signal remains above the threshold level, the gate is open and both the signal and the noise are allowed to pass through. When the level of the signal falls below the threshold level, the gate is closed and no signal is allowed to pass. In effect the perceptible noise is attenuated.

The Noise Gate soft effect has the following controls.

Control	Values	Description
Threshold	-96 dB - 0 dB	Determines the level at which the noise gate stays open. Signals exceeding the Threshold pass through unaffected. Signals not meeting the Threshold are attenuated based on the Ratio and Floor settings.
Ratio	1:1 - 20:1	Defines the amount of gain reduction applied to the signal below the Threshold level. For example, a Ratio of 2:1 means that for every 2 dB the input signal increases, the output signal will only increase by 1 dB.
Attack	0.01 ms - 10 ms	Defines the speed at which the gate will open when the audio level goes above the Threshold. A short attack rate means that the early part of the signal will not be attenuated. If the attack time is too short a click can be heard when the gate opens. A long attack rate means that most of the early part of the signal is attenuated. The result can be more natural sounding than using a short Attack.

Control	Values	Description
Hold	0 ms - 1000 ms	Defines the minimum time that the gate will stay open. A longer hold time can help avoid chattering by preventing the gate from closing prematurely. For example when used with speech, the short pauses between words or sentences will not cause the gate to close.
Release	10 ms - 2000 ms or Auto	Defines how quickly the gate will close once the level has dropped below the threshold. A larger release value allows for a smooth decay rather than an abrupt cut when the gate closes.
Floor	-96 dB - 0 dB	Defines the amount of attenuation when the gate is closed.
Output Gain	-60dB - 24 dB	Defines the amount of gain to add to the output signal.

Audio Timewarp

Audio Timewarp is a soft effect used to timestretch an audio segment. With Audio Timewarp you can change the speed and duration or the pitch of the audio. Audio Timewarp uses the DIRAC Time Stretching and Pitch Shifting Technology developed by DSP Dimension (www.dspdimension.com). Depending on the amount of timestretch applied, this soft effect may degrade the quality of the resulting audio.

To apply the Audio Timewarp effect on an audio segment:

- 1 From the Record T/L, select the audio segment that you want to adjust.
- 2 From the Audio Soft-Effects menu, enable AudioTW.
- 3 Adjust the Audio Timewarp parameters.

Use:	To:
Speed	Change the speed and duration of the audio clip based on a speed percentage. The values in the Time Ratio and Duration fields change automatically as you modify the speed percent.
Time Ratio	Change the speed and duration of the audio clip by setting a time ratio. This is the ratio of the number of samples in the result divided by the original number of samples. The values in the Speed and Duration fields change automatically as you modify the Time Ratio.

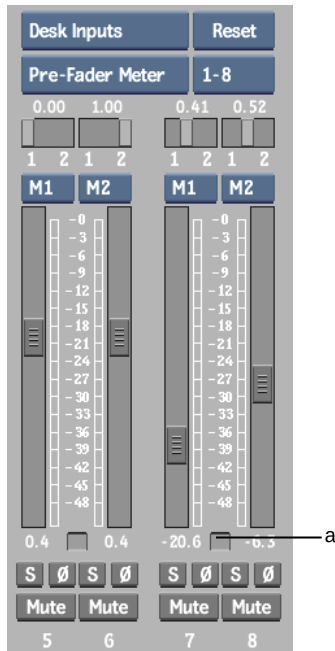
Use:	To:
Duration	Change the speed and duration of the audio clip to create a destination clip with the required duration. The values in the Speed and Time Ratio fields change automatically as you modify the duration.
Pitch Shift	Change the pitch of the audio clip. Leave this option set to 1.00 X to keep the audio pitch constant when applying the timestretch. This is the ratio of the shifted frequency values divided by the original frequency values. (A Pitch shift value of 2 shifts one octave up; a Pitch shift value of 0.5 shifts one octave down.)
Quality Factor	Select the quality of the resulting audio. This can be set to Quick, Standard, or High Quality mode. Use a lower quality mode to experiment with different settings, and then use High Quality to process the final result.
Time/Frequency Localization	Select a time/frequency localization option that suits your audio material: <i>Lambda1</i> - Ensures full time localization and is suitable for single-instrument tracks and voice-over. <i>Lambda2</i> - Sets higher time localization and lower frequency localization. If applying <i>Lambda1</i> results in an echo effect, this could be a better option. <i>Lambda3</i> - Sets the time/frequency localization in mid ranges of time and frequency domains. This is the best general-purpose setting. <i>Lambda4</i> - Sets higher frequency localization and lower time localization. <i>Lambda5</i> - Ensures full frequency localization and is suitable for multi-instrument tracks, such as classical music.

Using Input Strips

Use the AudioDesk to adjust various audio settings of an input strip.

Adjusting Gain for an Input Strip

Use the gain faders in the AudioDesk to control the gain for an input strip. You can adjust the faders while playback is stopped, or during playback, to get a dynamic update of audio levels. Use the Gain Fader Lock buttons to specify if the faders move individually or in pairs. You can set the input strip gain to any value from $-\infty$ dB to +24.0 dB. If you define a gain level for individual segments in the audio tracks, those levels are combined with the levels defined by the input strip gain level.



(a) Input Strip Gain display

To adjust input strip gain:

- 1 Ensure that each audio track that you want to work with is assigned to an AudioDesk input strip. See [Assigning an Audio Track to an AudioDesk Input Strip](#) on page 1052.
- 2 Play the clip. The current audio levels appear in the meters.
- 3 Do one of the following:
 - To adjust the input strip faders individually, disable the Gain Fader Lock buttons.
 - To adjust faders as a pair, enable the Gain Fader Lock button below the pair of faders.
- 4 Click the fader for the input strip you want to adjust and drag it to the new level.

The current gain level appears in the Input Strip Gain display below the selected channel. You can also adjust the levels with the playback stopped.

Assigning Audio Input Strips to Output Strips

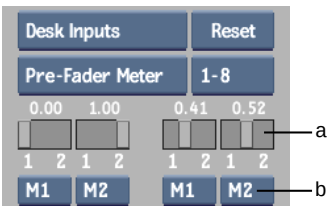
Use the Output Strip assignment boxes to assign the audio signals from the AudioDesk input strips to different output strips. You can assign a signal from any input strip to any output strip. You can mix all signals from the track faders down to one output strip, or assign the signals to any combination of two output strips.

To assign audio to output strips:

- 1 Ensure that each audio track in the timeline that you want to work with is assigned to an AudioDesk input strip. See [Assigning an Audio Track to an AudioDesk Input Strip](#) on page 1052.
- 2 From the Output Strip assignment box for the input strip you want to assign, select the output strip you want. For example, to assign input strips 1 and 2 to output strips 2 and 5.

Set this input strip:	To this output strip:
1	M2
2	M5

You can monitor and play back audio in the Output Clip menu with any combination of audio pan and assignment settings.



(a) Pan fader (b) Output Strip assignment box

Adjusting Pan Settings for an Input Strip

Once you assign the input strips to output strips, you can use the pan faders to pan the input strip audio signal between its own output strip and its paired output strip.

To pan the signal between left and right output strips:

- Click the pan fader for the pair of output signals that you want to pan and drag left or right to slide the pan fader.

Drag:	To:
Left	Increase the amount of signal on the left output strip.
Right	Increase the amount of signal on the right output strip.
Centre	Send an equal amount of signal to the left and right output strips.

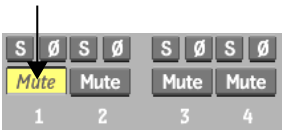
You can also specify numeric values in the pan fields to position the faders with precision.

Muting an Input Strip

You can mute an input strip. When you mute an input strip, it is not heard during playback, but its levels still appear on the pre-fader meters. You can also mute an input strip from the timeline.

To mute a strip:

- Enable the Mute button for the input strip that you want to mute.



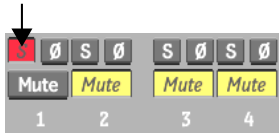
The strip is muted.

Soloing an Input Strip

You can solo an input strip. When you solo an audio track, all other tracks are muted and only the soloed tracks are played back. You can also solo an input strip from the timeline.

To solo a strip:

- Enable the S button for the input strip that you want to solo.



The strip is soloed.

Phase-shifting an Input Strip

You can phase-shift an input strip. Phase-shifting occurs when an audio waveform becomes displaced over time with other waveforms, causing a partial cancellation to result. If phase errors are introduced between a pair of input strips you can invert the phase for one strip to bring them back in phase.

To phase-shift a strip:

- Enable the Ø button for the input strip that you want to phase shift.



The strip is phase-shifted.

About EQ Filter Effects

EQ filter settings are used to precisely manipulate the audio frequency content. For example, use EQ filters to improve noisy audio tracks or to enhance vocal tracks. EQ Filters are accessible either from the EQ Desk to adjust input strips, or from the Audio Soft Effects menu to adjust individual audio segments. There are six available EQ filters: High Shelf, High Cut, Mid Presence, Mid Notch, Low Shelf, and Low Cut. Only the High Shelf, Mid Presence, Mid Notch, and Low Shelf filters are available on the EQ Desk.

Many filters use a quality factor, or “Q”, which affects the width of the bell curve applied on the EQ graph. A curve with a high Q covers a narrower bandwidth and means that only a few frequencies are affected. A curve with a low Q covers a wider bandwidth, affecting many frequencies.

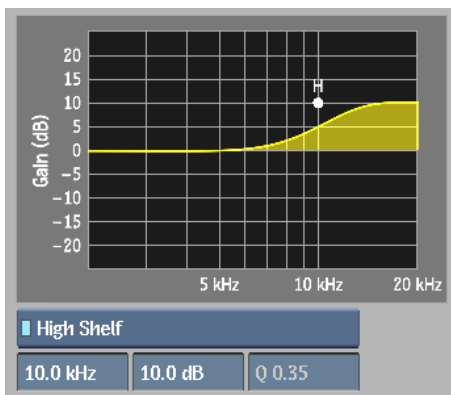
Unless a particular effect is desired, EQ settings should be used sparingly. Almost all filters induce phase shift on the outgoing audio signal, which can

cause a problem in mixing. The higher the value of Q , the more this phase shifting occurs.

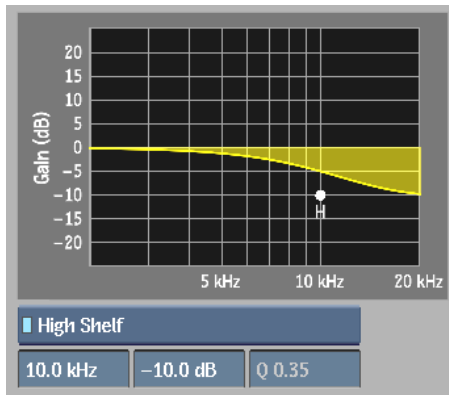
High Shelf Filter

The High Shelf filter works on the high frequencies of the audio signal (1 to 20 kHz). The High Shelf filter is useful for adding crispness to the sound. By specifying a frequency for the high EQ, you set the high shelf frequency. All frequencies above the specified frequency are boosted or attenuated, depending on the gain setting (-24 to +24 dB). The default high shelf frequency setting is 12 kHz with a gain of 0 dB.

The following diagram illustrates the result of boosting gain around the specified frequency of 10 kHz using the High Shelf filter.



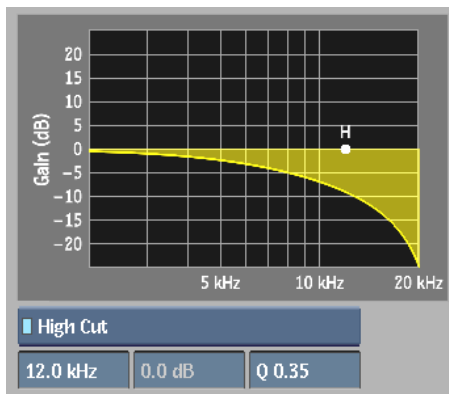
The following diagram illustrates the result of attenuating gain around the specified frequency of 10 kHz using the High Shelf filter.



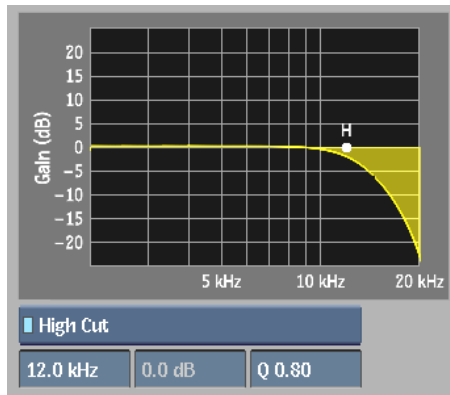
High Cut Filter

The High Cut filter (commonly known as a low-pass filter) works on the high frequencies of the audio signal (1 to 20 kHz). The High Cut filter is most commonly used to reduce noise and hiss, and to eliminate pops. By specifying a frequency for the high EQ, you set the cutoff frequency. Frequencies below the cutoff frequency pass through unaffected. Frequencies above the cutoff frequency are attenuated at a constant rate, depending on the Ratio setting. Adjust the Q curve to determine the range of frequencies affected. The default cutoff frequency setting is 12 kHz with a Q value of 0.71.

The following diagram illustrates the result of attenuating gain around the frequency of 10 kHz using a High Cut filter with a lower Q setting of 0.35.



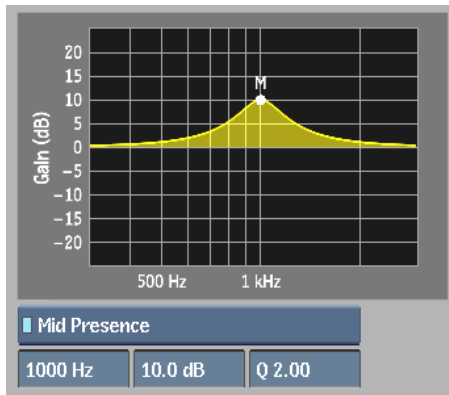
The following diagram illustrates the result of attenuating gain around the frequency of 10 kHz using a High Cut filter with a higher Q setting of 0.80.



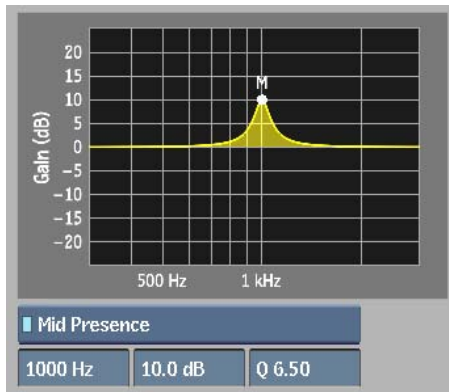
Mid Presence Filter

The Mid Presence filter is a parametric mid filter that can work on any frequency of the audio signal (20 Hz to 20 kHz). There are four available mid filter nodes for you to use. A presence filter is typically used for isolating and boosting or limiting a specific portion of the audio signal, such as a voice or an instrument. It is useful for removing background hiss or to dampen sibilance from poorly recorded vocals. By specifying a frequency for the mid EQ you can set the target frequency. Adjust the Q curve to determine the range of frequencies affected by the gain setting (-24 to +24 dB). For example, by isolating a specific frequency of a voice, you can boost or limit its gain while adjusting the Q value to prevent other portions of the audio signal from being affected. The default Mid Presence filter setting is 1000 Hz with a gain of 0 dB and a Q setting of 2.0.

The following diagram illustrates the result of boosting gain around the frequency of 10 kHz using a Presence filter with a lower Q setting of 2.00.



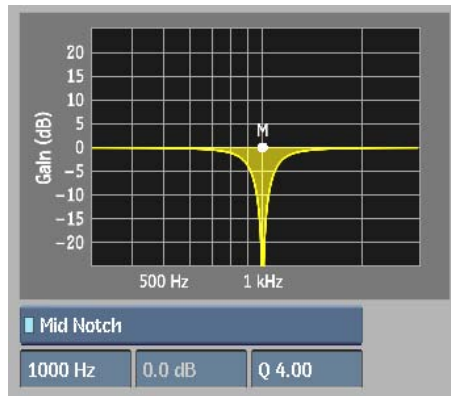
The following diagram illustrates the result of boosting gain around the specified frequency of 10 kHz using a Presence filter with a higher Q setting of 6.50.



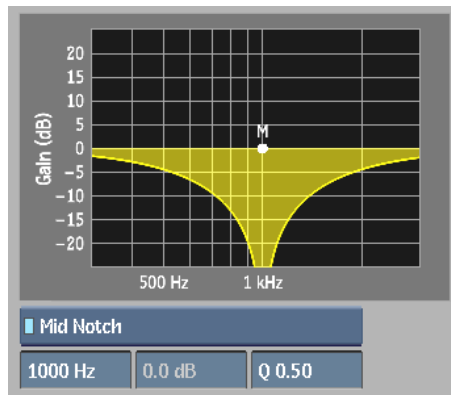
Mid Notch Filter

A Mid Notch filter is a parametric mid filter that can work on any frequency of the audio signal (20 Hz to 20 kHz). There are four available mid filter nodes for you to use. A notch filter fully limits the specified frequency range regardless of the gain setting. It is often used to reduce the 50 Hz or 60 Hz hum originating from the power source, while having little noticeable effect on the rest of the frequency spectrum. By specifying a frequency for the mid EQ, you can set the target frequency. Use the Q curve to determine the range of frequencies affected. The default Mid Notch filter setting is 1000 Hz with a Q value of 2.0.

The following diagram illustrates the result of using a Notch filter at the specified frequency of 1000 Hz with higher Q setting of 4.00.



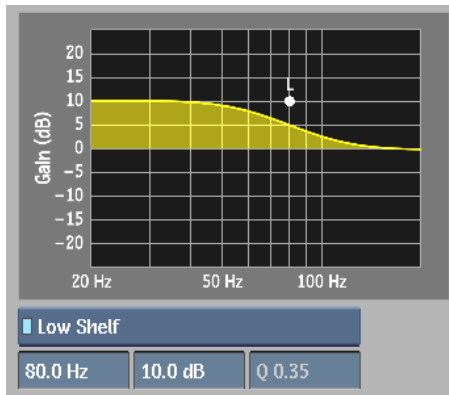
The following diagram illustrates the result of using a Notch filter at the specified frequency of 1000 Hz with lower Q setting of 0.50.



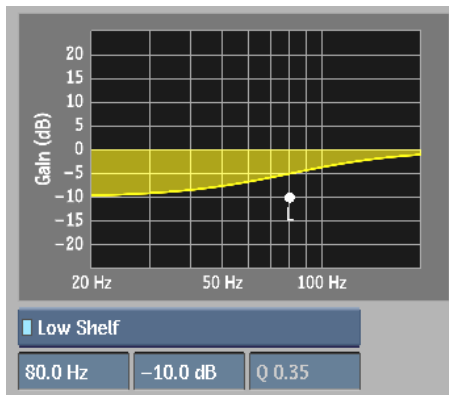
Low Shelf Filter

The Low Shelf filter works on the low frequencies of the audio signal (20 Hz to 1 kHz). By specifying a frequency for the low EQ, you set the low-shelf frequency. All frequencies below the low-shelf frequency are boosted or attenuated, depending on the gain setting (-24 to +24 dB). The default low-shelf frequency setting is 80 Hz with a gain of 0 dB.

The following diagram illustrates the result of boosting gain around the specified frequency of 500 Hz using a Low Shelf filter.



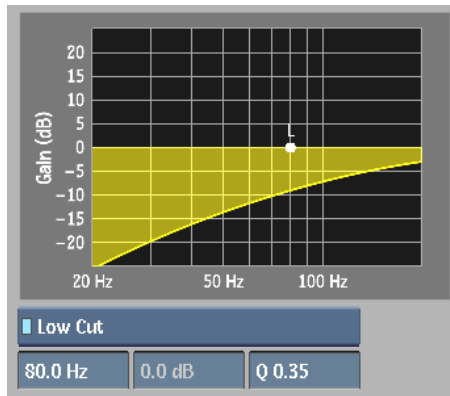
The following diagram illustrates the result of limiting gain around the specified frequency of 500 Hz using a Low Shelf filter.



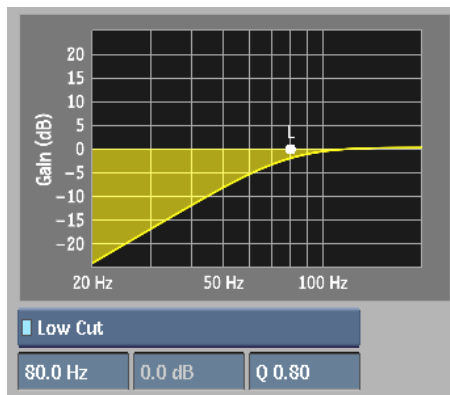
Low Cut Filter

The Low Cut filter (commonly known as a high-pass filter) works on the lower frequencies of the audio signal (20 Hz to 1 kHz). The Low Cut filter is often used to reduce low frequency noise such as rumble. For example, when recording vocals it is common to use a low cut filter at about 60 to 80 Hz for this purpose. By specifying a frequency for the low EQ, you set a cutoff frequency. Frequencies above the cutoff frequency pass through unaffected. Frequencies below the cutoff frequency are attenuated at a constant rate, depending on the Ratio setting. The default cutoff frequency setting is 80 Hz with a Q value of 0.71.

The following diagram illustrates the result of limiting gain around the specified frequency of 500 Hz using the Low Cut filter with a lower Q setting of 0.35.



The following diagram illustrates the result of limiting gain around the specified frequency of 500 Hz using the Low Cut filter with a higher Q setting of 0.80.



Adjusting EQ Settings on the EQ Desk

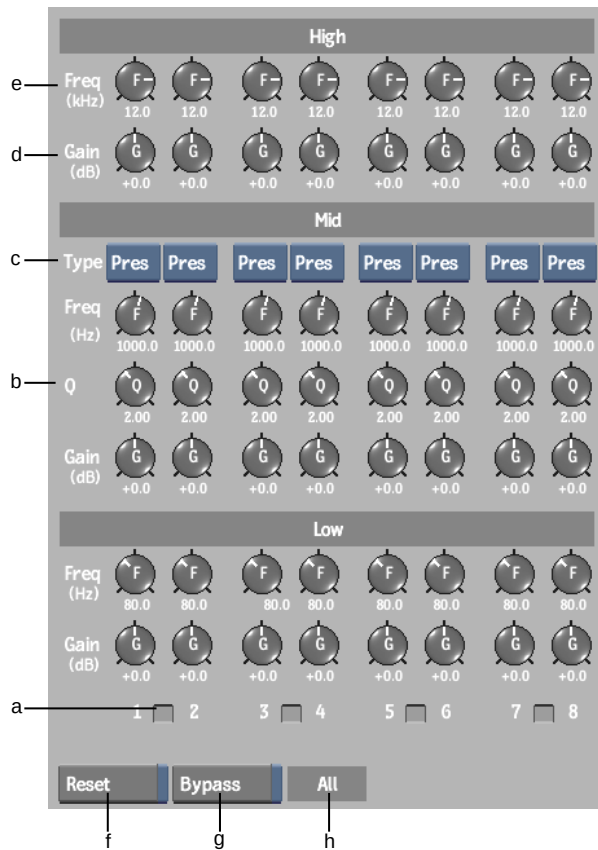
Use the EQ Desk to adjust the EQ for each audio track. The EQ Desk allows precise manipulation of the audio frequency content, although it is not as extensive as the EQ soft effect. For example, use it to improve noisy audio tracks or to enhance vocal tracks. Each desk strip has three available filters: a High Shelving filter, a Parametric Mid filter, and a Low Shelving filter. Each can provide as much as 24 dB of boost or attenuation.

You can animate all EQ Desk values. See [Animating AudioDesk Effects](#) on page 1086.

To adjust the EQ settings:

- 1 In Player, select the Audio Desk tab, then select the EQ Desk tab. In Player, select the Audio Desk tab.

The EQ Desk appears.



(a) EQ Lock button (b) Q knobs (c) Filter Type boxes (d) Gain knobs (e) Frequency knobs (f) Reset button (g) Bypass button (h) All label

- 2 Hold the cursor over the knob for the Frequency, Gain, or Q value that you want to adjust.

Two white arrows appear indicating the direction you can move the mouse or pen.

- 3 Drag the knob to the new value.

The knob is highlighted green when it is a value other than the default setting.

The EQ Desk controls are described as follows.

Frequency knobs Select the frequency for the EQ.

Gain knobs Boost or attenuate the selected frequency.

Filter Type boxes Display Presence or Notch filter for the EQ strip.

Q knobs Adjust the Q for the parametric EQ.

EQ Lock button Adjust the EQ individually or in pairs.

Bypass button Enable to bypass selected EQs.

Reset button Enable to reset selected parameters.

All label Reset or bypass all parameters. Active when either Bypass or Rest are enabled.

Using Parametric Mid Filters

The Notch and Presence Parametric Mid filters can be used to reduce or remove unwanted audio anywhere in the frequency spectrum.

To reduce or remove an unwanted frequency using Parametric Mid filters:

- 1 Ensure that each audio track that you want to work with is assigned to an AudioDesk input strip. See [Assigning an Audio Track to an AudioDesk Input Strip](#) on page 1052.
- 2 Play the clip and listen for the unwanted portion of the audio signal.
- 3 Boost the gain for the Parametric Mid filter of the EQ strip that you are working with.
- 4 Play your audio clip again.
- 5 While the audio is playing, click and drag the Frequency knob for the Parametric Mid filter.

The unwanted frequency will be very loud when you have selected the correct frequency.

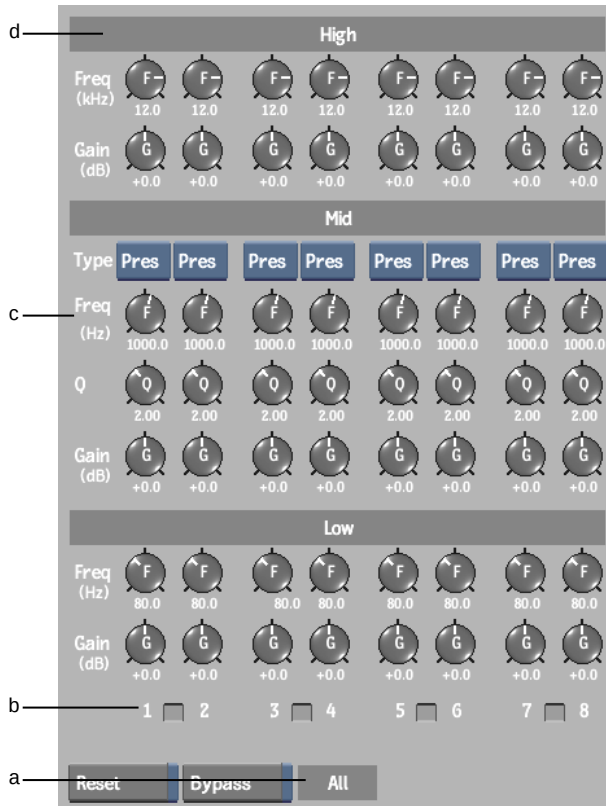
- 6 Once you isolate the unwanted frequency, stop dragging the Frequency knob.
- 7 Do one of the following:
 - To reduce the frequency, select Presence from the Filter Type box and lower the gain knob for the Parametric Mid filter enough so that the unwanted frequency is attenuated without affecting the overall audio signal.
 - To remove the unwanted frequency completely, change the filter type to Notch.

Resetting EQ Values

You can reset the EQ values to default for a single knob, a range of knobs, or an entire input strip.

To reset EQ values:

- 1 On the EQ Desk, enable Reset.



(a) All label resets everything (b) Track label resets the entire input strip
(c) Parameter label resets the entire row (d) Group label resets all values within group

2 Reset the applicable EQ value by clicking it, as follows.

To reset:	Click:
An individual knob.	The knob.
A row of EQ values.	The Freq, Gain, Type, or Q type parameter label.
All EQ values of a group.	The High, Mid, or Low group label.
All EQ values for a single input strip.	The track label. If a channel is locked with another, both are reset.

To reset:	Click:
All EQ values.	The All label.

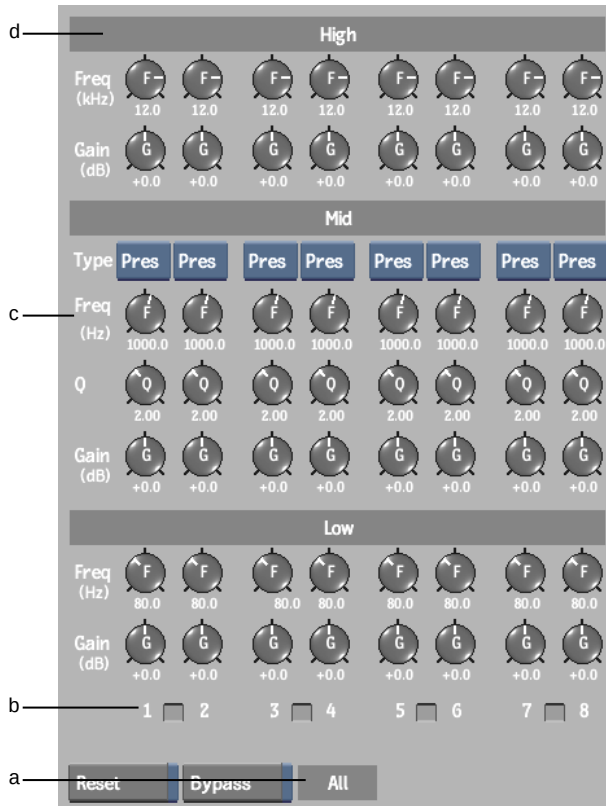
TIP Instead of using the Reset button, you can also **Ctrl**-double-click knobs and labels to reset values.

Bypassing EQ Values

You can bypass filter groups or filter rows in the EQ Desk, temporarily removing the effect of the EQ changes you made to isolate a particular filter group and adjust the quality of the audio. You can use this capability to compare the original, unchanged track with the track with EQ changes applied to it. Note that bypassing EQ changes affects both playback and output. Also, if you perform a mixdown on a track with bypassed EQ values, the values are not applied to the processed clip. See [Mixing Down Audio](#) on page 1100.

To bypass an EQ setting:

- 1 On the EQ Desk, enable Bypass.
The cursor changes to a stop sign.



(a) All label bypasses everything (b) Track label bypasses the entire input strip (c) Parameter label bypasses the group (d) Group label bypasses the group

- 2 Bypass the filter or filter area that you want to bypass by clicking it, as follows.

To bypass:	Click:
A filter.	One of the knobs for that filter.
A filter group.	The High, Mid, or Low group label, or the Freq, Gain, Type, or Q type parameter label within the selected group.
All filters for a single input strip only.	The track label.
All filters.	The All label.

The values below the knobs appear grey to show that they are not being used.

Animating AudioDesk Effects

You can create audio animations with real-time playback by animating audio soft effects and input strip effects such as audio levels, pans, and EQ both on the AudioDesk and in the Channel Editor. Your animation can be as simple as gradually raising the volume and then suddenly lowering it. In contrast, you can create a complex audio animation so that specific audio waveforms coincide with video effects and various transitions on the timeline.

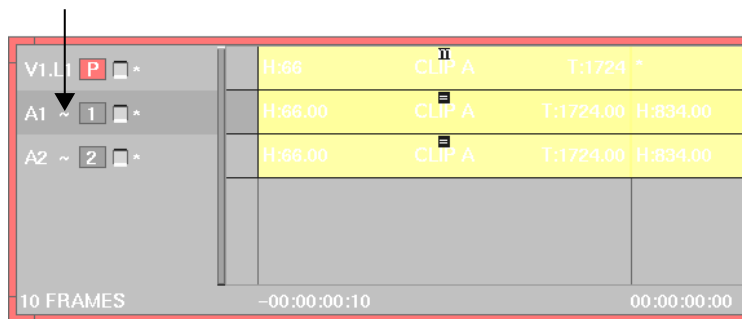
All audio animations are linked to the track (except for Audio Gain, which can be linked to the individual audio segments) and relative to the start of the track. That means when you make changes in the timeline, such as deleting or adding segments in the track, your audio animations may fall out of sync with the audio segments.

You can not animate auxiliary audio effects, but you can animate the segment send effects.

To animate audio levels:

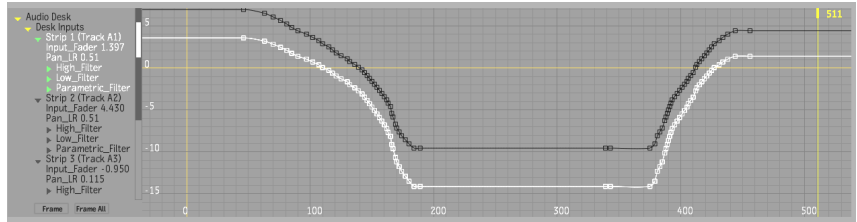
- 1 On the AudioDesk, enable Auto Key.
- 2 Play back the audio.
- 3 On the AudioDesk, change the audio levels while the audio is playing back.

A tilde appears next to the audio tracks indicating there is animation.



- 4 Stop the playback.

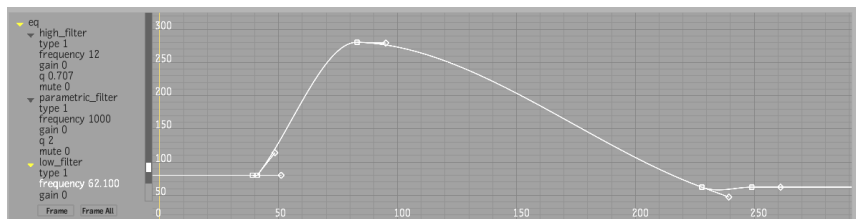
- 5 To view the animation channels, double-click the audio track on the timeline. Alternately, click the Animation button.
- 6 In the channel hierarchy of the Channel Editor, click the Strip 1 Track A1 channel.
- 7 Select the Input_Fader channel and click Frame Chn in the Animation controls.
The Input_Fader curve appears in the animation curve window.



- 8 Tweak the keyframes according to the fade-in and fade-out effects you want.
- 9 Click Undo to undo changes and make modifications to the audio animation.

To animate EQ Desk controls:

- 1 On the AudioDesk, enable Auto Key.
- 2 On the timeline, select one or more audio tracks.
- 3 Play back the audio.
- 4 On the EQ Desk, change the settings for any of the filters while the audio is playing back. See [Adjusting EQ Settings on the EQ Desk](#) on page 1079. A tilde appears next to the audio tracks indicating there is animation.
- 5 View the animation keyframes in the Channel Editor.



The High Shelf Filter settings are included in the High_Filter folder of the channel hierarchy, the Low Shelf Filter settings are included in the Low_Filter folder of the channel hierarchy, and the Parametric Mid Filter settings are included in the Parametric_Filter folder of the channel hierarchy.

- 6 Tweak the keyframe values for these channels as required for the audio animation effect you want to obtain.

About Auxiliary Effects

Auxiliary Effects are global effects modules that provide modulation (phaser, flanger, and chorus), delay, and reverb audio effects. The outputs of Auxiliary Effects are stereo, and are patched to a single pair of output channels. You can send the audio signals of any number of audio segments to the Auxiliary Effects modules. At the segment level, you can adjust how much of the audio signal is sent to the modules using any of the Modulation Send, Reverb Send, or Delay Send audio soft effects. See [About Audio Soft Effects](#) on page 1060. All other parameters for Auxiliary Effects are adjusted using the Auxiliary Effects panel. The parameters for each Auxiliary Effect apply globally to all audio segments patched to it.

Modulation

The Modulation Auxiliary Effect consists of three audio sub-effects: Phaser, Flanger, and Chorus. You can only apply one of the three Modulation sub-effects for an entire sound mix. If you need to use more than one Modulation sub-effect in your mix, you will have to create a separate mix with that effect, or mixdown a specific segment or segments with that effect and insert it into another sound mix.

Phaser

The phaser produces the classic “swooshing” sound that characterizes phasing. The phaser effect is based on a two-voice stereo algorithm and works by shifting the phase of the signal (Delay) and adding it back to the original signal (Feedback), causing partial cancellation of the frequency spectrum. In effect, this creates notches in the frequency domain that eliminate sounds at the

notch frequencies. The position (Depth) of these notches varies over time, and the phaser includes a low frequency oscillator (Speed) for this purpose.

Control	Values	Description
Delay	1.0 - 30.0 ms	Defines the average phase Delay between the input signal and the filtered output. Default is 1.2 ms.
Depth	0 - 100%	Defines the depth of the phase modulation, or the amount that the Delay time is varied. Default is 100%.
Speed	0.1 - 2 Hz	Defines the phase modulation rate. Default is 0.9 Hz.
Feedback	0 - 100%	Defines the amount of output signal fed-back to the input. This produces a resonance effect that intensifies the peaks and lows. Default is 0%.
Output Gain	-96 - 0 dB	Default is 0 dB.

Flanger

The Flanger effect applies a modulation sweep effect to the audio signal. Flanging has a very characteristic sound that many people refer to as a "whooshing" sound, or a sound similar to that of a jet plane flying overhead. It is generally used as special effect on electric guitars. The flanger effect is based on a two-voice stereo algorithm and works by introducing a 90° phase offset between each voice (Delay). This produces peaks and notches in the resulting frequency spectrum. Varying the delay between the two voices (Depth) causes these to sweep up and down the frequency spectrum. The signal can be inverted and fed back (Feedback) to the original voice, producing a resonance effect which gives a more characteristic flanging sound.

Control	Values	Description
Delay	1.0 - 30.0 ms	Defines the average phase Delay between the input signal and the filtered output. Default is 0.7 ms.
Depth	0 - 100%	Defines the depth of the modulation sweep, or the amount that the Delay time is varied. Default is 64%.
Speed	0.1 - 2 Hz	Defines the modulation sweep rate. Default is 0.9 Hz.
Feedback	0 - 100%	Defines the amount of output signal fed-back to the input. This produces a resonance effect that intensifies the peaks and lows. Default is 0%.

Control	Values	Description
Output Gain	-96 - 0 dB	Default is 0 dB.

Chorus

The Chorus effect makes a sound appear as many similar sounds coming from multiple sources, such as a chorus from a group of singers. It adds thickness to the sound, and is often described as “lush” or “rich”. The chorus effect is based on a 4-voices stereo algorithm. The chorus effect can make a single instrument sound like there are actually several instruments being played. There is a 90° phase offset between each voice. The effect applies a delay to the audio signal (Delay) and pitch modulates it (Depth).

Control	Values	Description
Delay	1.0 - 30.0 ms	Default is 5.0 ms.
Depth	0 - 100%	Defines the depth of the chorus effect. Default is 80%.
Speed	0.1 - 2 Hz	Defines the pitch modulation rate. Default is 0.2 Hz.
Feedback	0 - 100%	Default is 0%.
Output Gain	-96 - 0 dB	Default is 0 dB.

Delay

The Delay effect temporarily stores an audio signal then plays it back after a period of time (Delay). The delayed signal may fed back into the recording again (Feedback), to create the sound of a repeating, decaying echo. It is different from reverb, which creates a “reflected” sound using a different technique. The Delay effect is based on a simple algorithm made of two independent mono delay lines.

Control	Values	Description
Delay	0 - 20000 ms	Defines the amount of time to delay the signal. Default is 250 ms.
Feed-back	0% - 100%	Defines the number of times to repeat the signal. Default is 15%.

Control	Values	Description
Gain	-96 - 0 dB	Default is -12 dB.

Reverb

The Reverb effect simulates a physical environment, such as a gymnasium, cathedral, or valley, that is different from the physical environment of the original recording. In a physical environment, the way we hear sound is based on the properties of direct sounds and reflected sounds. Direct sounds are the frequencies that reach the ear straight from the audio source. Reflected sounds are frequencies that reach the ear after being reflected from a physical surface, such as a wall or mountain side.

Direct sound is an indicator of the proximity of the audio source. For example, if you close your eyes as a car passes, you can estimate its distance based on the level of sound you hear as it goes by. Reflected sounds are the indicators for the physical environment. For example, in a small room, sound is reflected back to your ear more quickly than in a large room. The time it takes for the reflected sound to reach your ear can give you an idea of the size of room you are in. As well, different surfaces and materials have different reflective properties for sound. The more reflective a surface, the more reverb will occur.

By modifying the Predelay, Decay Rate, and Damping values, you can simulate physical environments. You can take a recording that was recorded in a small room with little reverb and make it sound like it was recorded in a large room, such as an arena or church. Different types of music tend to sound best with reverberation times appropriate to their characteristics.

Control		Description
Predelay	1 ms - 200 ms	Defines the predelay for the reverb effect. This determines the delay between the original sound and the first echo. Default is 25 ms.
Decay Rate	0% - 100%	Defines how fast the reverberation decays. Default is 40%
High Cut	0% - 100%	Defines the amount of high frequencies that are filtered out from the reverb effect. This can make the result sound more natural. Default is 0.1%
Damping	0% - 100%	Defines the rate at which high frequencies are dampened as the reverberation decays. Default is 40%

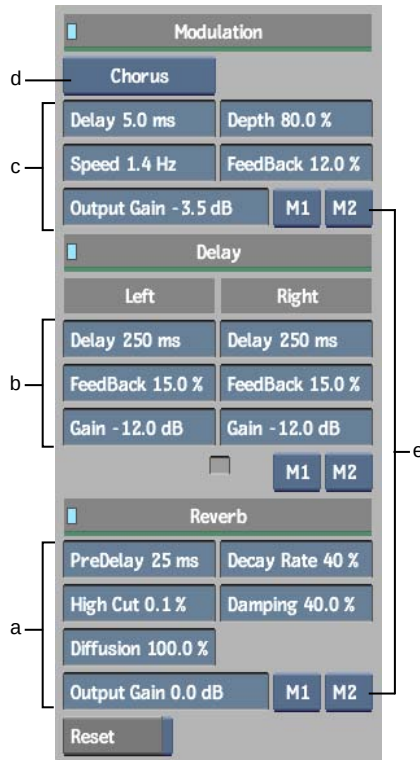
Control		Description
Diffusion	0% - 100%	Defines the density of echoes in the reverberation. Default is 100%.
Output Gain	-96 - 0 dB	Default is 0 dB.

Adjusting Settings on the Auxiliary Effects Desk

Auxiliary effects such as Modulation, Delay, and Reverb can be applied to any number of audio segments. Settings for Auxiliary effects can be adjusted through the Auxiliary Effects Desk menu.

To adjust settings for an auxiliary effect:

- 1 Ensure that the Aux FX Desk tab is selected.

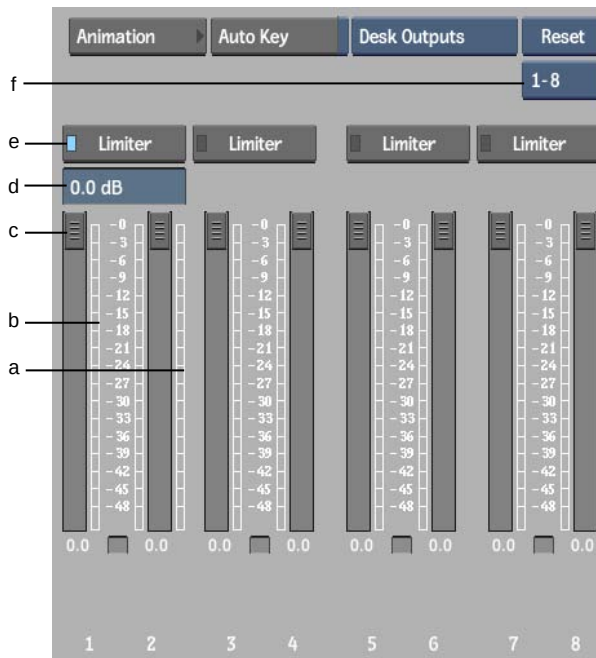


(a) Reverb Effect controls (b) Delay Effect controls (c) Modulation Effect controls
(d) Modulation Effects option box (e) Output Channel Selection buttons

- 2 If you are adjusting settings for a Modulation effect, select the desired effect from the Modulation Effects option box.
- 3 Adjust the settings for the desired effects as needed.
For a description of the effects and their settings see [About Auxiliary Effects](#) on page 1088.

Using Output Strips

You can use the output strips to control the gain or limit the peaks of the audio output signals.



(a) Limiter meter (b) Output meter (c) Gain Level fader (d) Limiter Level box (e) Limiter button (f) Output Strip Display selection box

Adjusting Output Strip Gain

Use the output strip faders to control the audio output levels. You can adjust the faders while playback is stopped, or during playback to get a dynamic update of audio levels.

To adjust the audio output strip gain:

- 1 In the AudioDesk, ensure that each audio input strip that you want to work with is assigned to an output strip.
- 2 Toggle the meters to Desk Outputs.
- 3 Play the clip.
The audio output levels are displayed on the meters.
- 4 Click the fader for the output strip that you want to adjust and drag it to the new level.

You can also adjust the levels with the playback stopped.

Using the Limiter

The Limiter provides a form of signal compression. It allows audio signals below a set value to pass unaffected, and clips off the peaks of stronger audio signals that exceed the set value. The audio remains untouched unless the limiter is working, in which case only gain is affected. The built-in auto-release mechanism allows for fast recovery, minimizing distortion and pumping. The Limiter is a stereo effect that applies to a pair of output strips.

To set the limiter:

- 1 In the AudioDesk, ensure that each audio input strip that you want to work with is assigned to an output strip.
- 2 Toggle the meters to Desk Outputs.
- 3 Play the clip.
- 4 Note the audio output levels displayed on the meters.
- 5 Enable the Limiter button.
The Limiter meter appears.
- 6 Adjust the Limiter level to remove any overloads, or to limit the peaks to a desired output level.

Using the Audio Tools

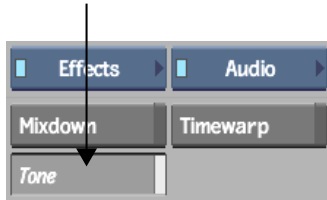
You can perform additional audio functions using the Audio Effects menus in Backdraft Conform. You can create an audio-only clip containing tone or silence, apply an audio timewarp, or mixdown the audio to fewer tracks.

Creating an Audio Tone Clip

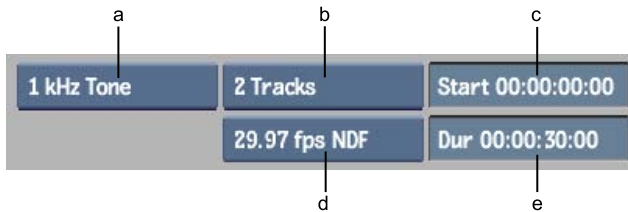
You can create an audio-only clip containing up to eight audio tracks of silence, or audio tone at the frequency and level that you specify. Audio Tone clips appear with waveforms in their proxies in the clip library and on the EditDesk. You can record out the audio tone clip to tape to ensure that the audio levels are adjusted correctly.

To create an audio tone clip:

- 1 From the Menu Priority box, select Effects.
- 2 From the Audio/Visual Tools box, select and enable Audio.
- 3 From the Audio Effects menu, click Tone.



The Tone options appear.



(a) Frequency box (b) Audio Tracks box (c) Start Time field (d) Timecode mode box (e) Duration field

- 4 Select the frequency.

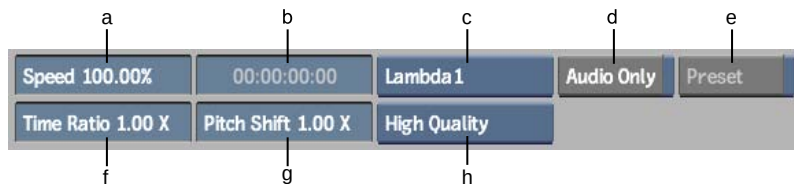
NOTE Selecting Silence will still create an audio clip, but the audio track(s) will have a flat waveform at -infinity dB.

- 5 Select the timecode mode.
- 6 Set the start time in the Start Time field.
- 7 Set the duration in the Duration field.
- 8 Select the number of audio tracks. There will be one tone for each track.
- 9 Select the destination.

Audio-Tone clips are displayed with waveforms in the proxy.

About the Audio Timewarp Options

Use the Audio Timewarp options to customize the timestretch of an audio segment. The Audio Timewarp options appear as follows:



(a) Speed field (b) Duration field (c) Time/Frequency Localization button (d) Audio Only button (e) Preset button (f) Time Ratio field (g) Pitch Shift field (h) Quality Factor box

Audio Timewarp options are described as follows:

Preset button Enable to timestretch the audio based on the difference in frame rates of the source and destination video standards.

Speed field Change the speed and duration of the audio clip based on a speed percentage. The values in the Time Ratio and Duration fields change automatically as you modify the speed percent.

Time Ratio field Change the speed and duration of the audio clip by setting a time ratio. This is the ratio of the number of samples in the result divided by the original number of samples. The values in the Speed and Duration fields change automatically as you modify the Time Ratio.

Duration field Change the speed and duration of the audio clip to create a destination clip with the required duration. The values in the Speed and Time Ratio fields change automatically as you modify the duration.

Pitch Shift field Change the pitch of the audio clip. Leave this option set to 1.00 X to keep the audio pitch constant when applying the timestretch. This is the ratio of the shifted frequency values divided by the original frequency values. (A Pitch shift value of 2 shifts one octave up; a Pitch shift value of 0.5 shifts one octave down.)

Quality Factor box Select the quality of the resulting audio. This can be set to Quick, Standard, or High Quality mode. Use a lower quality mode to experiment with different settings, and then use High Quality to process the final result.

Time/Frequency Localization button Select a time/frequency localization option that suits your audio material.

Select:	To:
Lambda1	Ensure full time localization. This is suitable for single-instrument tracks and voice-over.
Lambda2	Set higher time localization and lower frequency localization. If applying Lambda1 results in an echo effect, this could be a better option.
Lambda3	Set the time/frequency localization in mid ranges of time and frequency domains. This is the best general-purpose setting.
Lambda4	Set higher frequency localization and lower time localization.
Lambda5	Ensure full frequency localization. This is suitable for multi-instrument tracks, such as classical music.

Applying an Audio Timewarp

Use Audio Timewarp to timestretch an audio segment. With Audio Timewarp you can change the speed and duration or the pitch of the audio. Audio Timewarp uses the DIRAC Time Stretching and Pitch Shifting Technology developed by DSP Dimension (www.dspdimension.com). Depending on the amount of timestretch applied, this soft effect may degrade the quality of the resulting audio.

If you are converting video material to a different frame rate, you can apply a slight Audio Timewarp to the audio to keep it in sync with the video. For example, when you convert the video frame rate from 24 fps to 25 fps, you will need to increase the speed and duration of your audio while preserving the pitch. Presets are available for this purpose.

To apply an audio timewarp from the menu:

- 1 From the Menu Priority box, select Effects.
- 2 From the Audio/Visual Tools box, select and enable Audio.
- 3 From the Audio Effects menu, click Timewarp.



The Audio Timewarp options appear.

- 4 Select the clip with audio that you want to timestretch.
- 5 Adjust the Audio Timewarp parameters.
See [About the Audio Timewarp Options](#) on page 1097.
- 6 Select a destination.
A new clip containing the timestretched audio is added.

Converting Audio between Different Video Standards

When you convert your material between different video standards, your audio falls out of sync due to the change in the video frame rate. To avoid this, use the Preset option to timestretch the audio based on the difference in frame rates of the source and destination video standards.

To convert audio between different video standards:

- 1 From the Menu Priority box, select Effects.
- 2 From the Audio/Visual Tools box, select and enable Audio.
- 3 From the Audio Effects menu, click Timewarp.
- 4 Select the clip with audio that you want to timestretch.
- 5 Enable Preset.

The Timewarp Preset options appear.



(a) Source Frame Rate box (b) Destination Frame Rate box

The Source Frame Rate box shows the current frame rate of the selected clip.

- 6 From the Destination Frame Rate box, select the required value.

The conversion value appears in the Time Ratio field.

- 7 Select a destination.

A new clip containing the timestretched audio is added.

Mixing Down Audio

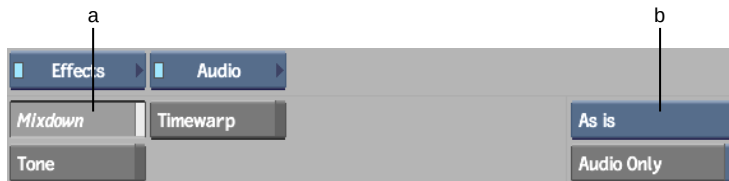
If you applied changes such as EQ, pan, or gain adjustments to audio tracks in the AudioDesk, and you want to export the clip with these changes, you need to mix down the clip prior to exporting it. It is not necessary to mix down audio prior to output to a VTR. However, if your audio tracks contain a lot of edits, and you notice dropped frames on playback, output may be smoother if you first mix down the clip.

Use the Audio Mixdown tool to mix down your audio with the current AudioDesk output strip assignments, to four channels, to stereo, or to mono. All soft effects such as dissolves, fades, and audio soft effects made to audio anywhere in the application are processed during mixdown. All current AudioDesk and EQ settings are also applied to the mixdown clip.

You can generate an audio-only mixdown clip, or you can generate a mixdown clip with all the clip's video tracks. You can also mixdown audio on export.

To mix down audio:

- 1 Make sure that you have assigned the audio tracks that you want to mix down to the appropriate channels. See [Assigning an Audio Track to an AudioDesk Input Strip](#) on page 1052.
- 2 From the A/V Tools box, select Audio.
- 3 From the Audio Effects menu, click Mixdown.



(a) Mixdown button (b) Mixdown option box

- 4 From the Mixdown option box, select one of the following options.

Select:	To mix down:
As Is	Mix down with the current output strip assignments. This option is recommended for the purpose of exporting or outputting the clip. See Using Output Strips on page 1093.
To 4 tracks	Mix down to four tracks. The output strips are assigned sequentially in fours to the mixed-down channels (where M1 goes to 1, M2 to 2, M3 to 3, M4 to 4, M5 to 1, and so on)
To Stereo	Mix down to two tracks. The output strips are assigned sequentially in twos to the mixed-down channels (where M1 goes to 1, M2 to 2, M3 to 1, M4 to 2, and so on).
To Mono	Mix down to one track.

For all options, the AudioDesk levels and EQ settings are applied to the mixed down clip.

- 5 To generate an audio-only clip, enable Audio Only.
- 6 Select the clip that you want to mix down.
The pan faders are reset to the full channel.
- 7 Select the destination.
The tracks are mixed down. The output strip assignments and pan settings of the destination clip are set to their default values.

Part 8: Processing and Formatting Effects

Part 8 includes these chapters:

- [Resize](#) on page 1105
- [Pulldown](#) on page 1133
- [Video Field Management](#) on page 1155
- [Colour Management](#) on page 1165
- [A/V Tools](#) on page 1209



Image courtesy of Fuel

Topics in this chapter:

- [Accessing Resize and Resize Settings](#) on page 1106
- [Resizing Clips on Import, Export, or in a Clip Library](#) on page 1106
- [Resizing Clips in the EditDesk Resize Menu](#) on page 1108
- [Resizing Clips in the Player](#) on page 1109
- [Resizing Clips on the Timeline](#) on page 1109
- [Resize Settings](#) on page 1110
- [Changing Views in Resize](#) on page 1117
- [Resizing from Source Using the Crop Box](#) on page 1119
- [Resizing to Destination Using the Crop Box](#) on page 1121
- [Animating Resize Settings](#) on page 1122
- [Saving and Loading Resize Setups](#) on page 1123
- [Processing Clip Handles When Working with Soft Clips](#) on page 1125
- [Resetting All Resize Settings to Default Values](#) on page 1126
- [Changing the Appearance of the Crop Box](#) on page 1127
- [Changing the Padding Colour](#) on page 1128
- [Setting Default Image Resolution Characteristics on Import](#) on page 1128

Accessing Resize and Resize Settings

Backdraft Conform provides clip resize settings in many locations to suit the mixed resolution workflow needs of your project. You can access resize settings from the following locations:

- The Import Image menu, the Export Image menu, or the Clip Library menu. See [Resizing Clips on Import, Export, or in a Clip Library](#) on page 1106.
- The Resize menu. See [Resizing Clips in the EditDesk Resize Menu](#) on page 1108.
- The timeline, using a Resize soft effect. See [Resizing Clips on the Timeline](#) on page 1109.
- In the Player from the Deliverables tab. See [Resizing Clips in the Player](#) on page 1109.

Resizing Clips on Import, Export, or in a Clip Library

You can resize clips when you load them from a clip library or when you input them from the Import Image menu. In this case, you cannot preview the resized result.

The clip library provides access to clips of all sizes on local and remote framestores. When you resize a clip while loading it from a clip library, you create a new clip. You can want to save the resized result to another clip library.

Although you can resize images on import, it is a good idea to import an image without changing its size. Doing so preserves the source resolution, and this in turn gives you more options to use the image. For example, if you resize an HD image to NTSC on import, you cannot restore the image information lost by the resize process.

However, because file-based images have square pixels, it is recommended that you set resize settings to assign the proper frame aspect ratio on import when importing images that originate from formats that use non-square pixels.

In some cases, for example, with NTSC and PAL images, Backdraft Conform detects the image frame size (720x486 or 720x576) and from this suggests that you resize the image by using a frame aspect ratio of 1.333 (4:3). If you are working with 1.778 (16:9) NTSC or PAL, you should override this setting.

With other non-square pixel images, such as those originating from anamorphic film formats, you must manually specify the frame ratio that corresponds to the image (for example, 2.35); otherwise, the images are imported assuming square pixels.

To access the resize settings from a clip library:

- 1 From the Clip Library box on the EditDesk, select the clip library that contains the clips that you want to resize.
- 2 From the clip library, select the clips that you want to load from the clip library.
- 3 To resize the clip while loading it, enable Resize on Load/Wire. The resize settings are enabled.



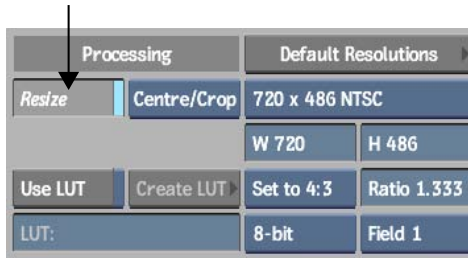
- 4 Set the resize settings.
- 5 Click Load.

To access the resize settings on import:

- 1 In the clip library, click Import Image.
- 2 Browse to and select the images that you want to import.

TIP You can select multiple images and image sequences for a single import. However, when you resize on import, the same resize settings are applied to the entire selection. Make sure your resize settings correspond to the selection of images.

- 3 To resize clips on import, enable Resize.



- 4 Set the resize settings.

To access the resize settings on export:

- 1 Open the clip library containing the clip that you want to export.
- 2 Select the clip.

TIP You can select multiple images and image sequences for a single export. However, when you resize on export, the same resize settings are applied to the entire selection. Make sure your resize settings correspond to the selection of images.

- 3 Click Export Image.
- 4 Set the resize settings.

Resizing Clips in the EditDesk Resize Menu

Use the Resize menu in the A/V Tools to change the resolution, aspect ratio, scan mode, framerate or format of a clip as well as its frame bit depth.

To access the Resize menu:

- 1 From the A/V Tools box, select and enable Video.



- 2 Click Resize to activate the Resize tool.

- 3 Select the clip that you want to resize.
- 4 Select a destination for the resized clip.
- 5 Set the resize settings using the Resize menu.
See [Resize Settings](#) on page 1110.

Resizing Clips in the Player

Clips displayed in the Player can be resized in real time, from the Real Time Deliverables menu.

To access **Resize in real time**:

- 1 In the Player, select the Deliverables tab.
- 2 Set the resize settings. See:
 - [Resize Settings](#) on page 1110
 - [Resizing from Source Using the Crop Box](#) on page 1119
 - [Resizing to Destination Using the Crop Box](#) on page 1121
 - [Animating Resize Settings](#) on page 1122

Resizing Clips on the Timeline

Use the Resize soft effect to change an element's resolution and bit depth directly on the timeline. This is especially useful when you want to, for example, resize a PAL clip to fit with your NTSC project. This soft effect is automatically applied to clips added to the timeline that do not have the same resolution or scan mode as the current clip.

When you mix clips of different resolution on the timeline, Backdraft Conform automatically applies a soft Resize using the following attributes:

- Resolution
- Bit depth
- Scan mode (field 1 and field 2 only)

Like any other soft effect, a soft Resize can be applied to a same-resolution segment of the timeline and used to correct blanking problems and even add

a “soft” letterbox. You can also use a soft Resize to apply a border on a clip or to perform a pan and scan and animate the image position to achieve optimal resizing.

Applying a Soft Resize

All clips on the timeline can be resized using a soft Resize. Backdraft Conform automatically adds or removes a soft Resize when performing mixed-resolution editing. For example, if you created an NTSC clip containing HDTV sources and, later, take the NTSC montage and insert it in an HDTV clip, the HDTV material will no longer have a soft Resize, but the NTSC version will.

To apply a soft Resize on a clip:

- 1 Select the element you want to resize from the timeline.
- 2 Click Resize to enable a resize on the selected element.

TIP You can also apply a soft Resize by pressing **Alt+7**.



NOTE You cannot mute a Matte container that has a soft Resize.

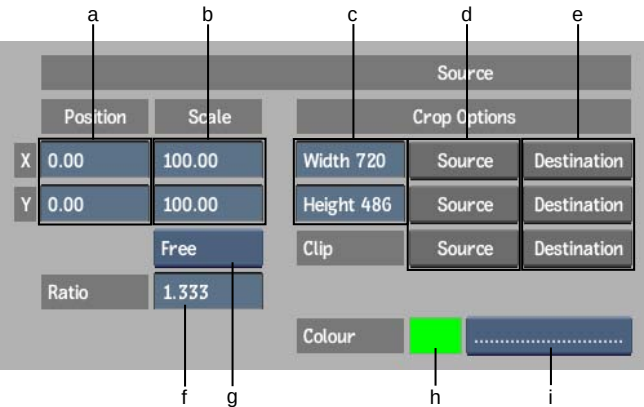
Resize Settings

The following sections show the resize source and destination settings available in the Resize menu or in functions that support Resize.

The Source, Resizing, and Destination settings are available in all resize procedures; however, the layout of these controls may change and some options are not available in some cases.

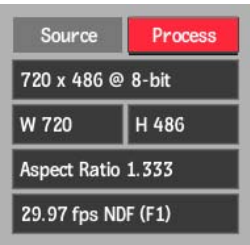
Source Settings

Use the Source settings to set or animate the position and size of the crop box.



(a) X and Y Position fields (b) X and Y Scale fields (c) Crop Box Width/Height fields (d) Source Frame Crop Box buttons (e) Destination Frame Crop Box buttons (f) Source Ratio field (g) Crop Box Mode box (h) Crop Box colour pot (i) Crop Box Line Type box

The Source settings displayed in the Deliverables tab are not editable, since the crop box is not available. In this case, use the Resize button to access the full set of resize settings.



X Position field Displays the horizontal position from the centre of the crop box relative to the centre of the source frame. Drag left or right, or click to enter a new X Position value.

Y Position field Displays the vertical position from the centre of the crop box relative to the centre of the source frame. Drag left or right, or click to enter a new Y Position value.

X Scale field Displays the horizontal scale of the crop box relative to the Crop Box Width field value, as a percentage. Drag left or right, or click to enter a new X Scale value.

Y Scale field Displays the vertical scale of the crop box relative to the Crop Box Height field value, as a percentage. Drag left or right, or click to enter a new Y Scale value.

Crop Box Width field Displays the currently set width of the crop box, in pixels. Drag left or right, or click to enter a new width value.

Crop Box Height field Displays the currently set height of the crop box, in pixels. Drag left or right, or click to enter a new height value.

Source buttons Click to fit the crop box width, height, or both to the source frame.

Destination buttons Click to fit the crop box width, height, or both to the destination frame.

Crop Mode box Select a mode to determine the scaling behaviour of the crop box while repositioning or rescaling.

Select:	To:
Free	Adjust the crop box freely, with no constraints on position or scale.
Prop	Use the current Crop Box Width and Crop Box Height settings. When adjusting the crop box, these proportions are maintained.
Source	Use the source clip aspect ratio for the crop box. When adjusting the crop box, this aspect ratio is maintained.
Destination	Use the destination clip aspect ratio for the crop box. When adjusting the crop box, this aspect ratio is maintained.

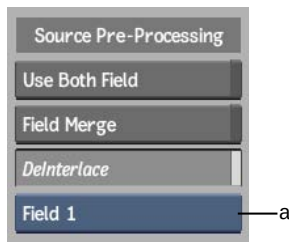
Source Ratio box Displays the aspect ratio of the crop box in the source frame. Editable.

Crop Box Border colour pot Displays the current colour of the crop box border. Editable.

Crop Box Line Style box Select the line style for the crop box.

Source Pre-Processing

Use the Source Pre-Processing settings to determine whether resize is performed on full progressive frames, or on either (or both) of the interlaced fields.



(a) Source Fields Toggle button

Use Both Field button Enable to use both fields of an interlaced clip to process the resizing. Disabled when Field Merge or Deinterlace are enabled.

Field Merge button Enable to merge the two fields of an interlaced clip to process the resizing. Disabled when Use Both Field or Deinterlace are enabled.

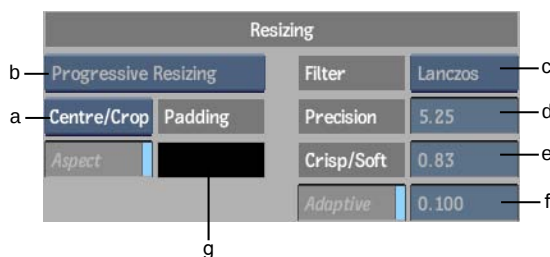
Deinterlace button Enable to select one of the two fields in an interlaced clip to process the resizing. Disabled when Use Both Field or Field Merge are enabled.

Source Fields Toggle button Select Field 1 or Field 2 when processing the resizing on only one field of an interlaced clip. Active when Deinterlace is enabled.

Resizing Settings

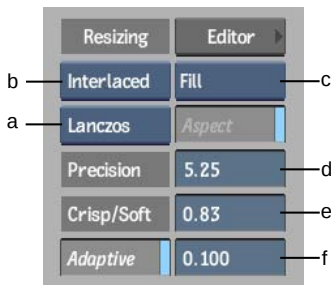
The following Resizing settings appear in the Resize menu.

NOTE Depending on the resolution of the images you are resizing and the model of your graphics card, the GPU may not be able to resize the clip. If the GPU cannot resize the clip, your application resizes the clip and adaptive de-interlacing is not available.



(a) Fit Method box (b) Resize Field Format box (c) Filter box (d) Precision field (e) Crisp/Soft field (f) Padding colour pot (g) Adaptive field

The following Resizing settings appear in the Deliverables tab of the Player.



(a) Filter box (b) Resize Field Format box (c) Fit Method box (d) Precision field
(e) Crisp/Soft field (f) Adaptive field

Resize Field Format box Select an option to determine whether the resize is performed on progressive or interlaced frames, if both source and destination clips are interlaced. If either clip is progressive, the resize operation is always progressive.

Fit Method box Select a fit method to be applied to the selected clip.

Select:	To fit:
Centre/Crop	The source image, centred, over the destination resolution frame. If the source is larger than the destination, it is cropped. If the source is smaller than the destination, it is surrounded by a black border.
Crop Edges	One edge of the source into the destination resolution frame without stretching or squashing the frame. Excess parts of the source frame after resizing are cropped. If the source—after the one edge is resized—is wider than the destination, its overhanging left and right edges are cropped. If the source is taller than the destination, the upper and lower edges are cropped.
Fill	The source, width, and height, into the destination resolution frame. This process, if the source and destination resolutions do not have the same aspect ratio, can distort the image.
Letterbox	The source to the destination resolution frame without squashing or stretching it, and without cropping the source. If the source is wider than the destination, black bars fill the top and bottom of the destination frame. If the source is narrower than the destination, black bars fill the right and left sides of the frame. In all cases, the entire source frame is fit into the destination frame.

Filter box Displays available resizing filters. All but the Impulse filter are rendered using the GPU. This box does not appear if you selected the Centre/Crop Fit method.

Select:	For:
Lanczos	Excellent and sharp results. Recommended for upscale and downscale. Expensive to compute.
Shannon	Excellent and sharp results. Results are sharper than Lanczos in small details. Recommended for upscale and downscale. Expensive to compute.
Gaussian	Medium quality and softer results.
Quadratic	Medium quality and softer results.
Bicubic	High-quality results, but not as sharp as Shannon. Use for both upscale and downscale.
Mitchell	High-quality results, but not as sharp as Shannon. Use for both upscale and downscale.
Triangle	Low quality results that are fast to compute. Use for downscale.
Impulse	Very low quality results that are fast to compute. Use for downscale.

NOTE Defining a filter method in a Resize menu will override the default setting specified in the Preferences menu.

Keep Aspect button Enable to maintain non-square pixel formats. This button only appears if you selected the Crop Edges or Letterbox methods.

Padding colour pot Select a colour to use for padding out the frame when centre-cropping, cropping edges, or letterboxing. The default padding colour is black.

Adaptive button Enable to use adaptive de-interlacing to minimize the creation of artifacts associated with resizing interlaced material. Active only when you select Interlaced Resizing from the Resize Field Format box.

Adaptive field Displays the Adaptive de-interlacing setting.

Destination Settings

The Destination settings define the format of the resized clip.

The following Destination settings are displayed in the Resize menu.

Destination	
720 x 486 NTSC	
W 720	H 486
Set to 4:3	Ratio 1.333
8-bit	Field 1
Fit Crop Resolution	

(a) Frame Depth box (b) Aspect Ratio Presets box (c) Frame Width field (d) Resolution Presets box (e) Frame Height field (f) Aspect Ratio field (g) Scan Mode box

The following Destination settings are displayed in Real Time Deliverables.

Destination		Process	
1920 x 1080 HDTV			
W 1920	H 1080		
Set to 16:9	Ratio 1.778		
29.97 NDF	Field 1		
Pull-down	8-bit		
Start TC	10:01:46:15		

(a) Frame Rate box (b) Aspect Ratio Presets box (c) Resolution Presets box (d) Aspect Ratio field (e) Scan Mode box (f) Frame Depth box

The following Destination settings are displayed in the Resize soft effect.

Destination	
Width 720	Height 486
Aspect Ratio 1.3333	
Depth: 8-bit	

Fit Crop Resolution button Adjusts the destination resolution to fit the current crop box.

Pull-down box Enable to add pull-down in the destination clip.

Frame Depth box Provides five frame depth options.

Resolution Presets box Provides options for many standard resolutions, as well as a Custom option that you can use to specify non-standard resolutions.

Width/Height fields Display the frame width and height of the selected resolution preset. If you select Custom from the Resolution Presets box, use these fields to enter the frame width and height values you want to use.

Aspect Ratio Presets box Provides standard frame aspect ratio options as well as a w:h option to set the clip to use square pixels. Also provides a Custom option so you can enter a custom frame aspect ratio in the Ratio field.

Scan Mode box Select an option to set the order in which the fields of interlaced material are scanned.

Select:	To resize:
Progressive	A frame-based clip to another frame-based clip.
Field 1	A clip by drawing Field 1 followed by Field 2.
Field 2	A clip by drawing Field 2 followed by Field 1.

For interlaced material, you can specify whether the resize needs to be done from both fields or just from one of the two. In the latter case, the result is a progressive clip made from the same two fields.

Ratio field Enter a custom frame aspect ratio in this field, if necessary.

Changing Views in Resize

When accessed from the A/V Tools or from soft effects, Resize includes a crop box that you use to define the region of the source clip from which the resize sample is taken.

You view the crop box with Front view selected, and the resized result with Result view selected. The most efficient way to work is to set up two viewports for a split view of the front and result views.

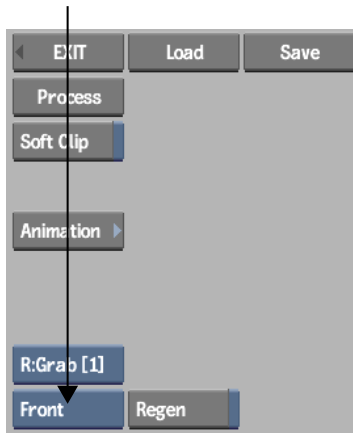
To monitor a Split view in Resize:

- 1 Load a clip into Resize or display the soft Resize settings if you are working on the timeline.
With Split view enabled, the viewport on the left displays the front clip and the viewport on the right displays the result clip.



(a) Front clip and crop box (b) Result clip

- 2 To change the view of the active viewport (the active viewport is indicated by a yellow border), select an option from the View box.



Select:	To view:
Front (or press F1)	The front clip and crop box.
Result (or press F4)	The result clip.
Channels (or press F5)	The Channel Editor.

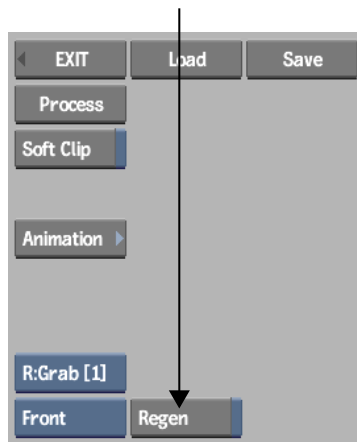
Select:	To view:
Tracks	The Channel Editor (set to Track view mode). Press F5 to cycle between the Channel Editor view options.
Info	The Channel Editor (set to the Channel Information view mode). Press F5 to cycle between the Channel Editor view options.

Getting Dynamic Feedback in Result View

You can view the effects of resize settings dynamically in Result view. This option is available only in the Resize menu accessed from the A/V Tools and soft effects.

To get dynamic feedback in Result view:

- Enable Regen.



Resizing from Source Using the Crop Box

Using the more complete resize settings in Resize, or in the Resize soft effect, you can set or animate the position and size of the crop box and have a dynamic preview from which to view results while setting the resize settings.

You can resize the entire source frame to the destination resolution using the Fill and Letterbox fit methods:

- The Fill fit method produces the best results when the source and destination resolutions are the same aspect ratio, such as when resizing from NTSC to PAL, or from any of the 4:3 full-aperture flat film formats (2048x1536) to NTSC/PAL.
- The Letterbox fit method is good for resizing a 16:9 clip to a 4:3 clip without losing any of the 16:9 original.

To resize a clip using the Fill fit method:

- 1 Access the Resize menu from the A/V Tools or from soft effects if you are working on the timeline.
- 2 To fit the entire source frame into the destination frame, the crop box must be the same size as the source frame and aligned along its edges. Do one of the following:
 - In the Width and Height fields, enter the source frame resolution values. Make sure the crop box is centred over the front clip.
 - Click the Source button next to the Clip label to match the crop box width and height to the source clip.
- 3 From the Resolution Presets box, select the destination resolution. You can also select Custom and then enter width and height values in the W and H fields.

The destination resolution should be the same aspect ratio as the source. If not, the resize process (using the Fill fit method) will stretch or squash the clip.

NOTE You are not able to define the output resolution in the Soft Resize menu. The output resolution is determined by the project's resolution.

- 4 From the Fit Method box, select Fill to fit the source, width, and height to the destination resolution.
- 5 From the Filter box, select a filter option.
- 6 Depending on the source and destination resolutions, select a scan mode from the Scan Mode box.
- 7 Process the result.

To resize a 16:9 source clip to a 4:3 destination resolution using the Letterbox fit method:

- 1 Access the Resize menu for a 16:9 clip from the A/V Tools or from soft effects if you are working on the timeline.
- 2 Click the Source button next to the Clip label to make the crop box the same size as the source frame.
- 3 From the Resolution Presets box, select a 4:3 destination resolution. You can also set custom width and height in the W and H fields.
- 4 From the Fit Method box, select Letterbox.
Black bars appear above and below the source frame, which itself is resized to fit the destination frame.
- 5 From the Filter box, select a filter option.
- 6 Depending on the source and destination resolutions, select a scan mode from the Scan Mode box.
- 7 Process the result.

Resizing to Destination Using the Crop Box

Using the more complete resize settings in Resize, you have a dynamic preview from which to view results while setting the resize settings.

In the first procedure, extract a 4:3 cutout from a 16:9 clip. In the second procedure, extract a custom cutout from a source clip.

To extract a 4:3 cutout from a 16:9 clip:

- 1 Access the Resize menu for a 16:9 clip from the A/V Tools or from soft effects if you are working on the timeline.
- 2 Click the Source button next to the Clip label to make the crop box the same size as the source frame.
- 3 Make sure Regen is enabled to get dynamic visual feedback of the result clip in the viewport on the right. See [Getting Dynamic Feedback in Result View](#) on page 1119.
- 4 From the Resolution Presets box, select the 4:3 resolution to which you want to resize the source.
- 5 Make sure Keep Aspect is enabled.

- 6 From the Fit Method box, select Crop Edges.
- 7 Depending on the source and destination resolutions, select a scan mode from the Scan Mode box.
- 8 Process the result.

To extract a custom cutout from a source clip:

- 1 Access the Resize menu for a 16:9 clip from the A/V Tools or from soft effects if you are working on the timeline.
- 2 Make sure Regen is enabled to get dynamic visual feedback of the result clip in the viewport on the right. See [Getting Dynamic Feedback in Result View](#) on page 1119.
- 3 From the Resolution Presets box, select the 4:3 resolution to which you want to resize the source.
- 4 Click the Destination button next to the Clip label to make the crop box the same size as the destination frame.
By default, the crop box is centred.
- 5 To make an off-centre cutout, drag the crop box to another position.
- 6 From the Fit Method box, select Centre/Crop.
- 7 Depending on the source and destination resolutions, select a scan mode from the Scan Mode box.
- 8 Process the result.

Animating Resize Settings

You can animate the position of the crop box to pan and scan a 16:9 clip to a 4:3 format. Pan and scan is a technique widely used for resizing 16:9 clips to a 4:3 resolution when the area of interest in the shots is to one side of the 16:9 frame. You can follow the area of interest in the shot by animating the crop box along the X-axis.

To pan and scan a 16:9 clip to a 4:3 clip:

- 1 Access the Resize menu for a 16:9 clip from the A/V Tools or from soft effects if you are working on the timeline.

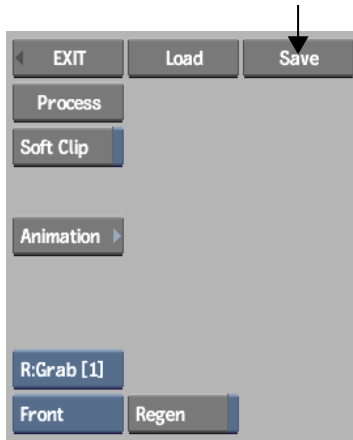
- 2 Enable Regen to get dynamic visual feedback of the result clip in the viewport on the right. Regen is available only when you access Resize from the EditDesk or timeline. See [Getting Dynamic Feedback in Result View](#) on page 1119.
- 3 From the Resolution Presets box, select the 4:3 resolution to which you want to resize the source.
- 4 From the Fit Method box, select Crop Edges.
- 5 Click the Source button next to the Clip label to make the crop box the same size as the source frame.
- 6 Depending on the source and destination resolutions, select a scan mode from the Scan Mode box.
- 7 Go to the first frame.
- 8 Enable Autokey to create position keyframes for the crop box automatically.
- 9 Scrub through the clip to identify areas where the area of interest includes the left and right edges of the clip outside the crop box.
- 10 Animate the position of the crop box accordingly by dragging the crop box. Press **Shift** while dragging the crop box to constrain changes in position to the X-axis:
 - If the area of interest changes suddenly following a splice between clips, add a keyframe for the X-position of the crop box at the last frame of the outgoing shot, and then add another keyframe at the first frame of the incoming shot.
 - If the area of interest changes with camera movement, create a linear or hermite animation to change the X-position of the crop box gradually.
- 11 Depending on the source and destination resolutions, select a scan mode from the Scan Mode box.
- 12 Process the result.

Saving and Loading Resize Setups

If you are working in Resize, or with the soft Resize settings, you can save resize setups and load them for use with other clips.

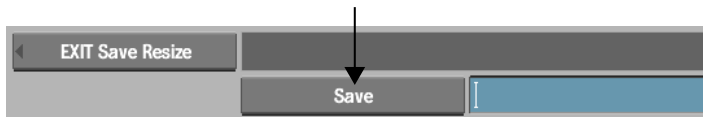
To save a setup in Resize:

- 1 In Resize, click Save.



The file browser appears.

- 2 Enter a name for the setup file and then click Save.

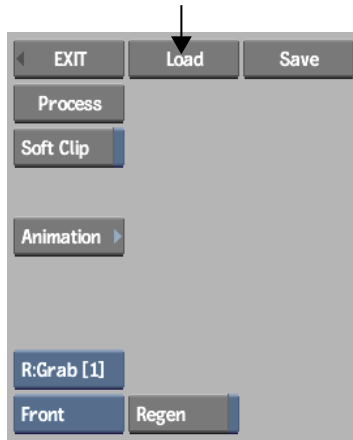


TIP By default, setups are saved to the *resize* directory in your project's home directory.

- 3 Click EXIT Save Resize.
You are returned to the Resize menu, and the setup name appears in the upper-left corner of the menu area, in a black uneditable field.
- 4 Once you save a setup, you can continue modifying the resize settings.
To update the most recently saved setup with your most recent changes, click Save next to the setup name, and then Confirm.

To load a setup in Resize:

- 1 In Resize, click Load.



The file browser appears.

- 2 Locate the setup file that you want to load, select the file, and then click Load.

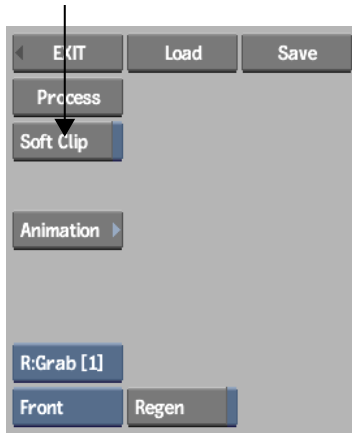


Processing Clip Handles When Working with Soft Clips

When you resize clips on the EditDesk that have soft edits such as dissolves, you can process all frames that are part of the dissolve and keep the soft edits intact. That way, if you want to change the dissolve, resized handle frames are available.

To process all frames associated with a soft clip:

- Enable Soft Clip.



NOTE You can only process clip handles if you do not animate the crop box. If you animate the crop box, the Soft Clip button is inactive.

Resetting All Resize Settings to Default Values

You can reset resize settings to their default values in Resize.

To reset all settings in Resize to the default values:

- 1 In Resize, click Reset All.



- 2 Click Confirm to reset all resize values.

TIP You can also click Reset All in the Animation menu. Doing so resets only animatable values. Other settings such as the fit method, scan mode, and other non-animatable settings remain unchanged.

Changing the Appearance of the Crop Box

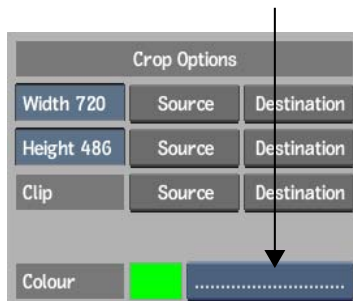
By default, the crop box is green. If there is a lot of green in the clip you are resizing, you may want to change the colour of the crop box to see it better. You can also change the line type with which the crop box is drawn.

To change the appearance of the crop box:

- 1 Click the colour pot to display the colour picker.



- 2 Use the colour picker to set the colour of the crop box.
- 3 To change the line type of the crop box, select an option from the Line Type box.



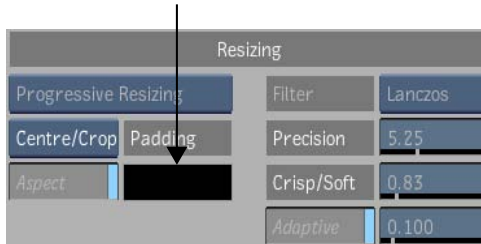
Changing the Padding Colour

The default padding colour when centre-cropping, cropping edges, or letterboxing, is black. You can set the padding to any other colour.

This option is not available from the Deliverables tab.

To change the padding colour:

- 1 Click the colour pot below the Padding title to display the colour picker.



- 2 Use the colour picker to set the colour of the letterbox padding.

Setting Default Image Resolution Characteristics on Import

You can force a common aspect ratio, scan mode, and frame rate for all images selected for import.

Alternatively, you can use the Default Resolutions list to set the aspect ratio, scan mode, and frame rate for the import based on the width and height of the individual image. This is useful when you want to import multiple images of varying dimensions.

To force a common aspect ratio, scan mode, and frame rate:

- 1 In the Import Image menu, disable Resize.
Only the Aspect Ratio box and the Aspect Ratio field remain enabled in the Resize options.

Clip Metadata			Processing		Default Resolutions	
Enter Tape	Enter Timecode	No Keycode	Resize	Pan	720 x 486 NTSC	
IMPORT	Start 00:00:00:00	No KC	X 0	Y 0	W 720	H 486
Up 1 level	29.97 NDF	16/S16 mm / 1perf	Use LUT		Set to 4:3	Ratio 1.33:1
Name:	Scan First File		LUT:		8-bit	Field 1

(a) Framerate box (b) Aspect Ratio box (c) Aspect Ratio field (d) Field Dominance box

- 2 Select a value from the Aspect Ratio box or enter a value in the Aspect Ratio field.

Specifying a unique aspect ratio in the Aspect Ratio field causes the Aspect Ratio box to show Custom automatically.

Specifying Default allows you to apply a preset resolution from the Default Resolutions list.

- 3 Use the Field Dominance box and the Framerate box to set the scan mode and frame rate, respectively, for all the selected images.

To use the Default Resolutions list to determine aspect ratio, scan mode, and frame rate:

- 1 In the Aspect Ratio box, select Default.
- 2 To view/edit the Default Resolutions list, click Default Resolutions. See [Default Resolutions List](#) on page 1129.

Clip Metadata			Processing		Default Resolutions	
Enter Tape	Enter Timecode	No Keycode	Resize	Pan	720 x 486 NTSC	
IMPORT	Start 00:00:00:00	No KC	X 0	Y 0	W 720	H 486
Up 1 level	29.97 NDF	16/S16 mm / 1perf	Use LUT		Set to 4:3	Ratio 1.33:1
Name:	Scan First File		LUT:		8-bit	Field 1

Default Resolutions List

The Default Resolutions list determines the aspect ratio, scan mode, and frame rate to apply to an image with a specific width and height. It is consulted

The screenshot shows the 'Resolution' window in a video player. The window has a title bar 'Resolution' and a close button. Below the title bar is a table with the following columns: Width, Height, Aspect Ratio, Scan Mode, and Frame Rate. The table contains 16 rows of resolution settings. A red box labeled 'b' highlights the first row of the table. Below the table is a section labeled 'Add Resolution' with input fields for Width, Height, Ratio, and a 'Set to 16:9' button. There are also buttons for 'Field 1' and '23.976 fps'. A red box labeled 'c' highlights the 'Ratio' input field. At the bottom left is an 'Apply Changes' button.

Width	Height	Aspect Ratio	Scan Mode	Frame Rate
640	480	1.333333	P	Undefined fps
720	486	1.333330	F1	29.97 fps
720	576	1.333333	F1	25 fps
1280	720	1.777778	P	59.94 fps
1828	1332	1.372372	P	24 fps
1828	1556	2.349614	P	24 fps
1920	1036	1.776062	F1	29.97 fps
1920	1080	1.777778	P	24 fps
1920	1440	1.333333	P	24 fps
2048	1536	1.333333	P	24 fps
2048	1556	1.316195	P	24 fps
3072	2048	1.500000	P	24 fps
3656	2664	1.372372	P	24 fps
3656	3112	2.349614	P	24 fps
4096	3112	1.316195	P	24 fps

Add Resolution

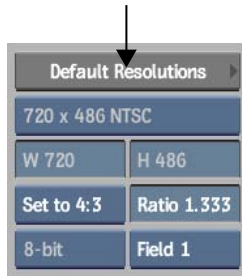
Width: Height: Ratio: Set to 16:9 Field 1 23.976 fps

Apply Changes

The list displays the contents of the `/usr/discreet/cfg/legacy.res.cfg` file. If this file does not exist, the system defaults for each resolution are used, such as 1.33 for NTSC and PAL.

To display the Default Resolutions list:

- 1130 | Chapter 45 Resize



The Default Resolution list appears.

To add a resolution to the list:

- 1 In the Resolution Edit Mode box, select Add Resolution.
- 2 Use the Edit controls to enter the width, height, aspect ratio, scan mode, and frame rate for the new resolution.
- 3 Click Apply Changes.

To edit a resolution:

- 1 In the Resolution Edit Mode box, select Edit Resolution.
- 2 In the Default Resolutions list, select the resolution you want to edit.
- 3 Use the Edit controls to adjust any of the following: width, height, aspect ratio, scan mode, or frame rate.
- 4 Click Apply Changes.

To remove a resolution:

- 1 In the Resolution Edit Mode box, select Remove Resolution.
- 2 In the Default Resolutions list, select the resolution you want to remove.
- 3 Click Apply Changes.
You are prompted to confirm the deletion.
- 4 Click Confirm to delete the selected resolution from the list.

Topics in this chapter:

- [About Pulldown](#) on page 1133
- [Capturing Film-Based Media with 2:3 Pulldown Removal](#) on page 1136
- [Capturing Film-Based Media with 2:3 Pulldown Using EDLs](#) on page 1139
- [Removing and Inserting Pulldown on the EditDesk](#) on page 1142
- [Monitoring Dual Timecodes and Pulldown](#) on page 1147
- [Tracking Hybrid Splices and Transitions](#) on page 1150
- [Outputting a Clip to Tape with 2:3 or PAL Pulldown](#) on page 1151
- [Exporting EDLs with 2:3 Pulldown Insertion](#) on page 1153

About Pulldown

Pulldown is a synchronisation technique that is used to approximate compatibility between two dissimilar formats (usually between film to video), by creating new frames.

Pulldown is added when 24 fps film material is transferred to 60i or 50i tapes using the telecine method. The same images that made up 24 frames of film must now make up 30 (60i, or NTSC) or 25 (50i, or PAL) frames of video. In other words, for every 24 film frames, frames must be added, the number of which depends on the video format:

- Six new video frames transferring to the NTSC format

- One new video frame when transferring to the PAL format

To accomplish this conversion, the film frames are first divided into fields. The fields are then distributed across frames in a regular pattern to create the frames with the smoothest results and least disturbance of the original material.

When transferring to the NTSC format, a pulldown frame is created every four film frames. How the pulldown frame is created varies according to the type of pulldown used:

- In 2:3 pulldown, the first frame is used in two fields of video, while the second is used in three.
- In 3:2 pulldown, the first frame becomes three fields, while the second becomes just two.
- In Advanced pulldown, the second and third frames each become three fields.

Example of a 2:3 and 3:2 pulldown transfer process:

- 1 The process begins with four frames of film.



- 2 The four frames are divided into eight fields.



- 3 The fields are resequenced using 2:3 or 3:2 pulldown, duplicating fields to create ten fields arranged into five video frames.
 - 2:3 pulldown: third and fourth frames are hybrids.



- 3:2 pulldown: second and third frames are hybrids.



- Advanced pulldown: third and fourth frames are hybrids.



In the case of PAL pulldown, the full 24 film frames are used to create a sequence of 25 video frames: the 12th and 24th film frames are used in 3 fields of video.

- Original film sequence:
AA BB CC DD EE FF GG HH II JJ KK LL MM NN OO PP QQ RR SS TT UU
VV WW XX
- PAL pulldown: frames 13 through 24 are hybrids.
AA BB CC DD EE FF GG HH II JJ KK LL LM MN NO OP PQ QR RS ST TU
UV VW WX XX

Regardless of the pulldown used, the approach is similar: the converted video consists of sequences of intact film frames separated by hybrid frames.

While the intact frames are identical to their sources, the hybrids consist of fields from two different film frames. If viewed as stills, the hybrid frames appear jittery—because the fields do not originate from the same moment in time. (When played back in the full sequence, the jitter is imperceptible.) When working with 24p sources in Backdraft Conform, it is important to keep in mind the jitter frames. They are the markers for setting up the automatic pulldown removal on capture.

Pulldown Tools

Backdraft Conform includes pulldown tools and features, the extent of which depend on the pulldown used.

Tool or feature	Standard	Advanced	PAL
Real-time pulldown removal on video capture	Available	Not available	Not available
Auto-capture from EDLs with automatic, real-time pulldown removal	Available	Not available	Not available
Real-time pulldown insertion during playback	Available	Not available	Not available
Pulldown insertion and removal on the Edit-Desk	Available	Available	Available
Dual timecode display on the timeline and in the Player	Available	Available	Not available
Reporting of hybrid transitions in EDLs	Available	Not available	Not available
Real-time pulldown insertion on video output	Available	Not available	Available
Exporting of EDLs from 24p masters as 60i with field-based accuracy for final tape-to-tape colour grading	Available	Not available	Not available

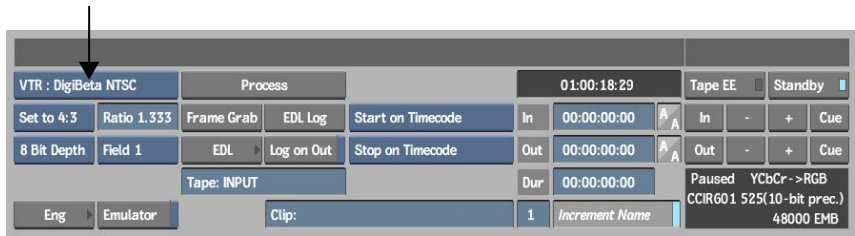
Capturing Film-Based Media with 2:3 Pulldown Removal

Using the Input Clip menu, you can capture 30 fps film-based material and convert it to 24 fps material in real time as you capture. The procedure for enabling automatic 2:3 removal differs depending on whether your tape uses non-drop or drop 60i timecode.

To capture material with 2:3 pulldown removal:

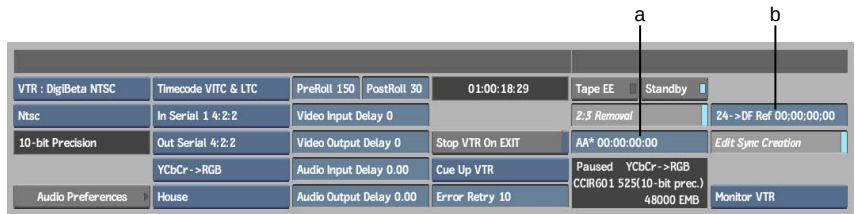
- 1 Open the clip library to where you want to store the clips that you are importing.
- 2 Click Input Clip.

- 3 In the Input Clip menu, select a VTR from the Device Name box.



- 4 Enable the channels that you want to capture. See [Capturing Single Clips](#) on page 141.
- 5 Name the tape and the clip you are about to capture. See [Naming Tapes and Clips](#) on page 139.
- 6 Click Eng.

The Engineering menu appears. It contains options for removing 2:3 pulldown in real time while capturing.



(a) AA Reference field (b) 24>DF Reference field

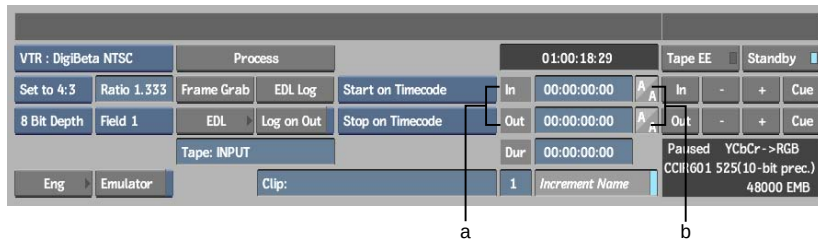
- 7 Enable 2:3 Removal.
- 8 In the AA Reference field, enter a timecode that corresponds with an AA frame on the tape that is currently in the VTR.

TIP To determine an AA frame, frame-step (**right arrow**) the tape and look closely at each frame. In 2:3 pulldown, two jitter frames with field artefacts are followed by three normal frames. The second frame after the two jitter frames is an AA frame. Many VTRs display fields instead of frames, so you will not see any jitter. In this case you can see that field A appears 2 times, followed by field B appearing 3 times, field C appearing 2 times, field D appearing 3 times, and so on.

- 9 When you capture material from a tape that uses 30 fps drop-frame timecode with 2:3 removal enabled, a slight discrepancy between timecodes is introduced due to the reference timecode used to determine the 30 drop frame to 24 timecode conversion. To optimize correspondence between the timecodes, enter the timecode in the 24 >DF Reference field that matches the start reel timecode for the tape.

TIP The start clip timecode can be deduced from the hour-mark of the timecode used by your clips. For example, 1;00;00;00 drop-frame would require a 1;00;00;00 value in the 24p>DF reference field to get a clip starting at 01;00;00+00.

- 10 Click EXIT to return to the Input Clip menu.
- 11 Using the In and Out timecode fields, set the in and out points for the capture session.



(a) In and Out timecode fields (b) 2:3 In and Out pulldown display

With the in and out timecodes set, the corresponding 2:3 pulldown frame is indicated in the In and Out 2:3 pulldown display. Use the 2:3 pulldown display to determine the 24 fps result in and out frames.

- 12 Click Process to capture the material with 2:3 pulldown removal.

Capturing Material from Tapes with Inconsistent 2:3 Pulldown

If a 60i tape contains film-based material that was transferred to the tape in different sessions, it is possible that the 2:3 pulldown from one session to the next is not consistent. If your 30 fps EDL refers to material across different sections of the tape with different 2:3 pulldown, you will be unable to capture with automatic 2:3 removal configured for the entire tape. Setting a reference frame for the tape would properly capture the section you referenced, but not others. Instead, you can capture the clips as is, then remove the pulldown on

the EditDesk. See [Removing and Inserting Pulldown on the EditDesk](#) on page 1142. You can also change the reference frame at each capture, and capture multiple times.

Capturing Film-Based Media with 2:3 Pulldown Using EDLs

Most offline editing of film-based material transferred to 60i tape results in a 30 fps EDL. You can set up an auto-capture session using the 30 fps EDLs, applying 2:3 pulldown removal to both the EDLs and the captured clips.

By previewing the 30 fps EDL converted to 24 fps, you can identify splices that fall on hybrid frames—the result of the 60i offline edit—and, if necessary, edit the EDL prior to auto-capture.

Importing EDLs With 2:3 Pulldown

Before you begin importing EDLs with 2:3 pulldown, you should put all the EDLs that you want to import into a single directory on the filesystem accessible from Backdraft Conform.

Ensure that you have a list of 2:3 pulldown reference frames for all tapes to which the EDLs refer. If you do not know the 2:3 pulldown on your tapes, load the tapes into your VTR and then open the Input Clip menu. Frame-step (**right arrow** and **left arrow**) through the tape to take note of the reference frame and type (AA/BB/BC/CC/DD).

This section covers the Import EDL menu only in terms of conforming 30 fps EDLs with automatic 2:3 removal. For complete information on the Import EDL menu, see [Importing EDL Files](#) on page 621.

To import an EDL file with 2:3 pulldown removal:

- 1 Follow the general procedure for importing an EDL file, and stop at the point where you can set any options in the Import EDL menu. See [Importing EDLs](#) on page 636.
- 2 Enable 2:3 Removal Mode.
- 3 From the Frame Code Mode box, select the option that corresponds to the EDLs you are loading.

When 2:3 Removal Mode is enabled, the only options are 29.97 fps and 30 fps. If you are loading multiple EDLs, the same frame code mode is used for all of them.

- 4 To ensure match frames on timewarped elements are maintained, enable Fix TW Match Frames.
- 5 Continue the procedure for importing an EDL file.
Your EDL file is imported with 2:3 pulldown.

Setting Default 2:3 Pulldown Configuration Options

You can set default 2:3 pulldown sequence reference frames for all tapes and record clips. In cases where you frequently receive tapes that require 2:3 removal, it is a good idea to communicate with your client so 2:3 sequence is inserted consistently for all tapes. That way, your default settings configure an accurate 2:3 removal process without you having to manually enter reference frames tape-to-tape.

You can also set preferences to highlight and correct hybrid frames, and to apply a timewarp fit to native 30 fps interlaced material referenced by EDLs for which 2:3 removal is disabled. That way, native 30 fps material can be integrated in 24 fps timelines more easily. See [2:3 Pulldown Options Menu](#) on page 634.

To set the default source 2:3 pulldown (for material on tapes provided to you), select a frame type. You do not have to enter a reference timecode.

- If the lowest timecode referenced for a tape by an EDL is an even hour (for example, 01:00:00:00), the reference frame is applied to that frame.
- If the lowest timecode referenced for a tape by an EDL is not an even hour (for example 01:00:01:22), the reference frame is applied to the next even-hour downward (for example, 01:00:00:00).

You can override these default settings on a tape-to-tape basis. See [Overriding Default 2:3 Pulldown Configuration Tape-to-Tape](#) on page 1140.

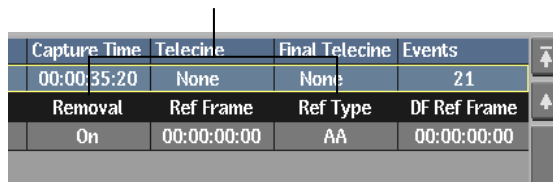
Overriding Default 2:3 Pulldown Configuration Tape-to-Tape

You can override default 2:3 pulldown configuration options on a tape-to-tape basis. Do so when you are provided with tapes that have a 2:3 pulldown

sequence that does not match the default settings, or to disable 2:3 removal for tapes that contain native 30 fps material.

To override default 2:3 pulldown configuration tape-to-tape:

- 1 In the Import EDL menu, enable View Tape List.
The tape list displays information about each tape referenced by currently loaded EDLs.
- 2 To view 2:3 pulldown configuration information, click the triangle on the left of the tape entry to expand its contents.
Columns indicate whether 2:3 removal is enabled, and, if it is, the reference frame and type for the 2:3 sequence on the tape.



Capture Time	Telecine	Final Telecine	Events
00:00:35:20	None	None	21
Removal	Ref Frame	Ref Type	DF Ref Frame
On	00:00:00:00	AA	00:00:00:00

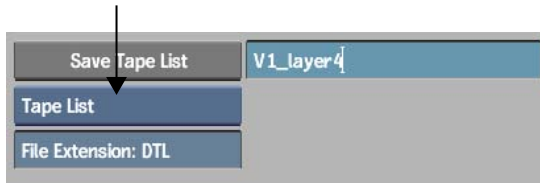
- 3 Drag over the entry in the 2:3 Removal column to turn 2:3 removal on or off.
- 4 To set the reference frame, enter a timecode in the Ref Frame column.
- 5 To set the reference frame type, drag over the Ref Type column.

Saving and Loading the Tape List

In cases where you may want to recapture or reassemble clips from EDLs more than once, it is a good idea to save the tape list (which stores the 2:3 pulldown configuration for each tape) so you can load it later. You can also use an R23 file to keep track of the key frames for all start frames of all the tapes referenced in an EDL. R23 files are accessible via the Import and Export EDL menus.

To save a tape list:

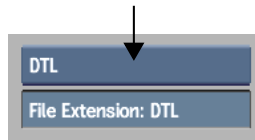
- 1 In the Import EDL menu, click Save.
- 2 In the Save EDL menu, select Tape List from the Save Option box.



- 3 Use the file browser to set the destination for the saved file.
By default the tape list is saved in your project's *~/edl* directory.
- 4 In the Name field, enter a name for the tape list.
By default the tape list is saved with the *.dtl* extension.
- 5 Click Save.

To load a tape list:

- 1 In the Import EDL menu, click Load.
- 2 In the Load EDL menu, select DTL (Discreet Tape List) from the File Extension box.



- 3 Use the file browser to locate and select the tape list.
- 4 Click Load.

Removing and Inserting Pulldown on the EditDesk

You can remove 2:3 or 3:2 pulldown during the capture process, but PAL and Advanced pulldowns are removed using the tools available on the EditDesk.

Although you can remove 2:3 or 3:2 pulldown from film-based sources on 60i tapes during the capture process, you can also capture the 60i sources as is, and then remove pulldown on the EditDesk.

EditDesk-based removal and insertion is also useful if your clips originate from the filesystem and were imported rather than captured from tape. Image import and export does not support pulldown removal.

To automatically detect and remove pulldown on the EditDesk:

- 1 From the Audio/Visual Tools box, select Film.
- 2 In the Film menu, click Rem Pulldown.



- 3 From the Pulldown box, select Auto-detect.
- 4 From the Timecode Mode box, select an option.

Select:	To:
Keep TC Mode	Keep the timecode of the source clip with the new clip.
Change TC Mode	Change the timecode of the new clip to 23.97 fps or 24 fps timecode, depending on the the source clip timecode.

- 5 If you selected Change TC Mode, select an option from the Start TC Mode box.

Select:	To:
Same Start Time	Use the start timecode of the original clip as the start timecode of the result clip without converting it. For example, it uses the 29.97 fps start timecode of the original clip as the 23.97 fps start timecode of the result clip, without converting it.
Same Start Frame	Convert the original start timecode of the clip to the new timecode mode, and then use the result timecode as the start timecode for the result clip. For example, it converts the 29.97 fps start timecode of a clip to 23.97 fps and then use the result timecode as the start timecode for the result clip.

- 6 To remove the pulldown, click the upper-left corner of the clip.
- 7 Select a destination for the resulting clip.

The new clip with only the original film frames is processed and appears on the Source Area. If the automated detection fails, you must manually remove the pulldown.

If the automatic detection and removal does not work, you have to manually remove the pulldown.

To manually remove pulldown on the EditDesk:

- 1 From the Audio/Visual Tools box, select Film.
- 2 In the Film menu, click Rem Pulldown.



- 3 From the Pulldown option box, select an option.

Select:	To:
Standard	Remove a 2:3 pulldown.
Advanced	Remove a 2:3:3:2 pulldown.
PAL	Remove a PAL pulldown. This option also sets the timecode mode to 25 fps if you set the Timecode Mode box to Change TC Mode.

- 4 From the Timecode Mode box, select an option.

Select:	To:
Keep TC Mode	Keep the timecode of the source clip with the new clip.
Change TC Mode	Change the timecode of the new clip to 23.97 fps or 24 fps timecode, depending on the the source clip timecode.

- 5 If you selected Change TC Mode, select an option from the Start TC Mode box.

Select:	To:
Same Start Time	Use the start timecode of the original clip as the start timecode of the result clip without converting it. For example, it uses the 29.97 fps start timecode of the original clip as the 23.97 fps start timecode of the result clip, without converting it.
Same Start Frame	Convert the original start timecode of the clip to the new timecode mode, and then use the result timecode as the start timecode for the result clip. For example, it converts the 29.97 fps start timecode of a clip to 23.97 fps and then use the result timecode as the start timecode for the result clip.

- 6 Look closely at the clip, and scrub it to find the first frame that immediately follows the jitter frames.
- For example, in a clip with standard pulldown, three smooth frames are followed by two jittery frames. Find the frame that immediately follows two jitter frames. In the example below, this is the rightmost D frame.



- 7 To remove the pulldown, click the upper-left corner of that frame.
- 8 Select a destination for the resulting clip.
- The new clip with only the original film frames is processed and appears on the Source Area.

To insert pulldown on the EditDesk:

- 1 In the Audio/Visual Tools box, select Film.
- 2 In the Film menu, click Add Pulldown.



- 3 From the Pulldown option box, select an option.

Select:	To:
Standard	Insert a 2:3 pulldown.
Advanced	Insert a 2:3:3:2 pulldown.
PAL	Insert a PAL pulldown. This option also sets the timecode mode to 25 fps if you set the Timecode Mode box to Change TC Mode.

- 4 From the Timecode Mode box, select an option.

Select:	To:
Keep TC Mode	Keep the timecode of the source clip.
Change TC Mode	Change the timecode to match that of the new framerate.

- 5 If you selected Change TC Mode, select an option from the Start Mode box.

Select:	To:
Same Start Time	Use the start timecode of the source clip as the start timecode of the result clip without converting it. For example, with a standard pulldown, it uses the 23.97 fps start timecode of the clip as the 29.97 fps start timecode of the result clip without converting it.
Same Start Frame	Convert the start timecode of the original clip to the new framerate, and then use the result timecode as the start timecode for the result clip. For example, with a standard pulldown, it converts the 23.97 fps start timecode of the clip to 29.97 fps, and then use the result timecode as the start timecode for the result clip.

- 6 From the Destination Timecode box, select the desired timecode for your destination clip. If you are inserting a PAL pulldown, this field is set to 25 fps.

Select:	To output with:
Auto	29.97 frames per second drop-frame or non-drop-frame timecode
30 fps	30 frames per second timecode
29 fps DF	29.97 frames per second drop-frame timecode
29 fps NDF	29.97 frames per second non-drop-frame timecode

- 7 Scrub the clip to locate the the frame required to properly insert the pulldown, and click the frame indicator.

When inserting:	Select:	To:
Standard pulldown	The first frame	Insert 3:2 pulldown. The result clip has the following sequence: AA, AB, BC, CC, DD.
	The second frame	Insert 2:3 pulldown. The result clip has the following sequence: AA, BB, BC, CD, DD.
Advanced pull-down	The second frame	Insert 2:3:3:2 pulldown. The result clip has the follwing sequence: AA, BB, BC, CC, DD.
PAL pulldown	The 11th frame	Insert PAL pulldown. The result clip has the following sequence: AA, BB, CC, DD, EE, FF, GG, HH, II, JJ, KK, LL, LM, MN, NO, OP, PQ, QR, RS, ST, TU, UV, VW, WX, XX

- 8 Select a destination reel for the processed result.
The new clip is processed and appears on the Source Area.

Monitoring Dual Timecodes and Pulldown

When you load 24p clips into the Player, the dual timecode and 2:3 pulldown monitoring options are enabled. To view dual timecodes, you must:

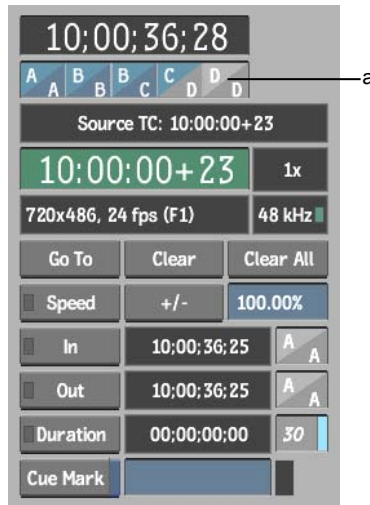
- View a 24p clip in a 29.97 fps frame rate project.

- Ensure that, in the Preferences menu, on the General tab, in the Timecode group, the Display Dual Timecodes button is enabled.

To monitor dual timecodes and 2:3 pulldown:

- 1 Load a 23.97 fps clip into the Player.

The playback rate is set to 23.97 fps. A pulldown frame type display indicates the corresponding pulldown frame type for the clip following pulldown insertion.



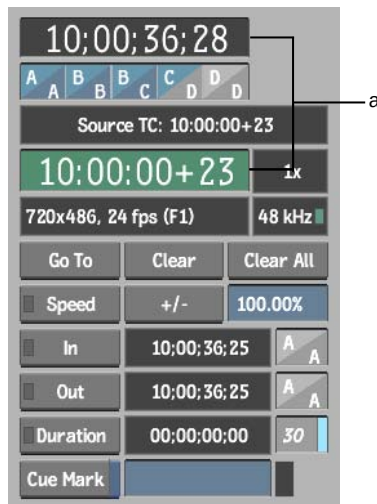
(a) Pulldown frame type display

The pulldown frame type display allows you to keep track of which transitions fall on jitter frames (video frames composed of two different film-based frames). 23.97 fps timecode uses a plus sign for the last punctuation mark, while 29.97 fps timecode uses a colon in non-drop frame mode, or a semi-colon in drop frame mode.

- 2 To view the 29.97 fps timecode that corresponds with each frame in the 23.97 fps clip following pulldown insertion, enable 30.



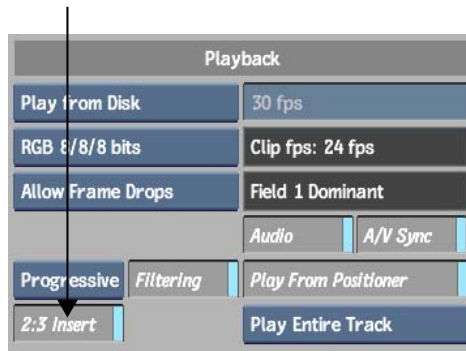
The timeline contains fields that display 23.97 and 29.97 fps timecode equivalents.



(a) 29.97 and 23.97 fps timecodes

NOTE Timecode 00:00:00:00 on the timeline is always an A-frame, both when you work on the timeline and when you output the final project. This is the reference used to calculate 2:3 insertion when recording to tape.

- 3 To enable real-time 2:3 insertion while playing the 23.97 fps clip, in the Player Menu, enable 2:3 Insert.



Tracking Hybrid Splices and Transitions

While working in a 24p project, you can use the timeline to monitor which transitions fall on jitter frames. It is useful to be aware of the actual video fields that are being used in a transition, particularly if the project will be modified after being output to tape.

Two hotkeys are provided to move the positioner backwards and forwards from one hybrid in or out point to the next:

- Use **Ctrl+Shift+Z** to go to the previous hybrid transition.
- Use **Ctrl+Shift+X** to go to the next hybrid transition.

As you move from one jitter frame to the next, the exact 2:3 sequence frame is shown in the 2:3 insertion sequence display in the Player.

NOTE You can also export an EDL with information on hybrid transitions. See [Exporting EDLs with 2:3 Pulldown Insertion](#) on page 1153 for details.

Outputting a Clip to Tape with 2:3 or PAL Pulldown

You can add 2:3 pulldown to a 24p master on output. You can also add PAL-pulldown to a 24p master, but this requires using the real-time deliverable feature.

To output a 24p clip with 2:3 pulldown:

- 1 Follow the general procedure for outputting a clip. When asked to select a timing, select a 60i- or 59.94i-based timing.
- 2 At the prompt: “Output all FCM mismatched clips?” click Confirm.
In the Output Clip menu, under the Deliverables tab, the Destination section now displays the correct frame rate of 30 fps. The Pulldown section also displays that pulldown is added to the clip.

Source		Destination		Pulldown
1920 x 1080 @ 8-bit		1920 x 1080 @ 8-bit		Add Pulldown
W 1920	H 1080	W 1920	H 1080	24->DF Ref 00:00 00:00
Aspect Ratio 1.778		Aspect Ratio 1.778		AA* 00:00:00:00
24 fps (P)		30 fps (F1)		

(a) Destination frame rate (b) 24>DF Reference field (c) AA Reference field

- 3 In the AA Reference field, enter a timecode on the tape that corresponds to an AA frame.
- 4 If the tape is drop frame, in the 24>DF Reference field, enter the drop frame reference timecode.
If you output a 24 fps clip to a drop frame tape, and you want to output to the same spot on the tape, use the same reference timecode that was used when you input the clip. The Drop Frame Reference Timecode field is used to calculate the correct in point on the drop frame tape. When you set the reference timecode in this field, note that the in point timecode field is updated accordingly.
- 5 Return to the Output tab and set the In and Out timecodes.
When outputting with 2:3 insertion, the Duration field is automatically adjusted to display the total number of frames after insertion.

In and out 2:3 pulldown frames appear when 2:3 Insertion is enabled in the Engineering menu. They indicate which type of inserted frame falls at the specified in- and out-timecode. When outputting clips:

- The in point can occur at any 2:3 pulldown frame except D/D.
- The out point can occur at any 2:3 pulldown frame except B/C.

This ensures the integrity of the output material on the tape.

- 6 Continue the procedure for outputting a clip. See [Outputting Clips To a VTR](#) on page 141.

NOTE The following procedure requires the use of the Real-Time Deliverable feature. See [About Real-Time Deliverables](#) on page 183.

To output a 24p clip with PAL pulldown:

- 1 Add a Deliverable to the clip. See [Creating and Modifying Deliverables](#) on page 195.
- 2 In the Destination section, select 25 fps as the frame rate.



(a) Frame Rate box (b) Pulldown button

- 3 Enable Pulldown.
You can now output the clip with PAL pulldown by outputting this Deliverable.

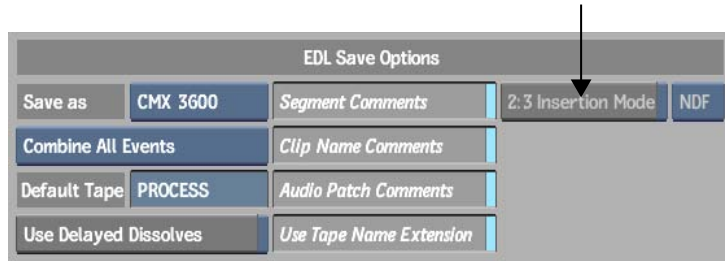
Exporting EDLs with 2:3 Pulldown Insertion

You can export an EDL for a 24p clip that converts the 23.97 fps information to 29.97 fps information and maintains 2:3 pulldown information for all in and out points (including cuts, wipes, dissolves and timewarps). 2:3 pulldown information is important when master tapes are to be sent out for hardware-based tape-to-tape colour correction.

When exporting the EDL, the 2:3 Insertion Mode button must be enabled. It is enabled by default when a 24p template is selected at project creation.

To export an EDL with 2:3 pulldown:

- 1 Follow the general procedure for exporting an EDL, and stop at the point where you specify EDL Save options. See [Generating EDLs](#) on page 727.
- 2 In the EDL Save Options group, enable 2:3 Insertion Mode.



- 3 Continue the procedure for exporting an EDL.
The new EDL is generated with 2:3 pulldown information inserted.

Video Field Management

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Topics in this chapter:

- [About Interlaced Video](#) on page 1155
- [Accessing the Video Menu](#) on page 1156
- [Managing Field Dominance](#) on page 1156
- [Deinterlacing and Interlacing Clips](#) on page 1162
- [Merging Fields](#) on page 1164

About Interlaced Video

Interlaced video formats divide frames into two line-based fields. One field consists of the first and subsequent odd lines in the frame, and the other field consists of the second and subsequent even lines in the frame. During the recording process, the two fields are recorded at slightly different moments. For example, when recording NTSC using field 1 dominance, field 1 is recorded 1/60th of a second before field 2.

As a result, video frames can betray the slight time difference between fields with jitter, particularly when they contain fast motion. When broadcast, the fields are displayed on-screen with the corresponding temporal offset. Interlaced video broadcasting is, from the human perceptual perspective, relatively seamless.

Not all interlaced video formats interlace frames in the same way. If you need to mix different interlaced video formats, you may need to change the field

dominance of your clips. To work with field-based clips in Backdraft Conform, use video field management tools to make sure results do not introduce interlacing artefacts or field-dominance jitter.

By default, when you edit or composite clips that have conflicting scan formats, Backdraft Conform displays warning messages and requires you to confirm potentially problematic operations. If you are comfortable working with clips that have different scan formats, you can disable these warnings by enabling Ignore Scan Format in the Modules section of the General Preferences menu. See [General Preferences](#) on page 517.

Accessing the Video Menu

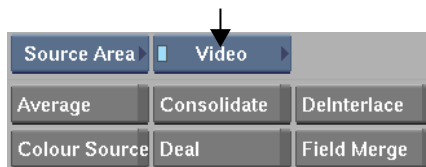
Most video field management tools are located in the A/V Tools Video menu.

To access the A/V Tools Video menu:

- 1 Make sure the current option in the Menu Priority box is disabled or enable the Effects option.



- 2 Select and enable Video in the A/V Tools box.



Managing Field Dominance

Other than a few non-standard exceptions, all interlaced video formats are field 1 dominant. This means that for a given frame, field 1 (F1) is recorded earlier in time, and therefore should be displayed first during broadcast. Field 2 (F2) is recorded after F1 and is therefore displayed after F1 during broadcast.

Where interlaced video formats differ, however, is in the first active line. The first active line is the uppermost line in the frame: in some interlaced video formats, this uppermost line belongs to F1; in others, it belongs to F2.

Format:	First active line belongs to:
NTSC	F2
PAL	F1
HD (interlaced)	F1

With mixed-resolution projects, you can mix interlaced video formats that have different first active line properties. However, you must account for the differences between the two formats. Otherwise, you risk outputting a result that displays one of the interlaced video formats improperly—introducing noticeable jitter as the field that was recorded earlier in time is displayed after the field that was recorded later in time.

You can mix clips with differing interlaced video formats in a project by reversing the field dominance of clips that do not correspond with your project's default resolution interlacing properties. For example, if you bring a PAL clip into an NTSC project whose material is F2 dominant, you should reverse the field dominance of the PAL clip.

When working with clips that have conflicting field dominance, you can:

- Change the scan mode of the project for the current session. Use this procedure to preview material with incorrect field dominance.
- Reverse the field dominance of a clip so it matches the rest of your material. Use this procedure, for example, to allow an F1 PAL clip to mix properly with an F2 NTSC clip.

NOTE The effects of both these procedures are only apparent on an interlaced broadcast monitor.

All clips in Backdraft Conform have a metadata tag for scan mode. This tag is assigned when the material is first brought in. If the tag scan mode is incorrect, you can change it to match the actual scan mode of the clip.

Changing the Scan Mode of a Project

The project scan mode dictates how interlaced video formats are captured from tape, sent to the broadcast monitor in-session, and output to tape. The project scan mode also determines field-based processing.

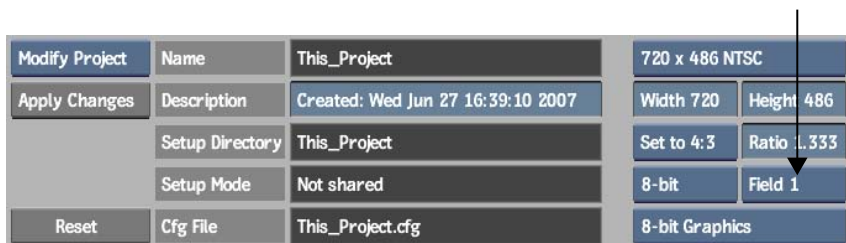
You can change the scan mode of your project by selecting an alternative scan mode option. Do this, for example, to view a PAL clip in an NTSC project properly before reversing its field dominance. Generally, changing the scan mode of a project is a temporary measure performed only to allow for the monitoring of clips whose format does not match the scan mode of the current project.

To change the scan mode of a project:

- 1 In the Project Management section of the Preferences menu, click the project Edit button.



- 2 From the Scan Mode box, select Field 1 or Field 2.



- 3 Confirm that Modify Project is selected in the Project Edit box, click Apply Changes, and then Confirm.

Modify Project	Name	This_Project	720 x 486 NTSC	
Apply Changes	Description	Created: Wed Jun 27 16:39:10 2007	Width 720	Height 486
	Setup Directory	This_Project	Set to 4:3	Ratio 1.333
	Setup Mode	Not shared	8-bit	Field 1
Reset	Cfg File	This_Project.cfg	8-bit Graphics	

NOTE The effects of switching the scan mode of a project between field 1 and field 2 are only visible on an interlaced broadcast monitor (which accounts for the slight flicker when you pause on an interlaced video frame). The graphics monitor displays both fields at the same time.

Reversing Field Dominance

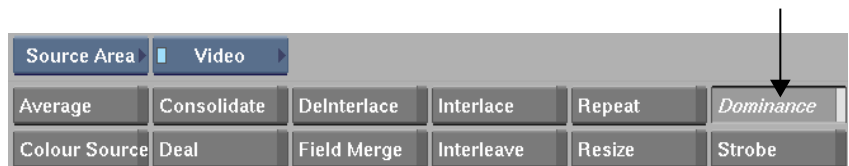
When working in a project that uses clips originating from different interlaced video formats, you may have to reverse the field dominance of clips that do not correspond with the project's interlacing properties.

You can reverse the dominance of clips on the EditDesk using the Dominance command in the A/V Tools menu. When you do so, the first and last fields of the clip are dropped to account for the offsetting required to reverse the field dominance: the result clip is one frame shorter. It is a good idea to capture enough head and tail frames so that the fields dropped on both ends do not affect the frames you want to use.

Both the media and the scan mode metadata tag are changed by this process.

To reverse the dominance of clips:

- 1 Display the Video menu and then enable Dominance.



- 2 From the Scan Mode Tools box, select Rev Dominance.



- 3 Select the clip to which you want to apply the process.
- 4 Select the destination reel.
The field dominance of the clip is reversed.

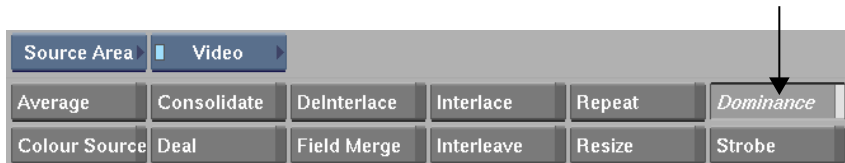
Changing the Scan Mode Metadata Tag of a Clip

When material is brought into Backdraft Conform, it is assigned a particular scan mode that becomes part of the clip metadata. When you view clip information, the scan mode displayed is from the clip metadata tag. The scan mode metadata tag for a clip may be wrong, for example, if you specified the scan mode as being field 1 when importing it, and it was actually field 2.

You can correct this problem using the Change Dominance option of the Dominance tool in the Video menu. This option changes the scan mode metadata tag for a clip without changing the actual scan mode of the media on the framestore.

To change the scan mode metadata tag for a clip:

- 1 Display the Video menu and then enable Dominance.



- 2 From the Scan Mode Tools box, select Change Dominance.



- 3 From the Scan Mode box, select the scan mode metadata tag that you want to assign to the clip.
- 4 Select the source clip.

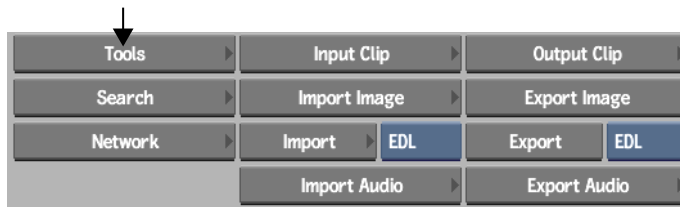
5 Specify the destination.

A new clip with the specified metadata tag is processed.

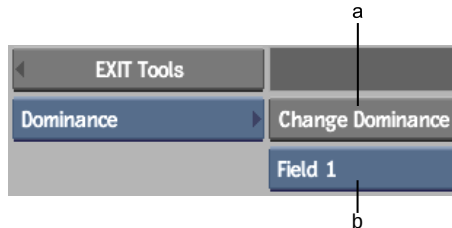
You can also do this from the clip library Tools menu.

To change the scan mode metadata tag for clips from the clip library Tools menu:

- 1 Select a single clip or hold **Ctrl** and select multiple clips in the clip library.
- 2 Click Tools.



- 3 From the Tools menu that appears, choose Dominance.
The Change Dominance controls appear.



(a) Change Dominance button (b) Scan Mode box

- 4 From the Scan Mode box, select the scan mode metadata tag that you want to assign to the selected clips.
- 5 Click Change Dominance and confirm the operation.
The scan mode metadata tag of the selected clips is changed.

Deinterlacing and Interlacing Clips

Deinterlacing and interlacing are used primarily to aid in the rotoscoping of field-based material, or in the application of filters to field-based material. Deinterlacing and interlacing are not necessary for processes that support field-based rendering.

Because there is a line-based difference in time per frame of interlaced video, if you paint or filter field-based frames, artefacts can be introduced. For example, if you blur over fields, colour information from pixels on the F1 field is smudged into the pixels on the F2 field.

Deinterlacing clips prior to painting or filtering separates each field, allowing you to work on separate fields and achieve better results. Once the effects have been added, re-interlace the clip.

Deinterlacing Clips

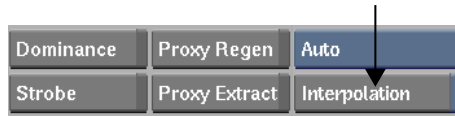
Deinterlace clips to separate each field to its own frame. The result clip is twice as long as the original.

To deinterlace clips:

- 1 Display the Video menu and then enable Deinterlace.
- 2 If necessary, select Field 1 or Field 2 from the Field Dominance box. By default, Field Dominance is set to Auto, which automatically determines whether the clip is Field 1 or 2 dominant. The other settings are available if Auto does not return the desired result.



- 3 From the Interpolation box, turn Interpolation on or off.



- If you deinterlace clips with interpolation off, the process repeats each isolated line to fill in the scan lines that would otherwise be vacant in the resulting clip's frames.
 - If you deinterlace clips with interpolation on, the process interpolates a blend between adjacent lines to fill in the isolated scan lines. This option reduces interlacing artifacts.
- 4 Select the clip that you want to deinterlace.
 - 5 Select the destination reel.
The result clip—twice as long as the original clip—appears.

Interlacing Clips

Interlace clips to restore deinterlaced fields to interlaced frames. The result clip is half as long as the original.

To interlace clips:

- 1 Display the Video menu and then enable Interlace.
- 2 From the Field Dominance box, select Field 1 or Field 2.



- 3 Select the clip that you want to interlace.
- 4 Select the destination reel.
The result clip—half as long as the original clip—appears.

Merging Fields

Merging fields blends pixels in neighbouring field lines to reduce artefacts caused by motion jitter. Merge fields when you have interlaced material that you want to output to a progressive scan format.

To merge fields:

- 1 Display the Video menu and then enable Field Merge.
- 2 Enter the percentage of blending between fields in the Level field.



Value	Result
100%	The average pixel value is replicated to both fields in an F1/F2 merge-pair, resulting in total field merging.
50%	Pixels on each line in an F1/F2 merge-pair are replaced by pixels defined by 50% of their original value and 50% of the blend, or field merge result.
0%	No change is applied to the clip.

- 3 Select the clip that you want to process.
- 4 Select the destination reel.
After a short time, the result clip appears.

Topics in this chapter:

- [About Colour Management](#) on page 1166
- [General Workflow for LUTs](#) on page 1168
- [Workflow for Custom 1D LUTs](#) on page 1169
- [Configuring Backdraft Conform to Use LUTs](#) on page 1170
- [Formatting 1D LUTs](#) on page 1171
- [Formatting 3D LUTs](#) on page 1172
- [Applying 1D LUTs to the Monitor](#) on page 1174
- [Viewing Clips with 3D LUTs](#) on page 1175
- [Processing Clips with 3D LUTs](#) on page 1179
- [Applying a LUT on Import or Export](#) on page 1181
- [Accessing the LUT Editor](#) on page 1182
- [Creating Custom 1D LUTs](#) on page 1185
- [Saving LUT Editor Setups](#) on page 1199
- [Loading LUT Editor Setups](#) on page 1200
- [Exporting LUTs](#) on page 1201
- [Converting OpenEXR Images](#) on page 1202
- [Controlling Image Display using Exposure and Image Data Type](#) on page 1204

About Colour Management

Digitized film images originating from a datacine conversion process are high-resolution scans that preserve much of a film's resolution and colour depth. In Backdraft Conform, a lookup table (LUT) is the primary colour management tool available to deal with different colour spaces. A LUT is an ASCII file used to map pixels or pixel components from one colour to another. To display logarithmic film scans properly, such as Cineon files in the linear colour space native to Backdraft Conform, you can work with monitor, display, and image conversion LUTs. You can use one of two kinds of LUTs: 1D LUTs and 3D LUTs.

Digital film scans often consist of logarithmic data rather than linear data. Linear data maps the luma range in equal intervals from black to white. Logarithmic data allows for more subtlety in the lower luma ranges of an image. In Backdraft Conform, you can work with either logarithmic or linear data.

When you want to work with linear data, you can use an image conversion LUT on input to convert the logarithmic data to linear data. Since Backdraft Conform assumes that input data is linear, it behaves more predictably when you work with linear data than when you work with logarithmic data.

When you want to preserve the image data contained in logarithmic film scans and do not want to apply an image conversion LUT, you can work directly with logarithmic clips. Working with logarithmic clips prevents any data loss that could occur during the image conversion process. When you work with logarithmic clips, however, apply a LUT for display purposes. Display LUTs affect transient data only — no data conversion is committed to the clip.

Using EXR Display, you can convert high dynamic-range images using a similar editor to the one used to modify LUTs. You can and change their exposure.

You can also change the display of an image you are working with to create a more plausible image display result. This allows you to display a video, logarithmic, or linear image in a context that is the same or similar to its final result.

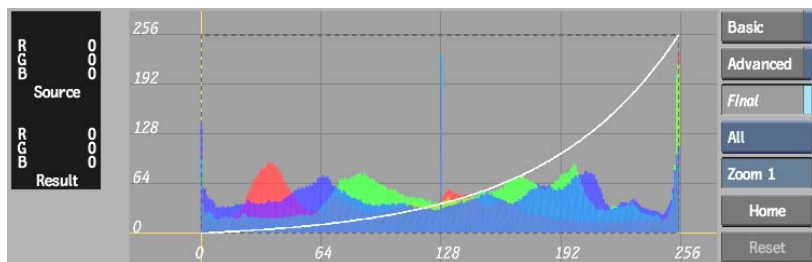
1D LUTs

A 1D LUT is generated from one measure of gamma (white, grey, and black) or a series of progressive measures for each colour channel. 1D LUTs are created and edited in Backdraft Conform and other applications. They are used as

image conversion LUTs when you import and export clips and as monitor LUTs. Monitor LUTs ensure the image seen on the monitor resembles the final output without modifying the image data. Image conversion LUTs are typically used to convert between the logarithmic data contained in film scans and the linear data used in Backdraft Conform. The procedures in this chapter describe how to use image conversion LUTs.

You can apply an image conversion LUT when importing a logarithmic film scan, and then apply the inverse LUT to convert the image data back to log data when exporting the final output. For example, you can use an import LUT to convert 10-bit logarithmic film images to 8-, 10-, or 12-bit linear images for manipulation in Backdraft Conform. When you finish modifying the image and ready to export it, you can apply the inverse LUT to restore the 10-bit logarithmic data, ensuring that the modified film print matches the original shot.

Backdraft Conform provides some ways to work with image conversion LUTs. You can use the predefined LUTs, which are the simplest mechanisms for file conversion. You can create customized LUTs that meet your needs more precisely. You can also use a 1D LUT created outside of Backdraft Conform as long as it matches the LUT format that Backdraft Conform uses. In most cases, you want to modify the LUT to maximize the range of data used. Because you are fitting 10-bit log data into 12-bit linear data, select the range in an image which produces the most accurate results with minimal loss of precision. The following illustration shows the histogram of a 10-bit logarithmic image with a modified LUT curve that produces the accurate results.



Monitor LUTs affect the way images display on the monitor without altering the underlying image data. If you import logarithmic film scans without conversion, you can use a monitor LUT (or a 3D LUT) to display the images correctly. Even when you apply an image conversion LUT to film scans on import, you still require a monitor LUT to reproduce the gamma qualities of film.

3D LUTs

3D LUTs are used for advanced film colour management in Backdraft Conform and provide a superior alternative to 1D LUTs. 3D LUTs are primarily used for display purposes and are the most accurate means of displaying logarithmic film scans on a graphics monitor. Since 3D LUTs often set up the proper display environment for your film clips, they are only applied to the Player or one or more viewers, rather than the entire monitor.

3D LUTs are always created outside of Backdraft Conform, and they are uneditable once imported. Instead, you can work with outside hardware and software, such as the Kodak™ Display Management system, to generate a 3D LUT for your needs. While there are generic 3D LUTs that are interchangeable between different systems, these generally provide less accurate results since they can only approximate the current viewing conditions.

3D LUTs place higher processing demands on your system than 1D LUTs. As such, interaction speed can slow down. To offset these demands and view clips in real time, you can process them with the 3D LUT.

If you are outputting footage destined for film, but require an intermediate video version, you can also process clips with 3D LUTs. You can process the footage with a 3D LUT, committing the log-to-lin data conversion to a video clip that will be viewed at another location. While this process produces footage with the closest accuracy to film look, its accuracy cannot match how the clip appears on your calibrated Backdraft Conform system. You cannot use a 3D LUT to convert linear data back to log data.

When a compatible graphics card is installed in your workstation, Backdraft Conform supports GPU-accelerated 3D LUT display, resulting in improved processing performance, such as real-time playback using 3D LUTs.

General Workflow for LUTs

The following table shows the workflow when working with a LUT that has already been created, whether it is a 1D or 3D LUT.

NOTE Backdraft Conform includes some predefined 1D LUTs.

Depending on whether you are using 1D or 3D LUTs, whether you are processing your clips with the LUTs or just using them for viewing purposes, you perform one or more of the following steps.

Step:	Refer to:
1. Import a 1D or 3D LUT created in an outside application.	Configuring Backdraft Conform to Use LUTs on page 1170
2. In Backdraft Conform, you can apply a 3D LUT to the Player or to a viewport, for viewing purposes.	One of the following: ■ Applying 3D LUTs to the Player on page 1176 ■ Applying 3D LUTs to the Image Window on page 1177
3. Process clips with 1D or 3D LUTs on import or export.	Applying a LUT on Import or Export on page 1181
4. Process clips with 1D or 3D LUTs from the LUT Editor accessed from the EditDesk.	One of the following: ■ Accessing the LUT Editor on page 1182 ■ Processing Clips with 3D LUTs on page 1179

Workflow for Custom 1D LUTs

The following table shows the workflow for creating a custom LUT.

Step:	Refer to:
1. Open the LUT Editor.	Accessing the LUT Editor on page 1182
2. Select a basic conversion LUT type.	Defining a Basic LUT Type on page 1186
3. Change the basic conversion curve.	Modifying Basic Conversion LUT Curves on page 1188
4. Fine-tune the final conversion LUT.	Advanced Editing of the Conversion LUT Curve on page 1195
5. Use colour patches to sample and compare corresponding colours in the source, reference, and result clips.	Comparing Colour Values Using Colour Patches on page 1198

Step:	Refer to:
6. Save your work:	Saving LUT Editor Setups on page 1199 or Exporting LUTs on page 1201
■ Save the LUT Editor setup to preserve its settings.	
■ Export the LUT to modify its bit depth or create a new basic LUT type.	

Configuring Backdraft Conform to Use LUTs

Although Backdraft Conform provides a LUT Editor for creating 1D LUTs interactively, you can use 1D LUTs created outside the Backdraft Conform environment. You can also use 3D LUTs, which are always created outside Backdraft Conform.

You can use LUTs created in other Autodesk Visual Effects and Finishing products, such as Combustion, as well as share LUTs between these applications. You can also use LUTs created in third-party applications, as long as they are in the recognized format.

You can access LUTs from anywhere on your network using the file browser. This can be useful if you are sharing the same LUT between multiple applications.

For ease of use, it is recommended that you save all LUTs in the project's LUT directory, called `~/lut` by default. They will be archived with the setups of the project.

All 1D LUT files must have the `.lut` extension.

All standard 3D LUT files must have the `.3dl` extension; encrypted 3D LUTs must have the `.e3d` extension. Encrypted 3D LUTs can be created using the Kodak Display Management system and can only be used on the system on which they were created.

To have Backdraft Conform recognize particular LUTs at start-up, you must import them into the 1D or 3D LUT list. See [LUT Preferences](#) on page 546.

You want Backdraft Conform to recognize these LUTs for the following reasons:

- So the 1D LUT can be applied to the monitor and is also accessible in the Player and View menu. See [Applying 1D LUTs to the Monitor](#) on page 1174.

- So the 3D LUT is accessible from the 3D LUT box in the Player menu for viewing purposes. See [Applying 3D LUTs to the Player](#) on page 1176.
- So the 3D LUT is accessible from the Reference Buffer box in the View menu to apply to the frames displayed in the reference buffer overlay. See [Applying 3D LUTs to the Reference Area and Overlay](#) on page 1178.
- So the 3D LUT can be applied to a viewport. See [Applying 3D LUTs to the Image Window](#) on page 1177.

Formatting 1D LUTs

Although Backdraft Conform provides a LUT Editor for creating 1D LUTs interactively, you can use 1D LUTs created outside the Backdraft Conform environment.

The LUT file begins with a declaration of the number of tables and the number of entries per table:

```
LUT: <number of tables> <number of entries per table>
```

The number of tables in the file depends on the channel-resolution required. For a LUT in which all three RGB channels are converted using the same values, just one table is required. To convert the three channels using different values, use three tables. For three channels plus alpha, use four tables. The number of entries in each table corresponds to the bit depth of the source file: 256 entries for 8-bit resolution, 1024 for 10-bit and 4096 for 12-bit. For example, a LUT operating on three 8-bit channels independently would have the following declaration:

```
LUT: 3 256
```

Each line following the header contains a single entry indicating the value to which the source is converted. For example, a table converting 10-bit logarithmic values to 8-bit linear would contain 1024 entries, corresponding to the 0-1023 intensity range of pixels in the source file. Each of these entries would be in the range of 0-255, corresponding to the intensity range in the destination. The following table shows the first and last few entries for a sample LUT of this type.

Entry	Value	Meaning
0	0	10-bit 0 is converted to 8-bit 0
1	0	10-bit 1 is converted to 8-bit 0

Entry	Value	Meaning
2	0	10-bit 2 is converted to 8-bit 0
3	1	10-bit 3 is converted to 8-bit 1
4	1	10-bit 4 is converted to 8-bit 1
5	2	10-bit 5 is converted to 8-bit 2
6	2	10-bit 6 is converted to 8-bit 2
...		
1021	255	10-bit 1021 is converted to 8-bit 255
1022	255	10-bit 1022 is converted to 8-bit 255
1023	255	10-bit 1023 is converted to 8-bit 255

Blank lines and comment lines (starting with a number sign [#]) are ignored by Backdraft Conform. Comment lines are useful in indicating the end of one table and the beginning of another, or for describing how your script or program works.

Formatting 3D LUTs

3D LUTs are always created outside Backdraft Conform. After you perform basic monitor calibration and take calibration measurements using the appropriate calibration device, you can work with your film lab to generate a 3D LUT file to account for both the characteristics of the monitor and the characteristics of the film stock you are using. Ideally, 3D LUTs should be developed for a particular monitor and a particular film stock.

A 3D LUT represents a colour conversion from one colour space to another. It applies a transformation on each value of a colour cube in RGB space. However, 3D LUTs use a more sophisticated method of mapping colour values between different colour spaces than 1D LUTs. Where 1D LUTs represent a transformation in which each colour channel (red, blue, and green) is independently mapped, 3D LUTs represent a transformation in which each colour channel is affected by the other two channels. For example, a highly saturated blue on film will also have an effect on the red and green channels, which 3D LUTs take into account. 3D LUTs can take into account the characteristics of both your monitor and the film stock you are using.

A colour cube can be subdivided into any number of vertices ($N \times N \times N$), where each vertex corresponds to an RGB value. You can apply a 3D translation to any of these values (dR, dG, dB) to map equivalent colours between colour spaces. Each RGB value, then, would have an equivalent transformed RGB value (R', G', B'). A 3D LUT maps these equivalents.

The first line of a 3D LUT file determines the level of segmentation of the colour cube, which determines how many vertices there are to assign values to. While each colour channel could be segmented differently, Backdraft Conform supports a uniform RGB segmentation of 17. The first line of the 3D LUT indicates at what 17 intervals input and output values are matched. All RGB values are represented in the 10-bit colour space. So, the first line of a 3D LUT indicates the 17 sampling intervals in the 10-bit space:

**0 64 128 192 256 320 384 448 512 576 640 704 768 832
896 960 1023**

The RGB colour cube, then, is divided by 17 vertices on each of the R, G, and B axes corresponding to these values, resulting in $17 \times 17 \times 17$ RGB values. This is the same number and ratio of vertices that are output in the 3D LUT files created by the Kodak Display Manager.

The 3D LUT file then lists transformed RGB colour output values for each input colour value.

The 3D LUT list assigns a colour value for every vertex. The RGB values on the first line in the list are for (0,0,0), those on the second line are for (0,0,1), and those on the third line are for (0,0,2). Values for the blue index are incremented first, followed by the green index, followed by the red index, until the whole list of $17 \times 17 \times 17$ is complete.

The vertex ordering is represented by the following:

0,0,0
0,0,1
0,0,2
...
0,0,16
0,1,0
0,1,1
0,1,2
...

0,1,16
0,2,0
0,2,1
...
...
0,16,16
1,0,0
...
...
16,16,16

For example, suppose the third line of the vertex list in a 3D LUT file is:

12 30 141

The third line in the list corresponds to the vertex in the 3D colour cube at the following coordinates: (0,0,2). Using the 17x17x17 subdivided colour cube, and the intervals indicated in the first line of the file, these coordinates correspond to the input colour (R=0, G=0, B=128).

That means that the input colour (0,0,128) will be mapped to the output colour (12,30,141).

Since most input colour values fall between the RGB values corresponding to the 17 sampling intervals, output colour values often result from an interpolation between the surrounding vertices.

Applying 1D LUTs to the Monitor

Gamma and 1D LUTs configured in the Preferences can be applied to the monitor. See [LUT Preferences](#) on page 546. They can also be applied from the View menu.

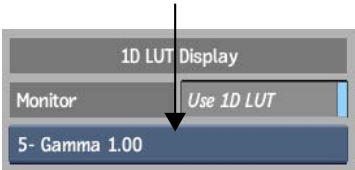
3D LUT display mode is disabled when 1D LUT display mode is activated.

To apply a 1D LUT to the monitor:

- 1 Enable Use 1D LUT to enable 1D LUT display mode. You can also press **Ctrl+Shift+’** (on the **tilde** key).

The 1D LUT displayed in the 1D LUT List box is applied to the display.

- 2 To change 1D LUTs, do one of the following:
- In the View menu, select the 1D LUT from the list in the Monitor LUT List box.



- Use hotkeys to switch between 1D LUTs defined in the 1D LUT list.

Press:	To apply:
Ctrl+Shift+1	The first 1D LUT defined in the 1D LUT list.
Ctrl+Shift+[2-9]	The second through ninth 1D LUT defined in the 3D LUT list.
Ctrl+Shift+0	The tenth 3D LUT defined in the 1D LUT list.

- 3 To toggle the current 1D LUT on and off, press its associated hotkey (**Ctrl+Shift+[1-0]**).
- 4 To disable 1D LUT display mode, press **Ctrl+Shift+' (on the tilde key).**

Viewing Clips with 3D LUTs

You can use 3D LUTs to accurately display film clips on the graphics monitor. 3D LUTs are applied to the Player and image window, rather than to the entire monitor. 1D LUT display mode is disabled when 3D LUT display mode is activated.

If you have also configured Backdraft Conform to detect one or more 3D LUTs, you can toggle the Player and image window to use a different 3D LUT instead. The clip itself is not affected: the 3D LUT only affects the display.

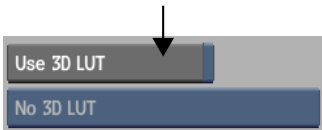
See [Configuring Backdraft Conform to Use LUTs](#) on page 1170.

Applying 3D LUTs to the Player

On the EditDesk, using the Player controls you can switch to 3D LUT display mode, and then select the 3D LUT you want to use to accurately display film clips.

To apply a 3D LUT to a clip in the Player:

- 1 Enable Use 3D LUT or press **Alt+Shift+’** (on the **tilde** key).



The 3D LUT List box is enabled, indicating which 3D LUT is currently being applied to the Player.

- 2 To change 3D LUTs, do one of the following:
 - Select the 3D LUT that you want to apply from the 3D LUT List box.



- Use hotkeys to switch between 3D LUTs defined in the 3D LUT list.

Press:	To apply:
Alt+Shift+1	The first 3D LUT defined in the 3D LUT list.
Alt+Shift+[2-9]	The second through ninth 3D LUT defined in the 3D LUT list.
Alt+Shift+0	The tenth 3D LUT defined in the 3D LUT list.

- 3 To turn off 3D LUT processing, disable 3D LUT or press **Alt+Shift+’** (on the **tilde** key).

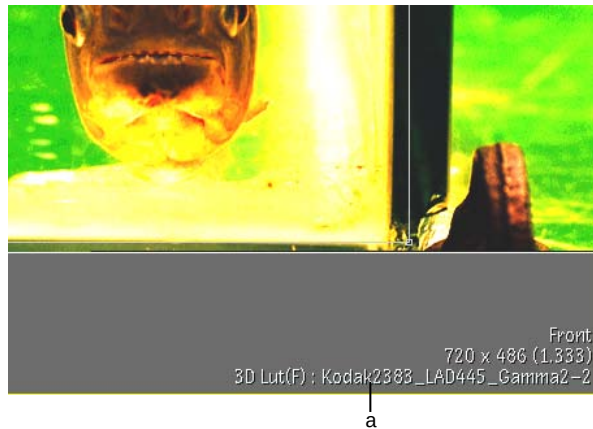
Applying 3D LUTs to the Image Window

To accurately display film clips, you can apply 3D LUTs to the image window, including the reference area and the reference overlay in Resize.

To apply a 3D LUT to a clip in the image window:

- 1 With a clip in the current viewport set to Front, Back, or Result view, enable Use 3D LUT (**Alt+Shift+~**) to enable 3D LUT display mode.

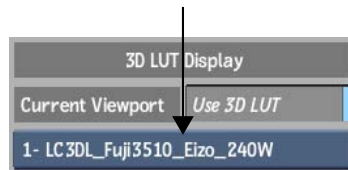
The 3D LUT displayed in the 3D LUT List box is applied to the viewport. Its name appears in the lower-right corner of the viewport. When the 3D LUT is on, its name is in light blue. When it is off, its name is in black.



(a) 3D LUT name in the viewport

Image courtesy of Technicolor (formerly Toybox)

- 2 To change 3D LUTs, do one of the following:
 - In the View menu, select the 3D LUT from the list in the Current Viewport box.



- Use hotkeys to switch between 3D LUTs defined in the 3D LUT list.

Press:	To apply:
Alt+Shift+1	The first 3D LUT defined in the 3D LUT list.
Alt+Shift+[2-9]	The second through ninth 3D LUT defined in the 3D LUT list.
Alt+Shift+0	The tenth 3D LUT defined in the 3D LUT list.

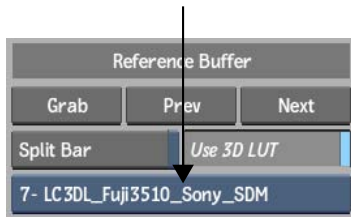
- 3 To disable 3D LUT display mode, press **Alt+Shift+’** (on the **tilde** key).

Applying 3D LUTs to the Reference Area and Overlay

You can enable 3D LUT display mode, and then apply 3D LUTs to the frames displayed when using the reference overlay in Resize.

To apply 3D LUTs to the reference overlay:

- 1 In the View menu, enable Split Bar to display the overlay in the viewport.
- 2 Enable Use 3D LUT display mode for the reference buffer.
- 3 Select a LUT from the 3D LUT List box.



- 4 To disable 3D LUT display mode for the reference overlay, select the Reference Buffer Off option.

Applying 3D LUTs During Real-Time Operations

You can import a 3D LUT that can be applied in real-time during the output of a clip.

When a Deliverable is applied to a clip, the LUT settings in the Deliverables menu override current 1D and 3D LUT preferences.

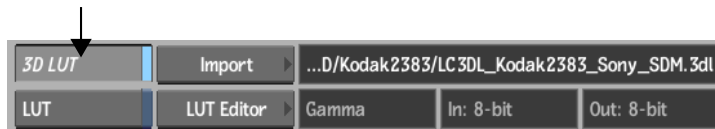
To import a 3D LUT in the Deliverables menu:

- 1 In the Player, click the Deliverables tab.
- 2 Create a new deliverable or use the current one. See [Creating and Modifying Deliverables](#) on page 195.
- 3 Click Import.



The File list appears.

- 4 Select a 3D LUT from the Files list or navigate to the file you want to use. In the Deliverables menu, the 3D LUT is applied by default.
- 5 Enable 3D LUT to toggle 3D LUT display.



Applying 3D LUTs to the Broadcast Monitor

You can apply a different 3D LUT to the broadcast monitor from the application monitor 3D LUT. See [Broadcast LUT Preferences](#) on page 510.

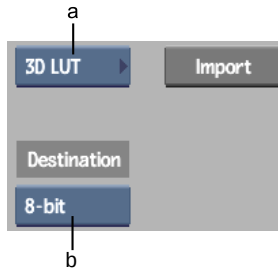
Processing Clips with 3D LUTs

You can process clips with a 3D LUT to commit the colour conversion to the clip. There is no way to restore logarithmic data once you have processed a clip with a 3D LUT. Typically, you do this to release a film clip for review on video, or to guarantee real-time playback which may not be possible in 3D LUT display mode.

While this process produces footage with the closest accuracy to film look, its accuracy cannot match how the clip appears on your calibrated Backdraft Conform system. Furthermore, you cannot use a 3D LUT to convert linear data back to logarithmic data.

To process a clip with a 3D LUT:

- 1 Access the LUT Editor from the EditDesk. See [Accessing the LUT Editor](#) on page 1182.



(a) Conversion LUT Type box (b) Destination box

- 2 From the Conversion LUT Type box, select 3D LUT.
- 3 Click Import LUT.
The file browser appears.
- 4 Navigate to the 3D LUT file you want to use, select it, then click Load.
You return to the LUT Editor, and the 3D LUT is applied to the clip in the image window. The 3D LUT name appears in the field next to the Import LUT button.
- 5 Select an output bit-depth option from the Destination box.

Select:	To:
8-bit	Output 8 bits per channel.
10-bit	Output 10 bits per channel.
12-bit	Output 12 bits per channel.
12-bit Unpacked	Output 12 bits per channel, unpacked.
16-bit float	Output 16 bits per channel, floating point data.

- 6 Click Process.
The clip is processed with the 3D LUT to the destination you selected.

Applying a LUT on Import or Export

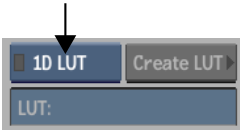
Applying a LUT to a film clip on import or export converts the clip's images according to the contents of the LUT.

A typical workflow when using 1D LUTs would be to apply the **10logto12** import LUT provided, converting 10-bit logarithmic image data to 12-bit linear image data. After working with the images in Backdraft Conform, you would then export the clip using the inverse of the LUT, **12to10log**. This restores its logarithmic values, in preparation for film printing.

Sample 1D LUTs have been provided that cover the most common conversion processes, and use standard data for Cineon digital negatives (normal exposure). If these LUTs do not give the desired results, you can use them to create a custom LUT. Often, a minor adjustment is all that is required. See [Creating Custom 1D LUTs](#) on page 1185.

To apply a LUT on image import or export from the EditDesk:

- 1 Open the clip library in which you want to store the images you are importing, or from which you want to export images.
- 2 Click Import Image, or select an image and click Export Image.
- 3 In the LUT Type box, select an option.



Select:	To:
Gamma	Apply gamma correction to a clip. This option only appears when a QuickTime movie is selected. See Importing and Soft-Importing Video Files on page 257.
1D LUT	Apply a 1D LUT to a clip.
3D LUT	Apply a 3D LUT to a clip.

- 4 If the LUT field is inactive, click the LED indicator to enable it.



- 5 Click the LUT field.

The file browser appears. The Files list contains the LUTs currently residing in your project's `~/lut` directory. These include the samples provided with Backdraft Conform, as well as any LUTs you may have saved or exported to this directory. By default, Lustre Color Management LUTs are stored in the `/usr/discreet/Lustre_Color/lut/Lustre_Color_3DLUTs` directory.

Sample 1D LUTs include the following.

LUT File Name	Conversion Process
10logto12	Converts a 10-bit logarithmic image to a 12-bit linear image.
10logto8	Converts a 10-bit logarithmic image to an 8-bit linear image.
8to10log	Converts an 8-bit linear image to a 10-bit logarithmic image.
12to10log	Converts a 12-bit linear image to a 10-bit logarithmic image.
invertRGB	Inverts the RGB values of the image.

- 6 If you want to switch to a different LUT type without exiting the file browser, use the LUT Type box.



- 7 Select a LUT in the Files list or navigate to the file you want to use.
The Import Image or Export Image menu reappears. The LUT field displays the name of the new LUT. It will be applied to the clip you import or export when the LUT is enabled.

Accessing the LUT Editor

Access the LUT Editor to create custom 1D LUTs or tailor existing ones.

You can access the LUT Editor from:

- The EditDesk.
- The Import Image menu.

NOTE You cannot import 3D LUTs when you access the LUT Editor from the Import Image menu or the Deliverables menu.

- The Deliverables menu.

You can also access the LUT Editor to process clips with 3D LUTs. See [Processing Clips with 3D LUTs](#) on page 1179.

Once the LUT Editor is open, you can define a basic conversion LUT type—logarithmic to linear, vice versa, or custom. Or, you can use an existing LUT Editor setup as a starting point for creating the new LUT. A setup preserves certain useful menu settings.

To access the LUT Editor from the EditDesk:

- 1 Make sure the current option in the Menu Priority box is disabled.



- 2 From the A/V Tools box, select and enable Film.



- 3 Click LUT Editor, select a clip, and then select the destination for the processed clip.

The LUT Editor appears, loaded with the current frame of the clip.

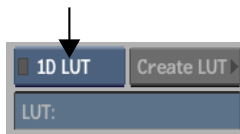
- 4 Define a basic LUT type, or load a LUT Editor setup to begin customizing the LUT. You can also load a 3D LUT with which to process the clip. See:
 - [Defining a Basic LUT Type](#) on page 1186
 - [Saving LUT Editor Setups](#) on page 1199
 - [Processing Clips with 3D LUTs](#) on page 1179

Accessing the LUT Editor from the Import Image Menu

Access the LUT Editor from the Import Image menu to edit 1D LUTs. When you have modified the LUT, you must export it upon exiting the editor to return to the Import Image menu.

To access the LUT Editor from the Import Image menu:

- 1 Open a clip library for storing the images.
- 2 Click Import Image.
The Import Image menu appears.
- 3 Use the file browser to locate the image you want to import.
- 4 In the LUT Type box, select 1D LUT.



- 5 Click Create LUT.



- 6 Using the file browser, select a reference image.
When selecting a reference image, you load only a single frame (the first, by default). To select a different frame, switch to Proxies view mode and expand the image sequence by clicking on the proxy's expansion arrow.
The LUT Editor appears. When loading a large image, such as a 2K Cineon image, it can take a few moments.
- 7 Define a basic LUT type, or load a LUT Editor setup to begin customizing the LUT. See [Defining a Basic LUT Type](#) on page 1186 and [Saving LUT Editor Setups](#) on page 1199.
- 8 Click Exit to export the LUT and return to the Import Image menu. See [Exporting LUTs](#) on page 1201.

Accessing the LUT Editor in the Deliverables Menu

Access the LUT Editor in the Deliverables menu to import and create custom 1D LUTs that can be applied in real-time during the output of a clip.

When a Deliverable is applied to a clip, the LUT settings in the Deliverables menu override current 1D and 3D LUT preferences.

To access the LUT Editor in the Deliverables menu:

- 1 In the Player, click the Deliverables tab.
- 2 Create a new deliverable or use the current one. See [Creating and Modifying Deliverables](#) on page 195.
- 3 Click the LUT Editor.



The LUT Editor appears, loaded with the current frame of the clip.

- 4 Define a basic LUT type, or load a LUT Editor setup to begin customizing the LUT. See [Defining a Basic LUT Type](#) on page 1186 and [Saving LUT Editor Setups](#) on page 1199.

In the Deliverables menu, the 1D LUT is applied by default.

- 5 Enable LUT to toggle 1D LUT display.



Creating Custom 1D LUTs

Because film prints vary greatly according to film stock, the sample 1D LUTs provided in Backdraft Conform might not suit all needs. Similarly, because shooting can occur under many conditions, the LUT you create to import one shot might not serve another, even within the same shoot or stock. With the LUT Editor, however, you can create a custom LUT.

Use the procedures in this section to create a custom LUT. When you create custom LUTs, the steps described in the custom 1D LUT workflow apply. See [Workflow for Custom 1D LUTs](#) on page 1169.

Defining a Basic LUT Type

One way to begin creating a custom LUT using the LUT Editor is by defining the type of LUT you want to use. You can choose from one of the presets for converting logarithmic data to linear data, linear to logarithmic, or for creating a LUT to manipulate images that are already linear. Each of these selections sets up the appropriate conversion curve. It also includes selecting a bit-depth for the output. Alternatively, you can also choose to import a LUT as a starting point. Each of these techniques is discussed in this section.

Another way to create a custom LUT is to load a LUT Editor setup. See [Loading LUT Editor Setups](#) on page 1200.

NOTE The procedures in this section do not apply to 3D LUTs.

To select a basic LUT type preset:

- 1 From the Conversion LUT Type box in the LUT Editor, select an option.



Select:	To:
Log to Lin	Begin with a standard curve for converting logarithmic data to linear data.
Lin to Log	Begin with a standard curve for converting linear data to logarithmic data.
Gamma	Begin with a standard curve for modifying linear data.

Select:	To:
Import	Import a LUT to use its curve as a basic LUT. See the following procedure.
3D LUT	Import a 3D LUT. See Processing Clips with 3D LUTs on page 1179.

The conversion curves for the basic LUT type you selected appear in the LUT Editor as the basic LUT.

- 2 Select an output bit-depth option from the Destination box. You can output 8 bits or 12 bits per channel.



To import a LUT to use its curve as a basic LUT:

- 1 Select Import from the Conversion LUT Type box.



- 2 Click Import.
The file browser appears.
- 3 Locate and select the LUT that you want to import.
You are returned to the LUT Editor.

The LUT name appears in the field below the Import button. The imported LUT's conversion curves appear in the LUT Editor as the basic LUT.

NOTE When you import a LUT, advanced setting are merged into the basic setting. In order to access the settings used to create a LUT, you must load the LUT, not import it. See [Loading LUT Editor Setups](#) on page 1200.

Modifying Basic Conversion LUT Curves

Once you define a basic LUT type, you can modify:

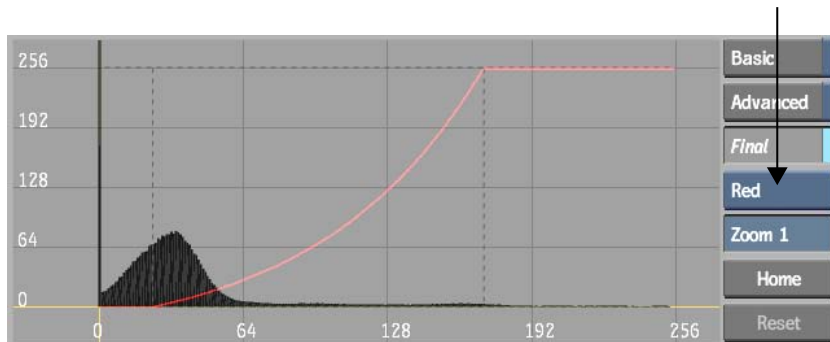
- The reference white and reference black values
- The highlights and shadows
- The gamma of the conversion curve
- The gamma of the incoming film negative
- The degree to which the shoulder at the upper end of the conversion curve is softened

When you modify these values, the basic LUT curves are updated to reflect the changes. For all procedures, you can monitor the R, G, and B channels independently while modifying the LUT.

NOTE The procedures in this section apply to predefined LUTs and LUTs that have been loaded. They neither apply to LUTs that have been imported nor 3D LUTs.

To monitor the R, G, and B channels independently:

- From the Edit Curve box, select Red, Green, or Blue to monitor the red, green, or blue channels independently.



Modifying Reference White and Reference Black Values

The reference white and reference black values define the intensity levels at which incoming pixels are considered white or black respectively. For example, selecting a logarithmic-to-linear basic conversion LUT curve sets the reference white to 685 and the reference black to 95. (These have been shown to be

good values for Kodak™ film stock.) As a result, source pixels with values from 685 and 1023 will produce white pixels, while those from 0 and 95 will be set to black.

Reference white and black are affected by the values assigned to highlights and shadows. White pixels are mapped to the value set for highlights, while black pixels are mapped to the value set for shadows. See [Modifying Highlights and Shadows](#) on page 1190.

To modify reference white or black values using the Ref White and Ref Black fields:

- Do one of the following:
 - To set proportional R, G, and B values, enable Prop and then enter the value in one of the (left-to-right) R, G, and B Ref White and Ref Black fields.
 - To set independent R, G, or B values, disable Prop and then enter the value in the corresponding (left-to-right) R, G, or B Ref White and Ref Black fields.

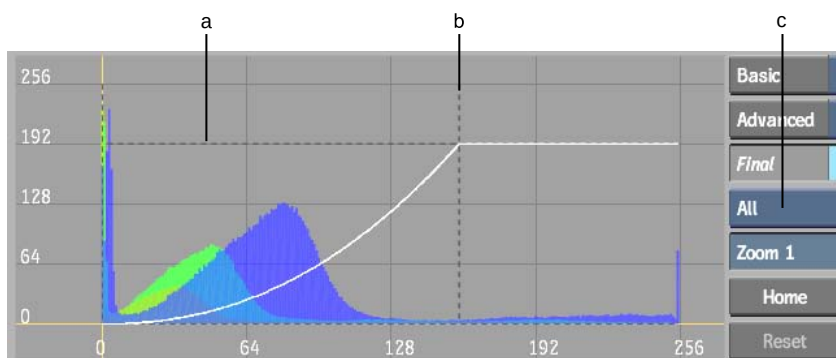
Ref White	170.748	170.748	170.748	Prop
Ref Black	23.680	23.680	23.680	Prop
Highlight	255.000	255.000	255.000	Prop
Shadow	0.000	0.000	0.000	Prop
Custom	1.000	1.000	1.000	Prop
Film Gamma	0.600	0.600	0.600	Prop
Soft Clip	0.000	0.000	0.000	Prop

(a) Ref White/Black fields and Prop (Proportional) buttons

To modify reference white or black values using the LUT Editor graph:

- Do one of the following:
 - To set proportional R, G, and B values, select All from the Edit Curve box, and then drag the vertical reference white or reference black line left or right.

- To set independent R, G, or B values, select Red, Green, or Blue from the Edit Curve box, and then drag the vertical reference white or reference black line left or right.



(a) Reference Black line (b) Reference White line (c) Edit Curve box

TIP If you already entered independent values and want to modify the R, G, and B values proportionally, you must drag the reference white or reference black line that corresponds to the corresponding channel. To view the selected R, G, or B luma values as a greyscale luma image in the Import Image menu, enable the Exclusive button.

Modifying Highlights and Shadows

Highlight and shadow values define the maximum and minimum values permitted for each channel. All values above the highlight are clamped down to it. Similarly, all values below the shadow are clamped up.

To modify highlight and shadow values using the Highlights and Shadows fields:

- Do one of the following:
 - To set proportional R, G, and B values, enable Prop and enter a value in one of the (left-to-right) R, G, and B Highlights and Shadows fields.
 - To set independent R, G, or B values, disable Prop and enter the value in the corresponding (left-to-right) R, G, or B Highlights and Shadows fields.

	Ref White	170.748	170.748	170.748	Prop
Log to Lin ▸	Ref Black	23.680	23.680	23.680	Prop
	Highlight	255.000	255.000	255.000	Prop
Destination	Shadow	0.000	0.000	0.000	Prop
8-bit	Custom	1.000	1.000	1.000	Prop
	Film Gamma	0.600	0.600	0.600	Prop
Export	Soft Clip	0.000	0.000	0.000	Prop

(a) Highlight/Shadow fields

To modify highlight or shadow values using the LUT Editor graph:

- Do one of the following:
 - To set proportional R, G, and B values, select All from the Edit Curve box, and then drag the horizontal highlight or shadow line up or down.
 - To set independent R, G, or B values, select Red, Green, or Blue from the Edit Curve box, and then drag the horizontal highlight or shadow line up or down.

Modifying the Gamma of the Conversion Curve

Set the gamma correction value to correspond to the display gamma you set your system to use. You can select a preset from the Gamma Correction box or enter a custom value.

To modify the gamma correction curve using the Gamma Correction fields:

- 1 Select an option from the Gamma Correction box.



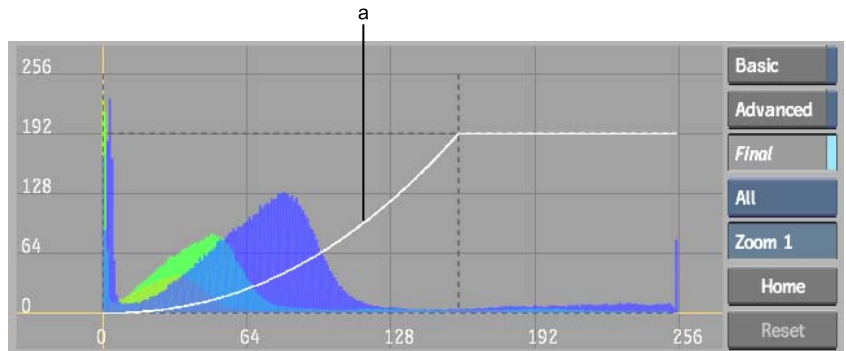
(a) Gamma Correction fields (b) Gamma Correction box

Select:	To:
Video Display	Set video gamma correction presets.
Custom	Enter custom gamma values.

- 2 If you selected Custom, do one of the following:
 - To set proportional custom R, G, and B gamma correction values, enable Prop, and then enter the value in one of the (left-to-right) R, G, and B Gamma Correction fields.
 - To set independent custom R, G, or B gamma correction values, disable Prop, and then enter the value in the corresponding (left-to-right) R, G, or B Gamma Correction field.

To modify the gamma correction curve using the LUT Editor graph:

- Do one of the following:
 - To modify the combined R, G, and B gamma correction curves proportionally, select All from the Edit Curve box, and then drag the gamma correction curve left or right.
 - To set independent R, G, or B values, select Red, Green, or Blue from the Edit Curve box, and then drag the gamma correction curve left or right.



(a) Gamma correction curve

Modifying the Gamma of the Incoming Film Negative

The values in the Film Gamma fields affect the gamma correction curve inversely to the Gamma Correction fields. This is because the gamma correction performed using these controls is based on the gamma of the original film negative. Typically, the gamma of a film negative is 0.6. Only adjust this value if your film negative is of a non-standard gamma. You should not have to modify this value by very much.

To modify the gamma correction curve using the Film Gamma fields:

- Do one of the following:
 - To set proportional custom R, G, and B gamma correction values, enable Prop and then enter the value in one of the (left-to-right) R, G, and B Film Gamma fields.
 - To set independent custom R, G, or B gamma correction values, disable Prop and then enter the value in the corresponding (left-to-right) R, G, or B Film Gamma field.

	Ref White	170.748	170.748	170.748	Prop
Log to Lin ▾	Ref Black	23.680	23.680	23.680	Prop
	Highlight	255.000	255.000	255.000	Prop
Destination	Shadow	0.000	0.000	0.000	Prop
8-bit	Custom	1.000	1.000	1.000	Prop
	Film Gamma	0.600	0.600	0.600	Prop
Export	Soft Clip	0.000	0.000	0.000	Prop

(a) Film Gamma fields

Adjusting the Softclip Values

You can soften the shoulder of the gamma correction curve by adjusting the Softclip values. When you soften the shoulder of the conversion curve, you soften the transition of colours toward the reference white value. This results in less harsh highlights in your clip.

To soften the shoulder of the gamma correction curve using the Softclip fields:

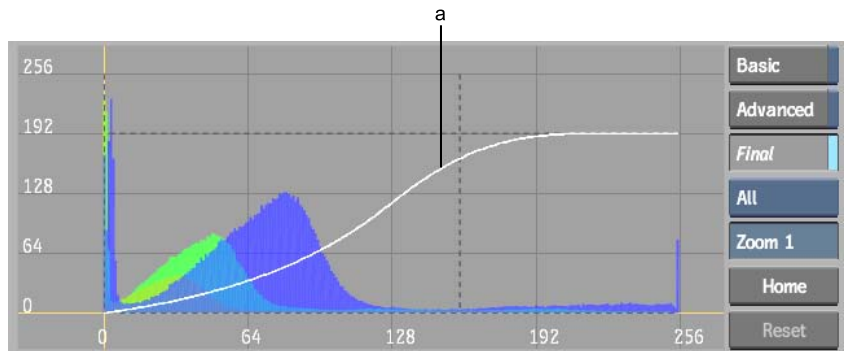
- Do one of the following:
 - To set proportional custom R, G, and B gamma correction values, enable Prop, and then enter the value in one of the (left-to-right) R, G, and B Softclip fields.
 - To set independent custom R, G, or B gamma correction values, disable Prop, and then enter the value in the corresponding (left-to-right) R, G, or B Softclip field.

	Ref White	170.748	170.748	170.748	Prop
Log to Lin ▾	Ref Black	23.680	23.680	23.680	Prop
	Highlight	255.000	255.000	255.000	Prop
Destination	Shadow	0.000	0.000	0.000	Prop
8-bit	Custom	1.000	1.000	1.000	Prop
	Film Gamma	0.600	0.600	0.600	Prop
Export	Soft Clip	0.000	0.000	0.000	Prop

(a) Soft Clip fields

To soften the shoulder of the gamma correction curve using the LUT Editor graph:

- Do one of the following:
 - To soften the shoulder of the combined R, G, and B gamma correction curves proportionally, select All from the Edit Curve box, and then **Shift**-drag the gamma correction curve left or right.
 - To soften the shoulder of the R, G, or B curves separately, select Red, Green, or Blue from the Edit Curve box, and then **Shift**-drag the gamma correction curve left or right.



(a) Softened shoulder

Advanced Editing of the Conversion LUT Curve

After you modify the basic conversion LUT curves, you may want to further refine the final result. To do so, you can use advanced editing tools. With advanced editing, you modify additional curves for the red, green, and blue channels to fine-tune the final conversion LUT and bring out or hide detail in specific areas. These curves have editable points, adding flexibility in how they affect each channel in the final conversion LUT.

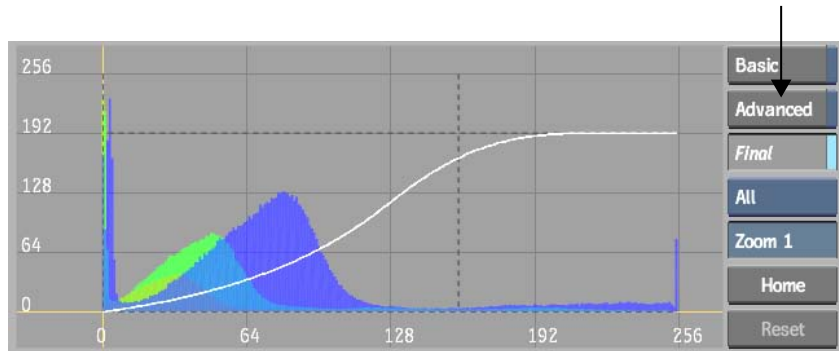
You can modify the shape of each advanced editing curve using control points. Modifications you make to these curves influence the curve of corresponding channels in the final conversion LUT. For example, you can add points to the advanced editing curve for the red channel, and by dragging the points, affect the slope of the red channel's final conversion LUT curve.

The modifications you make to the basic conversion LUT curves and the advanced editing curves are independent. The final LUT that you generate, however, is a single curve (or set of R, G, and B curves) that consists of basic LUT curves and adjustments you make with advanced editing curves.

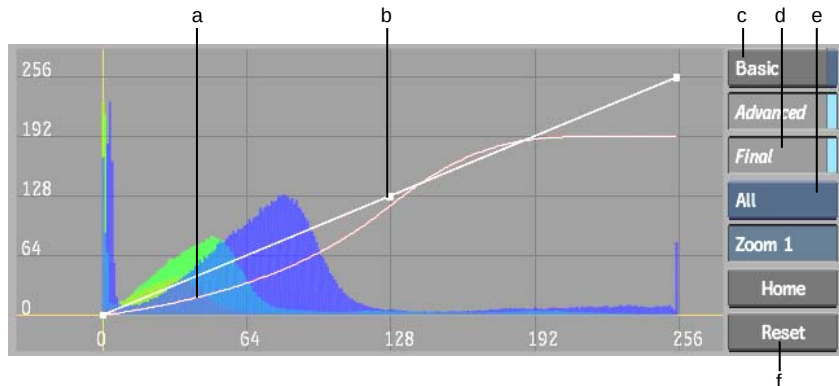
NOTE The procedure in this section does not apply to 3D LUTs.

To perform advanced editing of the conversion LUT curve:

- 1 In the LUT Editor, click Advanced.



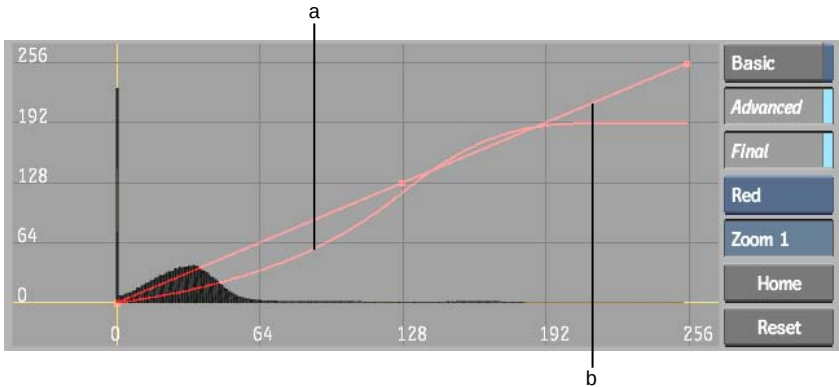
Additional advanced editing curves appear for the red, green, and blue channels. RGB curves use blending to distinguish overlapping curves. For example, when all RGB curves overlap, a white curve is produced, whereas green and blue overlapping curves produce a cyan curve.



(a) Red, blue and green overlapping advanced editing curves (b) Control point
(c) Basic button (d) Final button (e) Edit Curve box (f) Reset button

- 2 To adjust the R, G, and B curves more easily, select one of the channels from the Edit Curve box.

The corresponding channel's basic and advanced editing curves are displayed. The histogram only displays values for the selected channel.



(a) Color channel selected in Edit Curves box (b) Color channel's advanced editing curve

- 3 To modify the advanced editing curves, use the Edit Mode box.

Select:	To:
Add	Add control points to an advanced editing curve. With Add selected, click either the red, green, or blue advanced editing curve.
Delete	Delete control points from an advanced editing curve. With Delete selected, click a point on the red, green or blue advanced editing curve.
Move	Move control points. With Move selected, drag the points, or press Ctrl -drag to select multiple points. TIP Since the advanced editing curves use B-spline interpolation, the control points you manipulate will not necessarily rest on the curve itself. Points have a weighted influence on the curve depending on the position of the other points on the curve.
Zoom	Zoom in on the curves. With Zoom selected, drag over the curves right or left to zoom in or out.

Select:	To:
Rect Zoom	Zoom in on a section of the curves. With Rect Zoom selected, drag a selection box to zoom in on the area of the curves contained by the selection box.
Pan	Pan the curves. With Pan selected, drag over the curves to pan the curves in any direction.

Dragging control points of advanced editing curves affects the basic curves and the colour effect is immediately reflected in the clip.

- 4 To view the basic and final conversion LUT curves, toggle the Basic LUT and Final LUT buttons.
- 5 To reset the advanced editing curves only, click Reset.

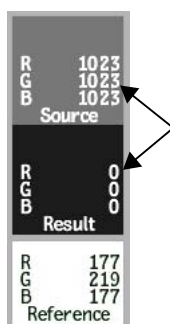
Comparing Colour Values Using Colour Patches

While creating the LUT, you may want to sample image channel values in the source, result, and reference clips to compare values of similar colours, or even corresponding pixels. The colour patches appear to the right of the LUT Editor graph.

NOTE The procedure in this section does not apply to 3D LUTs.

To sample colours in the LUT Editor accessed from the Import Image menu:

- 1 Click the Source or Result Colour patch.



The cursor changes to a colour picker.

- 2 Click the image.

Both source and result colours are sampled simultaneously. The RGB values for the selected pixel are displayed, and the sampling boxes take on the corresponding colour.

- 3 To sample a set of reference values, click the Reference sampling box and use the colour picker to sample the image.

The values are taken from either the result or reference image, depending on which clip display option is currently selected.

Saving LUT Editor Setups

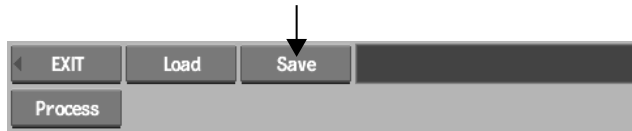
If you will be importing a series of clips from the same shoot or stock, consider using a LUT Editor setup. LUT setups retain all menu settings for the basic conversion LUT curve as well as those created when performing advanced editing. Because a LUT setup preserves the distinction between settings in the LUT Editor menu and adjustments made with the advanced editing curves, it is easier to fine-tune the LUT for specific clips. When importing multiple clips from the same shoot or film stock, later clips may require fine-tuning using the advanced editing curves, but much of the initial work will have been done in the menu.

A LUT setup is simply a 1D LUT that has been saved, rather than exported—saving preserves menu settings; exporting does not. When you re-load a saved LUT, menu settings and advanced editing curve values are restored, and you can adjust basic and advanced editing curves independently. In addition, saving automatically creates an inverse LUT.

When working with film, you normally apply the LUT you created when importing the clip, and the inverse LUT—created automatically upon saving—when exporting your finished work. Applying the export LUT restores the clip's logarithmic data in preparation for the film print. In addition, Backdraft Conform adds the correct *.lut* extension, and for the inverse LUT, adds the *_inv* suffix to the filename.

To save a LUT Editor setup:

- 1 Access the LUT Editor.
- 2 Click Save.



The file browser appears.

- 3 Set a location for the LUT.
- 4 Type a name for the LUT in the Save field.
- 5 If you accessed the LUT Editor in the EditDesk, select Setup from the Save option box.
- 6 Click Save.

The LUT and an inverse LUT are saved in the specified location.

Loading LUT Editor Setups

Loading a LUT Editor setup gives you access to the menu properties and advanced editing curves used to create the LUT.

You can load setups on image import from the EditDesk..

To load a LUT Editor setup while importing images from the EditDesk:

- 1 Access the LUT Editor.
- 2 Click Load.



The file browser appears.

- 3 Select the LUT Editor setup that you want to load.
- You are returned to the LUT Editor and the setup is loaded.

Exporting LUTs

Once you complete your custom LUT, you can use it to convert images. To do so, you must first save or export it. Saving a LUT preserves its menu settings and automatically creates an invert LUT. A LUT's menu settings include values for its basic curves, as well as its advanced editing curves. Exporting combines the basic curves and the advanced editing curves into a single set of curves. However, exporting provides the opportunity to change the bit depth of the LUT. Both saved and exported LUTs are applied to an image sequence in the same manner.

When you export a LUT, the settings that correlate with the basic curves and the advanced editing curves are merged to create a single set of RGB conversion curves and the independence of these settings is lost. Whether you load or import the LUT afterwards, it appears as a basic conversion curve only. However, like all basic LUT types, you can then alter it, for example, by using the advanced editing curves.

Exported LUTs serve as a good interchange format for colour consistency between Autodesk and non-Autodesk products.

Exporting is useful when you want to change a LUT's bit depth. If you develop a LUT for importing 10-bit logarithmic film data, for example, you can easily convert it to work for 12-bit logarithmic data. When exporting a LUT, you can scale both the input and output bit depths.

NOTE If you accessed the LUT Editor from the Import Image menu, you must export the LUT when you exit.

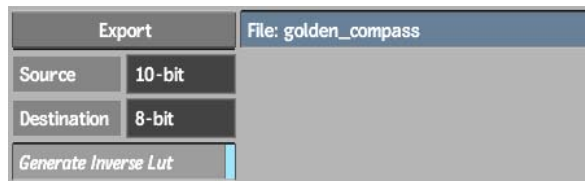
To export a LUT:

- 1 Access the LUT Editor.
- 2 Do one of the following:
 - Click Export.



- If you are using LUT Editor in the Import Image menu, click Exit.

The Export LUT menu appears.



- 3 Set a location for the LUT.
- 4 Select the source and destination bit depths for the exported LUT.
- 5 Enable Generate Inverse LUT to create an inverse LUT along with the normal LUT. You can apply an Inverse LUT to restore original LUT settings.
- 6 Click Export.

The LUT is exported to the specified location.

Converting OpenEXR Images

Backdraft Conform supports the OpenEXR file format. This file format stores 16- or 32-bit floating-point image data. Advantages of the OpenEXR format include a high dynamic range, high-quality colour resolution, and portability.

From the EditDesk, you can convert OpenEXR files using the LUT Editor. You can alter image channel values (such as the luminance) using the viewer's conversion controls, however, you cannot alter the original file.

You can convert the output of an OpenEXR image to an integer image with a bit depth of 8, 10, or 12 bits. At a destination bit depth of 12 bits, you can store packed data (which requires less space on the framestore) or unpacked data (which results in faster retrieval times). You still have the option of exporting to a new 16-bit floating point image.

The following steps are the suggested workflow when working with OpenEXR images.

Step:	Refer to:
1. Import the image.	Importing OpenEXR Files on page 249.
2. Convert the image and make changes to the basic conversion curve and editing parameters, similarly to a 1D LUT. Export an 8-, 10-, or 12-bit integer image from the OpenEXR image.	Converting an OpenEXR Image in the LUT Editor on page 1203.

Converting an OpenEXR Image in the LUT Editor

You can convert the output of an OpenEXR image by accessing EXR Display controls in the LUT Editor.

To convert an OpenEXR file:

- 1 Access the LUT Editor. See [Accessing the LUT Editor](#) on page 1182.
- 2 From the Conversion LUT Type box, select EXR Display.



The EXR Display controls appear.

Exposure Enter the display image exposure. Editing this value lightens or darkens the display image, revealing detail in the high or low range of luminance.

Defog Subtract from pixel values to reduce fogging of the image.

Knee Low Set the lower limit of a compressed pixel range. The knee function determines the white point and middle grey values of the image.

Knee High Set the upper limit of a compressed pixel range. The knee function determines the white point and middle grey values of the image.

Gamma Enter the gamma correction values for your screen setup.

P (Proportional) Enable to change remaining channel values proportionally with respect to a selected value.

- 3 In the Destination menu, select the output bit depth.

Controlling Image Display using Exposure and Image Data Type

When you are working in the Player or a module that supports multiple viewports, you can change the display of an image based on the type of image data you are working with. By default, an image is displayed in RGB mode with a transformation for a video image. You can apply transformations to the image to display an optimal view of logarithmic and linear images.

The Matte mode is a preset that allows you to preview the matte with exposure and contrast settings that are independent of those in RGB mode. In Matte mode, a linear transformation is applied to the image by default and 3D LUTs are not processed.

All transformations applied to images are for display purposes only. As you work with your transformed image, you will be able to better determine the decisions required to achieve a desired effect. For example, you can set an image window to display more realistic contrast values for a logarithmic image. If you apply an RGB blur or perform a colour correction, you will see the results on the transformed image, but when the clip is processed, only the RGB blur or colour correction information will be processed.

NOTE If you apply a 3D LUT that expects logarithmic input, you can apply it to any image data type, and still display a plausible result. This includes all print stock LUTs, including Lustre Color 3D LUTs. If you work with a different type of LUT, enable the Bypass button to work with the image with no transformation.

To access the exposure and image data type settings:

- Do one of the following:
 - In the Player, click the Player Options tab.
 - In a module with multiple viewports, display the View menu.
 - To access settings for the broadcast monitor, open the Preferences menu.



(a) Image Data Type box (b) Preset box

Exposure field Displays the exposure that is used to transform image display in the current image window.

Contrast field Displays the contrast that is used to transform image display in the current image window.

Image Data Type box Select the type of image data you are displaying in the current image window. Your selection determines the type of transformation that that is applied to the clip to modify the contrast.

Select:	To:
Logarithmic	Apply a transformation to a logarithmic film scan.
Video	Apply a transformation to a video clip.
Linear	Apply a transformation to a 16-bit floating-point image, with a high dynamic range.

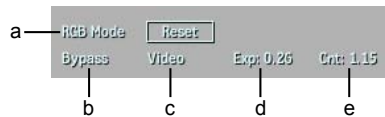
Apply All button In modules with multiple viewports, enable to apply the transformation for the current viewport to all viewports using the same Preset mode.

Bypass button Enable to deactivate display settings in the current image window.

Preset box Select an option to preview the image in either RGB or Matte mode.

Controlling Image Display Gesturally

You can adjust exposure and black level settings directly in the image window of the Player or a module viewport. You can adjust the image data type in a module viewport. The lower left corner of the image in the Player and each viewport display these settings. The Player only displays these settings as you make changes.



(a) Preset Mode (b) Bypass/Active Mode (c) Image Data Type (d) Exposure (e) Contrast

To adjust exposure and image display settings directly in an image window:

- 1 If you are working in a module, select the viewport.
- 2 Do one of the following:
 - Press **Shift+E** and drag left or right in the viewport to decrease or increase the exposure.
 - Press **Shift+C** and drag left or right in the viewport to decrease or increase the contrast.
- 3 If you are in a module, you can also do one of the following:
 - Click the Preset mode to alternate between RGB mode and Matte mode.
 - Click the Bypass/Active mode to alternate between Bypass mode (colour management is deactivated in the current display window), and Active Mode (settings are enabled).
 - Click the image data type to cycle through video, logarithmic, and linear settings.

NOTE If you are in a module, click Reset to restore default exposure and contrast settings. **Ctrl**-click either the exposure or contrast setting to reset it exclusively.

Topics in this chapter:

- [About A/V Tools](#) on page 1209
- [Accessing the A/V Tools](#) on page 1209
- [Video Tools](#) on page 1211

About A/V Tools

Use the Audio/Visual (A/V) tools to apply effects and formatting changes to video and audio clips. For example, mix down and timestretch audio, burn in timecode, degrain a clip, and interleave the frames of two clips.

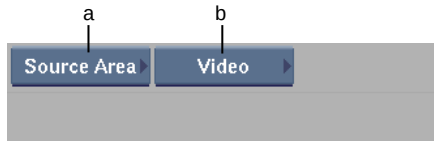
Accessing the A/V Tools

The A/V tools are grouped into different menus. To access these menus, use the A/V Tools box in the EditDesk menu.

The Undo and Redo buttons are also available while using A/V tools, so you can undo/redo events without having to exit the menu.

To access an A/V tools menu:

- 1 Make sure the current option in the Menu Priority box is disabled; alternatively, enable Effects in the Menu Priority box.



(a) Menu Priority box (b) A/V Tools box

NOTE To access the A/V Tools box when the Player is displayed, Effects must be enabled in the Menu Priority box.

- 2 Select and enable an option from the A/V Tools box.

The tools grouped under the selected A/V Tools box option appear.

Average	Consolidate	DeInterlace	Interlace	Repeat	Dominance	Regen Proxies
Colour Source	Deal	Field Merge	Interleave	Resize	Strobe	Extract Proxies

A blue LED light on the A/V Tools box indicates that the selected option is locked on until either a new tools option is selected or the current tools option is deselected.

- 3 To activate a tool, click once on the selected tool.
Parameters that correspond to the selected tool appear.

Keeping a Tool Active

Normally, when you activate and use a tool, the tool becomes inactive and its parameters disappear when you have finished using it. You can also activate a tool such that it stays active, allowing you to use it multiple times without having to re-activate it each time. For example, use this option on the Add Pulldown tool to add pulldown to several clips. You can do this with any A/V tool.

To activate a tool and keep it active after use:

- Press **Ctrl** and click the tool.
The tool stays active after being used.

To deactivate an active tool:

- Click anywhere in the grey area of the menu.

Video Tools

Use the Video tools to apply format changes and effects to video clips and to create source clips. For example, create colour sources and SMPTE colour bars. Manage clips by removing unused handles or dividing one clip into several smaller ones. You can also separate and recombine the fields of a source clip, change the scan mode, and repeat frames.

Average	Consolidate	Deinterlace	Interlace	Repeat	Dominance	Regen Proxies
Colour Source	Deal	Field Merge	Interleave	Resize	Strobe	Extract Proxies

For information on:	See:
Deinterlace, Field Merge, Interlace, and Dominance tools	Video Field Management on page 1155.
Regen Proxies and Extract Proxies	Managing Proxies on page 355.
Resize	Resize on page 1105
Average, Colour Source, Consolidate, Deal, Interleave, Repeat, Strobe	The following sections in this chapter.

Averaging Clips

You can use the Average tool to simulate the motion blur of a moving object in a clip. Backdraft Conform creates the motion blur by applying an image averaging function to each frame in the source clip. For each frame, partially transparent copies of the images are superimposed in the surrounding frames on top of the image in the current frame. Since the moving object is in a different position in each successive frame, the superimposed images in one frame will also show the object in different positions, creating the blur effect.

The number of images superimposed on one frame determines the length of the blur. You can control the length of the blur effect as well as the transparency of the superimposed images with the Average controls in the Video menu.

Average Over field Controls the number of frames used to calculate the average (the number of images superimposed on one frame). The Average Over value affects both the length and the transparency of the blur. For example, averaging over a large number of frames increases the length of the blur and the transparency of the superimposed images.

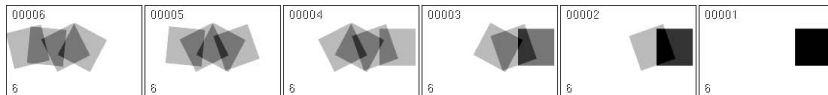
Weighted and Uniform Averages Controls the transparency of the blur with a weighted or a uniform average. For each frame processed in a weighted average, the frame closest to the current frame carries the most weight in the average calculation and is the most opaque. The frame furthest from the current frame carries the least weight and is the most transparent. In a uniform average, all frames carry equal weight and are equally transparent.

Past and Future Frames Uses Past frames or both Past and Future frames to calculate the average:

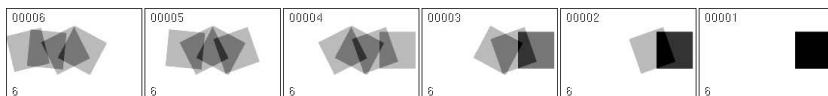
- With Past Frames, only the frames that precede the current frame are considered. The motion blur follows the object.
- With Past and Future frames, the frames on both sides of the current frame are considered.

The following examples demonstrate using the Average controls to process a source clip that is six frames long with the Average Over value set to 4. The first result clip shows a uniform average using past frames; the second result clip shows a weighted average also using past frames. The frames in the result clips are generated as follows:

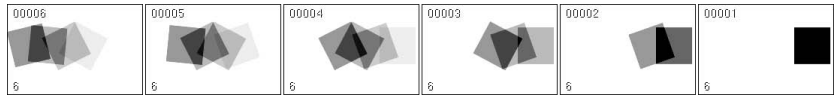
- Frame 1 is the same as source frame 1. Since there are no clips preceding the first frame, the first frame in the generated clip is always the same as the first frame in the source clip.



Action: Select the source clip



Result: Uniform average over 4 frames

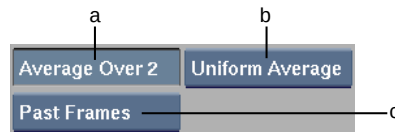


Result: Weighted average over 4 frames

- Frame 2 is the result of averaging source frames 1 and 2.
- Frame 3 is the result of averaging source frames 1, 2, and 3.
- Frame 4 is the result of averaging source frames 1, 2, 3, and 4.
- Frame 5 is the result of averaging source frames 2, 3, 4, and 5.
- Frame 6 is the result of averaging source frames 3, 4, 5, and 6.

To use the Average tool:

- 1 With Video selected from the A/V Tools box, click Average.
The Average controls appear.



(a) Average Over field (b) Weighted/Uniform box (c) Past Frames/Past & Future box

- 2 Enter the number of frames for the average in the Average Over field.
- 3 Select either Weighted or Uniform Average and either Past or Past and Future frames to use in the calculation.
- 4 Select the source clip.
- 5 Select the destination.

The result clip appears in the selected destination.

Creating Colour Sources

The Colour Source tool generates a virtual source that contains one or more identical frames of a solid colour or SMPTE or PAL colour bars at 75% or 100% luminance. When you use the Colour Source tool to create a custom colour

source, you can save that colour in the colour palettes. You can also use this tool to create frames composed of video noise. Noise clips are not virtual sources — each frame in the clip is unique.

To create a colour source or noise clip:

- 1 With Video selected from the A/V Tools box, click Colour Source. The Colour Source controls appear.



(a) Source Type box (b) Luminance box (c) Frequency box (d) Resolution button
(e) Frame Code Mode box (f) Timecode field

- 2 From the Source Type box, select the type of frame you want to generate.

Select:	To generate frames of:
Colour	A solid colour.
Noise	Monochrome video noise.
Colour Noise	Colour video noise.
SMPTE Bars	SMPTE standard colour bars.
PAL Bars	PAL standard colour bars.

- 3 From the Luminance box, select 75% or 100% luminance.
- 4 From the Frame Code Mode box, select the framerate and drop frame mode for your colour source clip.

Select:	To generate frames of:
60 fps	60 frames per second (used for NTSC video).
59.94 fps NDF	59.94 frames per second Non Drop-Frame (standard rate for NTSC). If you use 59.94 fps NDF, its indicated timings will not accurately correspond with real time.

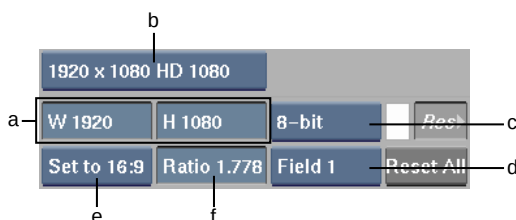
Select:	To generate frames of:
59.94 fps DF	59.94 frames per second Drop-Frame (standard rate for NTSC). This times the video accurately with real time by dropping the extra frames in the count.
50 fps	50 frames per second (standard for PAL).
30 fps	30 frames per second (mimics a film camera's frame-by-frame image capture).
29.97 fps NDF	29.97 frames per second Non Drop-Frame (frame rate for colour NTSC). If you use 29.97 fps NDF, its indicated timings will not accurately correspond with real time.
29.97 fps DF	29.97 frames per second Drop-Frame (frame rate for colour NTSC). This times the video accurately with real time by dropping the extra frames in the count.
25 fps	25 frames per second (good for LCD monitors or display formats that are not interlaced).
24 fps	24 frames per second (used to transfer a video signal to film).
23.976 fps	23.976 frames per second. This frame rate is used for NTSC DVD playback.

- 5 In the Start field, specify the start time.
- 6 In the Timecode field, specify the duration of the colour source that you want to generate.
- 7 To generate audio with the clip, select the number of audio tracks from the Track box and then select a frequency from the Frequency box.

NOTE Selecting Silence will create audio tracks with a flat waveform.

- 8 If the frame mode is set to Colour, select the colour for the frames using one of the following methods:
 - Click one of the colour pots next to the Colour mode button to transfer that colour into the current colour pot.
 - Click the current colour bar to access the colour picker. Use the colour picker to create the current colour. See [Colour Picker](#) on page 60.

- 9 By default, the result clip will have the same resolution as the project default resolution. To specify an alternative resolution, click Res. The Resolution controls appear.



(a) Width and Height fields (b) Resolution Presets box (c) Bit Depth box (d) Scan mode box (e) Aspect Ratio Presets box (f) Aspect Ratio field

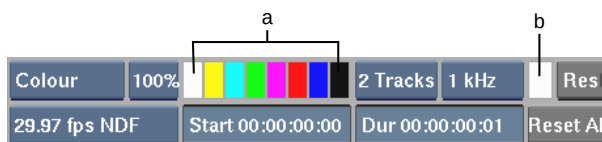
- 10 Specify resolution settings for the result clip using the Resolution controls.
- 11 Click Resolution to exit the Resolution menu.
- 12 Select the destination for the generated clip.

Once you create a colour source or colour bar clip using the Colour Source controls, you can use it as a virtual source. See [Virtual Sources](#) on page 866.

NOTE Audio settings and colour pots are saved from session to session. If you want to reset the options to the factory defaults, click Reset All in the Colour Source controls.

To save a custom colour:

- 1 With Video selected from the A/V Tools box, click Colour Source.
- 2 Click the Source colour pot to open the colour picker.



(a) Colour palettes (b) Source colour pot

- 3 Set a custom colour.
- 4 Click and hold in one of the colour palettes to store the custom colour.

Consolidating a Clip

Use the Consolidate tool to create a new clip from an existing clip burdened with excessively long heads and tails (handles). The consolidated clip retains handles only at the specified maximum number of frames.

To consolidate a clip:

- 1 With Video selected from the A/V Tools box, click Consolidate.
The Consolidate controls appear.



(a) Tracks option box (b) Maximum Handles field

- 2 Select which tracks to consolidate from the Tracks option box.
- 3 In the Maximum Handles field, enter the maximum number of frames to retain in the head and tail handles.
- 4 Select the clip you want to consolidate.

NOTE Using this tool, you cannot consolidate an element in a clip. You can consolidate an entire clip only.

- 5 Select a destination for the consolidated clip.

Dealing Clips

Use the Deal tool to divide a clip equally into smaller clips. Frames are dealt sequentially to each new clip until all frames are distributed. Use the Clip field to specify the number of clips you want to create. The following shows dealing a nine-frame clip with a clip value of three.

1	2	3	4	5	6	7	8	9

Source clip

1	4	7

First result clip

2	5	8

Second result clip

3	6	9

Third result clip

To deal a clip:

- 1 With Video selected from the A/V Tools box, click Deal.
The Clips field appears.
- 2 Set the number of clips to deal in the Clips field.
- 3 Select the clip you want to deal.
- 4 Select the destination for the result clips.
The result clips appear in the selected destination.

Interleaving Clips

Use the Interleave tool to interleave the frames of two source clips. You specify how to interleave the two clips in the Spacing field. For example, a spacing value of two mixes two frames of the second source clip after every frame of the first source clip.

A	B	C	D	E

First source clip

1	2	3	4	5

Second source clip

A	1	2	B	3	4	C	5

Result clip

To interleave two clips:

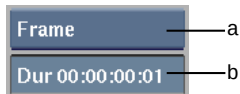
- 1 With Video selected from the A/V Tools box, click Interleave.
- 2 Set the spacing for the interleave in the Spacing field.
- 3 Select the source clips.
- 4 Select the destination for the result clip.

Repeating Frames and Clips

Use the Repeat tool to repeat individual frames, clips, or all frames in clips.

To repeat frames or clips:

- 1 With Video selected from the A/V Tools box, click Repeat.
The Repeat controls appear.



(a) Repeat Item box (b) Repeat Number field

- 2 Select the item to be repeated in the Repeat Item box.

Select:	To repeat:
Frame	The current frame in the selected clip.
Clip	The selected clip.
Frames in Clip	Each frame in the selected clip. (This can be used to create a slow-motion or stop-action effect.)

TIP When you repeat with the Frame option, the clip becomes virtual (no handles) so you can trim it to any duration on the timeline.

- 3 Specify the number of repeats in the Repeat Number field. The item selected in the previous step will be repeated the number of times indicated in the Repeat Number field.
- 4 Select a clip and a destination.
The result clip appears in the selected destination.

Strobing a Clip

Use the Strobe tool to create a clip that repeats a specified number of frames or fields without changing the duration of the clip. The repeated frames or fields replace the original frames or fields in the clip.

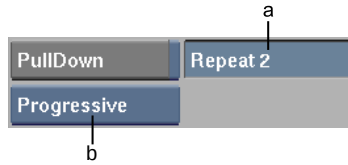
You can also create a film strobe. Creating a film strobe is useful for simulating a 3:2 video-to-film pulldown.

TIP Once you create a film strobe, add noise to the clip or colour correct it to produce a more authentic film look.

NOTE When you create a film strobe, the duration of the clip is not affected. To convert the clip to 24 fps, use the Remove 3:2 option.

To strobe a clip:

- 1 With Video selected from the A/V Tools box, click Strobe.
The Strobe controls appear.



(a) Repeat field (b) Strobe Mode box

- 2 Select the appropriate option from the Strobe Mode box.

Select:	To strobe:
Progressive	By frames.
Field 1	By field 1.
Field 2	By field 2.

- 3 Specify the number of frames or fields to repeat in the Repeat field.
- 4 Select the clip you want to strobe.
- 5 Select a destination for the processed clip.

The following shows a clip strobed by frames with a Repeat value of 2.

A	B	C	D	E	F	G	H	I	J

Source clip (shown in frames)

A	A	C	C	E	E	G	G	I	I

Result clip (shown in frames)

The following shows a clip strobed by field 1 with a Repeat value of 3.

Field 1	Field 2	Field 1	Field 2	Field 1	Field 2	Field 1	Field 2	Field 1	Field 2
A	A*	B	B*	C	C*	D	D*	E	E*

Source clip (shown in fields)

Field 1	Field 2	Field 1	Field 2	Field 1	Field 2	Field 1	Field 2	Field 1	Field 2
A	A	A	B	B	D	D	D	E	E

Result clip (shown in fields)

To create a film strobe:

- 1 With Video selected from the A/V Tools box, click Strobe.
- 2 Enable Pulldown.



The values for the film strobe are predefined. The processed clip automatically has a 3:2 field interlace pattern. You do not need to specify the number of fields to strobe.

- 3 Select the clip you want to strobe.
- 4 Select the destination for the processed clip.
The result clip appears in the selected destination.

The following shows a film strobe.

Field 1	Field 2	Field 1	Field 2	Field 1	Field 2	Field 1	Field 2	Field 1	Field 2
A	A*	B	B*	C	C*	D	D*	E	E*

Source clip (shown in fields)

Field 1	Field 2	Field 1	Field 2	Field 1	Field 2	Field 1	Field 2	Field 1	Field 2
A	A	A	B*	B*	C*	C*	C*	E	E

Result clip (shown in fields)

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