

Avid® Media Composer and Film Composer®

Effects Guide

Release 7.0

Avid
tools for storytellers™



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Index



CHAPTER 1

Preparing to Work with Effects

The Avid Composer system offers many effects that you can apply to your sequences. This chapter describes some of the concepts you must become familiar with before you begin creating and editing effects into sequences.

- [Effect Types](#)
- [Effects Creation Tools](#)
- [Understanding Real-Time and Downstream Key Effects](#)
- [Displaying the Effect Palette](#)
- [Installing Third-Party Plug-in Effects](#)
- [Settings for Effects](#)

Effect Types

There is much overlapping that occurs between the various types of effects you can create, as well as the methods used to create them. Roughly speaking, there are four basic types of effects:

- **Transition effects** (dissolves, wipes, and so forth) are applied at the cut point between two video clips that are on the same video track (that is, the same video layer). [Chapter 2](#) and [Chapter 3](#) describe techniques for creating transition effects.
- **Segment effects** (both single-layer and multilayer) are applied to an entire clip or group of clips. There are two types of segment effects:
 - A single-layer segment effect, such as a Mask, is applied to a segment on one video track. Single-layer segment effects use one stream of video. [Chapter 2](#) and [Chapter 3](#) describe techniques for creating single-layer segment effects.
 - A multilayer segment effect, such as a Picture-in-Picture effect, is applied to the top layer or a middle layer of segments that contain two or more video tracks that will be played simultaneously. [Chapter 4](#) describes techniques for creating multi-layer effects.
- **Title effects** are created with the Title Tool and edited onto their own layers in a sequence. [Chapter 5](#) and [Chapter 6](#) describe techniques for creating and editing title effects.
- **Motion effects** (freeze frame, variable speed, and strobe) are created by manipulating the playback characteristics of a clip of footage. [Chapter 2](#) describes techniques for creating motion effects.

A number of effects across these categories have both 2D (two-dimensional) and 3D (three-dimensional) versions on systems equipped with the 3D Effects option.



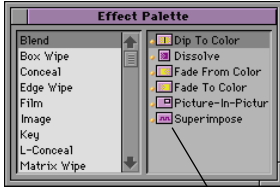
For a list of effects for each model, see the Avid Media Composer Products Reference Guide.

Effects Creation Tools

The following chart presents the basic tools used to create effects.

Sources of effects:

Effect Palette



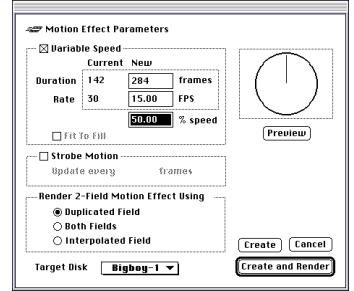
Apply transition and segment effects directly to tracks.

Title Tool



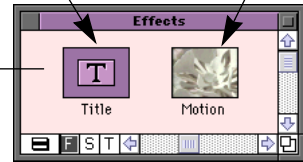
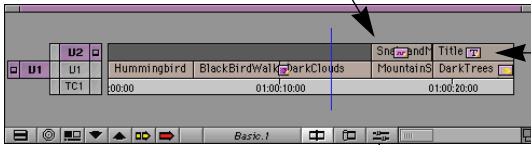
Edit effect clips into the Timeline.

Motion Effect Parameters dialog box



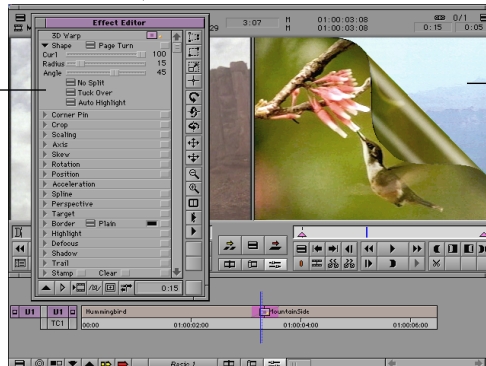
Title and motion effects appear first as clips in the bin.

Effects editing in Source/Record mode:



Effects adjustment in Effect mode:

Effect Editor: Allows you to adjust effect parameters.



Effect Preview monitor: Allows you to preview an effect, manipulate key frames, and manipulate wire-frame representations of the effect.

Understanding Real-Time and Downstream Key Effects

Many effects are *real time*, which means you do not have to render them before you play them. You can preview effects that are not real time before rendering. In addition, titles and graphic elements imported with an alpha channel display as *downstream key* (DSK) effects. When you establish Effect settings and Render settings, you determine how the Avid Composer system will play real-time effects and non-real-time effects. For more information, see [“Settings for Effects” on page 41](#).

About Downstream Key Effects

By default, all titles are created using the Avid Composer system’s DSK capabilities. Graphic elements imported with an alpha channel are also created as DSK clips.

Downstream keying allows you to add uncompressed titles or graphics over multiple streams of compressed media and continue to play the sequence in real time. The real benefits of downstream keying are seen during editing of Title Effect clips into sequences.



For information about editing with DSK titles, including descriptions of various restrictions and playback capabilities, see [Chapter 6](#).

About Real-Time Effects

A *real-time effect* is an effect that you can apply to a sequence and play without having to render it first (rendering takes time and disk space). A real-time effect has a small orange dot within the effect icon in the Timeline. Effects that must be rendered have a small green or blue dot within the effect icon in the Timeline. For more information, see [“Understanding the Color Coding” on page 33](#).



Because real-time effects require an Advanced JPEG compression board and on some systems a DVE daughter board, not all Avid Composer systems have real-time effects. For a list of the Avid Composer systems that have real-time effects, see the “Table of Effects in Media Composer Products” in the Avid Media Composer Products Reference Guide.

Playing Real-Time Effects

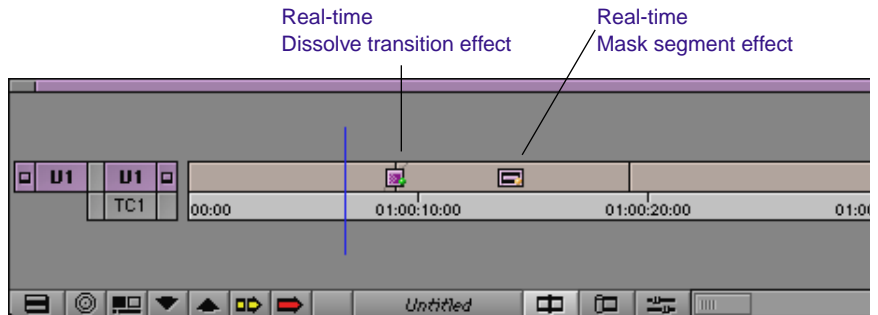
Although you can create a sequence that has any number of real-time and non-real-time effects, the Avid Composer system can play only one real-time effect at a time. The following sections explain how the Avid Composer system handles situations with overlapping real-time effects. In any case, if you want to play two overlapping effects, you must render one of the effects.



If you have a real-time Title effect and a real-time Dissolve effect, render the Dissolve effect because it takes less time.

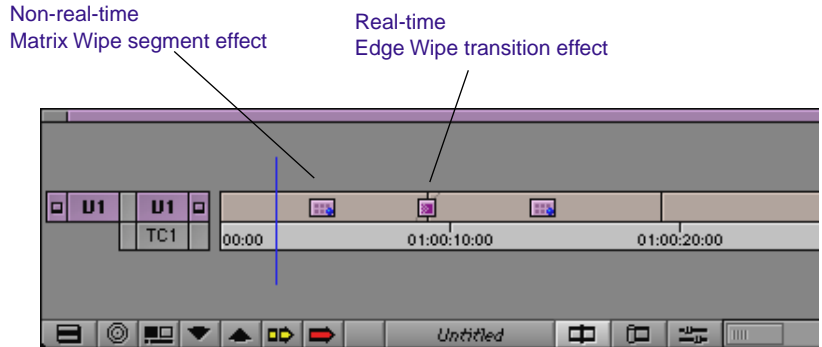
Overlapping Real-Time Effects on the Same Track

If your sequence contains overlapping real-time effects on the same video track, only one effect can be played in real time. For example, if you have two real-time effects on the same track (for example, a Dissolve overlaps video with a Mask effect), the Avid Composer system will play the real-time Mask effect and play the real-time Dissolve as a cut.



Overlapping Real-Time Effects and Non-Real-Time Effects

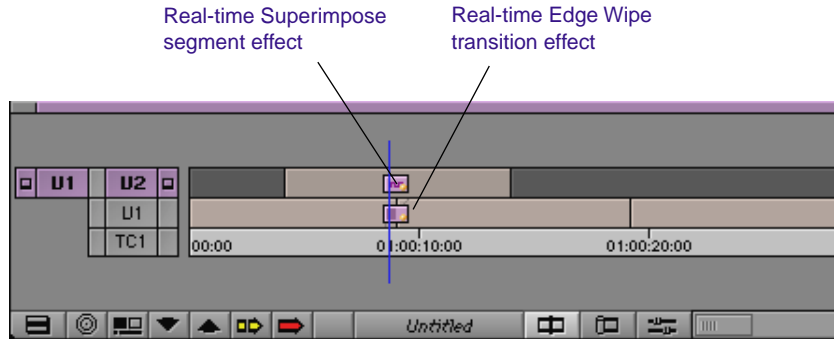
The combination of real-time and non-real-time effects on the same video track can show different results, depending on when you render the non-real-time effects.



- If you render the non-real-time segment effects *after* you apply the real-time transition effect, the sequence will play in real time.
- If you render the non-real-time segment effects and then apply the real-time transition effect, the transition effect will play as a cut.

Overlapping Real-Time Effects on Multiple Tracks

If your sequence contains overlapping real-time effects on multiple video tracks, only the effect on the highest numbered track can be played in real time. For example, if you have a real-time Superimpose segment effect on track V2 over a real-time Edge Wipe transition effect on track V1, the system plays the Superimpose effect in real time and plays the Edge Wipe effect as a cut.



In this example, the fastest way to play both effects is to render the Edge Wipe effect.

Overlapping Real-Time Effects with Downstream Key Titles and Graphics

You can stack a DSK title or graphic over a real-time effect, and both the title and the effect will play in real time. For more information on DSK titles and graphics, see [Chapter 5, "Creating Titles and Graphic Objects."](#)

Displaying the Effect Palette

The Effect Palette is a window that lists all the effects that are available on your Avid Composer system. The effects that are available on your Avid Composer system depend on the model and options that you purchased. For the list of effects available for your model, see the “Table of Effects in Media Composer Products” in the *Avid Media Composer Products Reference Guide*.

You select transition and segment effects from the Effect Palette. The effects in the Effect Palette are grouped by category:

- Blend
- Box Wipe
- Conceal
- Edge Wipe
- Film
- Image
- Key
- L-Conceal
- Matrix Wipe
- Peel
- Push
- Saw Tooth Wipe
- Shape Wipe
- Spin
- Squeeze
- Xpress 3D Effect

Each of these effect categories contains multiple effects. Use the following procedure to display the Effect Palette.

To display the Effect Palette:

1. Either choose Effect Palette from the Tools menu, or press ⌘-8.

Tools	
New Deck Controller	
Audio Mix	
Audio EQ	
Automation Gain	
AudioSuite	
Audio Tool	⌘1
Audio Punch In	
Burn-In Tool	
<hr/>	
Calculator	⌘2
Clipboard Monitor	
Command Palette	⌘3
Composer	⌘4
Compression	⌘5
Console	⌘6
<hr/>	
Digitize	⌘7
Effect Palette	⌘8
Effect Editor	

The palette for the first effect category, Blend, appears:.

Scrollable list of effect categories



Blend effect choices

The left side of the Effect Palette displays a scrollable list of effect categories. The right side shows the various effects that are available for the currently selected effect category.

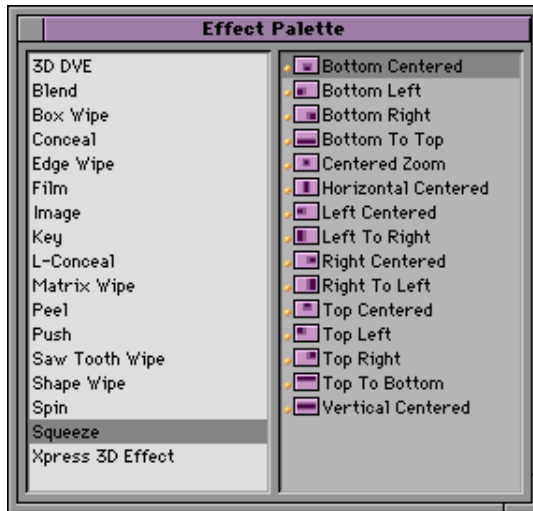
2. Click an effect category to select it.

Note that the 3D Warp effect is available only on systems with the 3D Effects option. For information on 3D effects, see [Chapter 9, “Working with 3D Effects.”](#) The Paint effect and AniMatte effect are available only on Avid Composer systems with the Intraframe Editing option.

Resizing the Effect Palette

You can resize the Effect Palette to display more effects when a particular category includes a long list of icons.

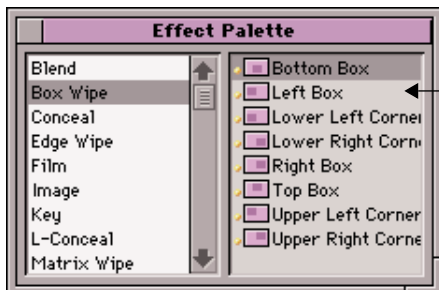
To resize the Effect Palette, click and drag the lower right corner of the palette to the size you want, and release the mouse button.



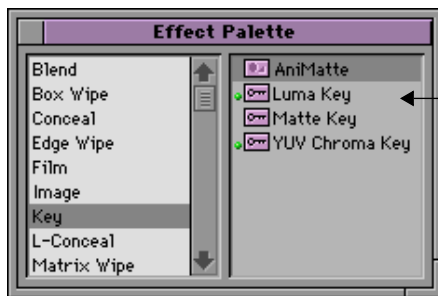
Understanding the Color Coding

Effect icons in the Effect Palette and in the Timeline display color-coded dots to help you determine whether an effect is real-time or non-real-time. After opening the Effect Palette, you will notice that:

- Real-time effects are preceded by an *orange dot*.
- Real-time effects that *might* not be playable in real time due to their position in a sequence or the options chosen in the Effect settings are preceded by a *green dot*. These effects take advantage of fast rendering.
- Non-real-time effects have *no dot*. In the Timeline, the effect icon contains a *blue dot* until the effect is rendered.



Orange dot indicates a real-time effect.



Green dot indicates a real-time effect that might not be playable in real time.

No dot (as in Matte Key above) indicates a non-real-time effect; in the Timeline, the effect icon contains a blue dot until the effect is rendered.



A real-time effect might not be playable in real time for one of the following reasons:

- There are two effect categories, Wipes and Keys, that contain effects that are mutually exclusive as real-time effects. If you have both effect categories in a sequence, only one can be real time. The other must be rendered.



The current Effect settings for the project determine which type of effect is real time during editing. For more information, see [“Effect Settings” on page 41](#).

- A real-time transition effect has been applied on top of another effect.
- There is more than one real-time overlapping effect.



When you edit a non-real-time effect into a sequence, the effect icon appears with a blue dot in the Timeline, which indicates that you must render the effect to play it in real time. After you render the effect, the effect icon appears in the Timeline without a dot.

For more information on real-time effects, see [“Understanding Real-Time and Downstream Key Effects” on page 26](#).

Displaying Effect Templates

Effect templates allow you to save the parameters of an effect to a bin and use them again to create or modify other effects.

In addition to allowing you to view all the standard effects, the Effect Palette allows you to view and access effect templates that are stored in open bins. The names of open bins containing effects appear in a list below the effect categories. To view the effect templates in the bin, click the bin name. The list appears in the right side of the Effect Palette. For example, in the following illustration the bin contains two effect templates named Matte Key: Avid Logo (With Alpha) and Title:

Show Open, which also appear in the right-hand list in the Effect Palette.



Whenever you open or close a bin or whenever you drop an effect into a bin, both lists automatically update.

Once a template appears in the right side of the Effect Palette, you can apply it like any other effect. See [“Using an Effect Template” on page 112](#) for more information.

Installing Third-Party Plug-in Effects

You can use third-party plug-in effects that are compatible with the Adobe Photoshop plug-in architecture and with the Avid Visual Extension (AVX™) standard. After you install these plug-ins, the effects appear in the Effect Palette. After you create an effect, you can save it as an effect template and reapply the template to other transitions or segments in your sequence. Effect templates also appear in a special section at the bottom of the Effect Palette.

Installing Photoshop-Compatible Plug-in Effects

The Avid Composer system can use many plug-in effects that are compatible with Adobe Photoshop Version 2.5. You purchase these plug-ins directly from a third-party vendor.

To install Photoshop-compatible plug-ins:

1. Copy the plug-in files from the software vendor's folder to the 3rd Party Plug-Ins folder in the Supporting Files folder in your Composer folder located on the Avid drive. You must place the plug-ins directly in this folder. They cannot be inside another folder within this folder or elsewhere on the Avid Composer system. If they are, the system will not recognize them.
2. If the Avid Composer application is open, you must close it and reopen it before the third-party plug-in effects will appear in the Effect Palette.

The following is an example of how Photoshop-compatible plug-in effects appear in the Effect Palette.



For information on applying third party effects, see [“Applying a Third-Party Plug-in Effect” on page 53.](#)

Installing AVX Plug-in Effects

AVX (Avid Visual Extension) is a plug-in standard for integrating various third-party effects with the Avid Composer system. AVX is a cross-platform software architecture designed to allow software effect modules to be dynamically linked with a host application such as Media Composer or Film Composer.

You can purchase these plug-ins directly from a third-party vendor. The following lists three of the current vendors, the plug-in product names, and the vendor's web address:

- Ultimatte® Corporation (Ultimatte™)
<http://www.ultimatte.com>
- Artel Software (Boris FX™)
<http://artelsoft.com>
- ICE (Integrated Computing Engines, Inc.) (ICEfx™ for Avid)
<http://www.iced.com>

AVX Plug-ins usually come complete with any necessary documentation. This section describes how to install the plug-ins and how to access them from the Avid Composer system.

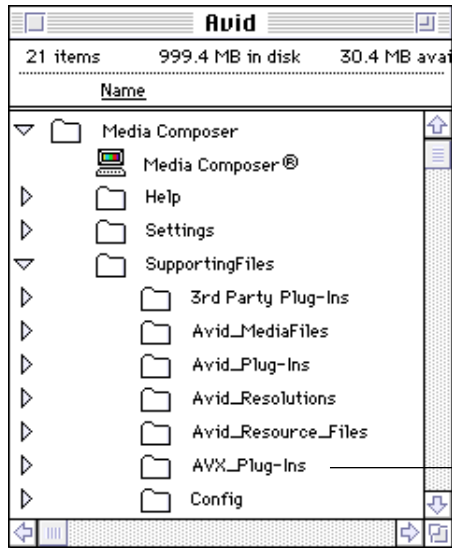
To install AVX plug-ins:

1. Exit the Avid Composer application.



Do not add or remove plug-ins while the Avid Composer application is running.

1. Copy the plug-in files from the software vendor's folder to the AVX Plug-Ins folder on your Avid drive.



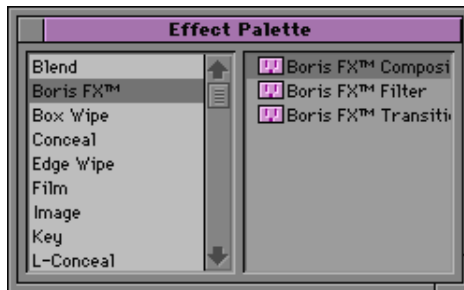
Place AVX plug-ins in this folder



You must place the plug-ins directly in this folder. They cannot be inside another folder within this folder or elsewhere on the Avid Composer system. If they are, the system will not recognize them.

- Restart the Avid Composer application and open the Effect Palette. The AVX plug-in effects will appear in the Effect Palette.

The following is an example of how AVX plug-in effects appear in the Effect Palette. This example shows several Boris effects.



Effect category

Effects

For information on applying third party effects, see [“Applying a Third-Party Plug-in Effect” on page 53.](#)



Some plug-in effects come with their own installation program. In that case, follow the directions supplied with the package.

Troubleshooting AVX Plug-Ins

This section describes solutions to problems that you may encounter with AVX Plug-ins.

Blank Effect Icons in the Timeline

AVX Plug-ins have a plug icon in the Effect Palette and in the Timeline. If the Effect icon in the Timeline is blank, the Avid Composer system either could not find the plug-in or the plug-in version doesn't match the version of software that you used to create the plug-in.

To determine the cause of the problem, open the Console window (choose Console from the Tools menu) and look for the message “Can't find effect.” The message will identify the plug-in that can't be displayed.

The following are the most common problems:

- The plug-in may be missing from the AVX_Plug-Ins folder. Open the AVX_Plug-Ins folder (located in the SupportingFiles folder) and look for your plug-in. If it is missing, replace it. This may involve reinstalling the plugIn.
- The plug-in in the AVX Plug-ins folder may be incompatible with the effect in the Timeline. This might happen if you update the Plug-ins on your system. For example, if you create an effect with Version 1.1 of the plug-in software and then update your plug-ins to Version 2.5, the new software may not be compatible with the old effect.

Plug-ins should be compatible with minor releases but not necessarily with major releases of the Plug-in software. For example, Version 1.0 of a Plug-in should be compatible with Version 1.1 or 1.2 (minor revision). But Version 1.0 may not be compatible with Version 2.0 (major revision change).

If the plug-in is correctly installed, contact the plug-in vendor and ask if there are any known version compatibility problems with the plug-in.

Missing Effect Categories in the Effect Palette

If the plug-in categories are not visible in the Effect Palette, they are either not installed correctly or you may have an incorrect version of the AVXLibrary. In this case, check the Console window for a message that states that AVX was disabled. If it was not disabled, quit the Avid Composer application, reinstall the plug-ins, and restart the application.

If the message in the Console states that AVX software was disabled, call Avid Customer Support to determine whether you need a new version of the AVXLibrary.

The Avid Composer System Cannot Render the Plug-In

If the Avid Composer system cannot render the plug-in, check the Console window. Some plug-ins write more information about the failure to the Console window. Also, some plug-ins may report the problem as a message in the Bin or Edit monitor. In general, contact the plug-in vendor if a plug-in doesn't work as expected.

Settings for Effects

The Avid Composer system has settings that control how you use effects. Some of these settings are User settings and some are menu selections. This section describes the User settings. The menu selections are described in [“Rendering an Effect” on page 116](#).



For information about other settings in the system, see the “Settings Scroll List” chapter in the [Avid Media Composer Products Reference](#).

Effect Settings

There are two effect categories, Wipes and Keys, that contain effects that are mutually exclusive as real-time effects. If you have both effect categories in a sequence, only one can be real time. The other must be rendered.



Your Avid Composer system must have an Advanced JPEG compression board to have real-time effects.

Use the Effect Settings dialog box to specify which effect category will be real time. Make this decision based on whether you will be creating more wipes or keys in your sequence.



Because wipes and keys are real-time effects on Avid Composer systems with the 3D Effects option, the Effect settings do not apply to these systems.

To change the Effect settings:

1. Click the Settings button in the Project window.
2. Double-click the Effects setting.

The Effect Settings dialog box appears.



3. Select which effect category you want to be real time. The change takes place immediately in the Effect Palette.

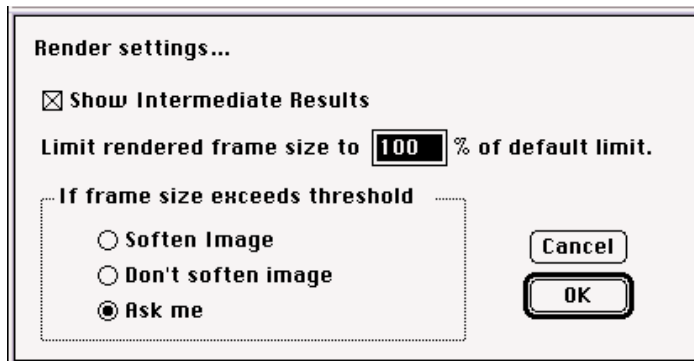
Render Settings

You can control the size of an imported graphic and a rendered effect by changing the Render settings. This setting is intended to prevent playback pauses caused by PICT images, QuickTime® files, or rendered composites that are too complex.

To change the Render settings:

1. Click the Settings button in the Project window.
2. Double-click the Render setting.

The Render Settings dialog box appears.



3. Enter the following parameters:

- Select Show Intermediate Results if you want the Avid Composer system to display the rendering of the effect as it progresses in the third, full-screen monitor.
- Limit rendered frame size to $n\%$ of default limit — This is a percent of the Avid Video Resolution's (AVR) default limit for the frame size. The effect's AVR is the same as the sequence's AVR. Enter a percent. The default is 100%.
- If frame size exceeds threshold — The threshold is established by the above percent. Select an action. The default is "Ask me."

If you select "Ask me," and the threshold is exceeded during rendering, a dialog box appears:



If you select "Don't Soften," you might get an error message, such as a video underrun, when you play the rendered file.

If you do not respond within 30 seconds, the system automatically selects Soften.

Timeline View Settings

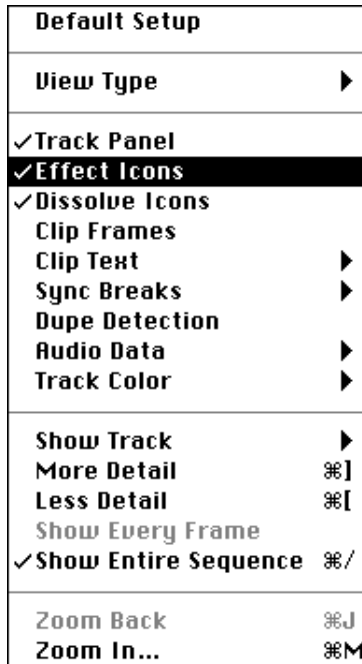
All effect icons are displayed in the Timeline by default. You can change the Timeline settings to display all effect icons, all effect icons except Dissolve icons, or no effect icons. If you have changed the setting to display *no* effect icons, you have to reset it before you begin applying effects. The fewer effect icons you display, the faster the screen refreshes.

To change the Timeline settings:



1. Click the Fast Menu button in the Timeline window.

The Timeline settings pop-up menu appears.



2. To display all effect icons in the Timeline, choose Effect Icons.
3. To display all effect icons except Dissolve icons, choose Effect Icons and deselect Dissolve Icons.
4. To display no effects icons, deselect Effect Icons. Dissolve Icons is automatically dimmed.
5. To save your Timeline settings, click the Timeline View Name button, select Save As, and enter a view name.

Timeline View Name button



Trim Settings

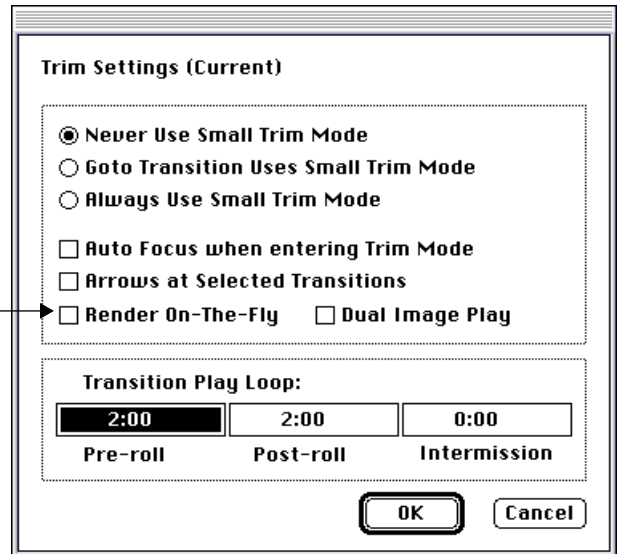
When you are in Trim mode, you can control whether or not the effects you apply are computed immediately on the screen (that is, on-the-fly) or rendered later when you select the Render Effect function; viewing a transition as a cut can facilitate the trimming process. This setting is defined in the Trim Settings dialog box.

To change the Trim settings:

1. Click the Settings button in the Project window.
2. Double-click the Trim setting.

The Trim Settings dialog box appears.

Use the Render On-The-Fly selection to determine when the Avid Composer system computes effects.



For information on changing the Trim settings, see the “Working in Trim Mode” chapter in the Avid Media Composer User’s Guide or Avid Film Composer User’s Guide.



CHAPTER 2

Basics of Effects Editing

This chapter explains how to create basic transition and single-layer segment effects, including motion effects.

- [Applying Effects to a Sequence](#)
- [Deleting Effects in a Sequence](#)
- [Working with Transition Effects](#)
- [Adjusting Transitions in the Timeline](#)
- [Creating Motion Effects](#)

Applying Effects to a Sequence

This section explains how to apply an effect to a sequence in the Record monitor. Some effects can be applied only to transitions, other effects can be applied only to segments (clips in the sequence), and some effects can be applied to both transitions and segments.

You can apply an effect:

- To one transition or segment on a single video layer
- To multiple transitions or segments on a single video layer
- To multiple transitions or segments on multiple video layers

The effect type (transition or segment) determines where you can place the effect in the sequence. For an explanation of the effect types, see [“Effect Types” on page 23](#).

After you apply an effect, the next step is to adjust the effect’s parameters. To understand how to adjust the effect parameters, see [“Changing a Parameter” on page 96](#).

Displaying Effect Icons

The default setting in the Timeline menu is to always display effect icons in the Timeline. If you have changed the setting, you have to reset it before you begin applying effects. For more information, see [“Timeline View Settings” on page 43](#).

Applying a Single Effect

Use the following procedures to apply an effect to one transition or segment on a single video layer.

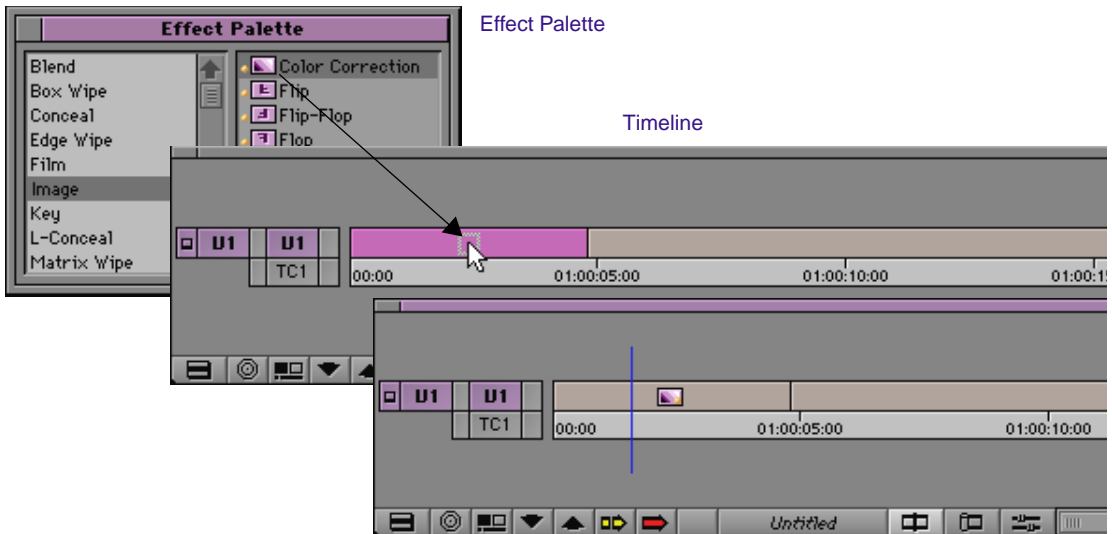
To apply a single effect:

1. Create a sequence in the Record monitor using the standard Avid Composer editing procedures. For information about editing a sequence, see the “First Edits in Source/Record Mode” chapter in the *Avid Media Composer User’s Guide* or *Avid Film Composer User’s Guide*.
2. Choose Effect Palette from the Tools menu.

For an explanation of the Effect Palette, see [“Effect Types” on page 23](#).

3. To apply an effect, do one of the following:
 - Click and drag the desired effect to the segment or transition in the Timeline, and release the mouse button.
 - Use the Segment Mode button to highlight the segment in the Timeline where you want to apply the effect, and double-click the effect’s icon in the Effect Palette.

The effect icon appears in the Timeline as shown in the following example.





While you are applying an effect, if the effect is a segment effect, one segment at a time is highlighted as you drag the effect within the Timeline. If the effect is a transition effect, one transition at a time is highlighted as you drag the effect within the Timeline. Some effects can be both a transition and a segment effect, in which case transitions and segments are highlighted in the Timeline.

Applying Multiple Effects

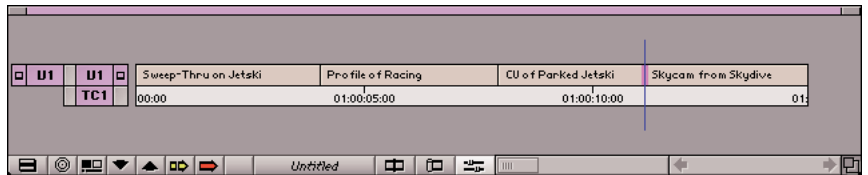
You can apply an effect to multiple transitions, segments, or video layers in a single step. First, select the sections in the sequence using a lasso and then apply the effect. The specific procedures are explained below.

Selecting Multiple Transitions

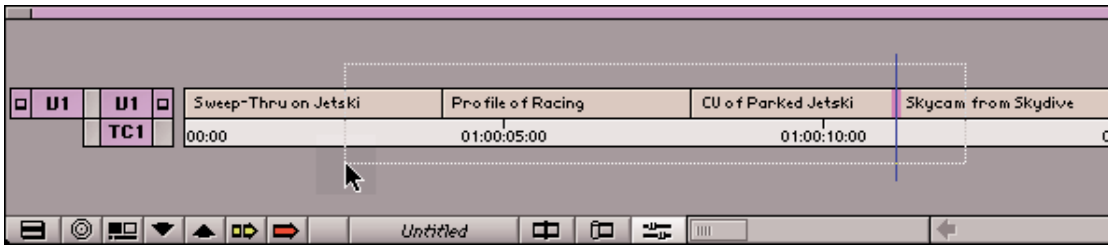
To select multiple transitions:



1. Make sure that you have not selected any transitions or segments in the sequence, and click the Effect Mode button to enter Effect mode.
2. Click a transition in the Timeline.



3. Move the cursor *above* the Timeline, and click and drag the cursor to the right or left of the transition to activate a selection box.
4. Lasso any additional transitions you want to select.

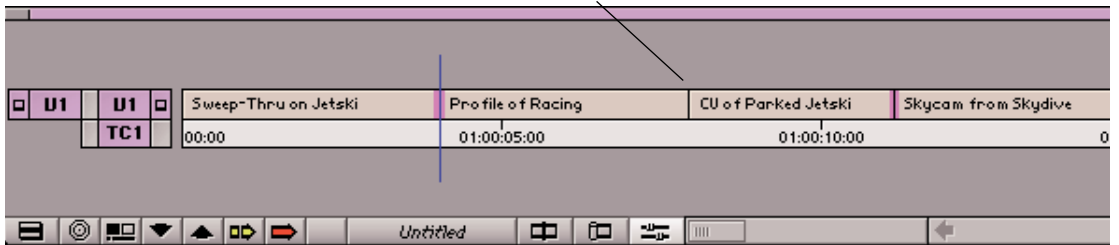


5. Release the mouse button when you have lassoed all the desired transitions.

The transitions that you selected are highlighted, and the position indicator moves to the first transition.

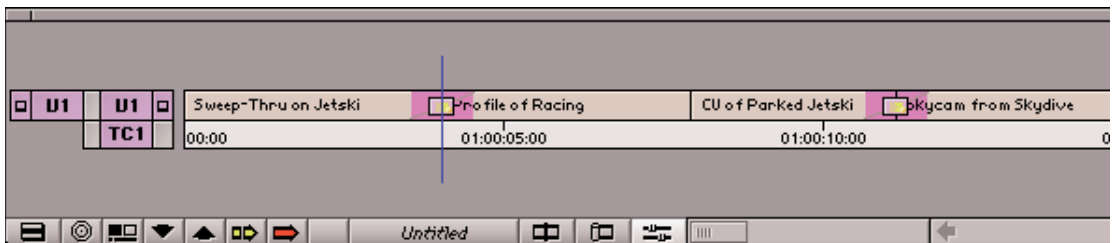
6. If the desired transitions are not contiguous, Shift-click a transition to deselect it.

Transition is deselected.



7. Open the Effect Palette and double-click the effect's icon that you want to apply to the transitions — in this example, the Fade from Color Effect icon.

The effect is applied to the highlighted transitions in the Timeline.

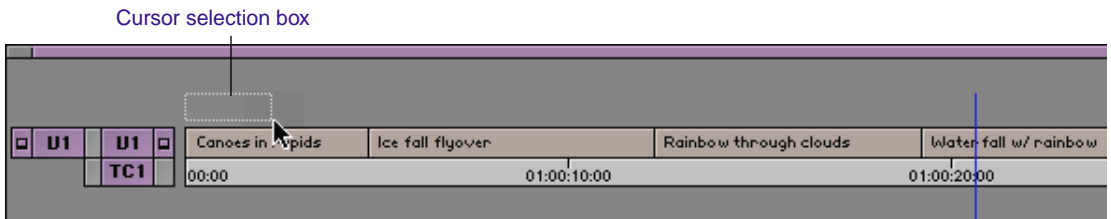


If there is not enough incoming or outgoing media to apply the transition effect, a dialog box appears. For more information, see [“Sizing the Effect to Fit the Media” on page 62](#).

Selecting Multiple Segments

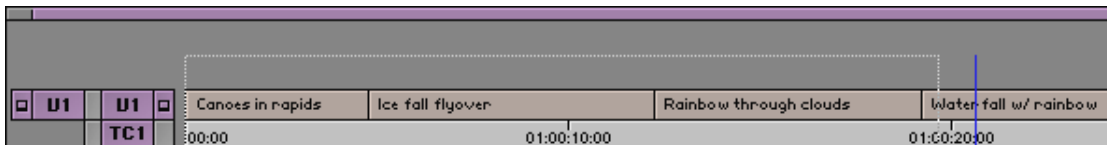
To select multiple segments in the same video layer:

1. In Source/Record mode or Effect mode, move the cursor above the Timeline and to the left of the *leftmost* transition that you want to select. Click and drag the cursor to the *right* and *down* to activate a selection box.

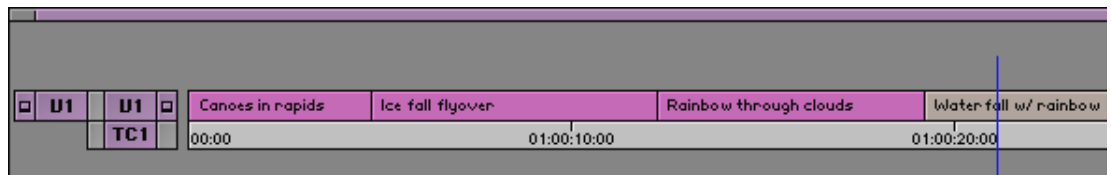


2. Continue to drag the selection box to the *right* until you lasso the *rightmost* segment that you want to select.

Three segments are lassoed.



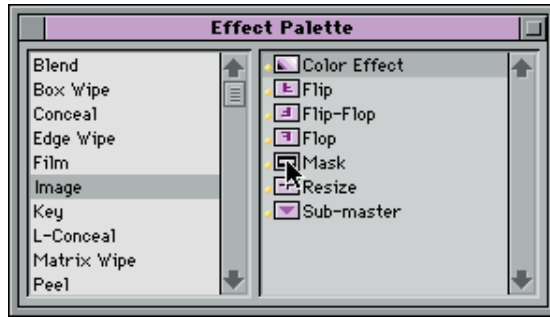
3. Release the mouse button when you have lassoed all the desired segments. The segments that you selected are highlighted.



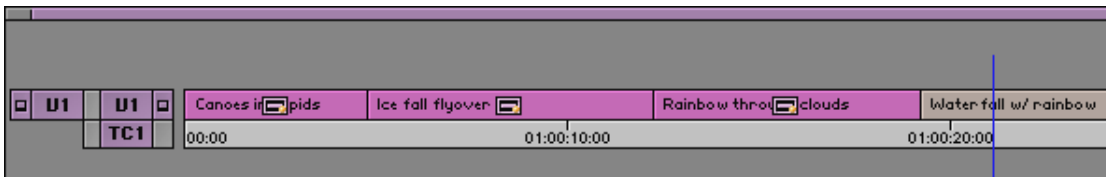
4. If the desired segments are not contiguous, Shift-click a segment to deselect it.
5. Open the Effect Palette and double-click the effect's icon that you want to apply to the segments — in this example, the Mask Effect icon.



To nest all clips inside one effect, Option-double-click the effect icon in the Effect Palette.



The effect is applied to the highlighted segments in the Timeline.



Selecting Multiple Layers

You can select transitions or segments on multiple layers using the same procedures described in [“Selecting Multiple Transitions” on page 49](#) and [“Selecting Multiple Segments” on page 51](#).

Applying a Third-Party Plug-in Effect

Third-party plug-in effects are applied to a sequence using procedures that are similar to those used for an Avid Composer system effect. The only difference is that parameters for third-party plug-in effects appear automatically in dialog boxes apart from the Effect Editor. Third-party plug-in effects you can apply to a sequence include plug-ins compatible with Adobe Photoshop Version 2.5, AVX plug-ins, and Digidesign AudioSuite Plug-Ins.



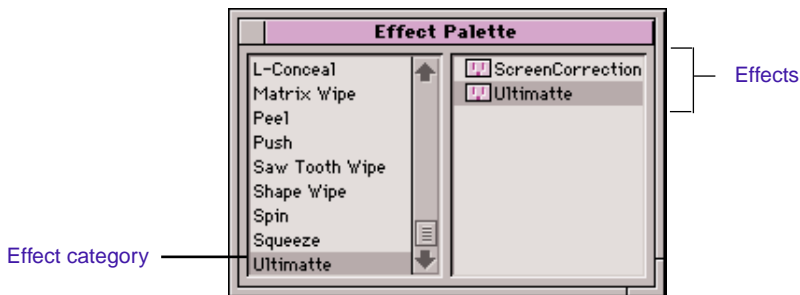
When a segment contains a third-party plug-in effect, the effect's parameter dialog box appears the first time you move the position indicator to another frame in that segment.

Applying a plug-in effect is similar to applying a standard Avid Composer system effect.

1. Choose Effect Palette from the Tools menu.

The Effect Palette appears.

2. Choose the effect category that contains the plug-in. For example, the following illustration shows the Ultimatte plug-ins.



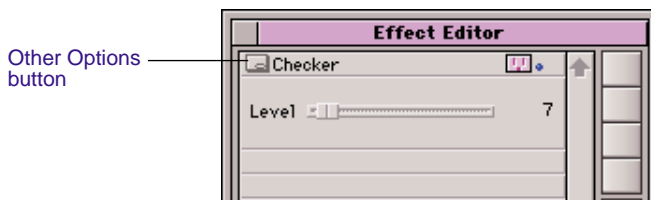
3. Drag the effect onto your clip or transition in the Timeline.



4. Click the Effect Mode button.

The Effect Editor appears. One of the following styles of dialog boxes appears:

- Avid Composer Effect Editor controls only. This means that you only see controls in the Effect Editor window.
- Custom dialog box only. In this case, when you click the Effect Mode button, the Effect Editor is empty except for the Other Options button. Click the button to open the plug-in dialog box.
- Combination of Avid Composer and custom. In this case, Avid Composer controls appear and you also see the Other Options button to access the custom options. Click the button to see the additional dialog box.



5. Adjust and preview the effect, depending on the controls in the dialog box. The plug-in vendor usually supplies documentation on how to adjust the effect.
6. When it is appropriate, render the effect.



Applying a third-party plug-in to a clip can cause the clip levels to be illegal by NTSC standards. Use an external vectorscope to check if the chroma and luma levels are still appropriate. If they are not, correct the levels by adjusting the parameters of the plug-in effect or by applying the Color Effect.



Third-party effects can require longer rendering times than do native Avid Composer effects.

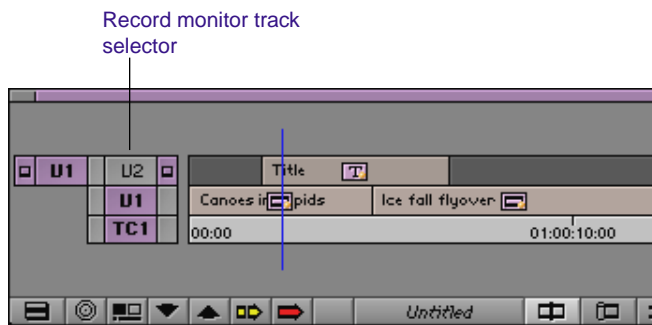
Deleting Effects in a Sequence

Transition effects can be deleted from a sequence in Source/Record mode, Trim mode, or Effect mode. Segment effects can be deleted in Source/Record mode or Effect mode. Use the following procedures to either delete a single effect from a sequence or delete effects in multiple segments.

To delete a single effect:

1. Place the blue position indicator on the effect's icon in the Timeline.

In this example, the segment effect for the first clip on video track V1 is being deleted.



2. If there are multiple tracks that contain effects at the same position in the Timeline, select only the track where the effect to be deleted resides.

In this example, only video track V1 is selected, because the Title effect on video track V2 should not be deleted.



If you are deleting a segment effect and the segment contains a transition effect, the transition effect will be deleted also, because the transition effect resides “on top of” the segment effect. If necessary, you will have to reapply the transition effect.



3. In Source/Record mode, click the Remove Effect button located on the Fast menu above the Record monitor or in the second row of buttons below the Record monitor.

In Trim mode — for transition effects only — either press the Delete key or click the Remove Effect button.

In Effect mode, select the effect and press the Delete key.



When you delete an effect from a sequence, the associated media file is NOT deleted. In order to delete the effect's media file, you must manually remove it from the drive. The system operates this way so that you will be able to undo the deletion of an effect or undo the change you made to an effect. To delete an effect's media file, see [“Managing Your Media Files” on page 121](#).

To delete multiple segment effects:

1. In either Source/Record mode or Effect mode, click either Segment Mode button below the Timeline and Shift-click each segment that contains a segment effect to be deleted.
2. Click the Remove Effect button, or press the Delete key.

Using the Fade Effect Button

You can use the Fade Effect button to fade segment effects quickly and easily. A dialog box appears that allows you to enter the number of frames to fade up and fade down.

The Fade Effect feature automatically creates key frames for the effect. You can access the key frames in the Effect Editor.

To fade a segment effect:

1. Load the sequence if you haven't already done so.
2. To fade a single segment effect, place the blue position indicator in the segment.

To fade multiple segment effects, click either the yellow Extract/Splice-in button or the red Lift/Overwrite button at the bottom of the Timeline window to enter Segment mode; then press and hold the Shift key and click the segments in the Timeline.

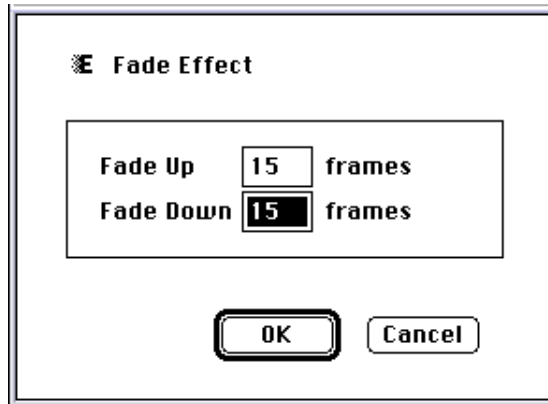


3. Click the Fade Effect button.



You can map the Fade Effect button to the Record monitor or the User Command Palette. For more information on mapping buttons, see the Avid Media Composer User's Guide or the Avid Film Composer User's Guide.

4. In the dialog box that appears, enter the number of frames to fade up and fade down, and click OK.



You can immediately view the Fade effect by playing the segment or segments.

Working with Transition Effects

You apply a transition effect to the cut point between two clips on the same video track. After you apply a transition effect, you can adjust its alignment and duration. Depending on the specific effect, other effect parameters may apply.

Types of Transition Effects

Transition effects are included in all effect categories on the Effect Palette, except the Image effect category.

For an explanation of the transition effects in each effect category, see [Chapter 10, “2D Effects Reference,”](#) and [Chapter 11, “3D Effects Reference.”](#)

Applying a Dissolve Effect

One of the most common transition effects is a Dissolve. The Avid Composer system has three methods you can use to apply a Dissolve effect:

- Select the Dissolve effect from the Effect Palette.
- Type a duration in the Transition parameters.
- Click the Add Dissolve button.



This section describes each of these methods.

Using the Effect Palette

To apply a Dissolve effect using the Effect Palette:

1. Create a sequence in the Record monitor using the standard Avid Composer editing procedures. For information about editing a

sequence, see the “First Edits in Source/Record Mode” chapter in the *Avid Media Composer User’s Guide* or *Avid Film Composer User’s Guide*.

2. Choose Effect Palette from the Tools menu.
3. From the Blend category of the Effect Palette, drag the Dissolve effect icon to the transition in the Timeline and release the mouse button.

The Dissolve Effect icon appears in the Timeline.

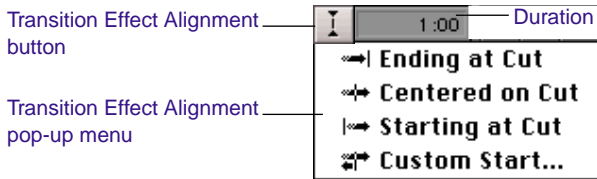
When there is not enough incoming or outgoing media to apply a transition effect, a dialog box appears. See [“Sizing the Effect to Fit the Media” on page 62](#).

Using the Transition Parameters

You can create a Dissolve effect using the Transition parameters displayed in Trim mode and Effect mode. Simply enter the duration for which the effect will play, and the system adds the Dissolve to the sequence.

To create a Dissolve effect using the Transition parameters:

1. In Trim mode or Effect mode, click a transition in the Timeline.
2. In the Transition Duration parameter, enter the Dissolve’s duration. The Duration format is determined by the Duration setting above the Record monitor, for example, seconds:frames.



This adds the Dissolve effect at the transition, and a Dissolve Effect icon appears in the Timeline.

3. Click the Transition Effect Alignment menu button, and select the effect's position relative to the cut point from the pop-up menu.

For an explanation of the Transition Alignment menu selections, see [“Transition Parameters” on page 385](#).

Using the Add Dissolve Button

Another way to create a transition effect is to click the Add Dissolve button. This button allows you to apply a Dissolve or any other transition effect listed below without having to access the Effect Palette:

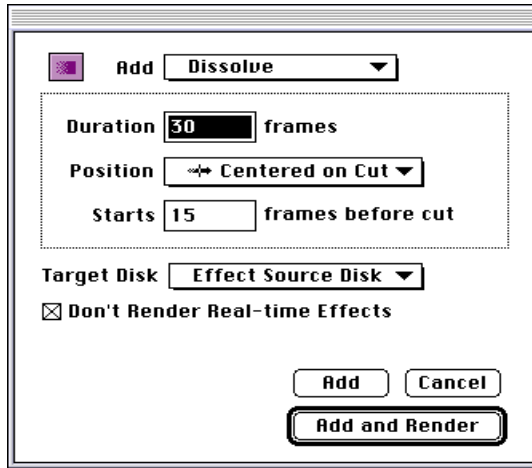
- Dissolve
- Film Dissolve
- Film Fade
- Fade to Color
- Fade from Color
- Dip to Color

To create an effect using the Add Dissolve button:

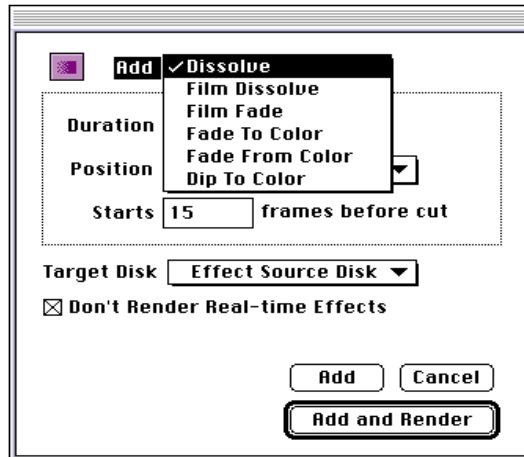
1. In Source/Record mode, Trim mode, or Effect mode, move the position indicator to the transition in the Timeline.
2. Click the Add Dissolve button located either below the Record monitor, in the monitor Fast menu, or in the Command Palette.



A dialog box appears.



3. Click the Add Dissolve parameter and choose a transition effect from the pop-up menu.



For an explanation of individual effects, see [Chapter 10, "2D Effects Reference."](#)

4. Enter the Duration of the transition effect in frames.

5. Click the Position parameter and choose the effect's alignment to the cut point from the pop-up menu.
6. If you select Custom Start, in the Starts parameter you must enter the number of frames before the cut to start the effect.
7. Click Target Disk and from the pop-menu choose a disk on which to store the effect if you choose to render it.

The *Effect Source Disk* is the disk where the media on the outgoing shot of a transition resides.

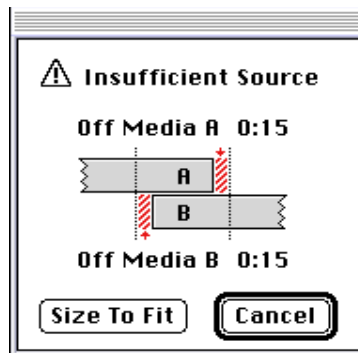
8. If the effect you selected is real time on your Avid Composer system, select the Don't Render Real-time Effects parameter to prevent real-time effects from being rendered.
9. To add the effect without rendering it, click the Add button.

Or, to add the effect and render it, click the Add and Render button.

This adds the selected effect to the transition in the sequence.

Sizing the Effect to Fit the Media

When you select a transition effect from the Effect Palette, such as a Dissolve, and there is not enough source media to apply the effect, the following message appears:



- Off Media A — Refers to the number of frames by which the outgoing media is short.
- Off Media B — Refers to the number of frames by which the incoming media is short.

To automatically size the effect to fit the media:

- Click the Size To Fit button in the dialog box.

The system sets the duration of the effect to fit the available media; if you have selected an alignment, the system attempts to preserve it.

To change the alignment or duration of the transition effect, see [“Using the Transition Parameters” on page 59](#).

Trimming a Transition Effect

You can trim a transition effect using the standard transition trim procedures or the Transition Corner Display function in Trim mode. For more information, see the “Working in Trim Mode” chapter in the *Avid Media Composer User’s Guide* or *Avid Film Composer User’s Guide*.

Adjusting Transitions in the Timeline

You can change the duration of Dissolve effects just by dragging them in the Timeline. You must be in Transition Corner Display in Trim mode to use this feature.

To adjust a transition using the Transition Corner Display:

1. Click on the transition in the Timeline.
2. Enter Trim mode.
3. Click the Transition Corner Display button.



The button turns bright green, and the display is enabled. As you position the cursor over the transition, it changes to look like a film clip that has been cut for a splice.

4. Lengthen or shorten the transition effect by clicking and dragging to the desired length.
 - To shorten a transition, drag toward the transition point.
 - To lengthen a transition, drag away from the transition point.

The cursor changes to a hand that moves as you drag. You can adjust either the outgoing or the incoming video.

5. To review your edit, click the Play Loop button.



To customize transition effect parameters, see [“Transition Parameters” on page 385](#).

Creating Motion Effects

A motion effect, applied to a clip in the Source monitor, allows you to alter the playback characteristics of the clip. Motion effects include freeze frame, variable speed (such as slow motion or fast motion), and strobe motion effects. You can also combine variable speed and strobe effects in a single clip.



When you use a motion effect to slow down a clip, the effect is real time. When you use a motion effect to speed up a clip, the effect is non-real-time and must be rendered before it can be played.

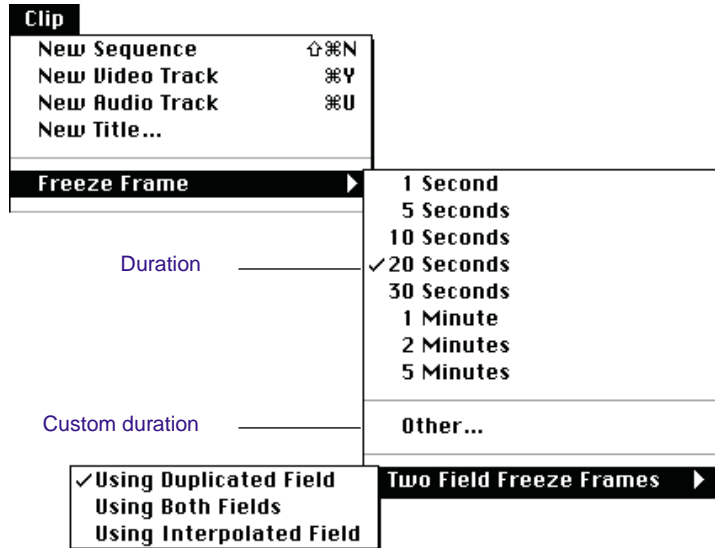
Creating a Freeze Frame

A Freeze Frame effect is a still image based on a chosen frame from a clip that continues to display for the duration that you choose. When combined with the original clip, the footage plays and then “freezes” and holds on the frame that you specified.

To create a Freeze Frame effect:

1. Load a clip into the Source monitor.
2. Cue the clip to the frame that you want to freeze.
3. Choose Freeze Frame from the Clip menu.

A pop-up menu appears.



4. If you are using two-field media (AVRs 70, 75, or 77), choose Freeze Frame from the Clip menu and choose an option from the Two Field Freeze Frames pop-up menu:
 - Using Duplicated Field — A single field is displayed in the effect.
 - Using Both Fields — Both fields are used to create the effect.
 - Using Interpolated Field — A second field is created for the effect by combining scan line pairs from the first field in the original media.

The chosen option becomes the default until you choose another option.

5. Choose Freeze Frame from the Clip menu and choose a duration:
 - Choose a preconfigured duration from the list.
 - Choose Other and type a custom duration into the dialog box; then click OK to enter the new duration.

A dialog box appears, prompting you to choose a target drive for the freeze frame media.

6. Choose a drive from the pop-up menu and click OK.

A new clip appears in the Source monitor and in the current bin preceded by a Motion Effect icon. The new clip has the original clip name followed by the letters FF.



Creating a Rolling Clip That Freezes

One common use for freeze frames is to create a segment that plays normally and then freezes, either to superimpose text information or to add emphasis to the end of a sequence before fading.

To create a rolling clip that freezes:

1. Load the original source clip from which you created the freeze frame.
2. Edit the clip into the sequence.
3. Place an IN mark in the sequence at the frame used to create the freeze frame.
4. Load the Freeze Frame clip into the Source monitor.
5. (Option) Mark the clip if necessary to shorten the duration of the clip.

6. Click the Splice-in button to edit the freeze frame into the sequence.

When you play the sequence, the footage plays full-motion and then freezes at the chosen frame.

Creating a Variable Speed Effect

Variable Speed effects involve changing the rate of playback to achieve fast-motion or slow-motion effects. The Avid Composer system creates slow-motion effects by duplicating frames in the original media. It creates fast-motion effects by eliminating frames from the original media. The resulting motion might appear to be jerky.

To create a Variable Speed effect:

1. (Option) If you require a fixed duration for the clip based on a segment in the sequence, mark the segment in the Timeline with IN and OUT marks.



2. Click the Motion Effect button.



The Motion Effect button does not appear on the interface by default. You can map the Motion Effect button from the Command Palette to the Edit monitor or to the keyboard. For more information, see the Avid Media Composer User's Guide or the Avid Film Composer User's Guide.

The Motion Effect Parameters dialog box appears.

Variable Speed
option

Motion Effect Parameters

Variable Speed

	Current	New	
Duration	60	120	frames
Rate	30	15.00	FPS
		50.00	% speed

Fit To Fill

Strobe Motion

Update every frames

Render 2-Field Motion Effect Using

Duplicated Field
 Both Fields
 Interpolated Field

Target Disk

Preview

Create Cancel

Create and Render

3. Select the Variable Speed option.
4. Specify the play speed for the Variable Speed Motion effect in one of the following ways:
 - Type a number of frames into the frames field.
 - Type a frame rate into the FPS field. To indicate reverse motion, enter a negative number for the play rate.
 - Type a percentage of the current play rate into the % speed field. To indicate reverse motion, enter a negative number for the percentage.
 - Select the Fit To Fill option to automatically set the Variable Speed parameters so that the duration of the motion effect will match the IN to OUT duration marked in the Record monitor.

When one of these is set, all values change to reflect the specified play rate.

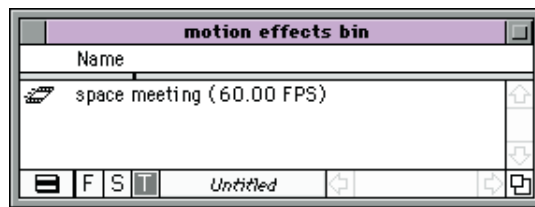
5. (Option) If your clip was digitized in one of the two-field AVRs (AVRs 70, 75, or 77), choose a Render 2-Field Motion Effect option:
 - Duplicated Field — A single field is displayed in the effect.
 - Both Fields — Both fields are displayed in the effect.
 - Interpolated Field — A second field is created for the effect by combining scan line pairs from the first field in the original media.
6. Complete the effect by doing one of the following:
 - Click Create to create the new clip and close the dialog box.



An unrendered Variable Speed Effect clip displays a green dot when edited into a sequence to indicate that the clip might not play in real time in certain circumstances. For more information, see [“Understanding Real-Time and Downstream Key Effects” on page 26.](#)

- Click Create and Render to render the clip — creating new media files — and close the dialog box.

A new clip is created in the Source monitor and in the current bin. The clip is named with the original clip name followed by the frame rate in parentheses. This clip can then be edited into your sequence like any other clip.



Creating a Strobe Motion Effect

Strobe motion results in a stuttering effect during playback of a clip. You determine the degree of the “stutter” or strobe when you create the effect.



You can also combine strobe motion with the Variable Speed effect. For more information on the Variable Speed effect, see [“Creating a Variable Speed Effect” on page 67.](#)

To create a Strobe Motion effect:



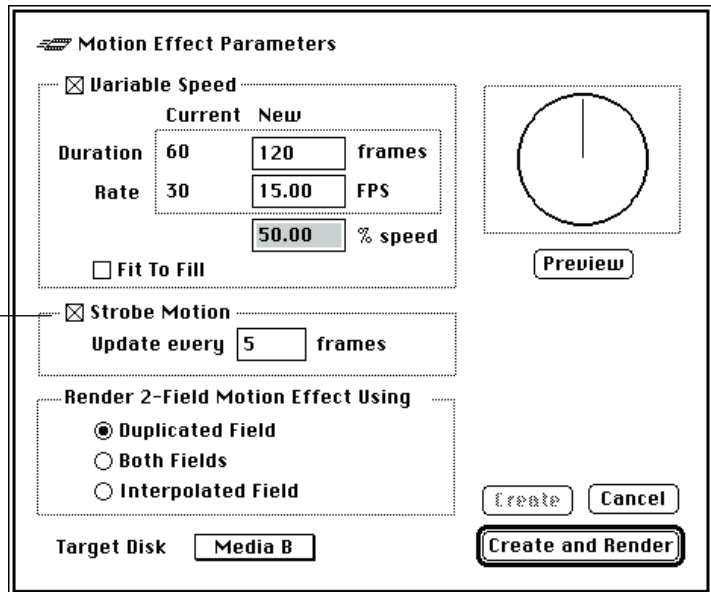
1. Click the Motion Effect button.



The Motion Effect button does not appear on the interface by default. You can map the Motion Effect button from the Command Palette to the Edit monitor or to the keyboard. For more information, see the *Avid Media Composer User’s Guide* or the *Avid Film Composer User’s Guide*.

The Motion Effect Parameters dialog box appears.

Strobe Motion option



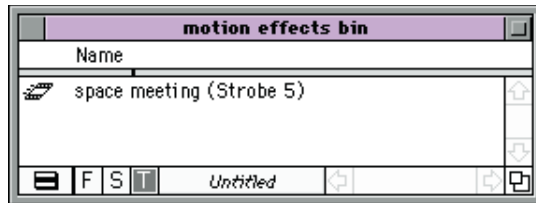
2. Select the Strobe Motion option.

3. Specify the update rate in frames for the Strobe Motion effect. For example, a rate of 5 causes every fifth frame to be displayed in the Strobe Motion effect.
4. (Option) If your clip was digitized in one of the two-field AVRs (AVRs 70, 75, or 77), choose a Render 2-Field Motion Effect option:
 - Duplicated Field — A single field is displayed in the effect.
 - Both Fields — Both fields are displayed in the effect.
 - Interpolated Field — A second field is created for the effect by combining scan line pairs from the first field in the original media.
5. Click Create and Render to render the clip and close the dialog box.



You must render a Strobe Motion effect in order to play it back in real time.

A new clip appears in the Source monitor and in the current bin preceded by a Motion Effect icon. The clip includes the original clip name followed by the word Strobe and the number of update frames in parentheses.





CHAPTER 3

Working in Effect Mode

After you have created an effect and applied it to a transition or segment in your sequence, you can adjust its appearance and operation by changing its effect parameters. This chapter explains how to go to Effect mode and use the Effect Preview monitor and the Effect Editor, and how to adjust the most common effect parameters.

- [Entering Effect Mode](#)
- [Understanding the Effect Preview Monitor](#)
- [Using Big Effect Mode](#)
- [Working with the Effect Grid](#)
- [Using the Effect Editor](#)
- [Using Key Frames](#)
- [Adjusting Basic Parameters](#)
- [Using an Effect Template](#)
- [Playing an Effect](#)
- [Rendering an Effect](#)
- [Managing Your Media Files](#)

Entering Effect Mode

After you add an effect to a sequence, you must enter Effect mode to change the parameters of the effect. Entering Effect mode transforms the Source/Record monitor into the Effect Preview monitor and opens the Effect Editor.

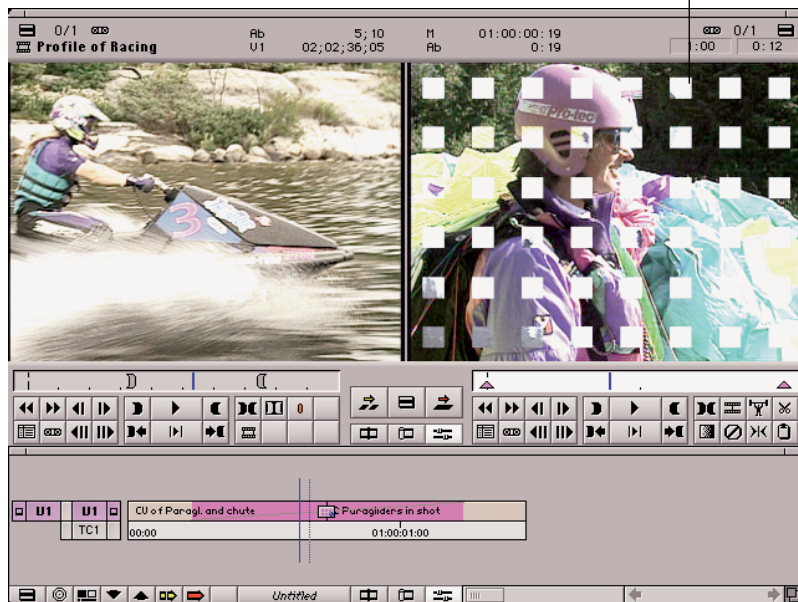
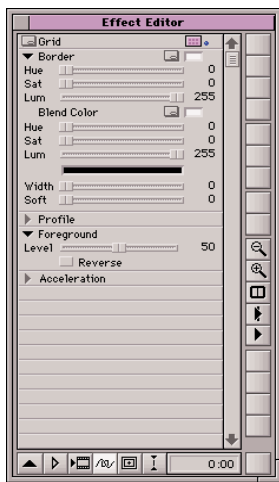
To enter Effect mode:

1. Place the blue position indicator on the effect's icon in the Timeline.
2. Click the Effect Mode button.



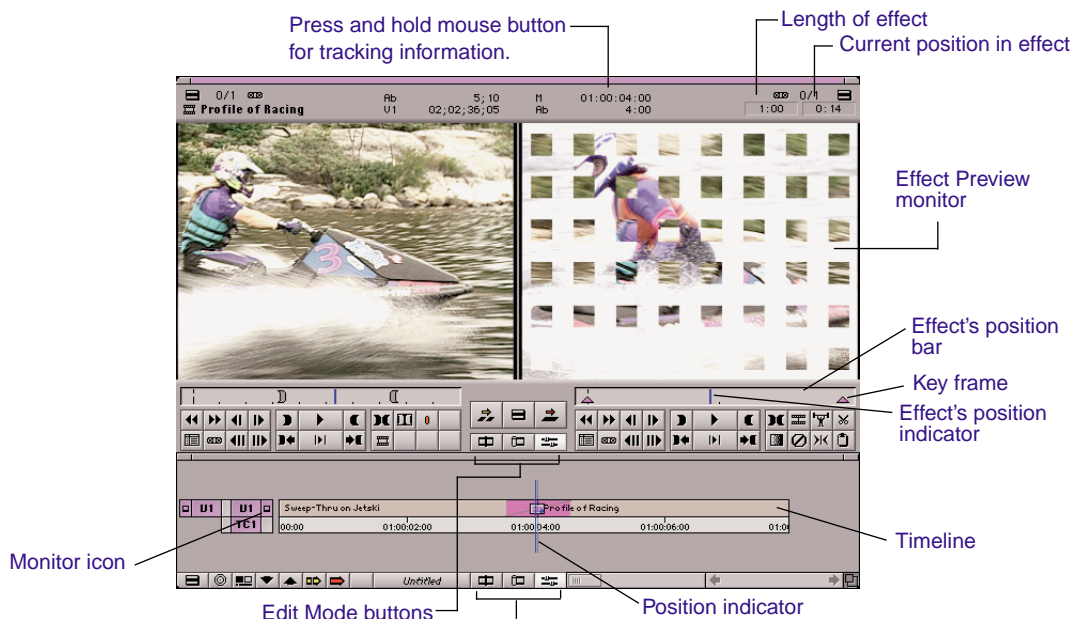
The Record monitor is transformed into the Effect Preview monitor, and the Effect Editor, which includes buttons and parameter panes to change effects, appears in the Bin monitor.

Effect Editor



Understanding the Effect Preview Monitor

The Effect Preview monitor displays the selected effect in the sequence where the position indicator is located in the Timeline. The effect's position bar, located directly below the Effect Preview monitor, represents only the selected effect, not the entire sequence.



If the effect you expect does not appear in the Effect Preview monitor, make sure that you have activated the monitor in the monitor column of the effect's track. If a black frame appears in the Effect Preview monitor, the position indicator might be at a location in the Timeline where an effect has not been applied to the sequence.

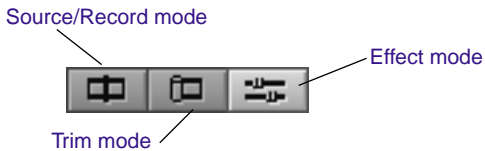
The two boxes above the Effect Preview monitor display the length of the effect in seconds and frames and the current position in the effect's Timeline. In Effect mode, these boxes replace the name of the sequence that appears in this area when you are in Source/Record mode.

You can press and hold the mouse button to display a menu for viewing and changing the tracking information. For information on displaying tracking information, see the “Viewing and Marking Footage” chapter in the *Avid Media Composer User’s Guide* or *Avid Film Composer User’s Guide*.



If the position information boxes do not appear above the Effect Preview monitor, increase the size of the window.

The following buttons appear below the Effect Preview monitor and below the Timeline.



- Source/Record mode — Use this button to go to Source/Record mode.
- Trim mode — Use this button to go to Trim mode.
- Effect mode — This button is highlighted, to indicate that you are in Effect mode. If you are using a high-resolution monitor, click this button once to enter Big Effect mode. For more information on Big Effect mode, see [“Using Big Effect Mode” on page 76](#).

Navigating in Effect Mode

The following sections describe helpful techniques for moving through footage in Effect mode.

Changing Position

You can change your position in the effect either by dragging the position indicator in the effect’s position bar or by typing the timecode in the same way you do in Source/Record mode. The type of timecode

you enter (master timecode or absolute timecode) depends on the top row of tracking information you are displaying. The position information boxes above the Effect Preview monitor update as you change position. For more information on entering timecode to change the current position, see the “Viewing and Marking Footage” chapter in the *Avid Media Composer User’s Guide* or *Avid Film Composer User’s Guide*.

Using Single-Field Step

Single-field step enables you to view field 1 and field 2 of each frame of video. This feature is useful when you want to locate a defect on a specific field and use an effect to correct the defect. Any effect edits you make affect both field 1 and field 2 of each frame.

When you enter Effect mode, the tracking display above the Effect Preview monitor indicates the currently displayed field by adding “.01” to the tracking number for the first field, or “.02” for the second field.

To step through the footage one field at a time, press the Option key and click either the Step Forward or the Step Backward button. As you step, the tracking number updates to reflect the currently displayed field.

Using Big Effect Mode

Once you choose the Effect Editor, if you have a high-resolution monitor, you can click the Effect Mode button again to bring up Big Effect mode, which offers you a larger Effect Preview monitor.

Big Effect mode provides an enlarged window that makes working with effects easier. The Source monitor disappears, and the Effect Preview monitor transforms into a larger working space that makes it easier to create effects and make changes to them.



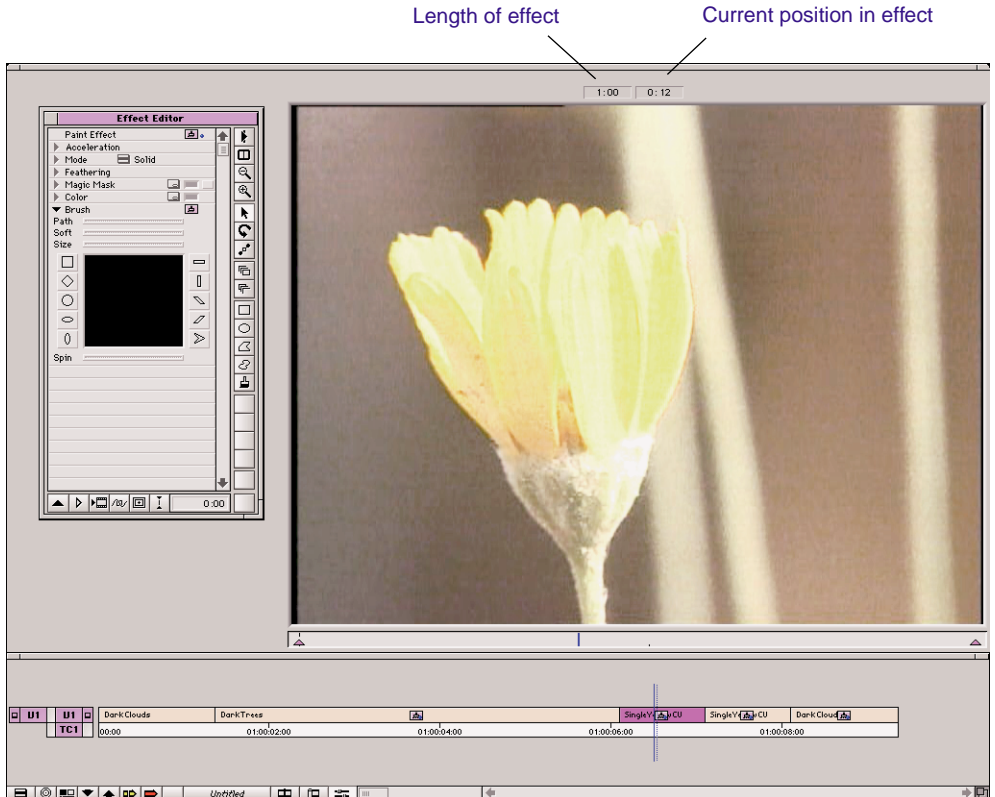
You must be using a high-resolution monitor as the Edit monitor to enter Big Effect mode.

To enable Big Effect mode:

1. In Source/Record mode, click and drag the Source/Record window so that it fills the width of your high-resolution Edit monitor.
2. Enter Effect mode by clicking the Effect Mode button.
3. Click the Effect Mode button again.



The Avid Composer system enables Big Effect mode. You can click and drag the Effect Editor to the left of the enlarged Effect Preview monitor.



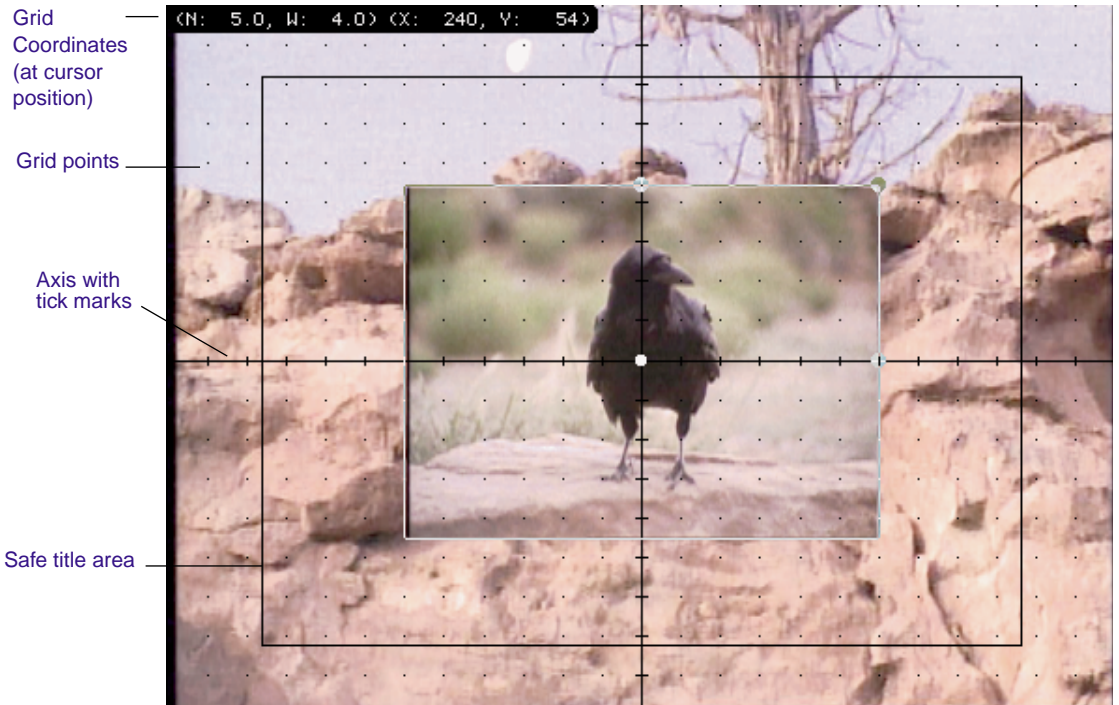
4. To return to normal Effect mode, click the Effect Mode button at the bottom of the screen.



If you do not return to normal Effect mode, Big Effect mode remains the default state when you enter Effect mode in the future.

Working with the Effect Grid

The Effect Grid provides a variety of ways to position effects with accuracy and previsualize them in the Effect Preview monitor. The grid coordinates can be expressed in traditional fields or X-Y pixels in any resolution. The following illustration shows a 12-field grid displayed in a video project.



In video and film projects, you can use the Effect Grid to:

- Display Safe Title and Safe Action guidelines.
- Display the aspect ratios for film categories such as standard film, Academy, Super 35 mm, and Anamorphic, as well as the 4 x 3 safety area for the 16 x 9 aspect ratio.
- Show coordinate information to track the exact location of an effect in the frame.
- Use the snap-to-grid feature to easily position effects.

In film projects only, you can use the Effect Grid to:

- View the results of a Blowup, Paint, or AniMatte effect.
- Interpret the path of a Paint or AniMatte effect over a series of frames using key frames. The coordinates show up when you generate a cut list, which enables the editor at the optical facility to track your effects accurately.

Setting the Effect Grid Options

To set the default grid values on your system, choose Grid from the Settings scroll list in the Project window. The following illustration shows the Grid Settings dialog box.

Grid Settings (Current)

Fields Type

Sub Fields Color

Source Scan Size

Horizontal pixels Show Safe Title

Vertical pixels Show Safe Action

Source Grid Offset

Horizontal pixels 4x3 Safety for 16x9

Vertical pixels Show Axes

Show Tick Marks

Show Aspect Lines

Show Points

Show Position Info



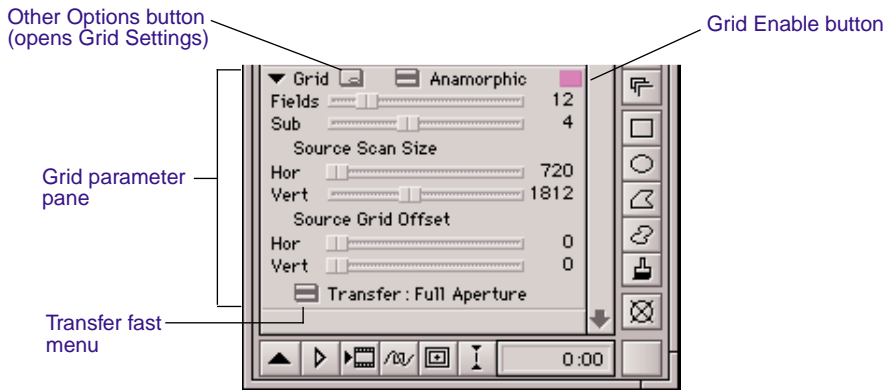
You can turn the Effect Grid on or off by clicking the Grid button in either Source/Record or Effect mode.



If you are working in a video project and want to see only the Safe Action and Safe Title guidelines, Option-click the Grid button; the Effect Grid options now default to Safe Action and Safe Title guidelines. To toggle the display back to the full range of Effect Grid options, Option-click the Grid button.

Setting Up the Effect Grid in a Film Project

In a film project, the Grid parameter pane values in Effect mode define a local grid effect that allows you to set the grid differently for each effect. If you save the effect as a template, the Avid Composer system automatically saves the local grid parameters as part of the template.



Use the Grid Enable button to turn the local Grid effect on or off. If you disable the local Grid effect, the Avid Composer system uses the global settings defined by the Grid dialog box. You can display the dialog box from two locations:

- Choose Grid from the Settings scroll list in the Project window.
- Click the Other Options button in the Effect Editor.

The Transfer Fast menu values appear on the parameter pane but do not appear in the Grid Settings dialog box. The Fast menu enables you to specify how the film was transferred to video as follows:

- Full Aperture — Transferred everything that is visible in the frame
- Academy — Did not transfer the sound track area that appears on the left-hand side of the film

Grid Options

Table 3-1 describes the features of the Grid Settings dialog box.

Table 3-1 Grid Settings Dialog Box Options

Heading	Description
Fields	Determines the number of tick marks along the grid axes as well as the number of visible grid points. Since different optical houses expect different Fields and Sub Fields values, you should check with your optical house before defining your grid.
Sub Fields	Determines the snap-to-grid feature between visible grid points. The value determines how many jumps are in between each visible point. A value of 1 snaps only to visible points. A value of 2 provides 1/2 field jumps. A value of 4 provides 1/4 field jumps, and so on. A value of 0 turns off the snap-to-grid feature.
Source Scan Size	Use these values if an optical house will use a film scanner to process your film (and add visual effects). Match the values to those used by your effects house.
Source Grid Offset	These values enable you to move the grid on the image. They are typically applied for reference purposes after the film has been scanned at the optical house. The offset allows you to sync up the telecine version with the scanned version. For example, you can add a marker to identify a specific location on one frame. If the optical house has different coordinate values for that point, you can offset the grid on the Avid Composer system to match the optical house's coordinates.
Type	Selects a different grid for each of the standard film types: Square Used for video projects Standard Film For 1.85, 1.77, and 1.66 and aspect ratios Academy For 1.85, 1.77, and 1.66 aspect ratios with guides for the loss soundtrack area Super 35 For 2.35 aspect ratio (pixel values count the entire frame) Anamorphic For 2.35 aspect ratio (pixel values count only in 2.35 area)
Color	Enables you to choose a color for the grid axes and the grid points.
Show Safe Title	Displays the safe title area. Create film titles within this area.
Show Safe Action	Displays the safe action area for video display. This box is self-adjusting for PAL and NTSC projects.

Table 3-1 Grid Settings Dialog Box Options (Continued)

Heading	Description
4 x 3 Safety for 16 x 9	Displays the safe area for the 4 x 3 aspect ratio when you are working in a 16 x 9 aspect ratio project.
Show Axes	Displays the axes.
Show Tick Marks	Shows tick marks along the axes. Use the Fields parameter to set the number of tick marks.
Show Aspect Lines	Displays the aspect-ratio lines. Each grid type has different aspect-ratio lines.
Show Points	Shows the grid points. Use the Fields parameter to set the number of grid points.
Show Position Info	Enables you to display the coordinates of any point in the Record monitor.

Displaying the Position Coordinates in Effect Mode

The Avid Composer system uses compass coordinates and X, Y coordinates to describe the position of an effect. To view the coordinates, you must choose the Show Position Info option in the Grid Settings dialog box and enable the Effect Grid. For compass coordinates, the point (0, 0) is the center of the axes. For X, Y coordinates, the point (0, 0) is the upper-left corner of the Source monitor. X values increase to the right, and Y values increase as you move up.

The compass coordinates describe the effect's position in terms of optical house standards. Each compass coordinate begins with a direction (N, S, E, or W, the abbreviations for North, South, East, or West) followed by a numerical value. This numerical component reflects the Fields and Sub Fields parameters you choose in the Grid Settings dialog box or the Grid parameter pane.

The X, Y coordinates describe position in terms of the Source Scan Size parameters you choose in the Grid Settings dialog box or the Grid parameter pane.

To display the coordinates in Source/Record mode, press and hold the mouse button, and drag the cursor in the Record monitor.

To display the coordinates in Effect mode:

1. Deselect all tools in the Effect Editor (including the Selection Tool and the Outline/Path button).
2. Press and hold the mouse button and drag the cursor in the Effect Preview monitor.

Using the Effect Grid in a Film Project

You can use the Effect Grid to include position information in a cut list for the Paint and AniMatte effects on a key-frame-by-key-frame basis. Additionally, you can display the position information for the *first* key frame of a Blowup effect in a cut list. You must enable the Effect Grid before you generate the cut list to display the coordinate information in the cut list.

Position Information for the Blowup Effect

The event section of the cut list displays the compass coordinates of the effect at the first key frame in the segment. Additionally, the Fields parameter you have chosen for the effect appears before the position coordinates.

Field parameter

X, Y coordinates

OPTICAL #1		Assemble Event #1	
		<i>Camera Count</i>	<i>Reel Count</i>
	[1]	0+00	0+00
	Blowup Field:2 East:1 South:2		
	Clip: Cowboys		
	26+10	26+09	26+09

Transfer: Full Aperture
 Grid: Academy
 Fields: 12
 Subfields: 4
 Scan Size: (X: 720, Y: 486)

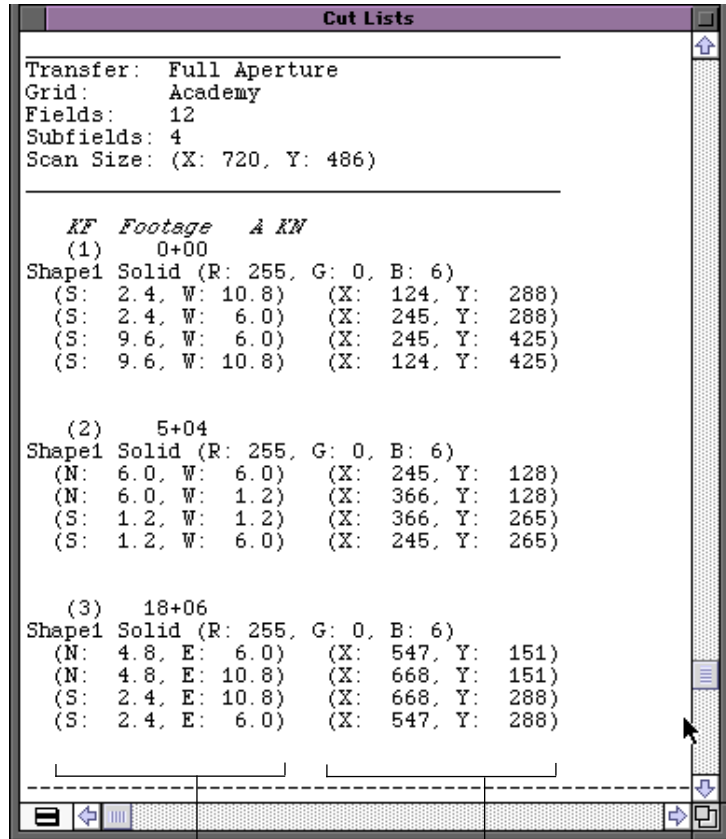
<i>KF</i>	<i>Footage</i>	<i>A KN</i>
(1)	0+00	Blowup Field:2 East:1 South:2
(2)	26+09	Blowup Field:2 East:1 South:2

(end of Optical List)

For information on the parameters available with the Blowup effect, see [“Blowup” on page 403](#).

Position Information for the Paint and AniMatte Effects

By enabling Key Frames in the Cut List Tool options for optical lists, you can track the position of each Paint and AniMatte effect on a key-frame-by-key-frame basis. You must enable the Effect Grid before you generate the cut list, or the coordinate information will not appear in the cut list. The following illustration shows a cut list that includes coordinates for a Paint effect.



The compass coordinates for Paint and AniMatte effects indicate the position of each corner of the effect for each key frame. For example, a pentagon you create with the Paint effect shows five associated compass coordinates. The X, Y coordinates in the cut list indicate the position of the center of the effect at each key frame.

For information on getting started with the Effect Grid and the Paint and AniMatte effects, see [“Previsualization Marker Tool for Film Projects” on page 277](#). For information on generating a cut list that shows the position coordinates, see [“Creating a Cut List with Effect Grid Information” on page 279](#).

Displaying the Safe Title and Safe Action Guidelines

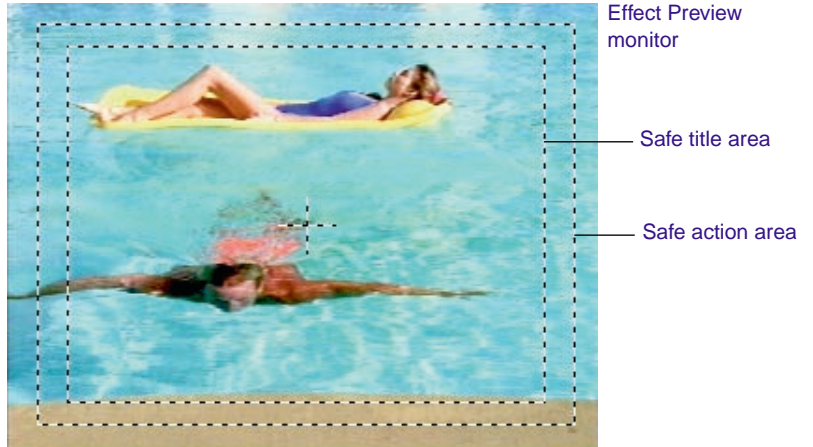
Many effects can utilize the outer edges of the viewing screen area. If you are editing material that will be viewed on screens with more limited viewing areas, such as standard televisions, you can use the Safe Title and Safe Action options to provide visual guidelines in the Effect Preview monitor that replicate the actual viewable area on a standard television screen.

For example, you can use the Safe Title option as a template for the area in which you want the effect to operate. In this way, you can avoid the appearance of the effect floating off into a nonviewable area of a standard television screen.



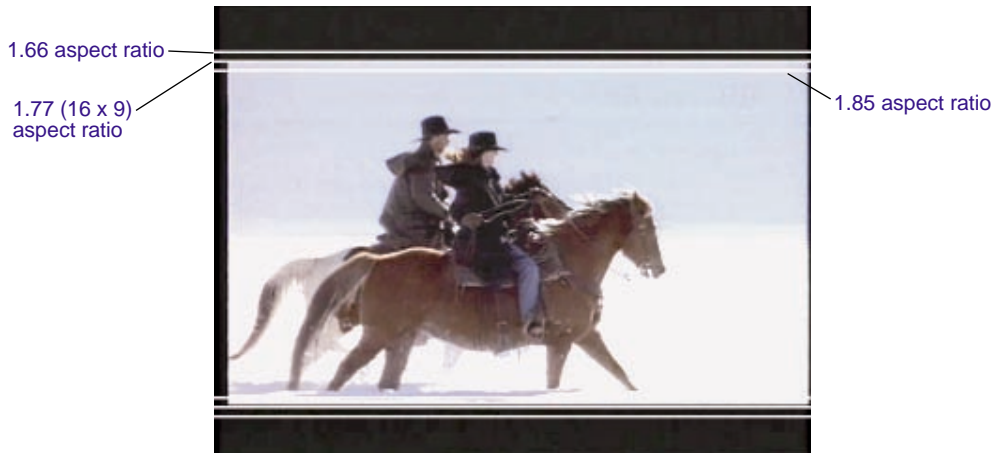
Activate the Safe Title and Safe Action options in the Grid Settings dialog box as described in [“Setting the Effect Grid Options” on page 79](#). To display the Safe Title and Safe Action guidelines in Source/Record mode or Effect mode, Option-click the Grid button.

Two outlined boxes appear in the Effect Preview monitor. The inner box is the safe title area. All text and objects should remain within the inner box. The outer box is the safe action area for video display.



Displaying the Aspect Ratio Grid for Film Projects

The Effect Grid displays several guidelines to show you where you could crop the top or bottom of your frame to achieve the “letter-box” effect. Use this feature to determine if an undesired element can be seen during screening, if an alternate take should be used, or if a resize is required. The following illustration shows the Standard Film aspect ratios.



Activate the film aspect ratio options as described in [“Setting the Effect Grid Options” on page 79](#). To display the aspect ratios in Effect mode or Source/Record mode, click the Grid button.

If you want to apply a Mask effect, select one of the Film masks from the Effect Palette. For more information about applying effects, see [“Applying Effects to a Sequence” on page 46](#).

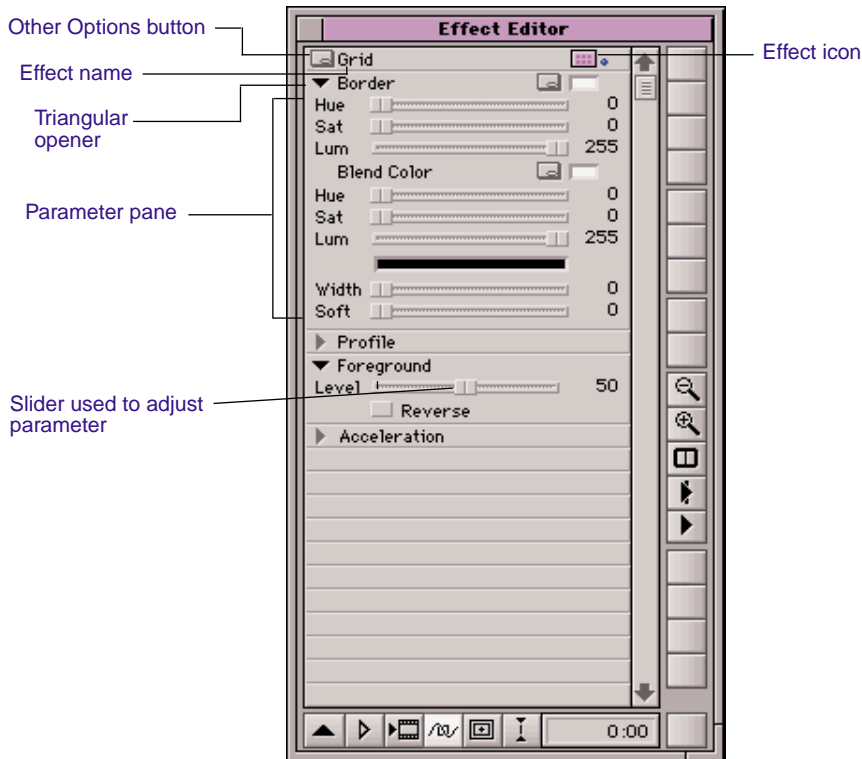
Using the Effect Editor

When an effect is selected and the Effect Editor is active, the selected effect displays in the Effect Preview monitor. The Effect Preview monitor's position bar represents only the selected effect, not the entire sequence.



If you are in Effect mode already, the Effect Editor is open and active. You can just select the segment or transition effect to display the effect's parameters in the Effect Editor.

When you click the Effect Mode button to enter Effect mode, the Effect Editor appears.



This example shows the Grid Wipe effect parameters.

Not all effect parameters apply to all effects. Parameters that do not apply to an effect do not appear in the Effect Editor for that effect. To determine which parameters pertain to an effect, refer to the effect's description in [Chapter 10, "2D Effects Reference,"](#) and [Chapter 11, "3D Effects Reference."](#)



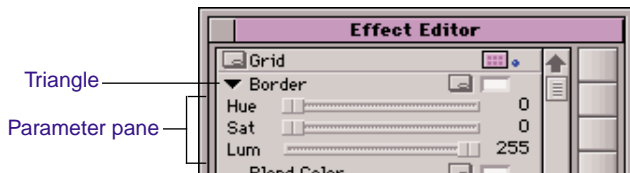
If the position indicator is not on an effect's icon in the Timeline or the track that contains the effect is not selected, then the Effect Editor is blank.

Effect Editor Buttons

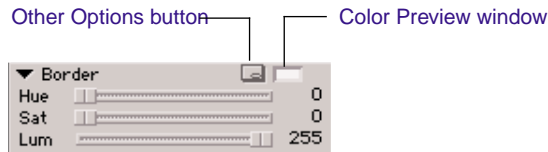
This section describes the buttons in the Effect Editor, starting from the top-left button in the window. Not all buttons apply to each effect. If a button is not applicable, it does not appear in the Effect Editor for that effect. For more information about using each of the buttons, refer to the associated topic in this chapter.

Additional buttons appear in the Effect Editor, depending on which effect you are using. For example, if you are working with a 3D effect, a set of 3D-specific buttons appear on the right side of the Effect Editor.

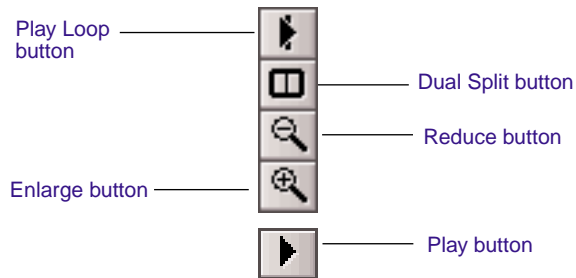
- Other Options button — Click to access additional parameters for matrix effects, third-party plug-in effects, and the Title Tool.
- Triangular opener — Click to display or hide the parameter pane. A downward-pointing triangle displays the parameter pane; a right-pointing triangle displays only the parameter name.



- Other Options button – Click the Other Options button next to the Color Preview window to display the color wheel palette when selecting a color. The Color Preview window displays the selected color. For more information, see [“Adjusting a Color Parameter” on page 104.](#)



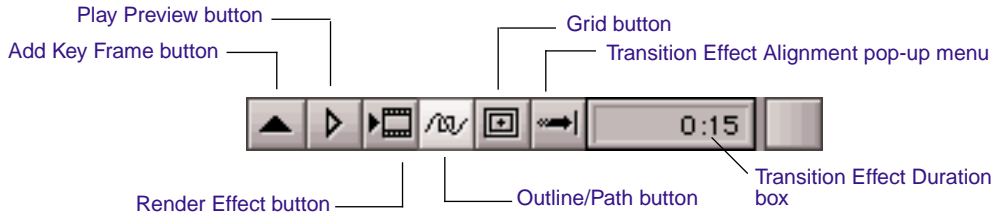
The following buttons appear along the right side of the Effect Editor.



- Play Loop button — Plays back a transition or segment effect in a loop. Click the button again to stop the looped playback.
- Dual Split button — Splits the Effect Preview monitor in half to show the image with and without effects applied to it.
- Reduce button — Reduces the image in the Effect Preview monitor.

- Enlarge button — Enlarges the image in the Effect Preview monitor.
- Play button — Plays the effect from the current position in the effect's Timeline for most 2D and 3D effects.

The following buttons appear at the bottom of the Effect Editor.



- Add Key Frame button — Creates a key frame at the frame in the effect's Timeline where you place the position indicator. Option-clicking this button deletes a key frame.

The Add Key Frame button on the Command Palette is mapped to the double quote key (") on the keyboard. You can map the button from the Command Palette to another key, or you can map the button to an existing button in the Source/Record monitor.

- Play Preview button — Plays back a preview of an unrendered effect.
- Render Effect button — Renders the effect.
- Outline/Path button — Displays a wire-frame representation to illustrate the movement of an effect from the first key frame through the last key frame.
- Grid button — Displays the Safe Title and Safe Action guidelines, and enables the Effect Grid for precise placement of effects.



- Transition Effect Alignment menu — Use this menu button to select the alignment of a transition effect to the cut point.
- Transition Effect Duration box — Click in this display to enter a duration for the transition effect other than the duration displayed.

For a detailed explanation of the above two parameters, see [“Using the Transition Parameters” on page 59](#).



- 3D Promotion — This button appears when you use a 2D effect on systems with the 3D Effects option installed. You can click the button to promote the effect to a 3D effect. For example, you can promote a 2D Picture-in-Picture effect to a 3D effect and make use of the 3D Effects parameters. Before you promote the effect to 3D, you may want to save a 2D copy as a template so you can go back to it again at a later time. For more information, see [“Promoting 2D Effects to 3D Effects” on page 331](#).

Moving an Enlarged Image in Effect Mode



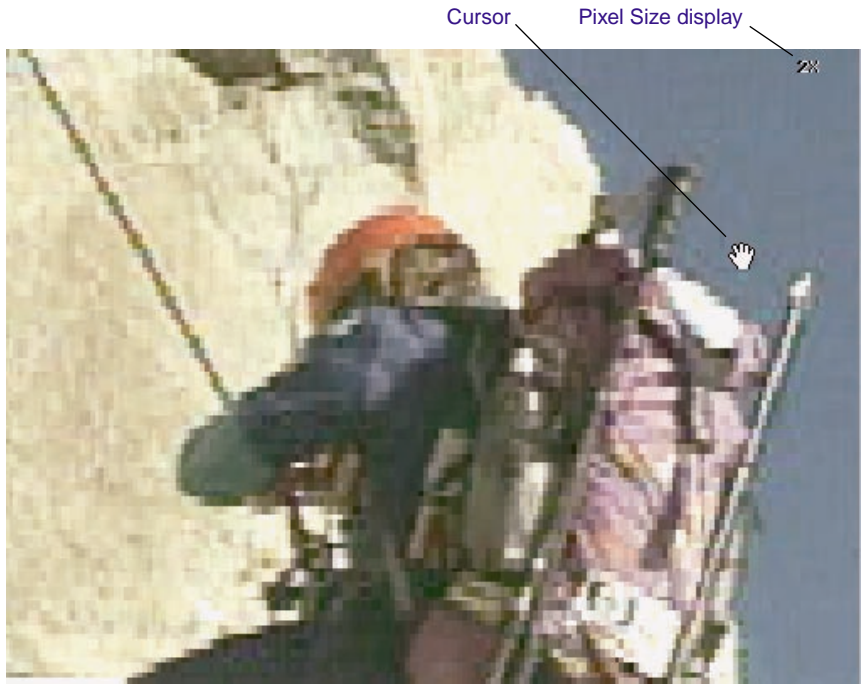
When you use the Enlarge button to increase the size of the image in the Effect Preview monitor, you cannot view the entire frame all at once. When you are creating an effect that requires great detail, you can reposition the enlarged frame in the monitor to view the sections that need your attention.



This feature applies only to an enlarged image in the Effect Preview monitor, not a standard-sized or reduced image.

To move the image within the Effect Preview monitor:

1. Click within the boundaries of the Effect Preview monitor.
2. Press and hold ⌘-Option.
The cursor becomes a hand.



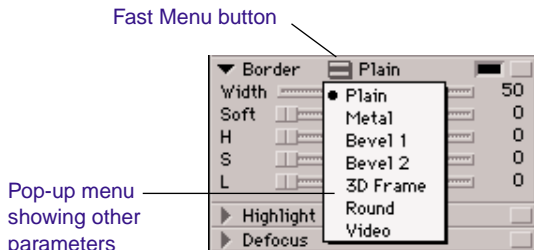
3. Drag the hand in any direction to reposition the image within the Effect Preview monitor.



Similarly, you can enlarge the frame in the Source monitor when you are working in Source/Record mode and move the frame around by pressing and holding ⌘-Option. To access the Enlarge and Reduce buttons in Source/Record mode, you must map the buttons to your keyboard or to the user-selectable palettes.

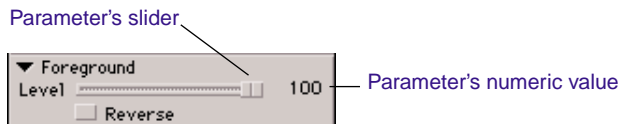
Selecting a Parameter

Some effects have additional parameters that you select from the current parameter's Fast menu. For example, border types for 3D effects are on the same Fast menu.



Changing a Parameter

To change a parameter that has a slider, you must click its slider. When a slider is activated, it turns pink. Use the Tab key to move from one slider to the next slider.



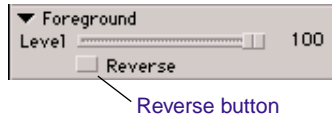
Use any of the following methods to change the value of a parameter that has a slider.

- Move the slider with the mouse.
- Type a new value using the numeric keypad, and, if you entered less than 3 digits, press Enter.

- Use the Left Arrow and Right Arrow keys to change the value by -1 or $+1$.
- Press the Shift key and use the Left Arrow and Right Arrow keys to change the value by -10 or $+10$.

Reversing an Effect's Direction

You can set many of the effects in the Effect Palette to operate in reverse. When you operate the effect in reverse, in most cases the incoming (B) video changes places with the outgoing (A) video. The reversal changes the positions of the A and B video only for the duration of the effect.



To reverse an effect's direction, click the Reverse button in the Foreground parameter pane.

When the Reverse button is selected, the effect operates in reverse; when the button is deselected, the effect operates normally. For an explanation of changing the effect's level, see [“Adjusting the Level Between Key Frames” on page 103](#).

Accessing an Effect's Additional Parameters

Some effects have additional parameters that control their operation. For example, the Grid Wipe effect has additional parameters in which you set the number of columns and rows in the wipe. When an effect has additional parameters, the Other Options button appears next to the effect name in the Effect Editor. The Other Options button also appears in a parameter pane in the Effect Editor if the pane can access additional parameters.



To access an effect's additional parameters, click the Other Options button next to the effect name or in a parameter pane.

A dialog box appears in which you set the additional parameters.



You also use the Other Options button to access the parameters for third-party plug-in effects and for the Macintosh Color Picker in the Title Tool and other effects that allow you to change color parameters.

Replacing an Effect

While in Effect mode, you can replace an existing effect.

To add a replacement effect:

1. Choose Effect Palette from the Tools menu.
2. Choose an effect category.
3. Use one of the following methods to replace the effect:
 - Drag the new effect's icon to the Timeline. To replace an existing effect, place the new effect's icon on top of the existing effect's icon.
 - Drag the new effect's icon to the Effect Preview monitor.
 - Highlight the effect in the Timeline, and double-click the new effect's icon in the Effect Palette.
4. Set the applicable effect parameters in the Effect Editor.

Using Key Frames

A *key frame* is a point in the effect's Timeline at which you can set parameters. Key-frame indicators appear as triangles in the effect's Timeline below the Effect Preview monitor.



Starting key frame

Ending key frame

By default, the Avid Composer system always provides the starting and ending key frames of an effect. These key frames are selected by default and thus any parameter changes are constant throughout the

effect. By using techniques for adding, deleting, moving, selecting, and deselecting key frames, you can begin to change the appearance and operation of the effect over time by applying parameter changes to specific key frames.

Adding a Key Frame

You can create a key frame at any point in the effect's Timeline.

To create a key frame:

1. Click the position in the effect's Timeline below the Effect Preview monitor where you want to add the key frame. The position indicator moves to that frame.
2. Click the Add Key Frame button to add the key frame.



Selecting a Key Frame

You can select a key frame or multiple key frames using the following procedures. A key frame turns pink when selected.

- To select one key frame, click the key-frame indicator in the effect's Timeline.
- To select multiple key frames, hold down the Shift key and click the desired key-frame indicators in the effect's Timeline.
- To select all key frames in the effect's Timeline, press ⌘-A, or ⌘-click on one key frame.



For a fast way to jump to the previous or next key frame, you can map the Fast Forward and Rewind buttons from the Command Palette to your keyboard.

Moving a Key Frame

After you have created a key frame, you can move it to another position in the effect's Timeline.



The starting and ending key frames cannot be moved.

To move a key frame, press and hold the Option key and click and drag the key frame to its new position.



Alternatively, you can select a key frame and click the Trim Left One Frame and Trim Right One Frame buttons or the Trim Left Ten Frames and Trim Right Ten Frames buttons.

Changing a Key Frame's Parameters

In addition to the Level and Acceleration parameters, you can change many of the parameters for any key frame, including the starting and ending key frames.

To change a key frame's parameters:

1. Click the key-frame indicator in the effect's Timeline to select it. The key-frame indicator turns pink when selected.
2. Adjust any of the applicable parameters in the Effect Editor.

Copying and Pasting Key-Frame Parameters

You can copy and paste parameters from one key frame and apply them to another key frame. You can also copy key-frame parameters from one effect to another effect.

To copy and paste key-frame parameters:

1. Click one key-frame indicator in the effect's Timeline whose parameters you want to copy.

2. Choose Copy from the Edit menu.
3. To copy the parameters to one key frame, click the key frame. To copy the parameters to multiple key frames, Shift-click multiple key frames. To copy the parameters to all key frames, choose Select All from the Edit menu.
4. Choose Paste from the Edit menu.

The parameters that you copied from one key frame are pasted to the key frame, or frames, you selected.



You can also use Cut and Paste from the Edit menu to delete and paste a key frame.

Deleting a Key Frame

You can delete any key frame you create. You cannot delete the starting and ending key frames that the Avid Composer system creates.

To delete a key frame:

1. Click the key-frame indicator in the effect's Timeline. The key-frame indicator turns pink when selected.
2. Press Delete.



Alternatively, you can Option-click the Add Key Frame button to delete a key frame.

Adjusting Basic Parameters

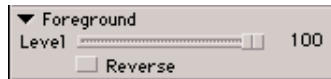
A number of parameters are common to many effects, such as parameters affecting size, position, or foreground level (transparency). You can adjust these parameters once for the entire effect, or you can use the Effect Editor along with key frames to change the effect parameter over time.



For reference information on all effect parameters, see [“2D Effect Parameters Reference” on page 367](#) and [“Basic 3D Effects Parameters” on page 490](#).

Adjusting the Level Between Key Frames

Use the Level parameter, together with key frames, to set the relative amount of the effect to be displayed over time — for example, to fade a Superimpose effect in or out.



For Blend and Key effects, the Level parameter represents the effect’s opacity. A Level of 100 is 100 percent opaque, a Level of 50 is 50 percent transparent, and a Level of 0 is 100 percent transparent.

For wipes and all other transition effects (except Dissolves), the Level parameter represents the proportion of incoming frames to outgoing frames. A Level of 0 is 100 percent of outgoing, a Level of 50 is 50 percent of outgoing, and a Level of 100 is 0 percent of outgoing.

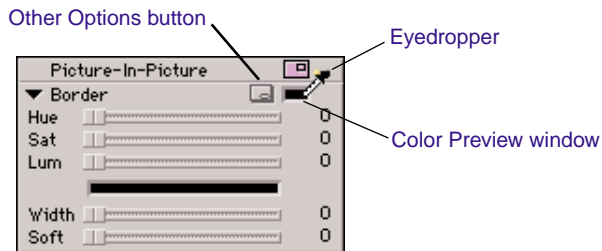
Dissolve effects are a special case, in which the Level parameter represents both the effect’s opacity and the proportion of incoming to outgoing frames.

To adjust the Level parameter:

1. Click a key-frame indicator in the effect's Timeline to select it.
2. Adjust the Level parameter using the standard procedures explained in [“Changing a Parameter” on page 96](#).

Adjusting a Color Parameter

You can change a color parameter or select a key color using the eyedropper or the Macintosh Color Picker instead of the Hue, Sat (saturation), and Lum (luminance) sliders.



Using the Eyedropper

To select a color using the eyedropper:

1. Position the cursor over the Color Preview window to activate the eyedropper.
2. Click and drag the eyedropper into the Effect Preview monitor, and release the mouse button on the color you want to select from the video image.

The parameter's numeric values are updated, and the selected color appears in the Color Preview window.

Using the Macintosh Color Picker

The Macintosh Color Picker is a standard application that ships with Macintosh systems. Its appearance varies, depending on the current release of the Macintosh operating system. You can access the Macintosh Color Picker through the Other Options button as follows:



1. Click the Other Options button in the parameter pane.

The Macintosh Color Picker dialog box appears.

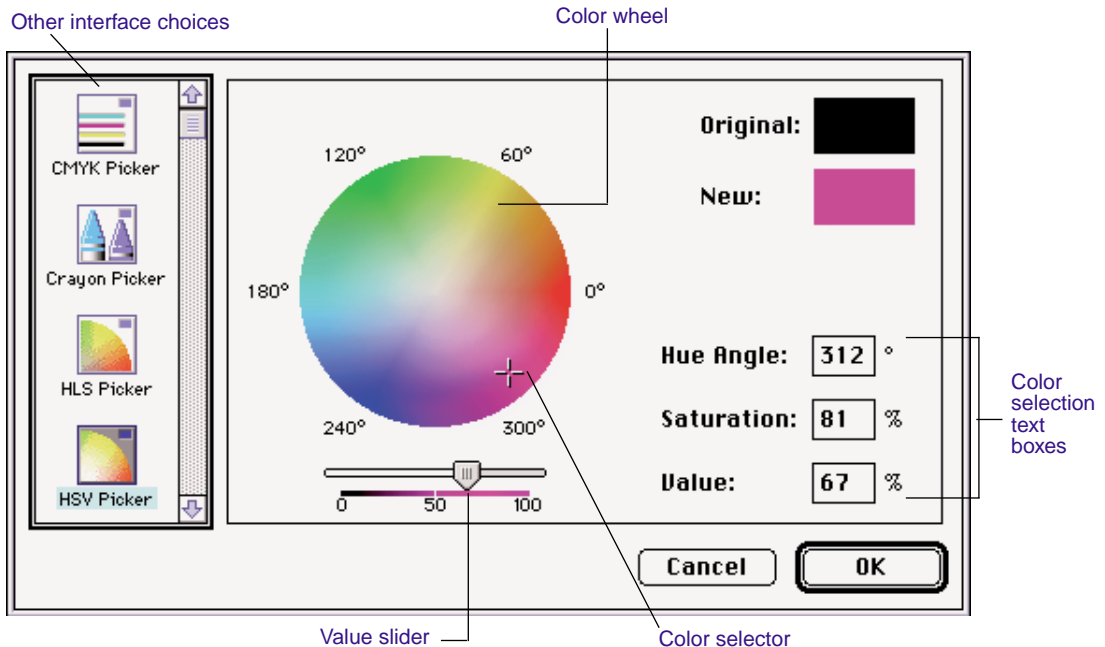


Figure 3-1 Macintosh Color Picker

The Macintosh Color Picker displays the HSV (hue, saturation, value) color wheel by default for Macintosh operating system Version 8.0, as shown in the above illustration. You can also select an RGB (red, green, blue) slider interface or an HLS (hue, luminance, saturation) interface

by selecting the appropriate icon in the left side of the Color Picker window. For a complete description of how to use the other Macintosh Color Picker interfaces, see the documentation that ships with your Macintosh.

To use the HSV color wheel:

1. Drag the color selector to select a color.
2. Drag the Value slider to make colors brighter or darker.

You can also enter color values using the color selection text boxes on the right of the dialog box. The color selector automatically changes position in the color wheel as you change values.

Adjusting the Effect's Position

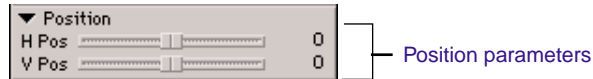
You can define how the foreground image of a multilayer effect will move across the background video by building a *motion path*, or string of key frames. You can define a motion path on multilayer video effects such as the Picture-In-Picture effect. Click the Outline/Path button to use the wire-frame feature when you want to see the path an image takes on the screen.

When you are creating a motion path that moves beyond the viewing screen, you can use the Reduce button to view an outline of the image at a reduced scale. The reduced scale view shows the area outside the background image and allows you to extend the motion path into that area. The Enlarge button returns the screen to full view.

You can change the position of a multilayer effect by using the Position parameter's sliders or by clicking and dragging the effect. The click-and-drag, or direct, method also provides you with the ability to rescale the effect.

Using the Position Sliders to Adjust the Position

The Position sliders represent the position of the effect center along both the X axis (Horizontal Position) and Y axis (Vertical Position) at a key frame. If the effect center is positioned at H Pos = 0 and V Pos = 0, the effect is centered in the frame.



On the X axis, an H Pos value of -999 places the center of the effect at the extreme left of the frame (off the visible screen), and a value of 999 places it at the extreme right (off the visible screen).

On the Y axis, a V Pos value of -999 places the center of the effect at the extreme top of the frame (off the visible screen), and a value of 999 places it at the extreme bottom of the frame (off the visible screen).

As you move the sliders, you can see the frame outline moving in the Effect Preview monitor.

Changing the Position of the Effect Directly

To change the position of the effect directly:



1. Click the Outline/Path button.
2. Click the center of the effect's outline in the Effect Preview monitor and drag it to the new position.

As you move the effect, the H Pos and V Pos sliders in the Position parameter pane move.



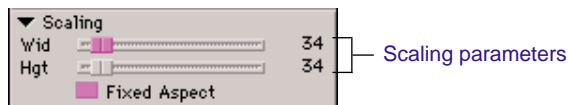
You also can rescale the effect by clicking and dragging the wire-frame handles located on the effect's outline.

The parameter pane values change automatically as you adjust the wire-frame handles.

For 3D effects, see ["Position — Moving the Image" on page 496](#) and ["Moving in 3D Space" on page 333](#).

Adjusting the Effect's Scale

For effects that use the Scaling parameters, you can change the scale of the effect at key frames. When you activate Fixed Aspect, the Wid (width) and Hgt (height) sliders move in unison.



Fixed Aspect is enabled.

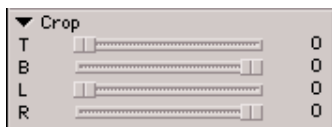
The range of values for the Wid and Hgt sliders is 0 to 400. A value of 100 means you have not scaled the effect (it is 100 percent of its normal size). A value of 400 means the effect is scaled 4 times its original size.

You can adjust the Scaling parameters using the standard procedures explained in the topic [“Changing a Parameter” on page 96](#). You also can click and drag the effect’s wire-frame handles, as described in [“Adjusting the Effect’s Position” on page 106](#).

For 3D effects, refer to the Scaling and Target parameters in [Chapter 11, “3D Effects Reference.”](#)

Cropping an Effect

The Crop parameter enables you to remove video from the top, bottom, left, and right edges of the video. This parameter applies to effects such as Picture-in-Picture, Resize, Chroma Key, and Luma Key.



The following table describes the actions of each of the Crop sliders.

Table 3-2 Cropping Parameters

Slider	Description
T (top)	Removes video from the top of the inner or incoming video. Values range from 0 to 999; 0 is the top of the screen, 500 is the middle of the screen, and 999 is the bottom of the screen.
B (bottom)	Removes video from the bottom of the inner or incoming video. Values range from -999 to 0; 0 is the bottom of the screen, -500 is the middle of the screen, and -999 is the top of the screen.
L (left)	Removes video from the left side of the inner or incoming video. Values range from 0 to 99; 0 is the left side of the screen, 500 is the middle of the screen, and 999 is the right side of the screen.
R (right)	Removes video from the right side of the inner or incoming video. Values range from -999 to 0; 0 is the right side of the screen, -500 is the middle of the screen, and -999 is the left side of the screen.

You can adjust the Crop parameter using the standard procedures explained in [“Changing a Parameter” on page 96](#). For 3D effects, see [“Crop — Cropping the Image” on page 491](#).

Adjusting the Acceleration

The Acceleration parameter allows you to adjust the fluidity of the effect, by having the effect “ease in” and “ease out” of every key frame. The Acceleration parameter applies to the entire effect, not specific key frames.



Table 3-3 includes some sample Acceleration settings.

Table 3-3 Acceleration Settings

Setting	Result
0	Linear acceleration
50	Slight “ease in” and “ease out”
100	Maximum “ease in” and “ease out”



The overall speed of an effect is determined by the duration of the effect, which is determined by the length of the clip in the sequence. If you want to slow down or speed up the movement of an effect, you will need to change the length of your sequence; or you can use add edits to limit the portion of the clip affected by the effect.

To adjust the Acceleration parameter, use the standard procedures explained in [“Changing a Parameter” on page 96](#).

Using an Effect Template

The parameters for an effect are called the effect template. You can reuse an effect template in multiple places in a sequence by saving the template in a bin and later applying the template to other effects or video clips in the sequence.

Saving an Effect Template

You can save the parameters from the rendered effect in the Effect Editor and reuse them for another effect.

To save an effect template:

1. Drag the effect icon from the Effect Editor to a bin.

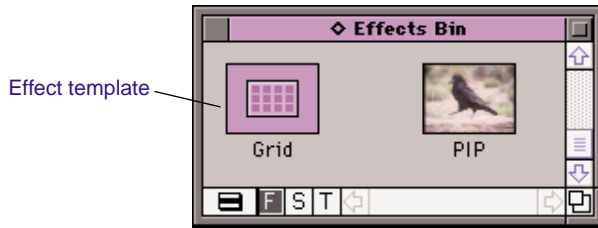


Effect icons for open bins are also displayed in the Effect Palette.

This creates a new effect template in the bin, containing the parameter setting information for the rendered effect. The new effect template is identified in the bin by its effect icon.



Alternatively, you can save a segment effect with its source media, which is useful when you want to save an imported PICT file or matte key clip for future editing into a sequence. Press and hold the Option key while you drag the effect icon from the Effect Editor to a bin.



2. To rename the template, click the template name below the icon and type a new name.

Applying an Effect Template

You can take an effect template that has been saved in a bin and apply the template and its parameters to other transitions or segments in your sequence.

To apply an effect template, use one of the following methods:

- Click the effect template in the bin or in the Effect Palette, and drag it to either the Timeline or the Effect Preview monitor.
- Place the position indicator on a segment or transition, and double-click the effect template in the bin or Effect Palette.

This applies all the parameters from the effect template to the new video clip that you are creating.

To apply only part of an effect template:

- Click the effect template in the bin or in the Effect Palette, and drag it to the specific effect parameter pane in the Effect Editor.

The effect template is applied only to the effect parameter pane to which you drag the template.



Position parameter pane



Do not drag the effect template through the Timeline window, because this deselects the effect.

Playing an Effect

To play an effect:

1. Drag the position indicator to the effect you want to play in the Timeline.
2. Click the Play button.



The system plays a non-real-time effect as fast as it can compute the image for each frame. To play the effect at its normal rate, you must render the effect first. However, if an effect is real time, it is played in real time.

3. To stop playing an effect, click the Play button, or press the space bar.

Playing an Effect in a Continuous Loop

To play the effect in a continuous loop:

1. Drag the position indicator to the effect you want to play in the Timeline.
2. Click the Play Loop button.



The system plays a non-real-time effect as fast as it can compute the image for each frame. To play the effect at its normal rate, you must render the effect first. However, if an effect is real time, it is played in real time.

3. To stop playing an effect, click the Play Loop button, or press the space bar.

Playing a Preview of an Effect

You might want to play an effect or its outline to check its appearance and operation. An effect's *outline* is a wire-frame representation of the effect.

To play an effect's outline:

1. Click the Play Preview button.



The effect's outline plays from the current position. For non-real-time effects, the outline does not play in real time. However, if an effect is real time, it is played in real time.

2. To stop playing the effect outline, click the Play Preview button, or press the space bar.

Rendering an Effect

You must render a non-real-time effect before it can be played. When an effect is rendered, the system stores the effect and its media file as a precomputed master clip (often referred to as a precompute). The system uses the precompute the next time to play the effect at its normal speed.

Selecting the Render Setting for a Project

You can control the size of a rendered effect to fit within a playable range by changing the Render settings. For more information, see [“Render Settings” on page 42](#).

Combining Real-Time Effects and Rendered Effects

The Avid Composer system can process only two streams of video at one time. Therefore, when two or more real-time effects overlap, the Avid Composer system can play only one of these effects in real time. The other effects will not be displayed.

Overlapping Real-Time Effects

The Avid Composer system handles situations with overlapping real-time effects in the following ways:

- In cases where two or more real-time effects overlap, the Avid Composer system plays one of the effects in real time and substitutes video from track V1 for the real-time effect that it cannot create. If the video on track V1 is not readily available because it is also a real-time effect, then the Avid Composer system substitutes black for the real-time effect that it cannot create.

- If real-time effects on different video tracks overlap, the Avid Composer system plays the effect on the highest numbered track in real time.
- If you have two real-time effects on the same track (for example, a Dissolve or Wipe overlaps video with Color effects), the Avid Composer system plays the real-time transition effect using video without the segment effect, or, in some cases, using black.

In summary, if you want to view the video with both effects, render one of the overlapping effects.

Overlapping Real-Time and Rendered Effects

In cases where you are rendering effects that will overlap real-time transition effects, place the real-time transition effects in the sequence before rendering the non-real-time effects. This ensures that you render enough extra frames of video to create the real-time effect in real time.

The Avid Composer system renders only this section of video if the real-time transition effect is present before you render the segment effect.

Speed Considerations

If you have multiple short clips with multiple real-time effects or images with a high level of complexity, you may exceed the capacity of the hardware to play these in real time, resulting in Video Underrun error messages. In this case, render some of the intermediate effects before playing the sequence.

Displaying Effects On-the-Fly

You can display the results of effects automatically as soon as you create them. Note that this can slow down your editing of the sequence.

To display effects automatically, choose the Render On-The-Fly option in the Special menu.

For another method of setting the Render On-The-Fly option, see [“Trim Settings” on page 45](#).

Rendering a Single Effect

After you have adjusted an effect’s parameters, you can render the effect.

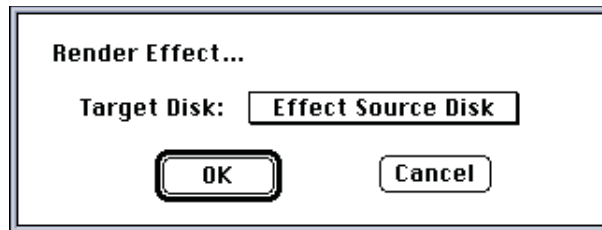
To render a single effect:

1. Place the blue position indicator on the effect in the Timeline.
2. Click the Render Effect button, or choose Render at Position from the Clip menu.



In Effect mode, the button is in the Fast menu below the Effect Preview monitor and in the Effect Editor. In Trim mode, the button is below the Source monitor. In Source/Record mode, the button is in the Fast menu. The button is also on the Command Palette.

A dialog box appears.



To prevent this dialog box from displaying, press and hold the Option key when you click the Render Effect button. The system will use the last disk selected.

To display the estimated render time, press the letter T on the keyboard. Press T again to clear the display.

3. Select a disk drive from the pop-up menu on which to store the rendered effect and click OK.

The *Effect Source Disk* is the disk where the media on the outgoing shot of a transition resides.

The effect is rendered, and a precompute master clip is stored on the disk drive you selected.

Rendering Multiple Effects

When you have more than one effect to render, you can render them as a group.

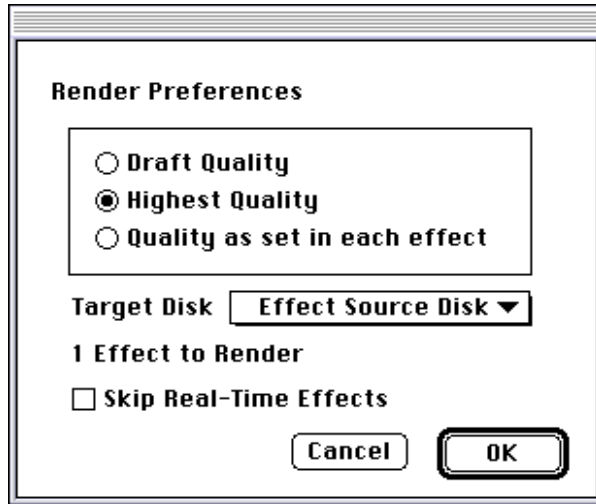


Save your sequence before you use this feature, because this is a long batch process during which you can leave the Avid Composer system unattended.

To render multiple effects:

1. Click the track selector button in the Timeline for each track on which you have effects to be rendered.
2. Mark an IN point before the start of the first effect to be rendered in your sequence; mark an OUT point after the last effect to be rendered.

3. Choose Render In/Out from the Clip menu.
The Render Preferences dialog box appears.



4. Select the quality if necessary. The default quality is Highest Quality.



You are able to select the effect quality only for certain non-real-time effects.

5. If you do not want to render the real-time effects in the selected group of effects, select the parameter Skip Real-Time Effects.

To display the estimated render time, press the letter T on the keyboard. Press T again to clear the display.

6. Click OK.

The Avid Composer system renders all effects between the IN and OUT marks.



Another way to speed up rendering is to use the Submaster effect. See [“Submaster Editing” on page 138](#).

Rendering Third-Party Plug-in Effects

Third-party plug-in effects must be rendered. Rendering times can be longer than native Avid Composer system effects. Use the same procedures explained in this section.

Managing Your Media Files

When you render an effect, create a title, or import a graphic file, the Avid Composer system creates two elements: an effect clip and a rendered effect media file (also known as a precompute master clip).

The Avid Composer system overwrites or automatically deletes a media file from your disk drive only if you:

1. Render an effect two or more times with the Render Effect button.
2. Close the project before either an Auto Save or a manual save occurs.

In this case, the Avid Composer system automatically saves the last-rendered effect and deletes the earlier, unreferenced versions. This autodeletion applies only to effects rendered since the last save or project close.

This prevents you from deleting media that may be necessary to play other versions of the sequence. If you want to remove media files from your disk to save disk space, you will have to manually delete the files.

Locating and Deleting Effect Media Files

Use this procedure to locate and delete unwanted media files on your disk drive for your current project.

1. Choose Media Tool from the Tools menu.

The Display Media Selector dialog box appears.



2. Select Current Project and Precompute Master Clips and click OK.

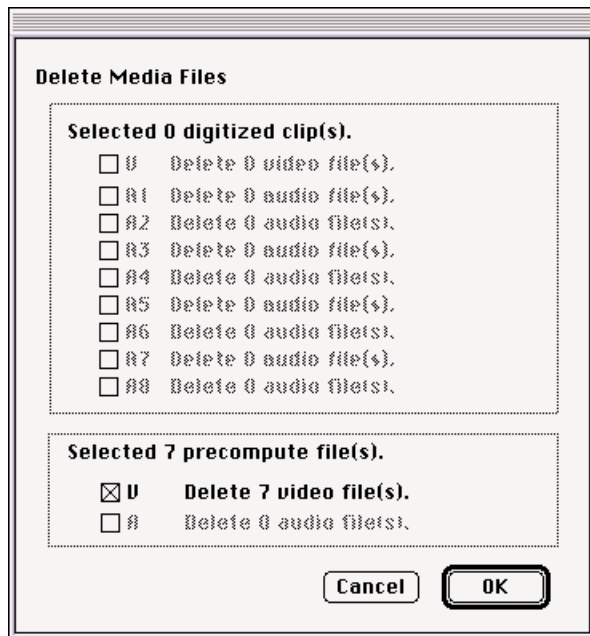
The Media Tool window opens and displays all precompute master clips associated with your current project.

3. Resize the Media Tool window, until you can see all or most of the precomputes.
4. Open the bin or bins that contain all the sequences in the current project whose media files you want to preserve.
5. Highlight all sequences whose media files you want to preserve.
6. Choose Select Media Relatives from the Bin menu.

In the Media Tool , all the precompute media files used in the selected sequences are highlighted.

7. Click the title bar of the Media Tool to make it the active window.
8. Choose Reverse Selection from the Bin menu to highlight all the precompute clips you are *not* using in the selected sequences.
9. Press Delete.

The Delete Media Files dialog box appears.



10. Click OK to delete the selected precomputes.



CHAPTER 4

Creating Vertical and Nested Effects

This chapter describes how to apply multilayer effects to your sequence. Vertical effects consist of two or more layers of video that play back simultaneously with effects such as Picture-in-Picture, Superimpose, or Submaster applied to the tracks. Nested effects consist of one or more effect layers that are contained within another effect on the *same* video layer.

The methods and concepts for creating multilayer effects — described in the following sections — build on the procedures for creating single-layer effects described in [Chapter 2](#).

- [Creating a Chroma Key or Luma Key Effect](#)
- [Creating a Matte Key Effect](#)
- [Working with Imported Graphics and Animation](#)
- [Nesting Effects](#)
- [Expanding Nested Effects in the Timeline](#)
- [Submaster Editing](#)

Creating a Chroma Key or Luma Key Effect

When you apply a YUV Chroma Key effect, the Avid Composer system replaces one part of the video image with another video image based on color. The Luma Key works in a similar way, but the system replaces one part of the video image with another video image based on luminance (brightness).

The following procedure describes the application and adjustment of a YUV Chroma Key effect. Use the same procedure to apply a Luma key, and see Chapter 10 for information on adjusting luminance parameters.

To create a Chroma Key effect:

The YUV Chroma Key effect is used most frequently with a foreground image shot in front of a highly saturated color screen (for example, a meteorologist shot in front of a blue screen and layered over a weather map). Use the following procedure to create a YUV Chroma Key effect:

1. Create a sequence with two layers. Place the foreground image on track V2 and place the background image on track V1.



If you have been building foreground segments on the V1 track and find that you want to create a key effect, you can use segment mode techniques to select all segments and drag them to V2. For more information on Segment mode, see the Avid Media Composer User's Guide or the Avid Film Composer User's Guide.

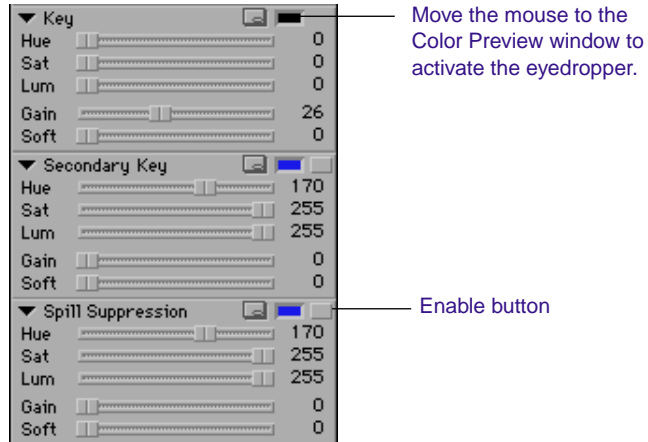
2. Choose Effect Palette from the Tools menu, or press ⌘-8.
3. Drag the YUV Chroma Key effect from the Effect Palette to the clip on track V2.

The key effect is added. Ultimatte Blue is the default key color.



4. Place the blue position indicator over the Key effect in the Timeline and click the Effect Mode button.

The following illustration shows the parameters for controlling chroma key and also shows the Color Preview window, used to activate the eyedropper.



5. Select the Key color. For more information on methods of selecting a color, see [“Adjusting a Color Parameter” on page 104.](#)
6. For additional fine-tuning, enable Secondary Key parameters, or the Spill Suppression parameters, and adjust the sliders.



For more information on the proper use of Secondary Key and Spill Suppression parameters, see [“Key Control Parameters” on page 374.](#)



When you enable spill suppression, the effect changes from a real-time effect (orange dot) to a non-real-time effect (blue dot). Typically you would rough out the primary and secondary key colors first in real time and then work on the spill suppression. This allows you to play the effect until you start work on spill suppression.

Creating a Matte Key Effect

The Matte Key effect uses three layers of video to create the effect. The bottom layer is the background image, the middle layer is the foreground image, and the top layer contains the matte or alpha channel.

To create a Matte Key effect:

1. Create a sequence with three video layers.
2. Edit the background image onto track V1.
3. Edit the foreground image onto track V2.
4. Load a high-contrast image into the Source monitor, and edit it onto track V3. The high-contrast image can be an imported graphic or a clip that you adjust within the Avid Composer system.



If the image is not high enough in contrast, you can adjust the contrast by applying the Color Effect and adjusting its parameters in Effect mode. For more information, see [“Using the Color Effect to Prepare a High-Contrast Image” on page 128](#).

5. Choose Effect Palette from the Tools menu, or press ⌘-8.
6. Apply the Matte Key effect as follows:
 - If your high-contrast image was created with the Color Effect, Option-drag the Matte Key icon from the Effect Palette onto the segment on track V3 to nest the Color Effect within the Matte Key effect.
 - If your high-contrast image on track V3 does not include a Color Effect, drag the Matte Key icon from the Effect Palette onto the segment on track V3.
7. Click the monitor selector for track V3. You should see tracks V2 and V1 through the high-contrast image on track V3.
8. Place the blue position indicator over the Matte Key effect and render the effect.

For an example of a Matte Key effect, see [“Matte Key” on page 423](#).

On systems with the 3D Effects option, see [“Using Matte Keys with 3D Effects” on page 332](#).

Using the Color Effect to Prepare a High-Contrast Image

This section describes how to enhance high-contrast images for use in creating Matte Key effects.

To create a high-contrast image from available footage:

1. Apply the Color Effect to the clip and change the Luma Range to 0 to 255.
2. Set the Luma Clip High and Low sliders to 255 and 0, respectively.
3. Use the Chroma Adjust to remove all saturation from the image.
4. Adjust the Gamma to change the color of the mid tones. Note that this is the only non-linear function in the Color Effect.

The high-contrast image can now be used as a matte for the key effect, as described in [“Creating a Matte Key Effect” on page 127](#).

Black portions of the high-contrast image will be transparent and white portions will be opaque. To switch the order, use the Reverse option on the Foreground parameter pane of the Matte Key effect.

Working with Imported Graphics and Animation

This section describes two different approaches to editing with imported graphic images, depending upon whether the image was imported as a master clip with no alpha channel (an opaque graphic element), or as a Matte Key Effect clip with an alpha channel (a key-able graphic element for video overlay).



These alternatives apply to both single-frame graphic images or animation. In addition, you can edit imported images into sequences using standard Avid Composer system effects. These topics are described in this section.



For more information on importing graphic and animation clips, see the “Importing Files” chapter in the Avid Media Composer User’s Guide or Avid Film Composer User’s Guide. See also the “File Format Specifications” chapter in the Avid Media Composer Products Reference Guide.

Editing with Imported Matte Key Clips

When an imported clip includes an alpha channel for keying the graphic over video, it appears in the bin with an effect icon and the words “Matte Key” attached to the front of the clip name and “(With Alpha)” attached to the end. You can shorten or change this name at any time.

Both single-frame graphic images (such as a single PICT file) and multiple-frame animation sequences (such as a PICT sequence file) appear in the bin in the same form after import, and you use the same editing techniques for both. You can edit this type of clip into a sequence as a standard matte key overlay.



Only single-frame files can be used as real-time keyed graphics. PICT sequences, QuickTime files, PICS animation files, and ERI Movie files cannot be used as real-time keyed graphics.

To edit a matte key clip into the sequence:

1. Edit the main video sequence onto track V1.
2. Add track V2 to the sequence by choosing New Video Track from the Clip menu, or by pressing ⌘-Y.



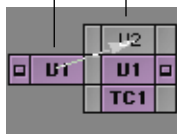
You must edit matte key clips onto track V2 or higher to achieve the keying effect. If you edit a matte key clip onto V1, the image is keyed over black unless the V1 track contains nested tracks.

3. Play the sequence and mark an IN point and an OUT point where you want to overlay the graphic.
4. Load a matte key clip into the Source monitor. Mark an IN point toward the center of the clip if it is a still.
5. In the Timeline, click and drag the Source monitor V1 track selector to the Record monitor V2 track selector to patch the video from V1 of the Source monitor to V2 in the sequence.

Timeline

Source monitor track selector

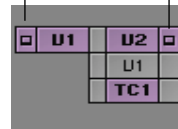
Record monitor track selector



Before

Source monitor selector

Record monitor selector

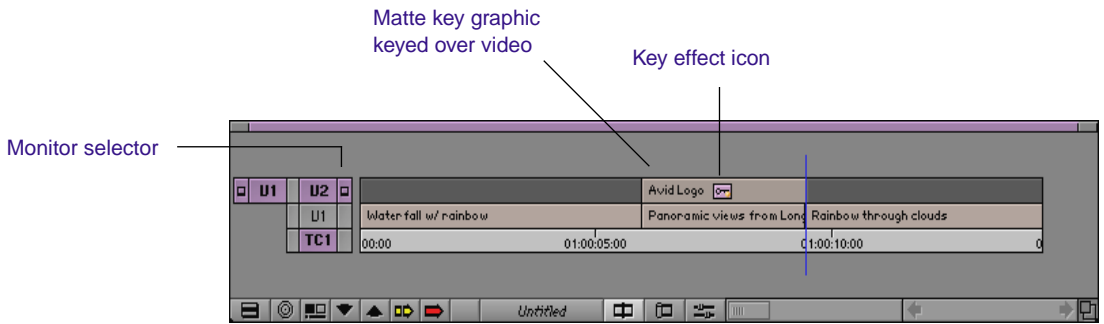


After

6. Click the Overwrite button to edit the matte key onto V2.

The graphic is keyed over the video on V1.

In the Timeline, the graphic appears on the track above the main video sequence. A Matte Key Effect icon appears in the Timeline segment. The blue dot in the icon indicates that the effect must be rendered before it can be played.



7. Adjust effect parameters in Effect mode, if necessary, using procedures described in [“Changing a Parameter”](#) on page 96.



If the keyed portions of the images are the reverse of the intended effect, then you must reimport and reverse on import. See the Avid Media Composer User’s Guide or the Avid Film Composer User’s Guide for more information.

8. Use the standard effect editing procedures to preview, render, or play the matte key clip.



Make sure the Monitor selector is on the topmost track, in this case V2, in order to see the complete effect.

Editing with Imported Master Clips

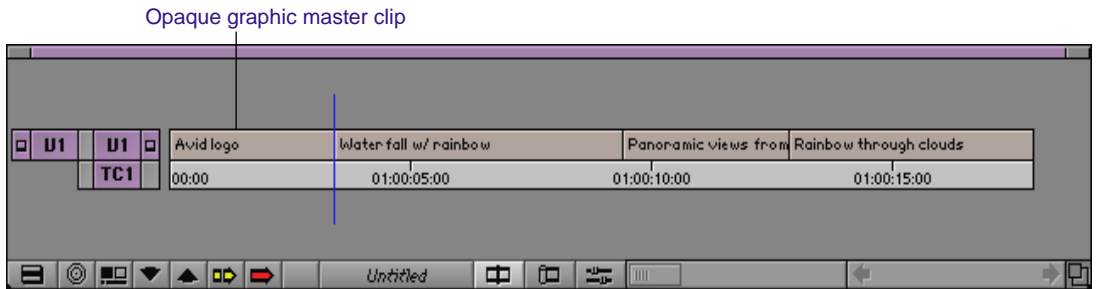
When an imported clip does not include an alpha channel for keying the graphic over video, its icon is the standard Master Clip icon. This is true for both single-image graphics or animation sequences. You can edit this type of clip into a sequence as an opaque image or animation (in other words, as a single layer) using basic editing techniques described in this section.

To edit an imported master clip into the sequence:

1. Load a graphic clip into the Source monitor, and load a sequence into the Record monitor.

2. In the Source monitor, mark an IN point at the start of the clip and mark an OUT point to specify the duration of the graphic.
3. In the Record monitor, mark an IN point where you want to edit the graphic clip into the sequence.
4. Select the Source and Record monitors' track selectors.
5. Click the Splice-in or Overwrite button to add the opaque graphic to the sequence.

The opaque image appears in the sequence. In the Timeline, the graphic looks like a standard video clip edited into the sequence.



6. Play the clip using the standard editing procedures to play and edit the graphic, the same as you would a video clip.

Nesting Effects

You can use the Avid Composer system to place effect tracks inside one another to better combine multiple images and digital video effects. This involves a process known as *nesting*, which allows you to use the Timeline to *step into* a track's edit, perform a series of editing operations, and then *step out* to view and render the effect as one segment on the track.

You can edit up to 24 video track layers (depending on the Avid Composer model you are using). Into each layer of video, you can additionally nest (stack inside) up to 24 additional video tracks. In

addition, you can step into each video track indefinitely, constrained only by your Avid Composer system's memory.



Nested effects must be rendered in order to play back correctly.

You can use nesting when you want to create layered effects. In this case, the nested layers are treated as one element during the transition. Since transition effects, such as dissolves, fades, and wipes, are not multilayered, nesting is not applicable to these types of effects; nor is nesting effects applicable to audio tracks.



Some effects are incompatible with each other when nesting. For example, Box Wipes and Edge Wipes cannot be used together in a nested segment because the two effects are competing to establish the shape of the wipe.

Another use of nesting is to constrain one effect using another effect. For example, you can use a Circle Wipe to constrain an image posterization inside a region.



Nested effects do not appear in the edit decision list (EDL).

Nesting a Split Screen

If you want to create a split screen that transitions into or out of another clip, you have to nest one layer inside the other. To create this effect, you can use a nested Edge Wipe to position the images.



To nest a split screen:

1. Edit one of the video sources onto track V1.
2. Choose Effect Palette from the Tools menu, or press ⌘-8.
3. Open the Effect Palette and drag the Horizontal Wipe effect from the Edge Wipe category onto track V1.

The monitor now contains half the shot on track V1 and black on the other half.



4. Click the Step In button on the Timeline tool bar to step into the Horizontal Wipe effect on track V1.
5. Edit the second video source onto the blank track V1 to replace the black half of the screen with the second video source.



6. Click the Step Out button on the Timeline tool bar.

You now have a split screen that is nested on one track. You can now treat this split screen as a single element and easily transition to another clip.

Another Nesting Technique

You can also nest effects by using a combination of keys as follows:

1. Create a sequence and add a segment effect.
2. Choose Effect Palette from the Tools menu, or press ⌘-8.
3. Option-drag another effect from the Effect Palette to the Timeline and place it on top of the first effect.

The first effect is automatically nested inside the second effect.

Expanding Nested Effects in the Timeline

In Effect mode, you can double-click a nested effect to expand the effect in the Timeline and display the effect's contents. All editing and patching features are available for the expanded effect; you can listen to audio while playing the nested effect. Double-click the effect's icon in the Timeline to step out of the nested effect.

Nesting a Title Within a Picture-in-Picture

If you want to create a moving picture-in-picture that includes a title, you will have to create a nested effect so the title moves with the Picture-in-Picture as one unit.

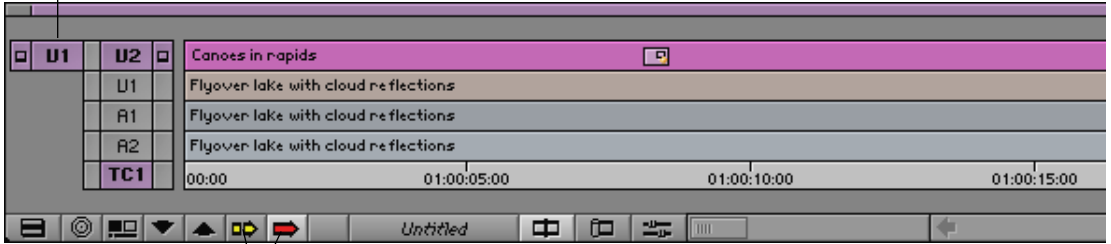
The following illustration shows a title within a Picture-in-Picture effect.



Use the following procedure to nest a title within a Picture-in-Picture effect:

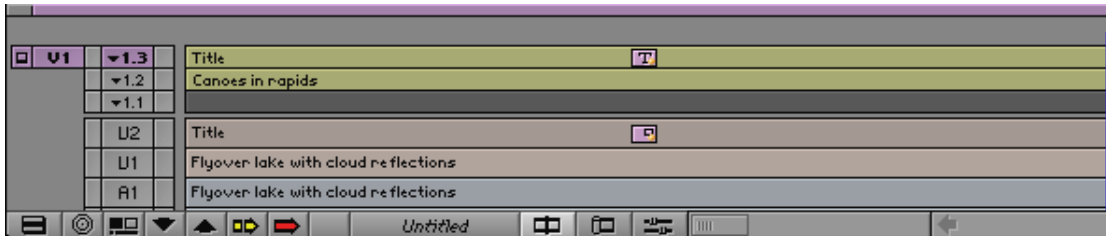
1. Create a sequence with two video layers. Put your foreground video in V2 and your background video in V1.
2. Create a Title effect and place it in an open bin. For information on how to create a title, see [Chapter 5, "Creating Titles and Graphic Objects."](#)
3. Choose Effect Palette from the Tools menu.
4. Apply the Picture-in-Picture effect from the Blend category to the segment on V2. The following illustration shows an example.

Source monitor
track selector



Segment Mode buttons

5. Click one of the Segment Mode buttons at the bottom of the Timeline.
6. Double-click the Picture-in-Picture Effect icon in the segment. The Timeline expands to display the nested tracks 1.1 and 1.2.
7. Deselect the Segment Mode button so you can edit the tracks.
8. Drag the Source monitor track selector to nested track 1.2.
9. Choose New Video Track from the Clip menu. The Avid Composer system creates nested track 1.3.
10. Drag the Source monitor track selector to nested track 1.3.
11. Edit the title into the new nested track 1.3 as shown below.



12. Select one of the Segment Mode buttons again, and double-click the Picture-in-Picture effect on track V2.

The Avid Composer system collapses the nested track.

Submaster Editing

The Submaster effect is in the Image category of the Effect Palette. When you render this effect, the Avid Composer system creates a single media file from several clips or effects in a sequence. This saves the new submaster clip to the disk as a single media file. However, each element that makes up the composite is left untouched so you can still manipulate any element.

The Submaster effect is a single-track segment effect and is available only if your Avid Composer system supports the nested editing option.



You can nest up to 24 tracks inside a Submaster effect.



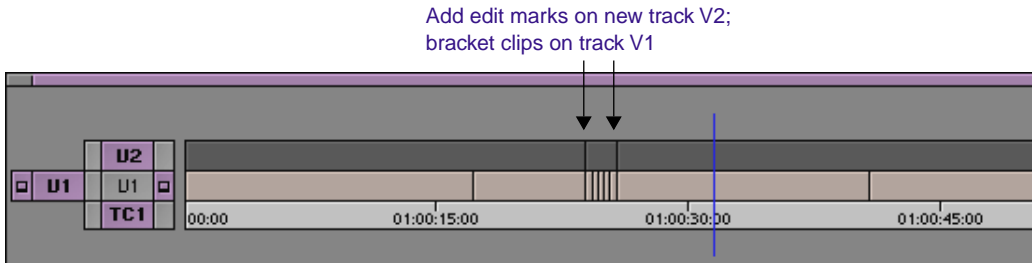
An EDL for a sequence that contains a Submaster effect represents the contents of the submaster as a single cut. To work around this, you can create a new sequence with the contents of the submastered material and generate a separate EDL for that sequence.

Submaster Editing of Multiple Clips

The Submaster effect is useful when you want to play back bandwidth-limited sequences, such as sequences made of several seconds of single-frame clips. It is much faster to use the submaster clip than to use methods such as applying a graphic, Picture-in-Picture, Mask, or Resize effect. Normally, submaster effects render at about the same rate as motion effects.

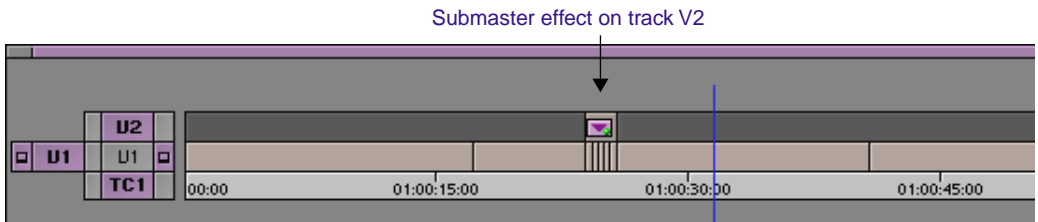
To apply a Submaster effect to multiple clips:

1. Choose New Video Track from the Clip menu.
2. On the new video track (V2 in the example), create one add edit before and another after the group of clips to be submastered.



3. Choose Effect Palette from the Tools menu.
4. Drag the Submaster Effect icon from the Image category in the Effect Palette to the space between the add edits you added on the new track (V2 in the example).

The system creates a new single-track segment clip from the clips below the Submaster effect.



Submaster Editing of Multiple Effects

The Submaster effect is also useful when you have combined effects, such as when you have layered or nested effects, or when you have segments or motion effects that begin or end with a transition effect.

Rendering a Submaster effect creates a single media file that contains all the selected effects.



A Submaster effect maintains links to the original media files so you should not delete the original files. If you want to combine tracks to create a sequence that is independent from the original media files, use Video Mixdown.

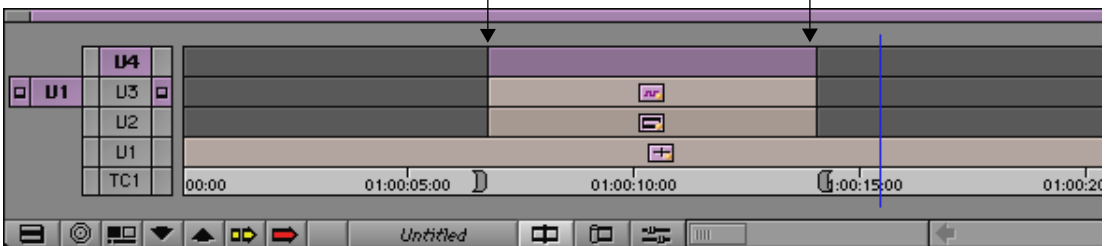


The Submaster effect does not render each track separately, so you cannot play each track individually, and the blue dot remains in the effect icon. In addition, you cannot delete a track below a Submaster effect or it becomes unrendered.

To apply a Submaster effect to effects:

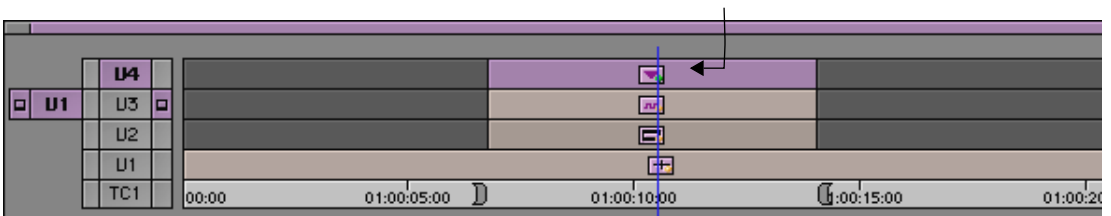
1. Choose New Video Track from the Clip menu.
2. On the new video track (V4 in the following example), mark two add edits at the start and end of the clips that contain effects to be submastered.

Add edit marks on new track V4;
bracket clips on tracks V1, V2, V3



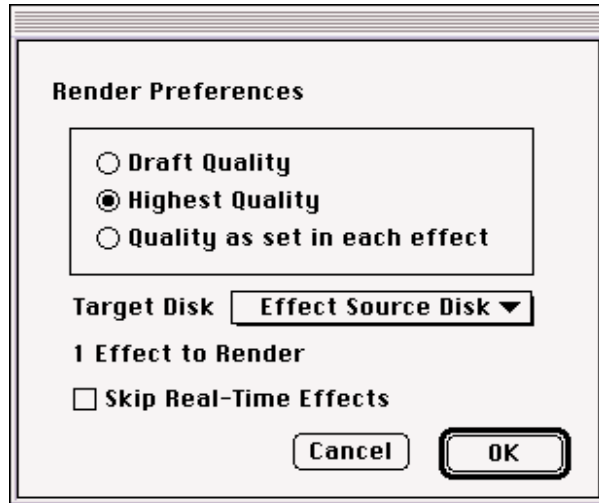
3. Choose Effect Palette from the Tools menu.
4. Click and drag the Submaster Effect icon from the Image category of the Effect Palette between the add edits you added on the new track.

Submaster effect on track V4



5. Highlight the V4 track selector and deselect any other tracks.

6. Place the blue position indicator over the Submaster effect in the Timeline.
7. Choose Render at Position from the Clip menu.
The Render Preferences dialog box appears.



8. Select the effects' quality. The default quality is Highest Quality. This parameter does not apply to all effects.
9. If you do not want to render the real-time effects in the selected group of effects, select the parameter Skip Real-Time Effects.
10. Click OK.

All effects at the position indicator are rendered.

Collapsing Layers into One Submaster Effect

You can use the Collapse button to build a multilayer effect. This feature allows you to nest your effects after building them on separate tracks. To use this feature, map the Collapse button from the Command Palette to your keyboard or a user-selectable palette.

The Collapse function allows you to build your effect at the topmost level and when you are finished, collapse the layers automatically into one Submaster effect. This function is useful for simplifying a sequence with complex compositing. Once you have collapsed a complex composite, you can easily add transition effects to the start and end of the newly created Submaster composite effect.



You can also use the Collapse feature to simplify the deletion of multilayered segment effects. After collapsing the effects, you can select the resulting segment and press the Delete key twice to delete the effect and all the layers.

After the tracks are collapsed into a Submaster effect, the Avid Composer system recognizes a Submaster effect as a multilayer effect instead of a single-layer effect. This allows you to add chroma keys and other additional multilayer effects to the nested tracks within a Submaster effect.



You can drag “two-channel” effects (such as chroma key) onto Submaster effects if the submaster contains two or more nested tracks. This is useful after performing a Collapse operation to composite the newly created submaster over another background.

To collapse a sequence:

1. Highlight all the tracks you want to collapse. The tracks must be adjacent.
2. Mark an IN point and an OUT point around the area to be collapsed.
3. Press the Collapse button.



The following procedure shows an alternate way to use the Collapse feature:

1. Enter Segment mode.
2. Select the segments you want to collapse.
3. Press the Collapse button.

Performing a Video Mixdown

Video Mixdown allows you to combine several tracks into a new master clip. You can use Video Mixdown after you have finished building your sequence and want to make it into one piece (for example, a standard opening to a program). It can be useful for a complex sequence you need to use repeatedly or if you want to add a motion effect to an entire sequence.

Video Mixdown is similar to Collapse; the difference is the end result.

- With Collapse, you collapse the tracks into a Submaster effect. After you perform a Collapse, you are still able to step inside the submaster nest and continue to work on the individual elements that make up the composite effect.
- With Video Mixdown, your end result is a new master clip made up of all the tracks you built on different layers. Those tracks become one clip; you cannot separate the tracks to work on them or step into the sequence.

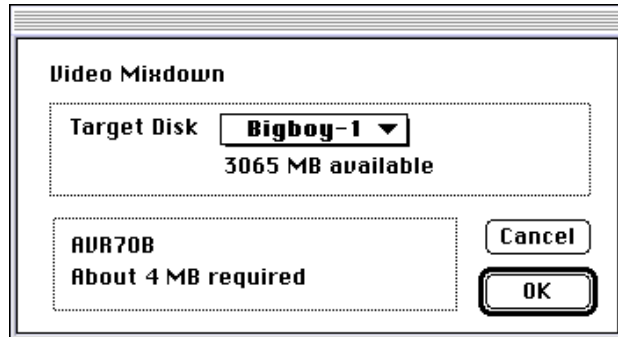


You cannot generate an EDL or film cut list for a sequence that contains a video mixdown. To work around this, you can either remove the video mixdown or maintain a version of the sequence that does not contain a video mixdown.

To perform a video mixdown:

1. Activate the Video monitor in the Timeline for the highest track you want to include in the video mixdown.
2. Mark an IN point and an OUT point around the area to mix down.
3. Select Video Mixdown from the Special menu.

The Video Mixdown dialog box appears.



4. Choose a Target Disk for storing the new master clip and click OK.

A thermometer appears, indicating the progress of the video mixdown. When the video mixdown is completed, a new clip appears in the bin along with the sequence, and a new media file is created on the target disk.



CHAPTER 5

Creating Titles and Graphic Objects

The Title Tool enables you to create titles that incorporate text, graphic objects, imported graphics, and video. Each title you create is saved in a bin and can be edited into your sequences. This chapter explains how to create titles, including graphic objects. Throughout this chapter, the term “title” refers to both text and graphics.

- [Task Overview — Creating and Editing Titles](#)
- [Downstream Keying of Titles and Graphics](#)
- [Opening the Title Tool](#)
- [Understanding the Title Tool Window](#)
- [Setting Up the Drawing Environment](#)
- [Creating Graphic Objects](#)
- [Creating Rolling or Crawling Titles](#)
- [Choosing Colors and Setting Transparency](#)
- [Working with Shadows](#)
- [Manipulating Objects](#)
- [Saving Titles and Title Styles](#)
- [Exporting a Title as a Graphics File](#)

Task Overview — Creating and Editing Titles

The following is an overview of the tasks you will perform to create a title:

- **Set up the drawing environment.** After you open the Title Tool, you can choose whether to display a color background or a frame of video from your sequence. You can also use safe colors or safe title and action guidelines, or apply a grid for the placement of objects.
- **Create a new title with the Title Tool.** You create the title by working with text and graphics objects, and then applying and adjusting borders, colors, transparency, and shadows.
- **Save the title and exit the Title Tool.** When you save a new title, you select an AVR that is compatible with your project and a target disk for the title media. You can also save just the styles for the title for future use. When you close the Title Tool, the new title appears in the bin and in the Source window, ready for editing.

These basic procedures are described throughout this chapter. For information on editing a title into a sequence, see Chapter 6.

Downstream Keying of Titles and Graphics

By default, all titles are created using the Avid Composer system's *downstream key* (DSK) capabilities. Graphic elements imported with an alpha channel are also created as DSK clips.

Downstream keying allows you to add uncompressed titles or graphics over multiple streams of compressed media and continue to play the sequence in real time. The real benefits of downstream keying are seen during editing of Title Effect clips into sequences.



For information about editing with DSK titles, including descriptions of various restrictions and playback capabilities, see Chapter 6.

Opening the Title Tool

To open the Title Tool:

1. In the Record monitor, place the blue position indicator on the video frame to be used as a reference.

If you are not using video as the background, you can skip this step. For more information, see [“Selecting a Background” on page 153](#).

2. Choose New Title from the Clip menu.



The Title Tool window opens. The Text Tool is automatically selected, and the cursor becomes an I-beam, ready for entering text.

Understanding the Title Tool Window

The following illustration shows a title over a video background:



The Title Tool window has several major components:

- A video background based on a sequence, or a color background that you create.
- The title or graphic in the foreground that you create.
- The safe title and safe action area guidelines. For more information, see [“Using Title and Action Guidelines” on page 152](#).
- The tool bar at the bottom of the screen. For more information see [“Understanding the Tool Bar” on page 149](#).
- In addition, there are title-related menu items on the File, Edit, Object, and Alignment menus. These menu items are described throughout this chapter.

Understanding the Tool Bar

At the bottom of the Title Tool window are tools and pop-up menus you can use for creating and editing text and objects. They work much like similar tools in other draw and paint programs.

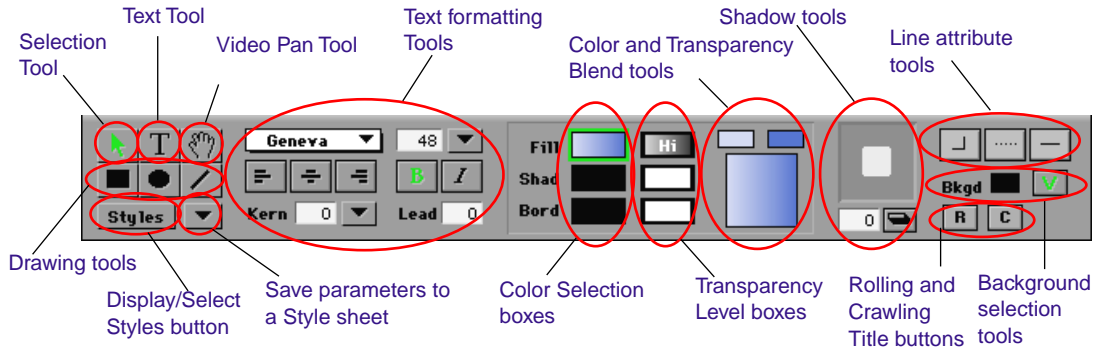


Table 5-1 briefly describes each section of the tool bar:

Table 5-1 Tool Bar Elements

Tool	Description
Selection Tool	Changes the cursor to an arrow and allows you to select text or objects for operations. See “Using the Selection Tool” on page 151 .
Text Tool	Changes the cursor to an I-beam and allows you to enter text. See “Working with Text” on page 156 .
Video Pan Tool	Changes the cursor to a hand and allows you to pan around the entire video clip within the Title Tool window.
Drawing tools	Allow you to draw boxes, circles, ovals, and lines. See “Creating Graphic Objects” on page 165 .
Style sheet	Allows you to set up title style templates that you can use repeatedly. See “Saving Title Styles” on page 197 .

Table 5-1 Tool Bar Elements (Continued)

Tool	Description
Display/Select Styles	Displays examples of the styles you defined and allows you to select one.
Text formatting tools	Allow you to set various text attributes such as font, font size, kerning, and leading. See “Formatting the Text” on page 158 .
Color Selection boxes	Allows you to change the color of text and objects. See “Choosing Colors and Setting Transparency” on page 177 .
Transparency Level boxes	Allows you to change the transparency levels of text and objects. See “Adjusting the Transparency” on page 181 .
Color and Transparency Blend tools	Allow you to create a blend between two colors or two transparency values.
Shadow tools	Allow you to create drop shadows and depth shadows for text and objects. See “Working with Shadows” on page 183 .
Line attribute tools	Allow you to change the corners of boxes, line and border thickness, and arrowhead styles. See “Selecting Line Attributes” on page 167 .
Rolling and Crawling Title buttons	Allow you to create rolling and crawling titles. See “Creating Rolling or Crawling Titles” on page 170 .
Background selection tools	Allows you to switch between a video and opaque background and change the color of opaque backgrounds. See “Selecting a Background” on page 153 .

Using the Selection Tool

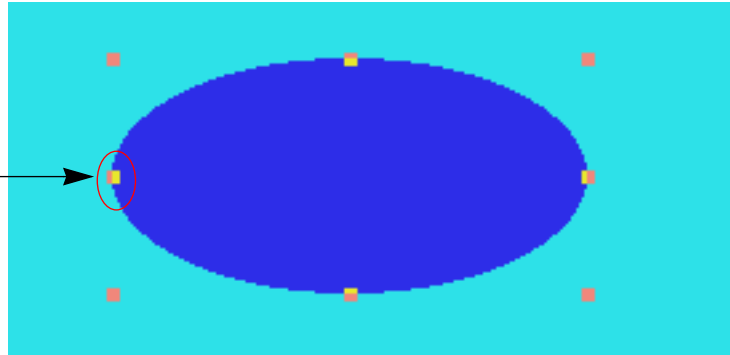
Selection Tool



The Selection Tool is one of the most frequently used tools. You use the Selection Tool when performing certain operations on objects you create, such as moving, formatting, resizing, or applying color.

To select an object, choose the Selection Tool and click an object. Selection handles appear around the object.

Selection handle for width



You can Option-click anywhere in the Title Tool window to switch between the Selection Tool and the Text Tool. You can also press and hold the Control key to display the Selection Tool temporarily at any time.

To select multiple objects, Shift-click with the Selection Tool, or click and drag the cursor to draw a lasso around the objects.



After you use a tool in the tool bar, the system reverts to the Selection Tool, and the cursor becomes an arrow. To prevent a tool from automatically reverting to the Selection Tool, double-click the tool's icon.

Setting Up the Drawing Environment

This section describes some aspects of the Title Tool that you can use to set up your titling/drawing session.



You can set or change these features at any time during your work on a title. These settings are stored with User settings and will appear each time a particular user opens the Title Tool.

Previewing Titles

Titles are always saved in anti-aliased format.

Text and objects in titles are created anti-aliased with an 8-bit alpha channel. Anti-aliasing ensures that text, lines, and object edges appear smooth, regardless of size. You can preview a title to see the title drawn with anti-aliasing, just as it will be saved.

To display anti-aliased titles, choose Preview from the Object menu.

As you continue to edit the title, the anti-aliased preview disappears. Choose Preview again each time you want to view the title with anti-aliasing.

Using Title and Action Guidelines

For Film projects, see [“Displaying the Aspect Ratio Grid for Film Projects” on page 89](#).

By default, the system displays two outlined boxes in the Title Tool window to use as guidelines (see the illustration at the beginning of the section [“Understanding the Title Tool Window” on page 148](#)). The inner box is the safe title area. All text for television broadcast should remain within this inner box. The outer box is the safe action area for video display. These guidelines are self-adjusting for PAL and NTSC projects.



All DSK titles must be created within (or cropped to within) the safe title area to guarantee real-time playback.

To display the safe title area or safe action area guidelines, choose Safe Title Area/Global Grid from the Object menu. You can also click the Grid button in the Effect Editor.

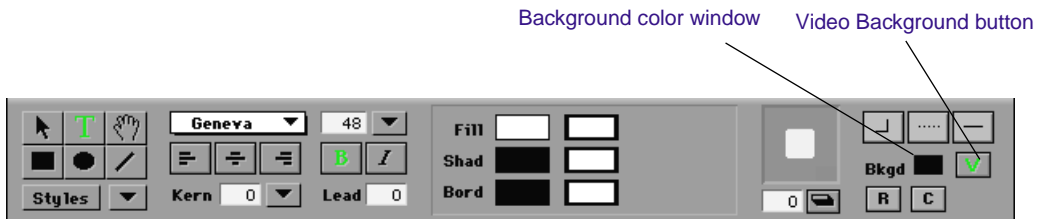
Using Safe Colors

If you plan to use your title for television broadcast, you can set the Safe Colors command in the Object menu. This command displays only low saturation colors for use in text, objects, and background. Colors with low saturation look best when combined with video. By default, Safe Colors is turned on.

To display only safe colors, choose Safe Colors from the Object menu.

Selecting a Background

Use the Video Background button to toggle between a video background and an opaque color background.



Using a Video Background

If there is a sequence in the Record monitor, the Title Tool opens with a video background. The location of the position indicator in the Timeline at the time you open the Title Tool determines the initial video frame that displays. If there is no sequence in the Record monitor, the Title Tool opens with no video showing (the background appears black).

The Video Background button is green when you are creating a title for display over a video background.

Use the background video frame as a reference. It does not become part of the title you create. You can edit the title anywhere else in the current sequence or in another sequence.

Updating the Video Background

You can update the video background at any time while creating titles within the Title Tool.

To update the video background:



1. Click the Video Background (V) button in the Title Tool to activate video background if you have not already done so.
2. Activate Source/Record mode with the sequence loaded into the Record monitor.
3. Move the position bar in the Timeline or Record monitor to display the new frame.
4. Click again in the Title Tool to activate its window.

The background is updated to reflect the current contents of the Record monitor.

Creating a Color Background

To create a title that appears over an opaque color background:

1. Click the Video Background button to toggle off the video background. The V in the Video Background button turns black.
2. Click and hold on the Background color window.

The Title Tool Color Picker dialog box appears.

3. Use the Title Tool Color Picker dialog box, eyedropper, or Macintosh Color Picker to select a color. See [“Choosing Colors and Set-](#)

[ting Transparency” on page 177](#) for a description of how to use these tools. The default background color is black.



When you create a title with a color background, it is opaque and it cannot be used to key over video.



You cannot create rolling or crawling titles with a color background.

Displaying a Grid

You can display a grid to help you position text and objects. The visible grid does not appear when you save the title.

To display a grid, choose Show Alignment Grid from the Alignment menu.

Snapping to a Grid

The snap grid is an invisible grid that helps position and connect objects. The snap grid has four lines for each line in the visible grid. Each square in the grid is subdivided by four invisible vertical and horizontal grid lines. Text and objects can snap to these lines.

To snap to a grid, choose Align to Grid from the Alignment menu.

When you create or drag an object in the Title Tool, the object snaps to the nearest grid line.

Bringing the Title Tool Window to the Foreground

If the Title Tool becomes obscured by another window, you can instruct the Avid Composer system to redisplay the tool. Choose Title Tool from the Windows menu.

Working with Text

By default, the Text Tool is active when you open the Title Tool, and you can begin entering text as soon as you click in the Title Tool window.



Option-click anywhere in the Title Tool window to switch between the Selection Tool and the Text Tool.

To use the Text Tool at any other time, click the Text Tool icon, click anywhere within the text object, and begin typing. An I-beam cursor indicates your position within the text. The Text Tool remains selected until you select another tool.



For information on previewing smooth text, see [“Previewing Titles” on page 152](#).

Creating Text

To create text:

1. Click the Text Tool on the tool bar.
The cursor becomes an I-beam.
2. Click the position in the frame where you want to add text.
A blinking insertion point appears.
3. Type the text. To insert a line return, press Return.



Text is word-wrapped automatically as you type. You can adjust the wrapping by changing the width of the text object. For more information, see [“Resizing Text Objects” on page 157](#).

4. When you have finished typing, click the Selection Tool on the tool bar to deselect the text object.



When you create text that is lined up on the left side using left justification (the default), you can eliminate the unused space on the right side of the newly created text object, especially if you want to use the Alignment menu commands. To eliminate the space, click the middle handle on the right side of the Text selection box and drag it to the left until it is closer to the text.

Resizing Text Objects

When you resize a text object, the text remains the same size but rewraps to fill the reshaped area.

To resize a text object:

1. Select the object with the Selection Tool.
2. Click and drag one of the object selection handles for width.



You can resize only the width of a text object. The height of a text object is automatically determined by the amount of text.

Repositioning Text Objects

To reposition a text object:

1. Click the Selection Tool on the tool bar and click the text object to select it.
2. Move the text:
 - Click in the middle of the object (not a handle) and drag it to a new position.
 - Use the arrow keys to move the object one pixel at a time.
 - Use commands on the Alignment menu to position the text. For more information, see [“Aligning Objects” on page 189](#).

Editing a Text String

To edit an existing text string, choose the Text Tool, and click anywhere in the text. You can perform the following tasks:

- Use the arrow keys to move around within the text string.
- Type additional characters.
- Press Return to enter a line return.
- Drag to select characters.
- Use the Cut, Copy, and Paste commands from the Edit menu.
- Use the Delete key.
- Change the formatting of the selected text, as described in [“Formatting the Text” on page 158](#).

Formatting the Text

The text formatting tools control the appearance of text. You can click a text object with the Selection Tool to format all the text within it, or you can use the Text Tool to select a string of text within a text object to format individual characters or words.



Text formatting tools

You can modify the following text attributes for either a text object or a selected text string:

- Current font
- Bold and italic

- Point size
- Kerning
- Leading

You can modify the following attributes for an entire text object only:

- Color (see [“Adjusting the Color” on page 178](#))
- Transparency (see [“Adjusting the Transparency” on page 181](#))
- Drop and depth shadows (see [“Working with Shadows” on page 183](#))
- Outlined text (see [“Selecting a Line or Border Width” on page 167](#))
- Justification



If you want to create text elements in the title with different appearances, then create a separate text object for each set of attributes.

Setting the Default Text Attributes

When you start the application and open the Title Tool, the Avid Composer system uses default text attributes (including 48-point Geneva font). You can change the defaults at any time. Changes you make to the default text attributes apply until you quit the application.

To change the default text attributes:

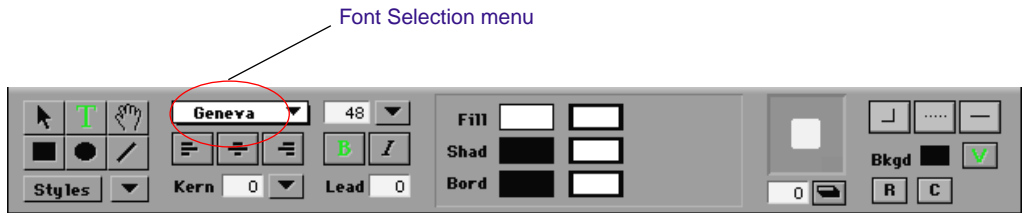
1. Click the Selection Tool (arrow).
2. Click in the Title Tool window but do not select any text.
3. Change any of the text attributes.

Now whenever you start typing a new text string, the Avid Composer system uses your new defaults.

Selecting a Font

The Font Selection menu shows the current font for a text selection and allows you to change the font.

When you first open the Title Tool, the font listed is the Macintosh preferred system font. If an existing text object is selected, the Font Selection menu displays the font of the text object.



The Font Selection menu displays all fonts currently installed in the Fonts folder of the Macintosh System Folder.

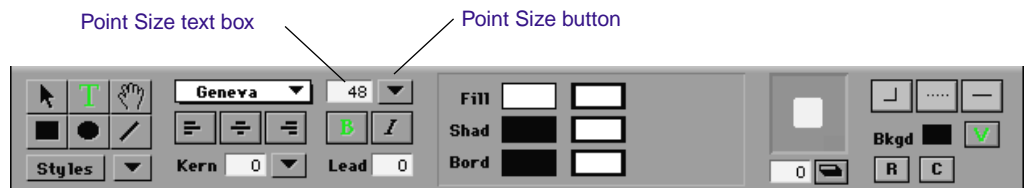
To change the font:

1. Click the Font Selection menu to display the Font pop-up menu.
2. Select a font from the menu.

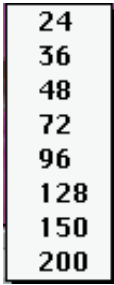
Adjusting Point Size

The point size controls the size of the selected text. A *point* is a typographical unit of measure. There are 12 points to the pica and 72 points to the inch.

You can enter a point size either before or after you type text.



Point Size
pop-up menu



To change the point size:

- Click the Point Size button and choose a standard point size from the pop-up menu.
- Double-click in the text box and enter a point size between 5 and 999; then press Return.
- Click in the text box and use the Up Arrow and Down Arrow keys to change the value incrementally.

Making Text Bold or Italic

The Bold and Italics buttons are located under the Point Size text box.



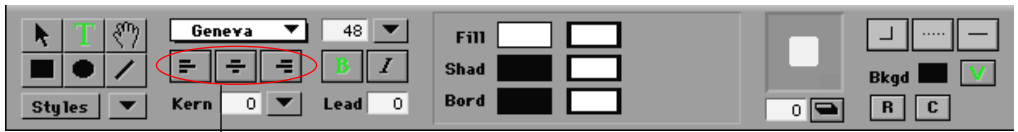
Bold and Italics buttons

In addition, the Object menu contains commands for bold and italics.

To change the text style, select the text you want to change and click the appropriate button, or select the appropriate command from the Object menu. You can also use Shift-⌘-B for bold and Shift-⌘-I for italic.

Justifying the Text

Below the Font Selection menu are the buttons for text justification. *Text justification* controls the alignment of text.



Text Justification buttons

Click the left Text Justification button to left justify text within the object. Click the center button to center text as you type within the object. Click the right button to right justify the text as you type.

Kerning the Text

Kerning improves the appearance of titles by controlling the amount of space between characters. You can expand or condense the character spacing to make text more readable or to create special effects, such as dramatically expanded spacing in a title.

The text kerning controls are located beneath the Text Justification buttons.



Kerning Text box and Kerning Selection button

You can kern the text for an entire text object, or you can manually kern individual character pairs or character strings. For example, if you mix italic and plain versions of a font in a title, you might want to adjust the spacing between characters.



You can adjust kerning for individual characters or selected groups of characters using the arrow keys only.

Loose kerning



Normal kerning



Tight kerning



You can use the menu options to select predefined kerning options, or specify your own custom kerning value. Positive numbers increase the spacing; negative numbers decrease the spacing. You can also use the arrow keys to make incremental adjustments.

To adjust kerning with the arrow keys:

1. Choose the Text Tool.
2. Click between a character pair or select a group of characters to be kerned.
3. Press the Option key and use the Left Arrow or Right Arrow keys to increase or decrease the kerning.

To adjust kerning with the menu options:

1. Select the text.
2. (Option) Click the arrow next to the Kerning text box and choose *Pair Kerning* to eliminate excessive space between some character pairs. Note that pair kerning works only on fonts that support kerning tables (for example, Palatino).

You can choose the kerning value before you type text.



3. Choose a kerning option from the Kerning pop-up menu:

- *Loose* adds space between letters.
- *Normal* leaves spacing unchanged.
- *Tight* closes up the spacing between letters.

To adjust kerning with the text box:

- Click in the Kerning text box and enter a positive or negative numerical value for custom kerning. Kerning values are a percentage of the point size.
- Click in the Kerning text box and use the Up Arrow and Down Arrow keys to change the value incrementally.

The system applies the kerning to the entire text object.

Adjusting Leading

Use *leading* to adjust the line spacing between lines in a title. Leading is measured in points, from baseline to baseline of the lines of text. The Title Tool uses the leading that is built into the font as the default. Positive leading values add space between lines; negative values decrease space. You might want to add leading for sans serif, tall, or boldface fonts, and for fonts with a strong vertical emphasis.



Leading text box

To set leading:

1. Click in the Leading text box.
2. Enter a number to indicate the leading value you want.

The Avid Composer system adjusts leading immediately.

Creating Graphic Objects

The drawing tools enable you to draw squares, rectangles, circles, ovals, and lines. To use the drawing tools, select one of these shapes.



Drawing tools

After creating graphic objects, you can change the following attributes:

- To round the corners of a box, adjust the width of lines and text borders, or add arrowheads to lines, see [“Selecting Line Attributes” on page 167](#).
- To change or blend colors in a graphic object, see [“Adjusting the Color” on page 178](#).
- To apply a drop or depth shadow, see [“Working with Shadows” on page 183](#).
- To add transparency to an object or an object’s shadow, see [“Adjusting the Transparency” on page 181](#).



By default, when you use a drawing tool and deselect the created object, the cursor reverts back to the Selection tool. To avoid this, double-click the drawing tool when you select it in the Title Tool tool bar.

Drawing a Square or Rectangle

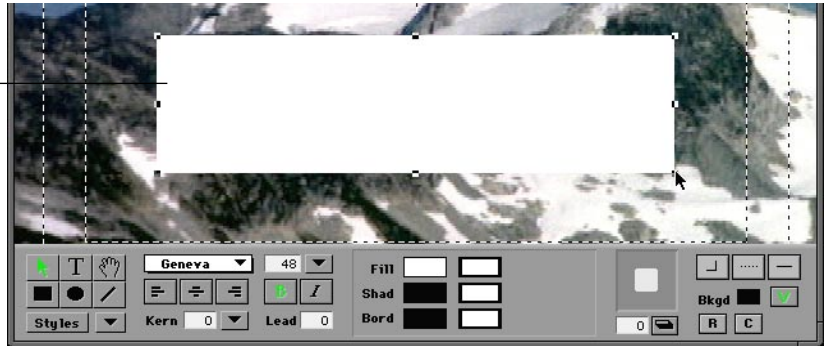
To draw a square or a rectangle:

1. Select the Rectangle Tool on the tool bar.
The cursor becomes a crosshair pointer.
2. Click and drag to create an object.



Shift-dragging constrains the Rectangle Tool to create a square.

Rectangle
drawn over
video back-
ground



Drawing a Circle or Oval

To draw a circle or oval:

1. Select the Oval Tool on the tool bar.

The cursor becomes a crosshair pointer.

2. Click and drag in the Title Tool window to create an object.



Shift-dragging constrains the Oval Tool to create a circle.

Drawing a Line

To draw a line:

1. Select the Line Tool (slanted line) on the tool bar.

The cursor becomes a crosshair pointer.

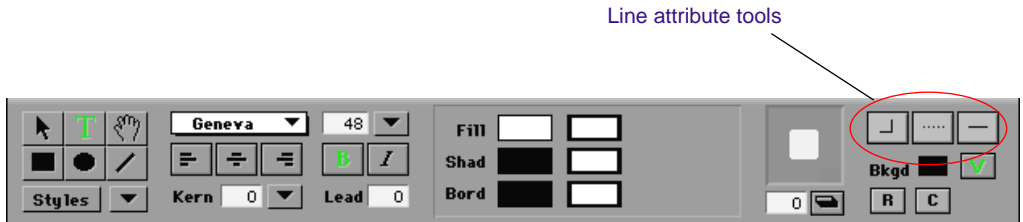
2. Click and drag to create a line.



Shift-dragging constrains the Line Tool to create a horizontal or vertical line.

Selecting Line Attributes

Use the line attribute tools to round the corners of a box, select the width of lines and borders, and add arrowheads to line endpoints.



Rounding Corners



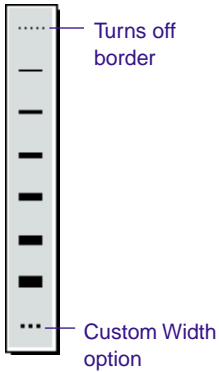
To round box corners:

1. Select a box.
2. Click the Corner button (the button on the left).
The Corner Selection pop-up menu appears.
3. Choose a rounding option from the pop-up menu.

If you choose the Custom Radius option, a dialog box appears for you to enter a custom corner radius.

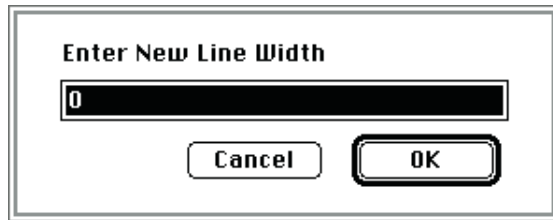
Selecting a Line or Border Width

You can use the Line Width button to change the width of lines created with the drawing tools, or to apply a border outline to text or graphic objects.



To select a line or border width:

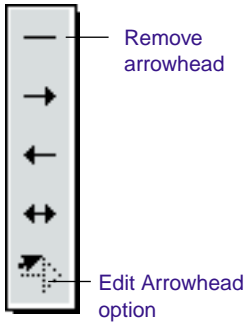
1. Select an object (such as a line, shape, or text object).
2. Click the Line Width button (the middle button) and choose a width from the pop-up menu.
3. Choose from the standard width selections or choose the Custom Width option to open a dialog box and enter a custom width.
4. If you choose the Custom Width option, in the dialog box type a whole number in pixels to specify a custom width. Use a width of 1 or greater for lines and 0 or greater for object outlines. The maximum width is 200.



If you selected a line for modification, the width of the line changes. If you selected an object for modification, the width of the outline changes.



Adding Arrowheads



To add arrowheads to a line:

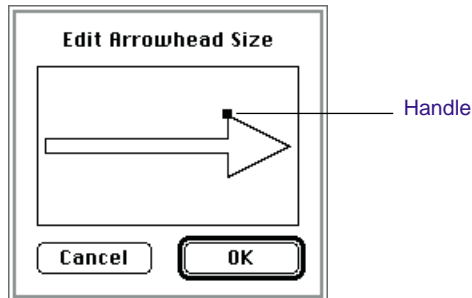
1. Select a line.
2. Click the Arrowhead button on the right edge of the tool bar.
The Arrowhead Selection pop-up menu appears.
3. Choose an arrowhead style from the pop-up menu, or choose the Edit Arrowhead option as described in the following section.

Changing Arrowhead Size

To change the arrowhead size:

1. Select a line.
2. Click the Arrowhead button.
3. Choose the Edit Arrowhead option from the pop-up menu.

The Edit Arrowhead Size dialog box appears.



4. Click the handle on the arrowhead and drag it vertically or horizontally to resize and reshape it.
5. Click OK. The arrowhead is applied to the line.

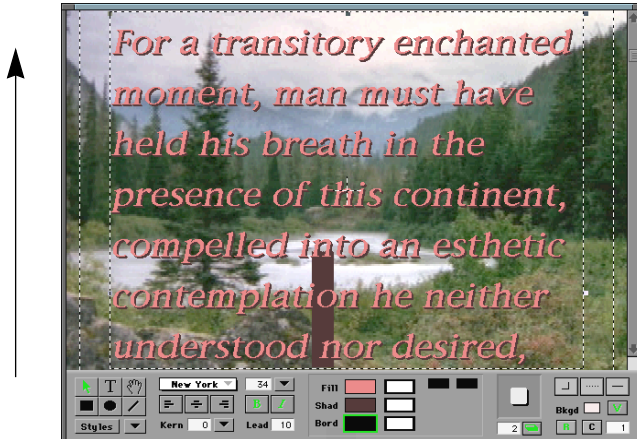
The shape of the arrowhead is in scale with the line width.

Creating Rolling or Crawling Titles

You can create text or graphics that move across the screen. You create the title in the Title Tool and refine the motion during editing.

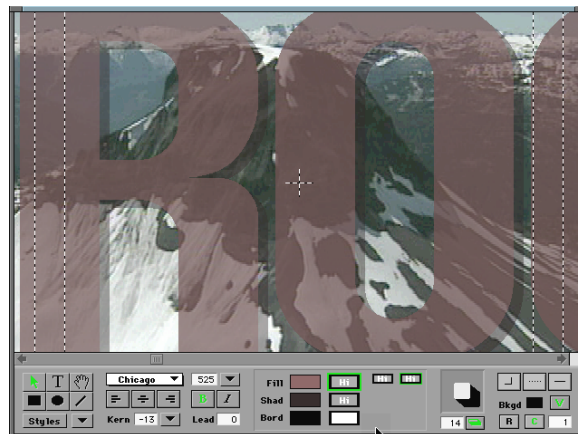
Rolling titles scroll vertically, moving from top to bottom or bottom to top, as shown in the following example.

Rolling titles scroll from bottom to top by default.



Crawling titles scroll horizontally, moving from left to right or right to left, as shown in the following example.

Crawling titles scroll from right to left by default.



Page Count Limits for Rolling or Crawling Titles

Rolling or crawling titles form pages in the Title Tool that are similar to the pages you create in a word processor. A *page* in a rolling or crawling title is a unit the size of a National Television Standards Committee (NTSC) or Phase Alternating Line (PAL) frame.

Table 5-2 shows the maximum number of pages you can create for rolling or crawling titles.

Table 5-2 Title Object Size

	Width	Width	Height	Height
Graphic objects	6 pages NTSC 5 pages PAL	4 K pixels	17 pages NTSC 14 pages PAL	8 K pixels
Text objects	12 pages NTSC 11 pages PAL	8 K pixels	67 pages NTSC 57 pages PAL	32 K pixels

Page limitations are based on the overall size of the text object. Typing more text, increasing the size of the font, or adjusting kerning and leading all affect the number of pages in the object.

- If you reach the end of the page limitation during typing of text, the object stops getting bigger and text entry stops.
- If you attempt to make changes to the text formatting that cause the text to exceed the page limit, an alert box appears stating that the operation will exceed the limit. Click OK to abort the operation and keep the title within the limit.

Using Auto Size Mode

For more information on adding extra pages with Auto Size mode disabled, see [“Adding Pages” on page 175](#).

Auto Size mode causes the Title Tool to add or remove pages automatically as you add, delete, or reformat the text. You can disable Auto Size mode if you want to add extra pages before or after the text to make room for additional title elements, for example.

Auto Size mode is active by default in rolling or crawling modes. To toggle Auto Size mode off or on, choose Auto Size Mode from the Object menu. A check mark indicates that Auto Size mode is enabled.

Setting Up Text Formatting for Rolling Titles

Before creating a rolling title, consider setting up the text formatting defaults, if possible, for such things as font, point size, leading, and kerning.

When you type the text for a rolling title, lines of text wrap appropriately within the safe title area, and the title scrolls down as you type, providing a realistic sense of positioning, word wrap, and page count limitations.



To set up the defaults, see [“Setting the Default Text Attributes” on page 159](#).

Workflow Options for Creating Crawling Titles

Unlike rolling titles, which scroll in the direction of the roll as you type the text, crawling titles do not scroll horizontally in the direction of the crawl during typing. To facilitate the creation of crawling text, consider the following workflow options:

- You can begin typing with a small font size, such as 12 point, to view as much of the text in the window as possible before changing the font size and resizing the text box in a horizontal direction.



To set up font and point size attributes, see [“Setting the Default Text Attributes” on page 159](#).

- You can type the text first as a rolling title. This allows you to view the text as it scrolls down during typing, and also provides you with a scroll bar on the right side of the screen for moving quickly through the text. You can then click the **C** button in the tool bar to convert it to a crawling title before resizing, reformatting, and saving the title.

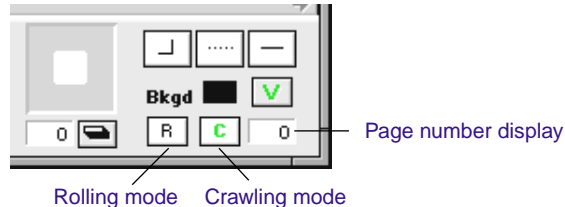
Typing the Rolling or Crawling Text

To type rolling or crawling text:

1. Choose New Title from the Clip menu.

The Title Tool appears.

2. Choose the Text Tool.
3. To make a rolling title, click the **R** button; to make a crawling title, click the **C** button. You cannot select both.



The button turns green, and a page number display appears in the bottom right corner of the Title Tool.



The Video Background button is automatically enabled (you cannot create rolling or crawling titles over a color background).

4. Type the title text. The text wraps automatically as you type.



All DSK rolling titles must be created within (or cropped to within) the safe title area on the left and right sides to guarantee real-time playback. Crawling titles must be created within (or cropped to within) the safe title area on the top and bottom.

5. When finished, click the Selection Tool in the Title Tool tool bar to select the new text object.

Resizing a Rolling or Crawling Title

To resize a rolling or crawling title:

1. Select the title object with the Selection Tool.
2. Click the object selection handle, and drag to resize the title until it appears as you wish.



You can resize only the width of a text object. The height of a text object is automatically determined by the amount of text.



Unlike still titles, a rolling or crawling title object can be sized to extend beyond the boundaries of the screen in the direction of the roll or crawl.

Scrolling Through a Title

When you create a rolling or crawling title, scroll bars appear:

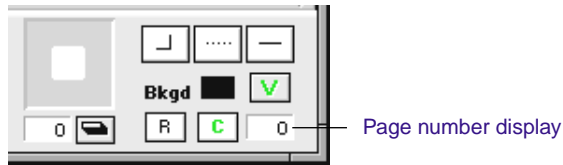
- In rolling titles, a scroll bar appears along the right side of the Title Tool window for moving vertically through the title.
- In crawling titles, a scroll bar appears along the bottom of the window for moving horizontally through the title.

Use standard Macintosh techniques for scrolling, such as clicking the arrow icons, dragging the scroll box, or clicking in the gray areas between the scroll box and the arrows. You can also do the following:

- Press the Page Up or Page Down keys on the keyboard to move through the title one page at a time.
- Press the Home or End keys to go to the beginning or end of the title.
- Press the Up Arrow and Down Arrow keys to move the cursor through the title one line at a time.

Going to a Page

When you first create a rolling or crawling title, a page number text box appears in the lower right corner of the Title Tool.



To go to a different page:

1. Click in the page number display.
2. Enter a page number for a specific page, or use the Up Arrow and Down Arrow keys to cycle through the page numbers.
3. Press Enter or Return.

Adding Pages

You can add pages to a rolling or crawling title to create space for adding new elements.

To add pages:

1. Choose Auto Size Mode from the Object menu to disable it (the check mark should no longer appear in the menu).



The Add Page command is not available when Auto Size mode is enabled.

2. Choose Add Page from the Object menu to add a page. You can choose Add Page repeatedly to continue adding pages up to the maximum page count.



For more information on maximum page counts, see [“Page Count Limits for Rolling or Crawling Titles” on page 171.](#)

3. Select text or graphic objects within the title and position them within the range of available pages, or create new elements.

Deleting Additional Pages

You cannot select individual pages to delete during the creation of a rolling or crawling title. However, if you add pages to the title with Auto Size mode disabled, once you complete the title you can remove excess pages after the title elements.

To delete additional pages, choose Auto Size Mode from the Object menu. Excess pages at the end of the title are removed.

Formatting Rolling or Crawling Titles

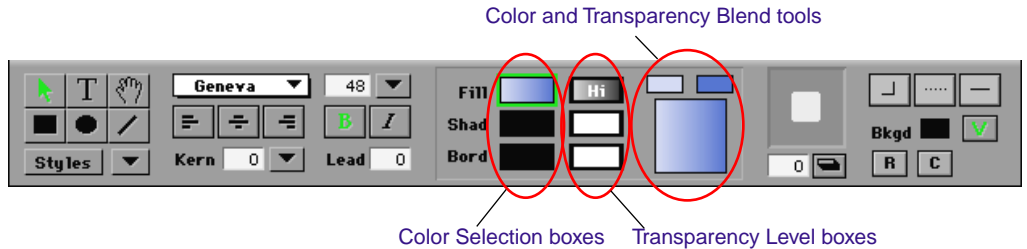
You can modify the text attributes of a rolling or crawling title with the same methods used to format still text elements:

- For information on adjusting font, point size, style, justification, kerning and leading, see [“Formatting the Text” on page 158.](#)
- To create outlines surrounding the text, see [“Selecting a Line or Border Width” on page 167.](#)
- For information on adjusting color and transparency, see [“Choosing Colors and Setting Transparency” on page 177.](#)
- To add a drop or depth shadow, see [“Working with Shadows” on page 183.](#)

Choosing Colors and Setting Transparency

You can select the color and transparency for text and graphic objects, their shadows and borders.

The following illustration shows the boxes associated with color and transparency:



- The Color Selection boxes control fill (Fill), shadow (Shad), and border (Bord) color, respectively.
- The Transparency Level boxes control fill, shadow, and border transparency, respectively.
- The Color and Transparency Blend tools appear when you select the Fill or Border color or Transparency Level box.

If you select a Color Selection box, the top boxes show the two colors that are used to create the blend. The bottom box shows the blended color and allows you to control the direction of the blend or transparency.

If you select a Transparency Level box, the top boxes show the two transparency values that are used to create the blend. The bottom box allows you to control the direction of the transparency blend.

Adjusting the Color

You can select a color from the Title Tool Color Picker, use an eyedropper to select a color from any open application on your computer, or use the Macintosh Color Picker to select a color. All these features are available through the Title Tool Color Picker (see Figure 5-1).

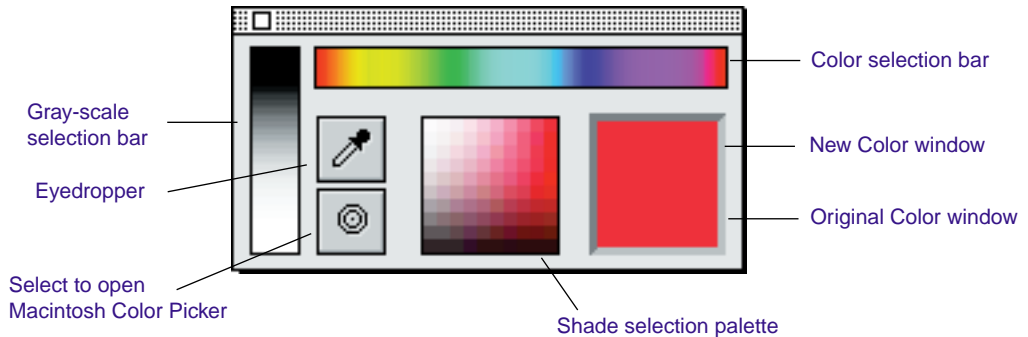


Figure 5-1 Title Tool Color Picker

To choose a color:

1. Select a text or graphic object. If you do not select an object, the color will be applied to the next object you create.
2. Click one of the Color Selection boxes on the Title Tool tool bar:
 - Fill (Fill) applies the color to the selected object.
 - Shadow (Shad) applies the color to the selected object's shadow.
 - Border (Bord) applies the color to the selected object's outline or border.
3. The Title Tool Color Picker appears.



You can drag the Color Picker from the tool bar to create a floating palette.

To choose a gray-scale value, choose a value from the gray-scale selection bar.

4. Choose a color:

- To choose from the Title Tool Color Picker, drag the cursor along the color selection bar to the color you want, and then move the cursor down into the shade selection palette to choose a shade. The color is applied when you release the mouse button.
- To use the eyedropper, drag the cursor to the eyedropper icon and release the mouse button. The cursor changes to the eyedropper. Click the color you want from anywhere in the window to apply the color to the selected object.
- To use the Macintosh Color Picker, drag the cursor to the round button icon under the eyedropper, and release the mouse button. The Macintosh Color Picker dialog box appears. For more information, see [“Using the Macintosh Color Picker” on page 105](#).

Blending Two Colors in an Object

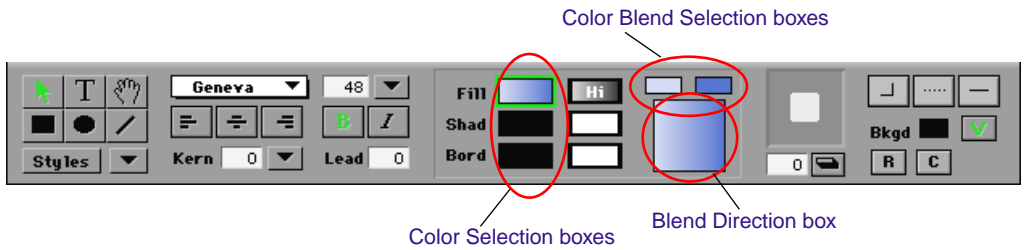
You can blend the fill and border but you cannot blend a shadow.

The Avid Composer system lets you blend two colors in a text or graphic object, or in a border. You can also specify the direction of the blend.

To blend two colors:

1. Select text or another object.
2. Click the Color Selection box for either fill or border.

The Color Blend tools appear.



3. Click one of the Color Blend Selection boxes and choose a color using either the Color Palette, the eyedropper, or the Color Picker.
4. Click the other Color Blend Selection box, and choose the second color for your blend.



The Blend Direction box appears below the two Color Blend selection boxes. This box displays the blend and allows you to specify the direction of the blend (for example, left to right).

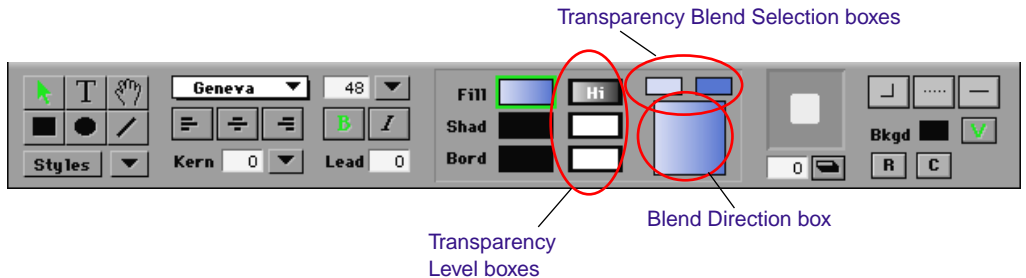
5. Click and drag clockwise in the Blend Direction box or counter-clockwise to achieve the effect you want.

As you rotate the pointer, the position of the two colors rotates. The change takes effect as soon as you release the mouse button.

Adjusting the Transparency

After you select a color, you can select the color transparency. To do so, click the appropriate Transparency Level box, depending on whether the transparency will apply to an object, or adjust a shadow or outline around the selected object.

The Transparency Level box displays the text “Hi” with a background that changes from black to white. A completely white background represents a fully transparent object or portion of an object. The following illustration shows an example:



In the pop-up control that appears, drag the slider until you attain the transparency you want, and then release the mouse button. The system immediately applies the transparency to your selection.



You might find it useful to turn off the shadow for an object while experimenting with transparency. Set the shadow value to 0 in the Shadow Depth Depth text box described in [“Working with Shadows”](#) on page 183.

Blending Transparency

You can blend the transparency of fills and borders by using a technique similar to blending colors. Use the Transparency Blend Selection boxes to set the blend values. Use the Blend Direction box to set the direction of the blend.

Transparency blend controls apply a gradient transparency to the selected object.



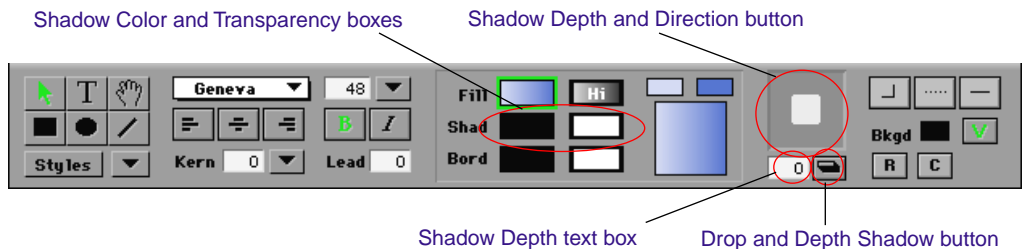
For more information on creating a blend, see [“Blending Two Colors in an Object” on page 179.](#)

Working with Shadows

You can add a drop shadow or depth shadow to text and objects. A drop shadow is offset from the title itself, as though cast by a light source. A depth shadow extends from the edges of the title, as though the title were three-dimensional. The following illustration shows an example of drop and depth shadows.



You can also select the color, width, direction, and transparency for the shadow. You can place the shadow anywhere within the title without restriction. The following illustration shows the tools used to create and modify shadows:



Applying Shadows

To apply shadows to objects:

1. Select text or an object.
2. Toggle the Drop and Depth Shadow button to select a drop or depth shadow.
3. Adjust the depth or direction of the shadow as follows:
 - Click the Shadow Depth and Direction button and drag the shadow displayed to any position.
 - Press the Shift key; then click and drag the shadow in the Shadow Depth and Direction button to restrict shadow placement to 45-degree angles around the title.
 - Press the Shift key and use the arrow keys to move the shadow to any position around the title.
 - You can also type a value in the Shadow Depth text box to change the shadow depth by increments.

The Avid Composer system automatically orients the shadow to the selected object. You can continue to follow these procedures to adjust the shadow until you achieve the effect you want.

Adjusting Shadow Color and Transparency

Use the procedures described in [“Choosing Colors and Setting Transparency” on page 177](#) to apply color and transparency to shadows.

Manipulating Objects

This section describes how to manipulate objects after you have created them. See [“Using the Selection Tool” on page 151](#) for a description of how to select objects.

Viewing Titles Full Frame

If you are working on an Avid Composer system with monitor resolution of 640 x 480 pixels, you can use the Full Frame command in the Object menu to get a better view of your title against the video or color background.



If your monitor is set to a higher resolution, such as 1024 x 768, the Full Frame command does not appear in the Object menu.

To view a title full frame in a 640 x 480 display:

- Choose Full Frame from the Object menu to hide the tool bar and view the title full frame.
- Choose Full Frame again to return to normal view.

Basic Manipulation Operations

You can use commands from the Edit menu to manipulate objects.

To perform basic operations:

1. Select an object, such as text, a square, a rectangle, a circle, or an oval.
2. Perform one of the following:
 - Choose Cut from the Edit menu to cut an object and move it to the Clipboard.

- Choose Copy from the Edit menu to copy an object to the Clipboard.
- Choose Paste from the Edit menu to paste an object from the Clipboard to the same location as the object selected for the last Cut or Copy operation.
- Choose Select All from the Edit menu to select all objects.
- Choose Clear from the Edit menu to delete selected objects.



You cannot delete locked objects. Unlock objects you want to delete.

- Choose Duplicate from the Edit menu to duplicate an object.

Layering Text and Objects

You can use commands on the upper portion of the Object menu to layer text and objects to create complex graphics.

Object	
Bring To Front	⌘⌘ =
Send To Back	⌘⌘ -
Bring Forward	
Send Backward	

The last object created occupies the top layer, but you can move objects forward or backward within the screen area.

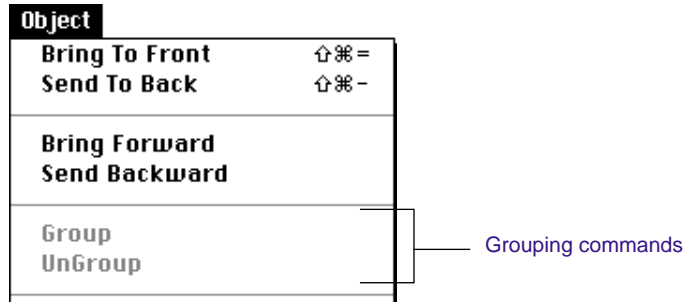
To adjust the layering of objects in a title:

1. Select an object with the Selection Tool.
2. Choose one of the following commands from the Object menu:
 - Choose Bring To Front to bring an object to the top layer.
 - Choose Send To Back to send an object to the bottom layer.

- Choose Bring Forward to move an object forward one layer.
- Choose Send Backward to move an object back one layer.

Grouping and Ungrouping Objects

After creating a number of text and graphic objects, you can use commands on the Object menu to group the objects and treat them as a single object.



Combining the objects into a group means that actions, such as moving or applying color, affect all objects in the group.

To group objects:

1. Shift-click multiple objects with the Selection Tool to select them.
2. Choose Group from the Object menu.

The selected objects are grouped together. Changes to any individual object in the group affect all objects in the group.

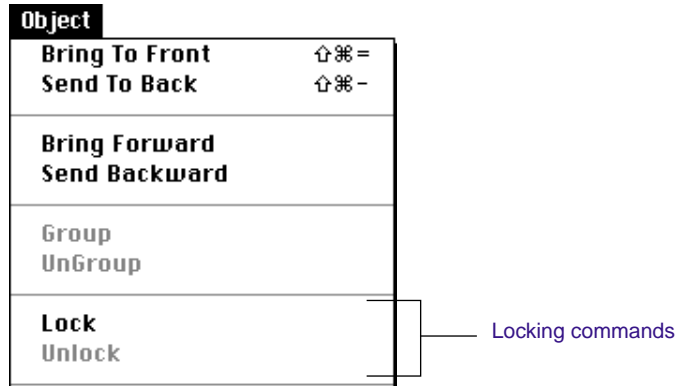
To ungroup objects:

1. Select a grouped object.
2. Choose UnGroup from the Object menu.

Everything in the group becomes an individual object that you can move or change separately.

Locking and Unlocking Objects

You can lock objects using commands on the Object menu so that changes to default settings, such as the font setting or object position, do not affect the locked objects.



You may also want to lock objects so that you do not inadvertently change them while working on other objects. You can lock an individual object or multiple objects.

To lock objects:

1. Select an object.
2. Choose Lock from the Object menu.

The object is locked and cannot be changed until you unlock it. When selected, the object displays hollow selection handles to indicate that it is locked.

Hollow object selection handles



To unlock objects:

1. Select a locked object.
2. Choose Unlock from the Object menu.

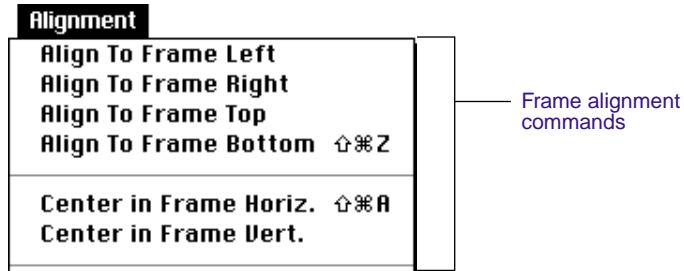
The object is unlocked and can be changed.

Aligning Objects

You can use the Alignment menu commands to align text and objects to each other and to the frame. Aligning to the frame refers to the safe title area. For information about the safe title area, see [“Saving Titles and Title Styles” on page 192.](#)

To align objects to the frame:

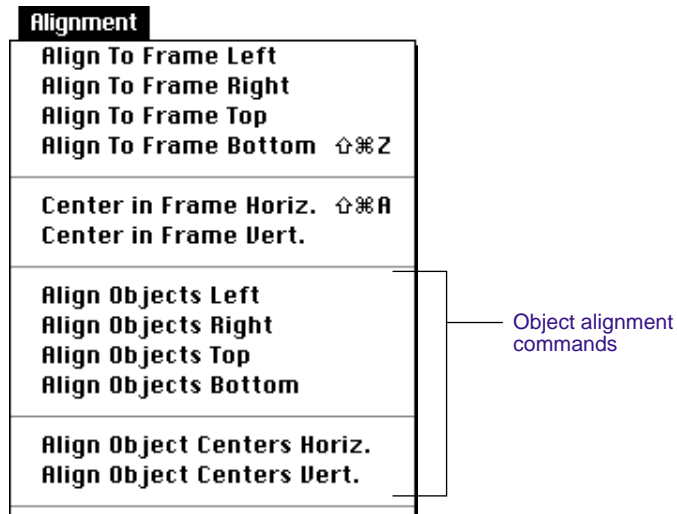
1. Select an object with the Selection Tool, or Shift-select multiple objects.
2. Choose a frame alignment direction from the upper portion of the Alignment menu.



The objects are aligned within the safe title area.

To align objects to each other:

1. Shift-select or lasso more than one object with the Selection Tool.
2. Choose an object alignment direction from the Alignment menu.



For information on aligning objects to a grid, see [“Displaying a Grid” on page 155](#).

Distributing Objects

You can use Alignment menu commands to distribute text and graphic objects evenly across the safe title area. For information about the safe title area, see [“Saving Titles and Title Styles” on page 192](#).

To distribute objects:

1. Shift-select at least three objects with the Selection Tool.
2. Choose a distribute command from the Alignment menu:
 - Choose Distribute Left to Right to distribute the objects evenly from left to right across the safe title area.

- Choose Distribute Top to Bottom to distribute the objects evenly from top to bottom across the safe title area.
- Choose Distribute First to Last to distribute the objects evenly between the position of the first object selected and the position of the last object selected. This option is especially useful for aligning object diagonally, or for roughly positioning a group of objects and then lining them up without spreading them out to the edges of the safe title area.

Alignment

Align To Frame Left Align To Frame Right Align To Frame Top Align To Frame Bottom ⌘Z
Center in Frame Horiz. ⌘A Center in Frame Vert.
Align Objects Left Align Objects Right Align Objects Top Align Objects Bottom
Align Object Centers Horiz. Align Object Centers Vert.
Distribute Left to Right Distribute Top to Bottom Distribute First to Last

Distribute
commands

Saving Titles and Title Styles

After creating a new title, there are three basic ways to save your work:

- Save the title and exit the Title Tool.
- Save the title and continue creating additional titles based on the first title.
- Save a title style that you can apply to titles you create in the future.

You can also reopen in the Title Tool a previously saved title and make further changes, as described in this section.



After editing a title into a sequence and adjusting effect parameters, you can also save a Title Effect template that contains only the effect information (without title media), for applying to other previously created titles. For more information, see [“Saving a Title Effect Template” on page 222](#).

Matching Resolutions

When you save a new title, you must choose an AVR for the title that is compatible with the project, based on the following:

- The rules regarding single-field, two-field, and multicamera AVRs apply to titles. In other words, you cannot mix single-field AVR titles with two-field AVR media in a sequence, and you cannot mix either single-field or two-field with m resolutions (multicamera resolution).



For more information on available AVRs and mixing resolutions in a project, see the [Avid Media Composer Products Reference](#).

- Your Avid Composer system uses the resolution information to compute the dimensions of the title.
- Even though DSK titles are uncompressed, if you decide during editing that you need to render the title to create a layered effect,

the title renders with the AVR you select when you first save the title.

Using the Fast Save Option

You can use the Fast Save option to work more quickly when creating and saving multiple titles in a Title Tool session. Fast Save skips the steps that create anti-aliased images from title objects. Instead, just the raw title objects (text and graphics) are saved in the bin, with the prefix “unrendered.” Fast Save is ideal for working with multipage rolling or crawling titles with complex styles and shading.



A title with the “unrendered” prefix cannot be displayed in the Source or Record monitors or edited into a sequence.

To use the Fast Save option, select the option Fast Save (unrendered) in the Save Title To Bin dialog box when saving the title.

For complete procedures for saving titles, see [“Saving a Title and Exiting the Title Tool” on page 194](#) or [“Saving Multiple Titles in a Session” on page 195](#).



Fast Save remains in effect until you either deselect it, load a title that was saved without Fast Save selected, or exit the Title Tool.

To render a fast-saved title:

1. Press the Control key and double-click the title in the bin to load it into the Title Tool.



If the Title Tool is already open, you can drag a Title Effect clip from the bin directly into the Title Tool window.

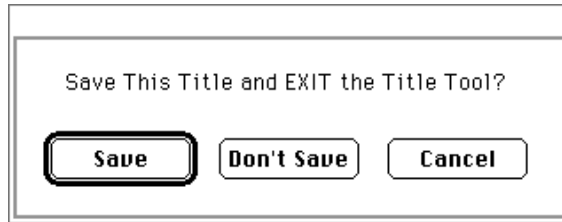
2. Choose Save Title As from the File menu.
3. Choose an AVR, target bin, and target disk for the title.
4. Deselect Fast Save, and click OK.

Saving a Title and Exiting the Title Tool

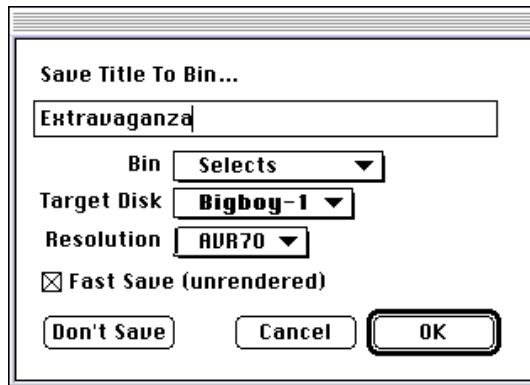
To save the title and exit the Title Tool:

1. Choose Close from the File menu.

A dialog box appears, asking if you want to save the existing title.



2. Click Save. The Save Title To Bin dialog box appears.



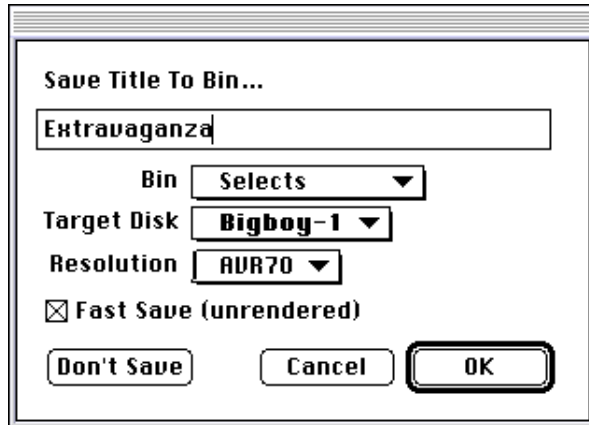
3. Enter a title name to identify the title in the bin; then choose a bin, target disk, and AVR from the pop-up menus.
4. Select or deselect Fast Save, depending on your needs. For more information, see [“Using the Fast Save Option” on page 193](#).
5. Click OK.

The Title Tool window closes, and the new title is loaded into the Source monitor. A two-minute Title Effect clip that corresponds to the new title appears in the bin.

Saving Multiple Titles in a Session

To save multiple titles:

1. Choose Save Title from the File menu. The Save Title To Bin dialog box appears.



2. Enter a title name to identify the title in the bin; then choose a bin, target disk, and AVR from the pop-up menus.
3. Select or deselect the Fast Save option, depending on your needs. For information, see ["Using the Fast Save Option" on page 193](#).
4. Click OK.

The new Title Effect clip appears in the bin.

5. Create another title.
6. Choose Save Title As from the File menu and repeat step 2 for each subsequent title that you create.

When you close the Title Tool, the last title created is loaded into the Source monitor.



If you keep the same name for the title when you choose "Save Title As," the system retains the first clip and creates a new one with the same name plus a two-digit extension that adds incremental numbering for each revised title.

Revising a Title in a Bin

If you want to revise a title that has not been edited into a sequence, you can reopen the title in the Title Tool directly from the bin.

To revise a Title effect in a bin:

1. Press the Control key and double-click the Title Effect icon in the bin. The title opens in the Title Tool.



If the Title Tool is already open, you can drag a Title Effect clip from the bin directly into the Title Tool window.

2. Edit the title using techniques described in Chapter 6.
3. Save the title using one of the following options:
 - **Save Title:** To save the title with the same name and media parameters (AVR, target bin, and target disk), choose Save Title from the File menu.

The revised Title Effect clip replaces the previous clip in the bin. The clip also appears in the Source monitor.

The Title Tool remains open. You can continue making additional titles, or choose Close from the File menu.

- **Save Title As:** To rename the title or change any of the media parameters (AVR, target bin, and target disk):
 - a. Choose Save Title As from the File menu.

The Save Title To Bin dialog box appears.
 - b. Rename the title or choose other options from the Bin, Target Disk, and Resolution pop-up menus.



If you keep the same name for the title, the system retains the original Title Effect clip in the bin and creates a new clip with the same name plus a two-digit extension that adds incremental numbering for each revision.

- c. Select or deselect the Fast Save option, depending on your needs. For more information, see [“Using the Fast Save Option” on page 193](#).
- d. Click OK to save the title and exit the Title Tool.

Saving Title Styles

As you begin to work with a title, you may set up some basic title parameters you will use again for other titles. You can save the following style parameters in the form of a title style:

- Font, style, size, justification, kerning, and leading
- Fill color and transparency
- Shadow color, transparency, depth, direction, and type
- Border color, transparency, and width

The following illustration shows the two menus that allow you to choose and define title styles.



Display and select Styles

Save parameters to a Style sheet

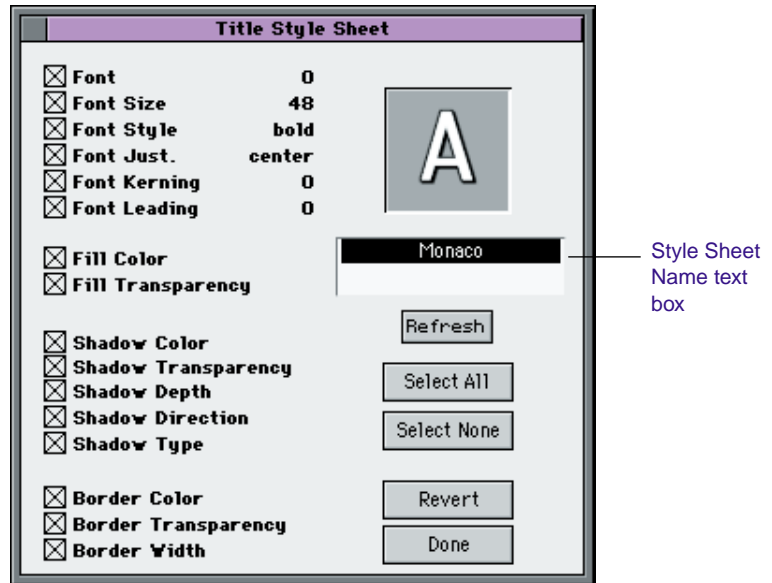
To save title parameters to a Style sheet:

1. Choose the Selection Tool so that the cursor becomes an arrow.
2. Select the object that you want to use as a basis for the title style.
3. Click the triangle to the right of the Styles button.

A menu appears that allows you to choose either an existing title style name or Save As.

4. Choose Save As.

The Title Style Sheet dialog box appears. The following illustration shows an example.



5. Check the parameters that you want to include in the style. The Avid Composer system uses the values from the currently selected object or from the current defaults if no object is selected.
6. Enter a name in the text box, and click Done when you are ready to exit the dialog box and save the values.

Recalling a Title Style

After you have saved your title style, you can recall the style and use the attributes as the defaults in subsequent Title Tool sessions.

To recall title style attributes as the defaults for creating titles:

1. Click the Styles button to display the Styles tear-off menu.

Arrows on the right and left allow you to scroll back and forth.



The menu contains a scaled visual representation of each style.

2. Drag the cursor to the chosen style and release the mouse button.
3. The style attributes appear in the Title Tool tool bar.

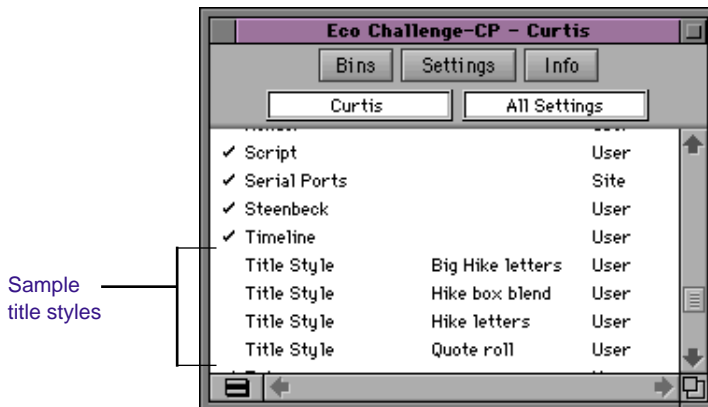
Applying Title Styles to Text Objects

To apply a title style directly to text objects:

1. Select one or more text objects.
2. Click the Styles button to display the Styles tear-off menu.
3. Choose a title style.

Managing Title Styles

The Avid Composer system lists the available title styles in the Project window. Click Settings in the Project window as shown in the following illustration:



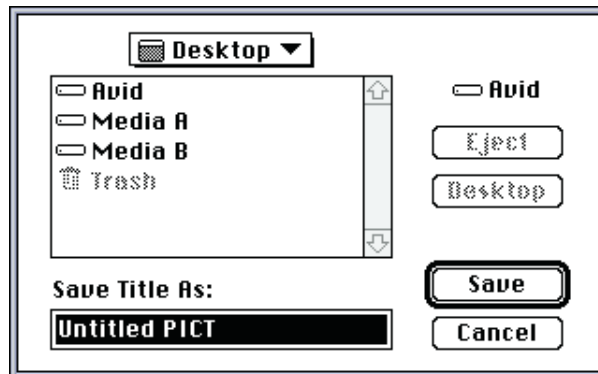
- To delete a style, select the style in the Project window and press the Delete key or choose Delete from the Edit menu.
- To copy a style, select the style in the Project window and choose Duplicate from the Edit menu.
- To rename a title style, either change the name in the Project window or perform a Save As operation as described in [“Saving Title Styles” on page 197](#) and change the name in the Style Sheet Name text box.

Exporting a Title as a Graphics File

You can export a title in PICT file format.

1. Choose Export Title from the File menu.

A dialog box appears.



2. Select the folder for the location where you want to export the file, enter a file name, and click Save.

The title is saved as a PICT file.



CHAPTER 6

Editing with Titles

Editing with titles involves placing Title Effect clips in a sequence and then adjusting parameters or revising the title in the Title Tool. The following sections provide guidelines for editing with title media.

- [Task Overview — Editing with Titles](#)
- [Before You Begin](#)
- [Editing a Title into a Sequence](#)
- [Trimming the Duration of Rolling and Crawling Titles](#)
- [Removing Titles](#)
- [Replacing Titles](#)
- [Fading a Title](#)
- [Adjusting Title Effect Parameters](#)
- [Revising a Title in a Sequence](#)
- [Replacing Fill Tracks](#)
- [Rendering Titles](#)
- [Re-creating Title Media](#)
- [Promoting a 2D Title to 3D](#)
- [Troubleshooting Titles](#)

Task Overview — Editing with Titles

The following is an overview of the tasks you will perform to edit a title into a sequence:

- **Edit the title into the sequence.** You can load a title into the Source window or drag the Title Effect icon from the bin to a segment in the Timeline. Title effects play in real time, using the Avid Composer system's downstream key (DSK) capabilities.
- **Adjust the title's parameters.** With a title edited into a sequence, you can use the Effect Editor to alter the appearance or position of the title. You can also open the title again in the Title Tool at any time to revise the title elements.
- **Revise the title.** After editing the title and adjusting parameters, you can revise elements of the title in the Title Tool, or replace fill tracks to create various effects.

These basic procedures are described throughout this chapter. For information on creating titles, see [Chapter 5](#).

Before You Begin

The following sections provide guidelines for working effectively with DSK titles, non-DSK titles, and title effect media.

Downstream Keying of Titles and Graphics

By default, all titles are created using the Avid Composer system's DSK capabilities. Graphic elements imported with an alpha channel are also created as DSK clips.

Downstream keying allows you to add uncompressed titles or graphics over multiple streams of compressed media and continue to play the sequence in real time. The benefits of downstream keying include:

- **High-quality lossless images.** Because the DSK title or graphic is uncompressed, the image retains its full quality.
- **Real-time adjustment of key frames and title parameters.** When you adjust key frames or effect parameters for the DSK title effect, the title continues to play back in real time.
- **Layering of titles over real-time or rendered effects.** You can apply a DSK title over a rendered effect or a real-time effect such as a transition, and all effects continue to play back in real time.
- **Smooth motion.** Downstream keying uses subpixel placement for smooth motion in rolling or crawling titles. Subpixels are units smaller than pixels.



To learn more about editing with DSK titles, see [*“Restrictions of Downstream Key Titles” on page 204.*](#)

Restrictions of Downstream Key Titles

The following are a few restrictions to keep in mind with DSK titles:

- Rolling or crawling titles are always DSK titles, unless you render them. You can convert a still DSK title to a non-DSK title. See [“Converting Downstream Key Titles” on page 205](#).
- You can play in real time only one DSK title at a time in a nested effect. The DSK title must be on the top layer of the nested tracks.
- Titles promoted to 3D are no longer DSK. Keep a copy of the original title if you want to continue using the DSK version. For more information, see [“Promoting a 2D Title to 3D” on page 228](#).
- DSK titles become non-DSK titles when you replace the fill track. For more information, see [“Replacing Fill Tracks” on page 226](#).
- All DSK titles must be created within (or cropped to within) the safe title area to guarantee real-time playback.
- Rolling or crawling titles might jitter slightly at certain speeds. You can adjust the duration slightly to fix the problem. See [“Trimming the Duration of Rolling and Crawling Titles” on page 213](#).

If you experience an underrun error with a DSK title, do one or more of the following:

- Render the DSK or underlying effects.
- Slow the roll or crawl by extending the duration of the clip.
- Add filler to separate DSK clips in the sequence.
- Store title and video media on separate disks, or use faster disks.

Converting Downstream Key Titles

All newly created titles and graphics imported with alpha channel are DSK clips by default. You can convert static DSK titles and graphics to non-DSK titles and Matte Key effects.

You might want to convert a DSK title to a non-DSK title in situations like the following:

- If you want to replace the fill track with a graphic or video
- If you want to play two titles simultaneously. The top title can remain DSK, but the bottom title or titles must be non-DSK.
- If you want to resize a 2D Title effect.
- If you want to play a title that causes a “DSK image too large” error message. For more information, see [“Troubleshooting Titles” on page 229](#).



You cannot convert rolling or crawling titles to non-DSK. You can render them, as described in [“Rendering Titles” on page 227](#).

To convert a DSK title to a non-DSK title:

1. Place the blue position indicator on the DSK title or graphic in the Timeline.
2. Click the Effect Mode button to open the Effect Editor.
3. Deselect the Downstream Key button.



Downstream Key

The Downstream Key button changes from pink to gray and the effect is now a non-downstream key effect.

4. To re-enable the DSK capabilities, open the Effect Editor and select the Downstream Key button again.



If you replace the fill track of a non-DSK title, you cannot restore the DSK capabilities.

Restrictions of Non-Downstream Key Titles



DSK titles and non-DSK titles have different real-time playback capabilities during editing and adjustment of key-frame parameters. For more information, see [“Playback Capabilities of DSK and Non-DSK Titles” on page 207](#).

Depending on the complexity of the title and the video it is keyed over, not all non-DSK titles can be played in real time. When you attempt to play too complex a title, the following conditions might occur:

- Background video might jitter.
- Title might flash.
- Title might display a gray slide.
- Video might shift left or right.
- Video might display a gray slide.
- Vista missed frame advance error might occur.
- Video underrun error might occur.
- Audio underrun error might occur.

If you encounter any of these conditions, try one or more of the following:

- Render the title or underlying effects.
- Simplify the title by removing text or drop shadows or by selecting different colors.

It is possible that a title with background video can be so complex that you can neither play it in real time nor render it.

It is also possible that you cannot play rendered titles because the resulting frames are too complex. You can control the complexity of titles by using the project’s Render settings. See [“Rendering Titles” on page 227](#) for an explanation of the Render settings.

Playback Capabilities of DSK and Non-DSK Titles

DSK titles and non-DSK titles behave differently in terms of real-time playback during editing and adjustment of effect parameters. The following table lists the different playback capabilities in different circumstances.

Table 6-1 DSK and Non-DSK Title Playback Capabilities

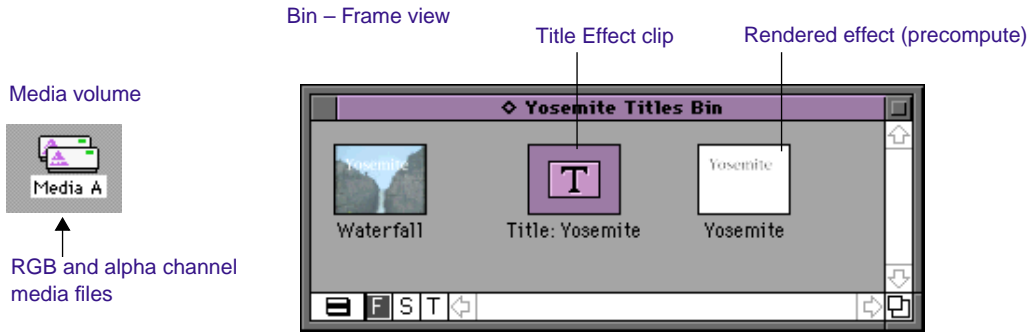
Operation	DSK Title Playback	Non-DSK Title Playback
Adjust foreground level parameter	Real-time	Real-time
Adjust scale parameters	Not available	Non-real-time
Adjust position (vertical, horizontal)	Real-time	Non-real-time
Adjust scroll position (rolling and crawling titles only)	Real-time	Not available
Adjust cropping	Real-time	Not available
Adjust top, bottom softness (rolling titles only)	Real-time (two-field AVRs only)	Not available
Replace the alpha track	Not available	Real-time
Apply to a layer above a non-DSK title	Real-time	Non-real-time
Apply to a layer below a DSK title	Non-real-time	Real-time
Key over extremely complex images	Real-time	Non-real-time



All DSK titles must be cropped to within the safe title area to guarantee real-time playback. If you create a title that extends to the edges of the screen, for example, real-time playback cannot be guaranteed.

About Title Effect Clips

When a title is saved, the Avid Composer system creates a Title Effect clip and saves it in the selected bin. One media object, referred to as a *precompute*, has references to the RGB and alpha channel information. Every time you make a change to a title effect, the Avid Composer system creates two additional media files. The original media files are left unchanged.



By default, the bin display does not show rendered effects. You can view rendered effects in the bin by choosing Set Bin Display from the Bin menu and selecting Rendered Effects.

Rendered effect (precompute)

Title Effect clip

Media volume



RGB and alpha channel media files

Bin – Text view

Name	Video	Tracks	Start
Yosemite	AVR70B	V1-2	
Title: Yosemite	AVR70B	V1	01:00:00:00
Waterfall		V1-2 A1-2 TC1	01:00:00:00

For more information, see [“Managing Your Media Files” on page 121.](#)

Editing a Title into a Sequence

After preparing the sequence with a second track for the title, there are two basic methods for editing the title into place:

- **Splice or overwrite method:** Mark IN and OUT points in the sequence, and perform a splice or overwrite edit. See [“Splicing or Overwriting a Title into a Sequence” on page 210](#).
- **Drag and drop method:** Use add edits to mark off a segment in the sequence, and drag the Title Effect clip from the bin to the segment in the Timeline using one of the Segment Mode buttons. See [“Dragging and Dropping a Title into a Sequence” on page 212](#).

About Setting Marks in Rolling and Crawling Titles

By default, a rolling or crawling title clip begins with the visible title just off screen. The clip ends just after the last element disappears off screen.

You can set IN and OUT marks in the Source monitor to change the start and finish points; that is, you might want the title to begin with a the screen full of text rather than start off screen.

You can play and mark a title clip in the Source monitor by using standard procedures. For more information, see the *Avid Media Composer User’s Guide* or *Avid Film Composer User’s Guide*.

If you want to use the complete roll or crawl in the sequence, do not set marks. For information about adjusting the duration of the roll or crawl, see [“Trimming the Duration of Rolling and Crawling Titles” on page 213](#).

Adding a Video Track

In most cases, you edit a title onto a second video track above the video that forms the background.

To add a second track:

1. If you have not already done so, load the sequence into the Record monitor.
2. Choose New Video Track from the Clip menu.

The system adds the next video track for the sequence to the Timeline. For example, if the sequence includes only V1, the system adds V2.



If you apply a title directly to a video clip on the main video track (for example, V1), the title replaces the video clip, and the title's video background is replaced by a black background.

Splicing or Overwriting a Title into a Sequence

To splice or overwrite a title into a sequence:

1. If the title you created is not in the Source window, drag the Title Effect icon there from the bin.



To replace the Title Effect icon in Frame mode temporarily with a frame from the title clip, click the Title Effect icon in the bin and press the Home key or End key on the keyboard. This feature is helpful if you have multiple titles in a bin.

2. Patch the title source to the video track in the sequence by clicking and dragging from the V1 source track to the V2 record track.



You can use any three-point editing method to edit a title into a sequence. The steps below are just one editing method. Refer to the Avid Media Composer User's Guide or the Avid Film Composer User's Guide for other methods.

3. In the Source window, set the mark IN point.



You should set the mark IN position toward the middle of a still title clip, so you can trim the title, if necessary. For rolling or crawling titles, set no marks and place the position indicator at the beginning of the clip if you want to use the full roll or crawl. The Avid Composer system uses the position indicator to determine the IN point on rolling or crawling titles.

4. In the Record monitor, set the mark IN and mark OUT points.

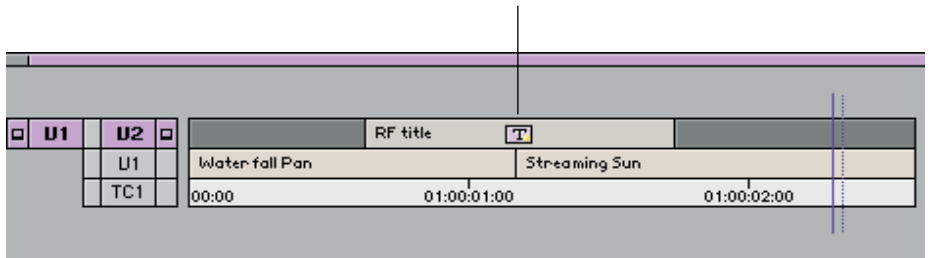
5. Make sure the V1 record track is deselected in the Track Selector panel.

6. Click either the Splice-in or Overwrite button to edit the title into the sequence.



This adds the Title Effect segment to the top video track.

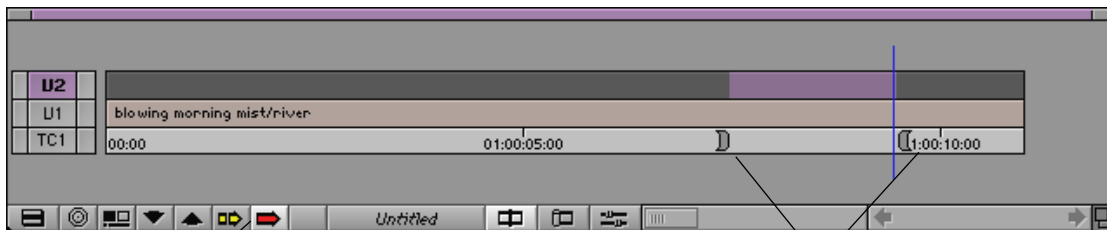
Title Effect segment in the Timeline



Dragging and Dropping a Title into a Sequence

To drag a title clip directly into the Timeline:

1. Place a mark IN in the sequence at the point you want the title to begin, and a mark OUT where you want it to end.
2. Click the red Lift/Overwrite button at the bottom of the Timeline window to enter Segment mode.

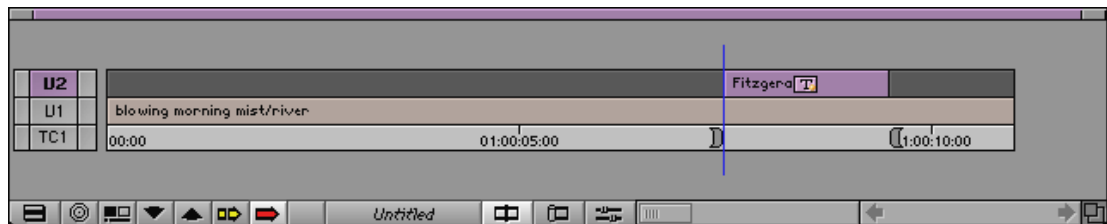


Segment Mode button

IN and OUT marks

3. Click the Title Effect icon in the bin, and drag it to the marked segment and release.

The following illustration shows the title edited into the Timeline:



Trimming the Duration of Rolling and Crawling Titles

When you edit the title clip into a marked segment of a sequence, the clip plays back from beginning to end regardless of the duration of the segment. In other words, the entire roll or crawl shrinks to fit within the duration of the marked segment in the sequence.

Once the clip is edited into the sequence, you can trim the duration of the segment at any time, and the rolling or crawling title adjusts to fit the new duration.

Unlike trimming other segments, trimming a rolling or crawling title does not remove any part of the title contents. As a result, the duration of the title determines how fast it plays. For example, the shorter you trim the title, the faster it rolls or crawls.



Rolling or crawling titles might jitter slightly at certain speeds. You can trim the duration slightly to fix the problem.

To trim the duration of a rolling or crawling title:

1. Enable the track containing the title and disable all other tracks by using the Track Selector panel.
2. Click the Trim Mode button to enter Trim mode.
3. Select either the head or the tail of the title segment for trimming.
4. Trim the title segment to the duration you want by using standard trim procedures.

The entire roll or crawl plays back within the new duration.



If you trim your rolling or crawling title very short, it scrolls very fast and can't display in real time; it must be rendered. The maximum speed it can scroll is one screen per second.

Removing Titles

To remove the title segment:

1. Click either the yellow Extract/Splice-in button to extract the title and shorten the track accordingly, or the red Lift/Overwrite button to lift the title out and maintain the track duration.
2. Select the title segment and press the Delete key twice to delete the Title effect and its alpha channel media file.

To remove only the Title effect:

1. Click the Effect Mode button to open the Effect Editor.
2. Click the Title effect in the Timeline to select it.
3. Click the Remove Effect button either on the Fast menu or in the row of buttons below the Record monitor.

This removes the Title effect from the segment. The alpha channel media file remains.



The Title Effect remains in the bin. To remove the Title Effect from the bin, select the effect in the bin and press the Delete key.

Replacing Titles

To replace a title in a sequence:

1. Click the red Lift/Overwrite button in the Timeline tool bar.
2. Click the Title segment currently in the sequence to select it.
3. Click the Mark Clip button to place an IN mark at the beginning of the Title segment and an OUT mark at the end of the segment.
4. Drag the new Title Effect clip from the bin to the marked segment and release.

The new title replaces the old title.

Fading a Title

You can use the Fade Effect button to fade a title quickly and easily. A dialog box appears that allows you to enter the number of frames to fade up and fade down.

The Fade Effect feature automatically creates key frames for the title segment. You can access the key frames in the Effect Editor.

To fade a title:

1. Load the sequence if you haven't already done so.
2. To fade a single title, place the blue position indicator in the title segment.

To fade multiple titles in a sequence, click either the yellow Extract/Splice-in button or the red Lift/Overwrite button at the bottom of the Timeline window to enter Segment mode, hold down the Shift key, and click the desired title segments in the Timeline.

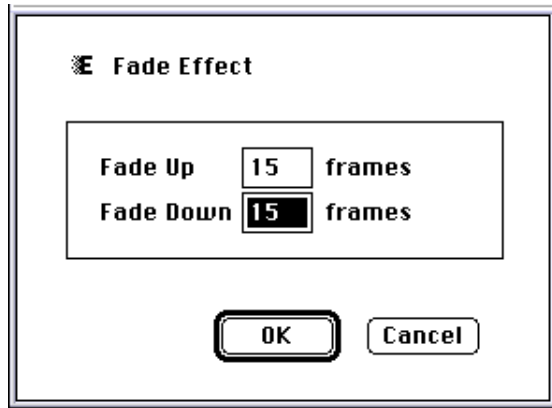


3. Click the Fade Effect button.



*You can map the Fade Effect button to the Record monitor or the User Command palette. For more information on mapping buttons, see the *Avid Media Composer User's Guide* or the *Avid Film Composer User's Guide*.*

4. In the dialog box that appears, enter the number of frames to fade up and fade down, and click OK.



This fades the selected title or titles. You can immediately view the Fade effect by playing the title segment.

Adjusting Title Effect Parameters

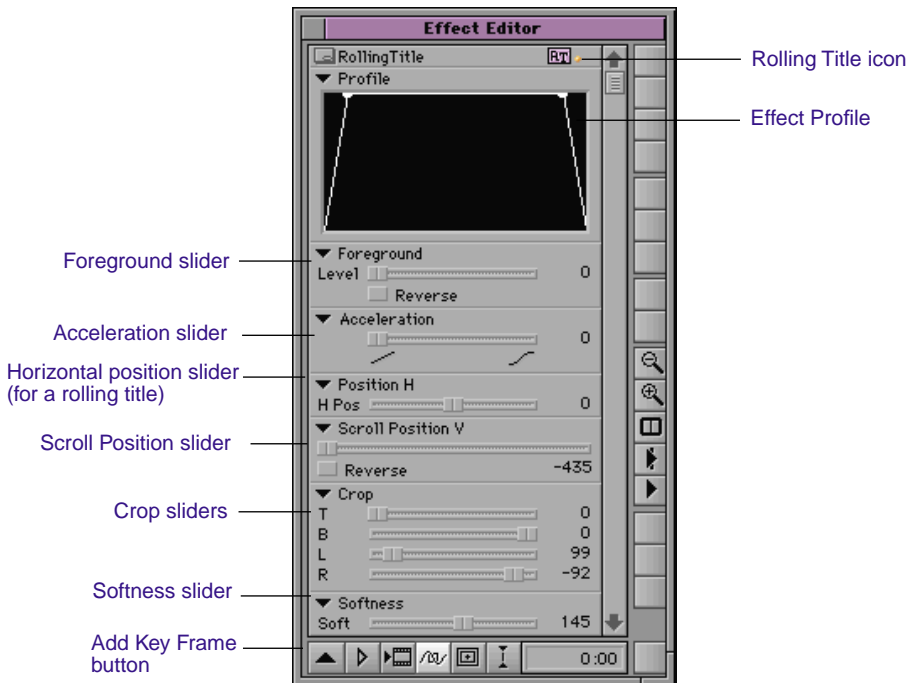
After editing a title into a sequence, you can open the Effect Editor and refine the title with full key-frame control over effect parameters such as Position, Scaling, Crop, and Softness for rolling and crawling titles.



DSK titles and non-DSK titles have different playback capabilities when you adjust effect parameters. For more information, see [“Playback Capabilities of DSK and Non-DSK Titles” on page 207.](#)

To access the effect parameters for a Title effect:

1. Click the Effect Mode button.
The Effect Editor appears.
2. Click the title in the sequence to select it.
The Effect Editor displays the parameter controls.



Using Title Key Frames

See the *Avid Media Composer Products Reference* for details about how many key frames you can set with your system configuration.

A key frame is a point in the title’s Timeline (or the Timeline of any effect) at which you can set parameters. You can use multiple key frames to gradually change a parameter over time. Key-frame indicators appear in the effect’s Timeline under the Record monitor. For more information, see [“Using Key Frames” on page 99](#).

Adjusting the Effect Profile

The Profile window in the Effect Editor is a graphical representation of the foreground level and acceleration applied to key frames:

- Foreground level affects the opacity of the Title effect. You can use the Profile graph to adjust level by selecting the appropriate key

frame in the effect's Timeline, and then clicking on the Profile key frame and dragging it up or down. For more information, see [“Adjusting Foreground Level” on page 218](#).

- Acceleration affects the rate of movement into and out of key frames. The greater the acceleration, the more rounded the line appears in the Profile window. For more information, see [“Adjusting Acceleration” on page 218](#).

Adjusting Foreground Level

Foreground level determines the opacity of the title at the selected key frame or key frames. You can change the overall transparency of the title itself, or you can change the transparency over time by adjusting levels for individual key frames.

Move the Foreground slider to change the transparency of the title.

- The 0 setting is completely transparent.
- The 100 setting gives you fully opaque characters.

Adjusting Acceleration

Acceleration changes the speed of movement into and out of key frames. This is also known as *ease in* and *ease out*. Zero on the slider is no acceleration for linear transition parameters between key frames; 100 maximizes ease in/out.



Acceleration applies to every key frame in the same way. The last time you change this parameter determines the acceleration for all key frames in the sequence.



Acceleration is not recommended for rolls or other DSK titles with vertical motion, due to anti-aliasing effects which cause flicker.

Adjusting Position

The horizontal position (H Pos) and vertical position (V Pos) sliders allow you to change the position of the title on screen. Rolling and crawling titles have additional scroll position (Scroll Position H or Scroll Position V) parameters.

If the position you determined when you created the title needs adjustment, you can change it here without revising the title itself:

- Move the V Pos or H Pos slider to adjust the position of the title on the screen.
- For rolling and crawling titles, you can also move the Scroll Position slider to adjust your location in the title.
- For rolling and crawling titles, you can change the scrolling direction with the Reverse button. Unlike clips of footage, title clips do not play smoothly when you press the J key or click the Play Reverse button. Click Reverse to change scrolling direction.



If you select all key frames when changing the scroll position on a rolling or crawling title, all key frames will be set to that position and the title will no longer move. Make sure you select the appropriate key frames.

Cropping Titles

Move the following Crop sliders to adjust the cropping of your title:

- T – Top
- B – Bottom
- L – Left
- R – Right

For rolling and crawling titles, cropping produces two different effects depending upon whether you crop parallel to or perpendicular to the

motion of the title. These two types of crops are referred to as source and destination crops:

- *Source cropping* a rolling or crawling title trims the title itself regardless of where the title appears on the screen. This is similar to cropping a still title, and occurs when you crop the title parallel to the direction of the motion.

Source cropping does not move the location of the title. Cropping titles parallel to the scroll direction is a source crop. For example, if you set the left Crop slider of a rolling title to 30, you trim the left boundary of the title toward the center by 30 points.

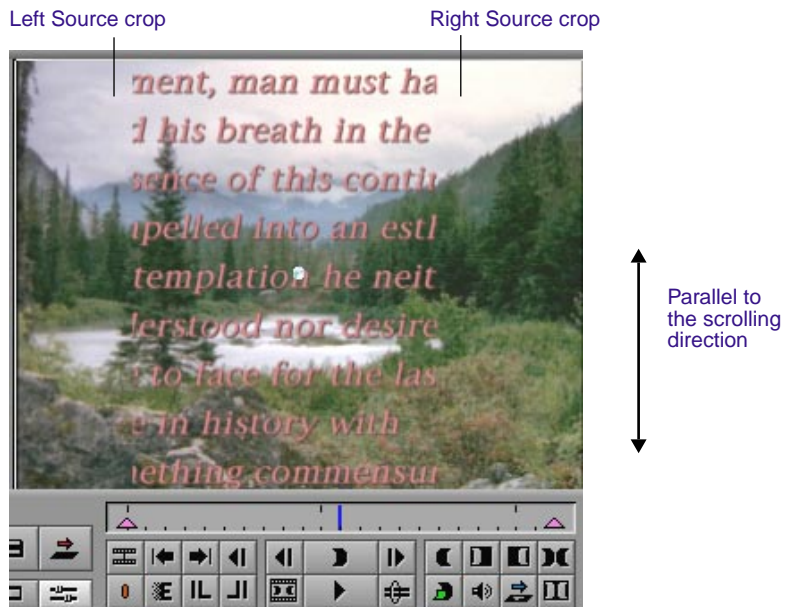


Figure 6-1 Source Cropping for a Rolling Title



Because the title comes out of the Title Tool already cropped in size fairly close to the text, using a source crop might begin to cut the title itself.

- *Destination cropping* changes the size of the window the title appears in. Destination cropping occurs when you crop perpen-

dicular to the direction of the motion (across the scroll direction). For example, if you set the top Crop slider of a rolling title to 30, you shorten the size of the window the title rolls through.

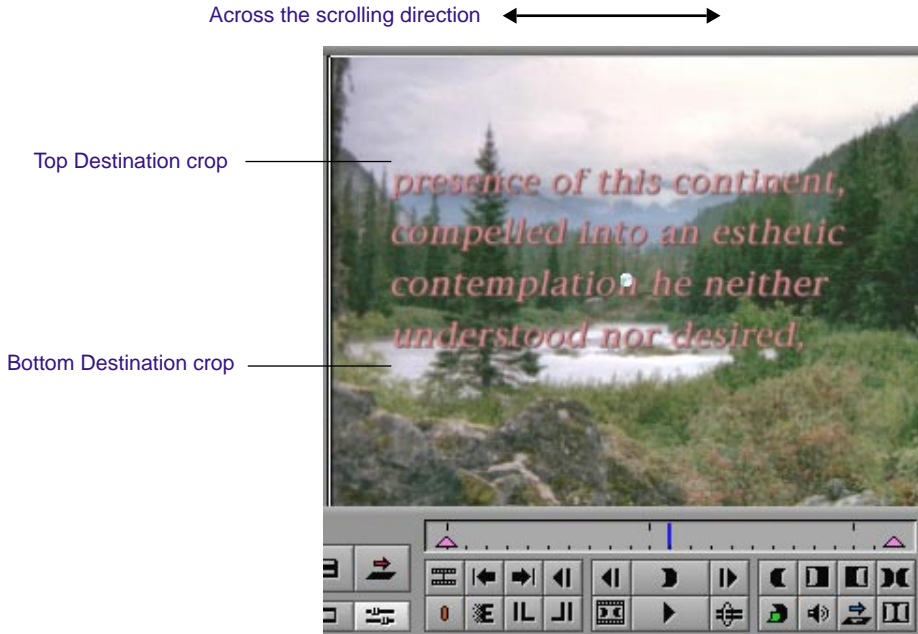


Figure 6-2 Destination Cropping for a Rolling Title

Rolling and crawling titles have opposite destination and source crop effects, as Table 6-2 shows. Keep in mind that destination cropping takes place *across the scroll direction*.

Table 6-2 Destination and Source Cropping

Title Type	Left	Right	Top	Bottom
Rolling	Source	Source	Destination	Destination
Crawling	Destination	Destination	Source	Source

Softening Edges on Rolling Titles

You can soften the top and bottom edges of rolling titles so that the title does not enter the screen abruptly from the top and bottom of the screen, but appears out of regions of gradual transparency. This feature is available only for two-field resolutions (AVRs 70 to 77 and AVR 12).

- Move the Soft slider to adjust the level of softness.

The numbers represent the number of lines of pixels to fade in and out at the top and bottom of the rolling title. Zero leaves the title unsoftened. The maximum number of lines of pixels you can soften a title with is 255.

Softening applies equally to both the top and bottom of the rolling title.



You cannot soften crawling titles.

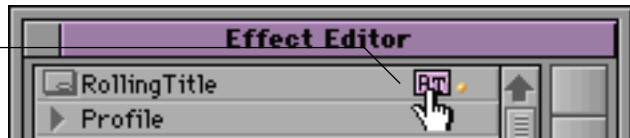
Saving a Title Effect Template

If you edited a Title effect into a sequence and applied changes using the Effect Editor, you can save the both the Title effect and the parameters to a bin for use in other sequences or projects. You can also save just the parameters without the title media, and apply the parameters to an entirely different title. This allows you to store standard title moves and effects that you use often.

To save the Title effect and parameters in a bin:

1. Open a bin where you want to store the Title Effect template.
2. Load the sequence containing the title into the Record monitor.
3. Click the Effect Mode button to open the Effect Editor.
4. Click the Title effect in the sequence to select it.
5. Drag the Title Effect icon from the Effect Editor to the desired bin.

Title Effect icon



To save just the Title Effect parameters without the title media, press the Option key and drag the Title Effect icon from the Effect Editor to the bin.



For more information on using effect templates, see [“Using an Effect Template” on page 112.](#)

Revising a Title in a Sequence

If you want to revise a title after you have edited it into a sequence and adjusted parameters with the Effect Editor, you can reopen the title in the Title Tool directly from the sequence.



If you have already edited a title into a sequence, or have made adjustments to the effect parameters for that title, you must revise the title in the sequence (not the Title Effect clip in the bin).

To change a title in a sequence:

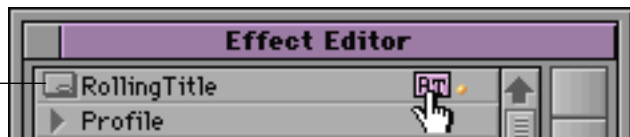


1. Click the Effect Mode button.

The Effect Editor appears.

2. Select the Title effect in the sequence.
3. Click the Other Options button on the Effect Editor.

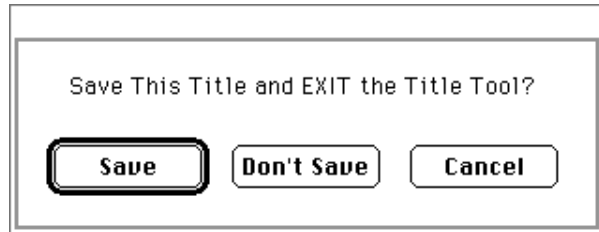
Other Options button



The Title Tool appears.

4. Edit the title using techniques described in [Chapter 5](#).
5. Save the title using one of the following options:
 - **Save Title:** To save the title with the same name (numbered incrementally) and media parameters (AVR, target bin, and target disk):
 - a. Choose Save Title from the File menu.

A dialog box appears.

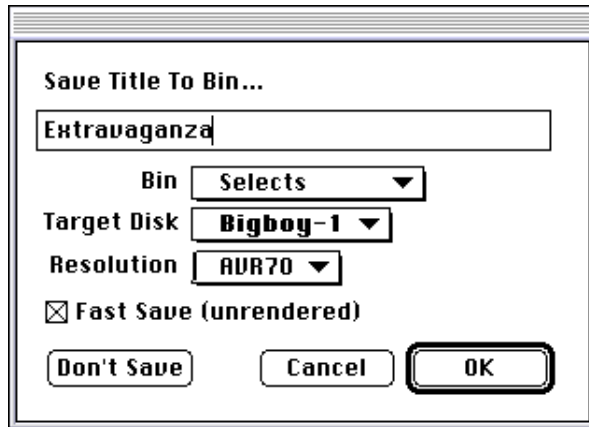


- b. Click Save.

The Title Tool closes, and the revised Title Effect clip replaces the previous clip in the sequence. The new clip also appears in the bin and the Source monitor, with the name of the previous clip plus a two-digit extension that adds incremental numbering for each revised title. The previous Title Effect clip is preserved in the bin.

- **Save Title As:** To rename the title or change any of the media parameters (AVR, target bin, and target disk):
 - a. Choose Save Title As from the File menu.

The Save Title To Bin dialog box appears.



- b. Rename the title or choose other options from the Bin, Target Disk, and Resolution pop-up menus.



You cannot select Fast Save when revising a title in a sequence.

- c. Click OK to save the title and exit the Title Tool.

The Title Tool closes, and the revised Title Effect clip replaces the previous clip in the sequence. The new clip also appears in the bin and the Source monitor with the new name. The previous Title Effect clip is preserved in the bin.

Replacing Fill Tracks

All newly created titles and graphics imported with alpha channel are DSK clips by default. When you replace the fill track with a graphic or video, the title is converted automatically to a non-DSK title.



After replacing the fill track, you cannot restore the DSK capabilities of a title.



You cannot replace the fill track on a rolling or crawling title.

To replace the fill track:



1. Click the Step In button on the Timeline tool bar to step into the effect.
2. Load the video you would like to use as replacement filler into the Source monitor.
3. Drag the source track selector button to the filler track selector button in the Track Selector panel to patch the new source video to the title fill track.
4. Using standard editing methods, edit the video from the Source monitor onto the fill track.

An alert box appears, warning you that the DSK capabilities of the title will be disabled.

5. Click OK to replace the fill track and convert the title to a non-DSK title; or, click Cancel to cancel the operation and retain the DSK capabilities of the title.

Rendering Titles

The following are a few situations in which you might want to render titles:

- If you want to layer DSK rolling or crawling titles in a sequence
- If you want to layer multiple effects, particularly more than one layer of DSK titles
- If you want to place other effects over a DSK title
- If you encounter an alert box with a message about audio or video underrun when playing a complex layered effect

For more information on rendering title effects, see [“Rendering an Effect” on page 116](#).

Re-creating Title Media

You can use the Recreate Title Media command to regenerate media that is offline, or to change the Avid Video Resolution (AVR) of the title. If you have batch digitized a sequence at a resolution different from the resolution at which the sequence was originally created, for example, you can use this command to re-create the titles at the new resolution.



The Recreate Title Media command removes any nested edits made inside a title, replacing the edits with the new title’s graphic and alpha tracks.

To re-create title media:

1. (Option) If you want to re-create title media in a different resolution, choose Compression from the Tools menu, and choose the AVR you would like to use for the re-created title media.
2. Load the sequence containing the titles into the Record monitor.

3. Mark the IN and OUT points in the sequence surrounding all the titles that you want to re-create.
4. Select the tracks where the title or titles are located.
5. Choose Recreate Title Media from the Clip menu.

Promoting a 2D Title to 3D

If your system is equipped with 3D effect capabilities, you can promote a Title effect to 3D to create additional effects with the title. For more information, see [“Promoting 2D Effects to 3D Effects” on page 331.](#)

Troubleshooting Titles

This section describes several errors that might occur when working with Title effects, and includes recommendations for resolving the problems.

No Title and Video Background Display

If the Title Tool is unable to display the title and the video background, increase the Avid Composer system's application memory allocation, as follows:

1. Quit the Avid Composer and go to the Macintosh Finder.
2. Click the Avid Composer application icon to select it.
3. Choose Get Info from the File menu.
4. Type larger numbers in the application Memory Requirements. The Minimum Size should be 12,000 K and the Preferred Size should be 32,000 K.
5. Click the close box to leave the Get Info window.
6. Open the Avid Composer application.

The next time you open the Avid Composer application, it will use the Preferred Size, if available. If it is not available, the Avid Composer system will take as much memory as possible. If less than the Minimum Size is available, an error message appears.

Downstream Key Error Messages

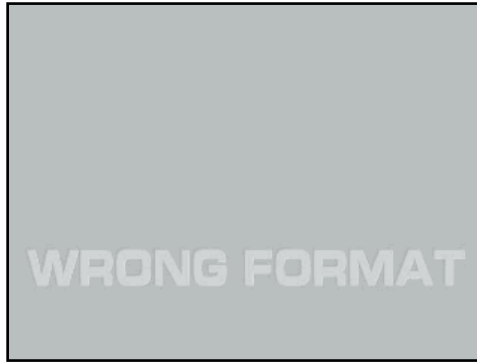
When you edit with DSK titles or graphics, you might experience an underrun error message or an “image too large” error message. Table 6-3 describes the causes and possible solutions for these problems.

Table 6-3 Downstream Key Errors and Solutions

Error	Problem	Possible Cause	Possible Solutions
DSK underrun error	The graphic key could not be loaded in time.	Insufficient disk speed, or the title is rolling or crawling too fast, or a series of DSK graphics are too close together.	<p>Render the DSK clip and underlying video.</p> <p>Slow down the rolling or crawling title.</p> <p>Store the DSK clip media on a drive other than the drive containing the underlying media.</p> <p>Add filler between sequential DSK clips.</p> <p>(Crawl only) Decrease the visible graphic height by cropping or by revising the title in the Title Tool.</p> <p>Use faster drives.</p>
DSK image too large	A moving title does not play correctly.	The system has limitations that restrict the size of the graphic to the safe title area of the screen.	<p>Crop the title to fall within the safe title area.</p> <p>Soften the top and bottom of a rolling title to fall within the safe title area.</p> <p>Revise the title in the Title Tool to fall within the safe title area.</p> <p>If appropriate, eliminate the motion of the title.</p> <p>Reduce the Record monitor video size by using the enlarge/reduce button.</p> <p>Render the Title effect.</p>

Wrong Title Format

If you see the following image in a monitor, it means that the resolution of the Title effect is not compatible with the resolution of video clips used in the sequence. You will have to determine the resolution of the video clip. Then, you must regenerate the title at the same resolution as the video clip.



To determine the AVR of the current video clip:

1. Load a sequence with the title that has the wrong format into the Record monitor.
2. In Source/Record mode, click the track selector in the Timeline for the track on which video appears.
3. Place the blue position indicator on a video clip in the Timeline.



4. Hold the Option key, and click the Find Bin.

The video source clip is highlighted in the bin.

5. Select bin Text view. The video source clip's AVR appears in the Video column.

To correct a title's AVR to match the AVR used in the video clips in the sequence, use the procedure described in ["Re-creating Title Media" on page 227](#).



CHAPTER 7

Intraframe Editing

This chapter describes the Intraframe™ Editing option. This option includes the Paint effect and the AniMatte™ effect. The Paint effect and the AniMatte effect share many of the same concepts, which are introduced in the following sections.

- [Editing with Intraframe Capability](#)
- [Using an Optional Pen Tool](#)
- [Editing with Single-Field Step](#)
- [Rendering Intraframe Effects](#)
- [Applying the Paint Effect to a Sequence](#)
- [Applying an AniMatte Effect to a Sequence](#)
- [Working with the Intraframe Editing Interface](#)
- [Using Effect Templates with the Intraframe Effects](#)
- [Working with Intraframe Editing Parameters](#)
- [Working with Vector-Based Objects](#)
- [Using the Paint Tools](#)
- [Moving and Manipulating Painted Objects and Mattes](#)

Editing with Intraframe Capability

While many of the tools and parameters are the same for the Paint effect and the AniMatte effect, the result of applying each effect is different. The Paint effect enables you to paint an object directly on an individual frame or series of frames (a segment of a sequence or subsequence). The AniMatte effect enables you to draw a matte on one or more frames to create multilayer matte keys and single-layer organic matte wipes.

With Intraframe editing, you can remove and edit defects, such as dropouts and scratches, that appeared on the original source videotape or film footage. Intraframe editing frees you from having to export images from the Avid Composer system, edit them in third-party applications, and import them back into the system.

Intraframe editing offers many creative possibilities. On individual frames, you can draw various shapes, paint brushstrokes, and create freehand objects or mattes, which you can reshape, rescale, move, and adjust the color values of to meet your needs.

For more information, see [“Working with Vector-Based Objects” on page 255](#).

When you use the Intraframe Editing tools, the Avid Composer system draws vector-based objects on the screen. Vector-based objects are composed of mathematically described lines and Bezier curves. You can edit the lines, curves, and other attributes of vector-based graphics with greater control and efficiency than you can with bitmapped objects, which are drawn on the screen as a pattern of dots, or pixels.

Additionally, any changes you make to a Paint or AniMatte effect is not limited to an individual frame. Instead, any object you paint and any changes you make to it appear for the duration of the entire segment or clip. In most cases, you can change the parameters of the effect between key frames.

Using an Optional Pen Tool

The Avid Composer system supports the addition of a pen tool and graphics tablet for use with the Intraframe Editing option. For installation and configuration instructions, see the documentation that ships with your pen tool and tablet.

Editing with Single-Field Step

To locate defects on individual fields of a frame for correction with the Paint and AniMatte effects, use the single-field step feature. For information on using single-field step, see [“Using Single-Field Step” on page 76](#).

Rendering Intraframe Effects

When you paint an object or draw a matte on a single frame in a sequence, the Avid Composer system applies the effect to the entire segment. While working in Effect mode, you can see the object as you step through each frame in the segment. To view the painted object in Source/Record mode, enable Render-On-The-Fly in the Special menu.

You also can use the Play Preview function to see an off-speed preview of a Paint effect while you are working in Effect mode. For more information, see [“Effect Editor Buttons” on page 91](#).

Intraframe effects are not real-time effects. When you have finished painting or drawing a matte on a segment, you must render the effect to play it in real time. Regardless of how many objects you add to an individual segment, the Avid Composer system plays back the effect as a single stream of video.

Rendering Paint Effects

Painted objects are rendered to the screen starting with the bottom layer (*closest* to the video background). Keep this concept in mind as you use different paint modes in combination and layer painted objects to generate new effects in a sequence. You also can combine the Paint effect with AniMatte effect to create custom effects.

Rendering AniMatte Effects

A multitrack AniMatte effect is rendered to the screen starting with the top video track (*farthest* from the video background and appearing closest to you in three-dimensional space). For example, if the video background is on V1, and the AniMatte effect is applied to V2, the system renders the effect starting with the image on V2.

However, if you draw multiple mattes in the *same segment*, these mattes are all objects that appear in the same foreground space; they interact with each other much like multiple painted objects do in the same segment. For more information, see [“Layering Objects and Matte Keys” on page 287](#).

Keep these concepts in mind as you use different key modes in combination and layer them to generate new effects in a sequence. You also can combine the AniMatte effect with the Paint effect to create custom effects.

Applying the Paint Effect to a Sequence

A Paint effect is a segment effect only. You cannot apply a Paint effect to a transition in a sequence.

You access the Paint effect by clicking the Paint Effect icon from the Image category in the Effect Palette and dragging it to a segment in a sequence.

To apply a Paint effect to a sequence:

1. Load a sequence into the Record monitor.
2. Open the Effect Palette by choosing Effect Palette from the Tools menu.
3. Click the Image category.
4. Click the Paint Effect icon and drag it to a segment in the sequence, and release the mouse button.
5. Enter Effect mode by clicking the Effect Mode button.



The Effect Editor appears with the default Paint effect settings.

Applying an AniMatte Effect to a Sequence

You can apply an AniMatte effect to segments and transitions in a sequence. Which method you choose depends on the effect you are trying to create.

For information on creating keys and wipes, see [Chapter 4](#).

When you are working with multiple tracks of video, you can apply the AniMatte effect as a segment effect to key in or key out selected areas of an image or to build an organic matte wipe. You also can apply the AniMatte effect to a transition to create a wipe between two adjacent shots in the same video track (single stream of video).

The AniMatte effect is accessible through the Key category in the Effect Palette.

To apply an AniMatte effect to a sequence:

1. Load a sequence into the Record monitor.
2. Open the Effect Palette by choosing Effect Palette from the Tools menu.
3. Click the Key category.



4. Click the AniMatte Effect icon and drag it to a segment or transition in the sequence, and release the mouse button.
5. Enter Effect mode by clicking the Effect Mode button.

The Effect Editor appears with the default AniMatte settings.

Working with the Intraframe Editing Interface

Most of the functions that you need to create and apply finishing touches to the Intraframe effects appear in the Effect Editor. Menu options also provide another method of accessing some of these functions. For more information on working with the Effect Editor, see [“Using the Effect Editor” on page 90](#).

When you apply a Paint or AniMatte effect to a segment and enter Effect mode, the Effect Editor appears. The cursor is an arrow when you select tools and options from the Effect Editor. When you select a paint or editing tool and position the cursor over the Record monitor, the cursor becomes a crosshair. The crosshair indicates that you can begin to paint or draw a matte on the frame.



After you use the Rectangle, Oval, Polygon, and Curve Tools, the Avid Composer system reverts to the Selection Tool, and the cursor becomes an arrow. After you use the Brush Tool, it remains the active tool, and the cursor remains a crosshair.

The painting and editing tools enable you to paint shapes or draw mattes, quick masks, and other vector-based objects on frames in a sequence. When you apply an Intraframe effect, the object or matte appears for the duration of the entire segment.

The Effect Editor also includes tools for manipulating painted objects and mattes, playback buttons, and collapsible panes. Each collapsible pane contains a category of parameters you can use to modify the appearance of an Intraframe effect. To open an effect category, click the triangle next to the category name or double-click the category name.

Using the Effect Editor with the Paint Effect

The following illustration identifies the different sections of the Effect Editor that are available when you apply a Paint effect to a segment and enter Effect mode.

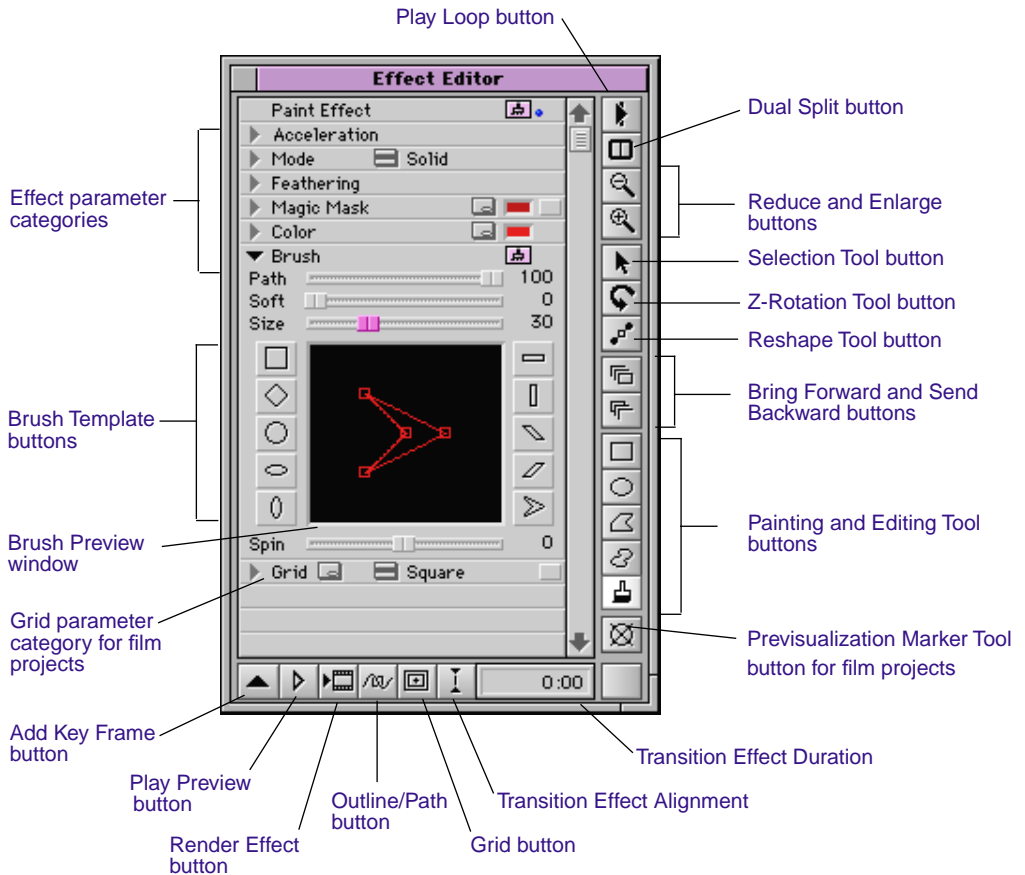


Table 7-1 briefly describes the functions of the Effect Editor for the Paint effect.

Table 7-1 Intraframe Editing Elements

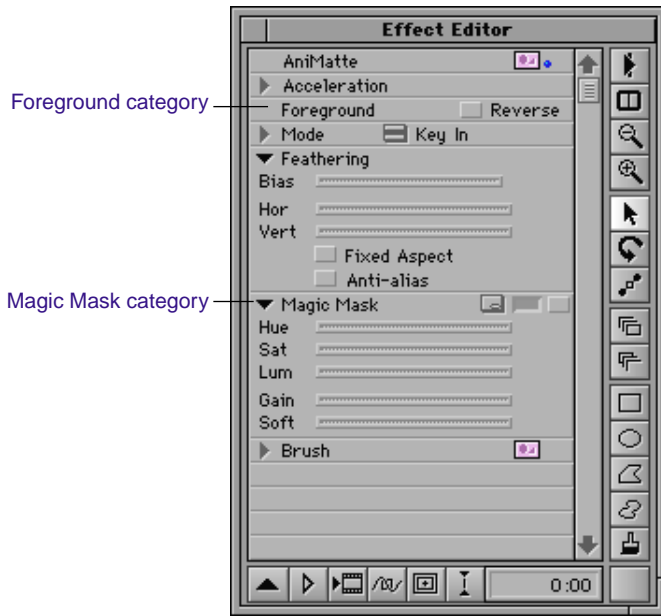
Tool	Description
Effect parameter categories	Enable you to change the parameters of an effect.
Brush Template buttons	Change the shape of the brush.
Brush Preview window	Displays the brush head with the parameters you have selected, such as color, softness, and shape. You also can use the window to reshape the brush head by dragging its control points.
Grid parameter category	In film projects only, provides localized control of the Effect Grid parameters and access to the GridSettings dialog box.
Add Key Frame button	Adds a key frame to an effect at the location of the position indicator in the effect's Timeline.
Play Preview button	Plays back a preview of an unrendered effect in the Record monitor.
Render Effect button	Renders effects on selected tracks at the location of the position indicator in the effect's Timeline.
Outline/Path button	Displays wire-frame representations of effects in a sequence. Illustrates the movement of an effect from the first key frame through the last key frame.
Grid button	Displays a grid for precise placement of effects in the image and for the snap-to-grid function.
Transition Effect Alignment	Enables you to choose whether a transition effect starts, ends, or is centered on a cut; not applicable to the Paint effect.
Transition Effect Duration	Enables you to enter the length of a transition in seconds and frames; not applicable to the Paint effect.
Painting and Editing Tools	Enable you to paint shapes or draw mattes on frames in a sequence with freehand capability or with preset shapes.

Table 7-1 Intraframe Editing Elements (Continued)

Tool	Description
Previsualization Marker Tool	In film projects only, enables you to add markers that track the path of an effect based on the coordinates provided when you activate the Grid.
Bring Forward and Send Backward buttons	Brings a painted object <i>one</i> layer forward on the screen or sends an object <i>one</i> layer backward on the screen. With the Option key pressed, brings a painted object to the front or sends an object to the back.
Reshape Tool button	Reshapes objects by manipulating anchor points at locations where new curves begin or straight lines intersect. Inserts additional control points.
Z-Rotation Tool button	Rotates an object around the Z axis.
Selection Tool button	Selects an object so you can change its parameters, move it, or delete it. With the Shift key pressed, selects multiple objects.
Reduce and Enlarge buttons	Reduces or enlarges the screen.
Dual Split button	Splits the screen in half to show the image with and without effects applied to it.
Play Loop button	Plays back a transition or a segment effect in Effect mode.

Using the Effect Editor with the AniMatte Effect

The following illustration shows the Effect Editor as it appears when you apply an AniMatte effect to a segment in a video project and enter Effect mode.



When you are working with an AniMatte effect, the categories that are available in the Effect Editor are the same as those for the Paint effect with the following exceptions:

- The Reverse option in the Foreground category enables you to swap the foreground and background video images for matte keys composed of multiple video tracks. When you are building a single-track wipe, the Reverse button enables you to swap the incoming and outgoing segments in the sequence.
- With the AniMatte effect, you use Magic Mask to choose a key color when you create a matte. (With the Paint effect, you use Magic Mask or the Color category to make color selections.)

Using Effect Templates with the Intraframe Effects

As you can do with many other effects, you can save a template of a Paint or AniMatte effect and apply it to other video segments in a sequence at a later time. For more information on saving and applying an effect template, see [“Using an Effect Template” on page 112](#).

Working with Intraframe Editing Parameters

The outcome of applying a Paint effect to a sequence is different from the result of applying an AniMatte effect to a sequence. However, many of the parameters available to both effects function similarly. The following sections describe how to work with the parameters that are common to both the Paint effect and the AniMatte effect.



For information on working with parameters specific to the Paint and AniMatte effects, see [Chapter 8](#).

Using the Selection Tool

The Selection Tool is one of the most frequently used tools. You use this tool to select a painted object or matte on the screen when you want to make changes to it. After you select an object, you can move it in the frame, rescale it, and change its parameters.



To select an object, choose the Selection Tool and click an object. Selection handles appear around the object.

To select multiple objects, Shift-click the additional objects with the Selection Tool, or click and drag the cursor to draw a lasso around the objects. When you select multiple objects, one set of selection handles appears around all the objects, which enables you to move, rescale, or otherwise change the parameters of all the selected objects simultaneously.



When a segment contains multiple objects, you can change your selection from one object to another by clicking one of the following buttons: Fast Forward, Rewind, Go to Next, or Go to Previous. To use these buttons in Effect mode, you must map them to your keyboard. For more information on these buttons, see the Avid Media Composer and Film Composer Quick Reference.

Global and Key-Frame Parameters

The Paint effect is divided into two logical groups:

- Global parameters that apply to all key frames
- Key-frame parameters that can change on an individual key-frame basis

Global Parameters

Global parameters cannot change between key frames. When you change one of these parameters, the Avid Composer system automatically sets the value for all key frames in the segment.

The following global parameters cannot change between key frames:

- Acceleration
- Paint Modes
- Layering
- Lock and Unlock
- Group and Ungroup

Key-Frame Parameters

All the effects in this category can change between key frames. This category includes the remainder of the Paint effect parameters, including:

- Opacity (in Mode category)
- Feathering (all parameters in category)
- Magic Mask (all parameters in category)
- Color (all parameters in category)
- Brush (all parameters in category)
- Z-Rotation
- Scaling (size)
- Shape of the object
- Position of the effect in the frame or relative to the frame

Opacity

Opacity, which appears in the Mode category, refers to the transparency level of:

- A painted object created with the Paint effect
- The image within the border of a matte or wipe created with the AniMatte effect

You can adjust the level of opacity for individual key frames in a segment. When you establish different values of opacity for adjacent key frames, the opacity level is interpolated from the first key frame to the next key frame in the segment.

For the Paint effect, a level of 0 makes a painted object completely transparent; a level of 50 makes an object 50 percent transparent; and a level of 100 makes an object opaque.

For the AniMatte effect, a level of 0 makes a keyed image completely transparent; a level of 50 makes a keyed image 50 percent transparent; and a level of 100 makes a keyed image opaque.

For example, if you create a matte that keys out a rectangular portion of a segment on V2, the image on V1 defaults to 100 percent opacity (opaque) and appears in the matte key without any traces of the image on V2. If you adjusted the opacity to 50, the image on V1 would be blended with the image on V2. Adjusting the opacity to 0 would make the image on V1 completely transparent and show only the image from V2 within the borders of the matte.

To adjust the opacity, do one of the following:

- Drag the Opac. slider to attain the desired value.
- Click the Opac. slider, and use the keyboard to enter a value from 0 to 100.

Object Visibility

The Object Visible button in the Mode parameter pane enables you to add a key frame to a segment or transition and have a painted object or matte suddenly “pop” onto the screen at the position marked by the key frame. You must have at least three key frames for an Intraframe effect to create this effect.

To pop a painted object or matte key onto the screen:

1. Paint an object with the Paint effect or draw a matte with the AniMatte effect on a segment or transition.



2. Select the object with the Selection Tool.

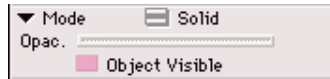


3. Drag the position indicator to the position in the effect's Timeline where you want the object to pop onto the screen, and click the Add Key Frame button.



There must be at least one more key frame in the segment or transition following the one you created in step 3.

4. Click the Object Visible button if it is not selected already.



5. Click the previous key frame to select that key frame, and then deselect the Object Visible button.
6. Repeat steps 1 to 5 for each object you want to pop onto the screen.



You can perform this procedure on different objects, or mattes in a segment or transition, to create an effect in which the objects or mattes pop onto the screen at the intervals and positions you determine.

Feathering

Feathering adds soft edges to a painted object or a matte key. Adding a soft edge can make a composited object look more natural against the background. Feathering softens edges by diffusing the border of the object by the pixel width you want.

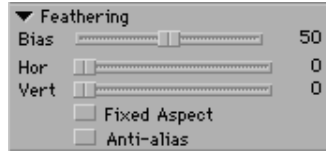
To adjust the feathering:



1. Select an object or matte with the Selection Tool.

If you do not select an object, the feathering values will be applied to the next object you create.

2. Click the triangle next to Feathering if the Feathering category is not open.



3. Adjust the Bias, Anti-alias, and Horizontal and Vertical parameters as described in the following sections.

Bias

The Bias slider in the Feathering category increases control over the dissipation of pixels around the edges of a painted object or matte. When you are applying a Paint effect, adjusting bias is especially effective when you trace an element on the screen.

A Bias setting of 0 feathers pixels starting at the outside edge; a setting of 50 starts feathering at the center portion of the edge; and a setting of 100 starts feathering at the inner portion of the edge. The default setting for Bias is 50.

To adjust the Bias, do one of the following:

- Drag the Bias slider to attain the desired value.
- Click the Bias slider, and use the keyboard to enter a number from 0 to 100.

Horizontal and Vertical Parameters

The Hor and Vert sliders enable you to choose the dominant direction in which feathering of an object or matte appears.

Increasing the Horizontal parameter extends feathering in both the positive and negative directions along the X axis (right to left and left to right on the screen). The minimum horizontal value is 0 pixels; maximum horizontal feathering is achieved by choosing a value of 255 pixels.

Increasing the Vertical parameter extends feathering in both the positive and negative directions along the Y axis (upward and downward on the screen). The minimum vertical value is 0 pixels; maximum feathering is achieved by choosing a value of 255 pixels.

To adjust the Hor or Vert sliders:

- Drag either the Hor or Vert slider to attain the desired value.
- Click either the Hor or Vert slider, and use the keyboard to enter a number from 0 to 255.

Fixed Aspect

The Fixed Aspect parameter gangs the Hor and Vert sliders together. When you drag one of the sliders, the other slider moves in unison. The Fixed Aspect button toggles the option on or off.



When you enable the Fixed Aspect option, horizontal is the dominant value.

Anti-Aliasing

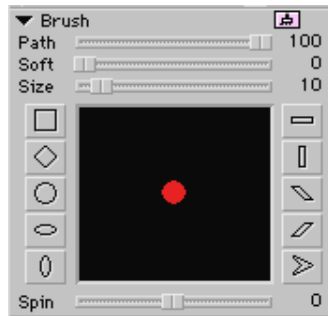
You also can select Anti-alias in the Feathering category, which decreases the jagged appearance of an object's borders. Anti-aliasing smooths the object's edges and can improve its image quality. You can use anti-aliasing in combination with feathering. The Anti-alias button toggles the option on or off.

Acceleration

Acceleration adjusts the effect's speed over time by having the effect ease in and ease out. This gives the effect a more natural appearance. The Acceleration parameter applies to the entire effect, not to specific key frames. For more information on adjusting the Acceleration, see [“Adjusting the Acceleration” on page 110](#).

Brush

The Brush parameters enable you to define the shape, size, and softness of the brush for creating brushstrokes on an image. Additionally, you can customize the shape and rotate the head of the Brush Tool to create a variety of new effects.



The parameters in the Brush category apply only to the Brush Tool.

The Brush category includes Path, Soft, and Size sliders, a Spin slider for adjusting the rotation of the brush head, templates for preset brush head shapes, and a Brush Preview window for previewing the custom brush head you create. You can apply the parameters described in this section in any order you like.

Path

The Path slider controls the percentage of paint or the matte that is visible from the initial point of pressure to the completion of the brushstroke. Path values range from 0 (no paint visible) to 100 (opaque).



As you paint on a segment, the object always appears opaque. Unlike other Paint Effect parameters, you adjust Path after you have finished painting.

Using Path to Create a Signature Effect

The Path parameter is useful for creating a “signature” effect with the Paint effect, in which a signature gradually appears on the screen as if written with an invisible pen.

To create the signature effect:

1. Apply the Paint effect to a segment.
2. Click the Brush Tool button if the brush is not already active.
3. Choose Solid from the Mode Fast menu.
4. Click and drag the cursor on the Record monitor to paint a signature or other string of text.
5. Release the mouse button when you finished painting.
6. Click the first key frame in the segment to select it.
7. Select the painted object if it is not selected already.
8. Click the Path slider, enter 0, and click Return.
9. Click the last key frame in the segment to select it.
10. Click the Path slider, enter 100, and click Return.



Alternatively, you can add key frames at different locations in the effect’s Timeline and change the percentage of the Path parameter at each key frame to modify how the effect appears over the course of the segment.

11. Render the Paint effect to play it back in real time.

Soft

The Soft slider adjusts the softness of the brush head. Softness ranges from a value of 0 (hard center) to 100 (softest overall head).

To adjust the softness:



1. Click the Brush Tool button if the brush is not already active.
2. Do one of the following:
 - Drag the Soft slider to attain the desired value.
 - Click the Soft slider, and enter a value from 0 to 100.

Size

You can use the Size slider to adjust the size of the brush head. Size is measured in terms of pixel width. The widths range from 0 to 100 pixels.

To adjust the brush head size:



1. Click the Brush Tool button if the brush is not already active.
2. Do one of the following:
 - Drag the Size slider to attain the desired value.
 - Click the Size slider, and use the keyboard to enter a value from 0 to 100.

The new size of the brush head is reflected in the Brush Preview window.

Shape

The Brush templates enable you to choose from a variety of preset shapes. Clicking one of the buttons changes the brush head to the new shape.

To adjust the shape of the brush head:



1. Click the Brush Tool button if the brush is not already active.
2. Click the desired template.

The shape is reflected in the brush head in the Brush Preview window.

Creating a Custom Brush Head from a Template

You can change the brush head to a custom shape by modifying the brush head in the Brush Preview window.

To create a custom brush head:

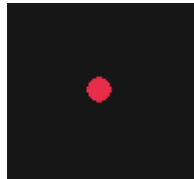


1. Click the Brush Tool button if the brush is not already active.
2. Click a template that will provide the basis for your custom brush head.

The template is displayed as the brush head in the Brush Preview window.

3. Click the brush head in the Brush Preview window.

Anchor points appear on the brush head where curves merge or straight lines intersect.



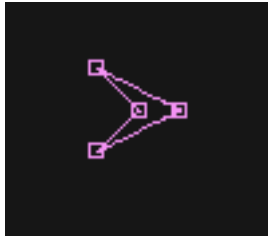
4. Click an anchor point and drag it to change the shape of the brush head.
5. Repeat step 4 with other anchor points as needed.



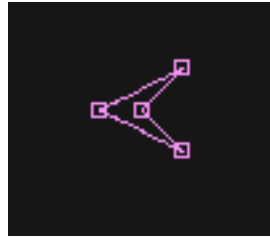
For brush shapes with rounded edges and curves, such as the oval, the ellipse, and the circle, clicking an anchor point creates direction bars and handles that enable you to edit the Bezier curve. For information on working with Bezier curves, see [“Working with Vector-Based Objects” on page 255](#). You can use the direction bars and handles, and you can drag the object’s control points, but, you cannot use the modifier key variations.

Spin

The Spin slider enables you to rotate the brush head 360 degrees in the clockwise and counterclockwise directions. The range of clockwise rotation is from 0 to -360 degrees, and the range of counterclockwise rotation is from 0 to 360 degrees. The default position for the brush head in the Brush Preview window is 0.



Rotation 0 degrees



Rotation 180 degrees

To rotate the brush head:



1. Click the Brush Tool button if the brush is not already active.
2. Click the button for the template as needed.

The shape is reflected in the Brush Preview window.

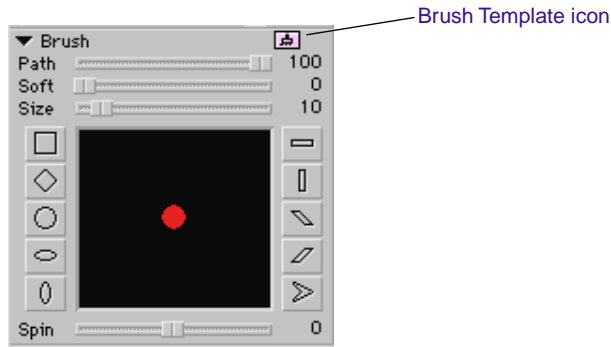
3. Do one of the following:
 - Drag the Spin slider to the right (clockwise rotation) or to the left (counterclockwise rotation) to rotate the brush head to the desired position.
 - Click the Spin slider, and use the keyboard to enter a value from -360 to 360.

Saving a Brush Template

You can save a template of a custom brush to a bin so that you can reuse the parameters of the brush with a Paint or AniMatte effect at a later time.

To save the brush template:

1. Click the Brush Template icon in the Brush category and drag it to a bin.



A brush template appears in the bin, and the name of the template defaults to Brush.

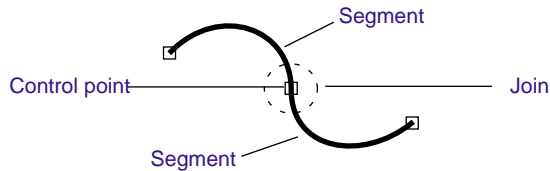
2. Click the name of the template in the bin, enter a unique name for the template, and click Return.
3. To use the template at a later time, click the template in the bin, drag it onto the Brush Preview window, and release the mouse button.
4. The brush in the Brush Preview window assumes the same parameters as the brush template you saved to the bin.

Working with Vector-Based Objects

Before you begin working with the paint and editing tools included in the Paint and AniMatte effects, you must understand the basics of working with vector-based objects and Bezier curves. The vector-based graphics technology of the Intraframe Editing option enables you to create and edit objects and mattes with a precision that you cannot achieve when you work with bitmapped objects. Vector-based objects are not subject to problems such as artifacting when you rescale them.

The Elements of Vector-Based Objects

The objects you paint, the matte keys you draw, and the brush templates that appear in the Brush Preview window include a control point at the midpoint of each line or curve, also known as a *join*. The portion of the line or curve on each side of the control point is called a *segment*. The control point controls the direction of each segment as it passes through the join.



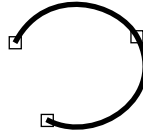
Control points for a painted object are visible when you select an object with the Selection Tool and then click the Reshape Tool button. Also, when you click a brush template in the Effect Editor, the brush head displays visible control points in the Brush Preview window.

A painted object can include three types of joins that describe its shape:

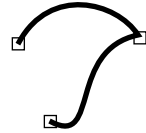
- The straight-edge join
- The smooth join
- The corner join



Straight-edge join

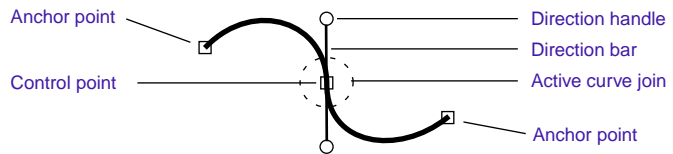


Smooth join



Corner join

A control point associated with a smooth join or a corner join describes a Bezier curve. Clicking a control point makes it the active join. Tangents called *direction bars* appear on each side of the control point associated with a Bezier curve. At the end of each direction bar is a *direction handle*. Dragging a direction handle changes the way the segments pass through the control point to define the curve.



When you drag a direction handle, you change the height and angle of the curve. The curve responds as if you were gently tugging it like a piece of string. The segments remain anchored to the control points on either side of the active join.

In contrast, straight-edge joins do not display direction bars and handles when you click them. To reshape an object composed of one or more straight edges:

- Select the object with the Selection Tool, click the Reshape Tool button, and then drag one or more control points. For information on manipulating control points, see [“Moving a Control Point” on page 265](#).
- Convert straight-edged joins to Bezier curves, and manipulate the curves as described in the following sections.

Getting Started with Bezier Curves

If you have never worked with Bezier curves, learning how to work with them requires a willingness to experiment. As you practice working with Bezier curves, you will gain greater control over painted objects and mattes, and the process will become more intuitive. The following sections describe how to paint a rectangular object with the Paint effect and use the Reshape Tool to convert corners into Bezier curves. You then will modify the curves to change the shape of the object.

Transforming a Rectangle into a Circle

To create a rectangle and transform it into a circle with Bezier curves:

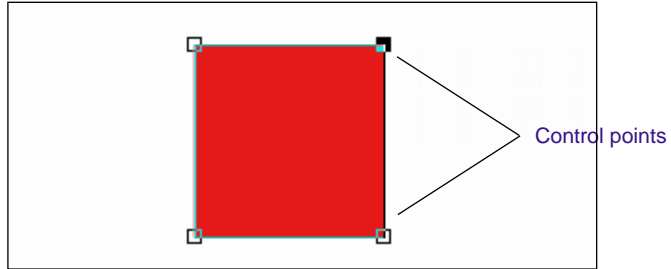
1. Apply the Paint effect to a segment in a sequence and enter Effect mode.
2. Click the Rectangle Tool button in the Effect Editor.
3. Choose Solid from the Fast menu in the Mode category.
4. Click and drag in the Record monitor to paint a rectangular object. Do not worry about picking a color or other parameters for this exercise.
5. Click the Selection Tool button and select the object you just painted.





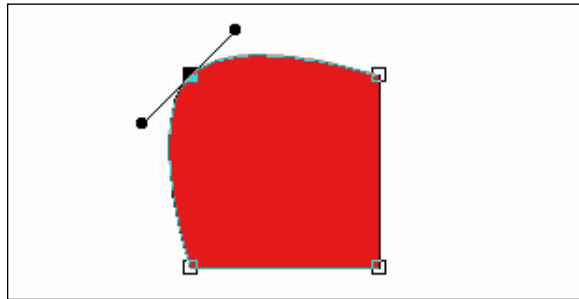
6. Click the Reshape Tool button or double-click the object.

Notice that each corner of the rectangle displays a control point.



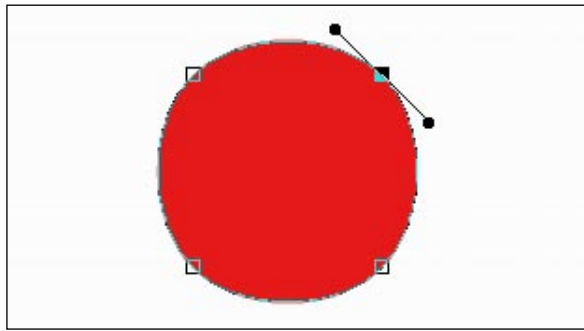
7. Control-click the control point at the top left corner of the rectangle.

Notice that the straight-edge join becomes a smooth join with direction bars and handles.



8. Working in a counterclockwise direction, Control-click each control point until they have all been transformed into smooth joins.

The resulting shape is a circle. The control point at the top right of the circle is the active join and displays direction bars and handles.

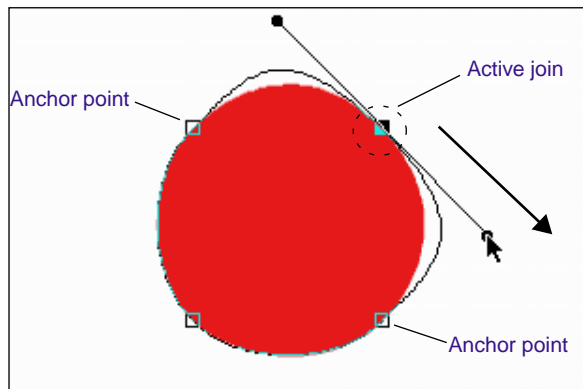


Experimenting with Direction Handles

To experiment with the direction handles:

1. Click the bottom direction handle and drag *away* from the control point to increase the length of the direction bar.

Notice how the curve changes. Also, the direction bar and segment on the opposite side of the control point move in unison with the direction bar you are dragging. The control points adjacent to the active join serve as anchor points for the segments that compose the curve.

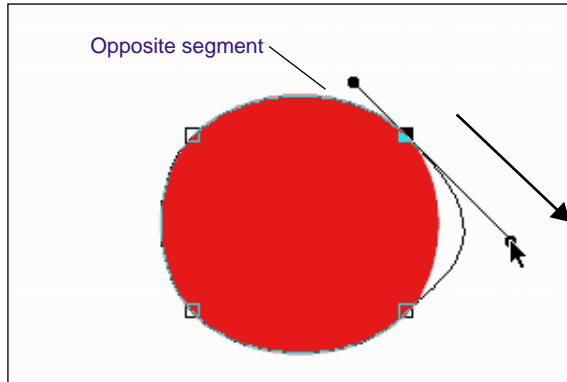


2. Drag the direction handle toward the control point to shorten the direction bar.

Notice how the curve changes as you shorten the direction bar.

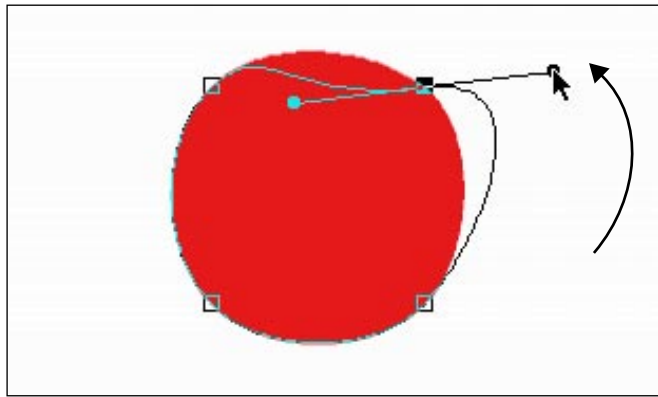
3. Control-click the direction handle and drag it *away* from the control point.

Notice that the length of the direction bar on the opposite side of the control point does not change; this prevents the height of its associated segment from changing. However, the opposite direction bar *does* move in unison with the direction handle you are dragging, thereby changing the angle of the segment in unison.



4. Control-click the direction handle to revert the direction bars to their previous functionality.
5. Click the bottom direction handle and drag it in a counterclockwise direction.

Notice the how the curve changes as you drag the direction bar.



6. When you have finished experimenting, adjust the direction bar so that the object again resembles a circle.

Creating a Corner Join

The painting tools do not create corner joins by default; you can change an existing smooth join into a corner join as described in this section. Also, if you want to transform a straight-edge join into a corner join, you must transform the straight-edge join into a smooth join first.

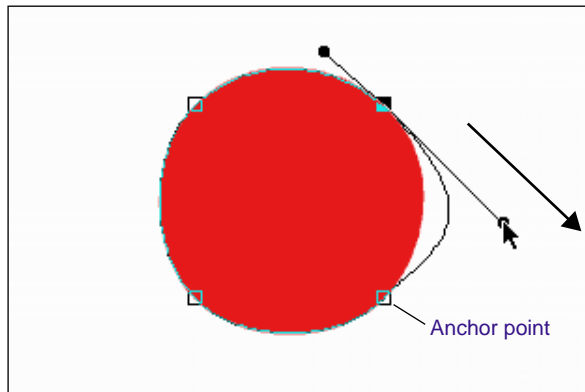
To transform a smooth join into a corner join:

1. Option-click the bottom direction handle.

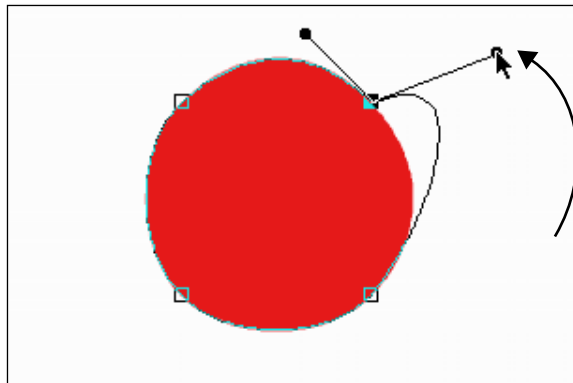
Although you might not notice it immediately, the smooth join is transformed into a corner join.

2. Drag the direction handle *away* from the control point.

Notice how the active segment behaves as you lengthen the direction bar. The direction bar and segment on the opposite side of the control point do not move in unison with this direction handle. Also, notice that the active segment remains anchored to the adjacent control point.



3. Drag the direction handle in a counterclockwise direction.
Notice the how the segment changes as you drag the direction bar.



4. When you are finished experimenting, Option-click the direction handle.
The control point reverts to a smooth join.

Modifying Lines and Curves Summarized

Table 7-2 summarizes how you can modify lines and Bezier curves (smooth joins or corner joins) by using the mouse and the modifier keys on the keyboard.

Table 7-2 Methods of Modifying Lines and Curves

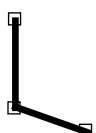
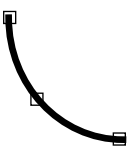
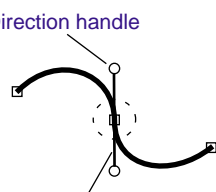
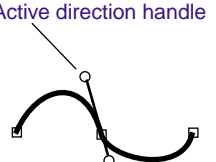
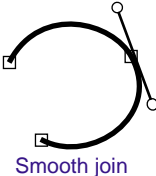
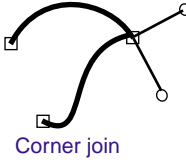
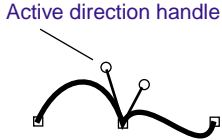
Illustration	Description	Action
 <p>Straight-edge join</p>	Transform a straight-edge join into a smooth join.	Control-click the control point. To change it back to a straight-edge join, Control-click the smooth join.
 <p>Smooth join</p>		
 <p>Direction handle</p> <p>Direction bar</p>	Smooth join: Drag one direction handle so that the direction bar on the opposite side of the control point moves and changes length in unison.	You do not have to press any of the modifier keys. Click and drag one of the direction handles.
 <p>Active direction handle</p>	Smooth join: Drag one direction handle so that the direction bar on the opposite side of the control point moves in unison but does <i>not</i> change in length.	Control-click a direction handle. To change it back, Control-click the direction handle.

Table 7-2 Methods of Modifying Lines and Curves (Continued)

Illustration	Description	Action
	Transform a smooth join into a corner join.	Option-click one of the direction handles. Control-click the corner join to change it back to a smooth join.
	Corner join: Drag one direction handle so that the direction bar on the opposite side of the control point moves independently of the bar on the opposite side of the control point.	You do not have to press any of the modifier keys. Click and drag one of the direction handles.
		

Painting a New Object with Bezier Curves

When you paint a freehand object to mask, colorize, or otherwise modify an image in a frame, you can achieve extraordinary precision when you know how to control Bezier curves. Being able to visualize curves and where you need to place their associated control points before you begin painting can make the process of tracing shapes easier.

The following tools paint new objects that are composed of Bezier curves:

- Oval Tool
- Polygon Tool
- Curve Tool

For information on how to use these tools to paint new objects with Bezier curves, see the description for each tool in the section [“Using the Paint Tools” on page 268](#). Keep in mind that you are not limited to using these tools to create curved objects because you can transform the straight-edge joins in any painted object into Bezier curves as described in [“Modifying Lines and Curves Summarized” on page 263](#).

Moving a Control Point

If a control point is not in the desired location, you can move it. Table 7-3 describes how you can change the shape of an object by moving its control points.

Table 7-3 Methods of Moving a Control Point

To move	Do the following
A control point freely	Drag the control point to its new location. The control point’s direction bars do not change orientation.
Multiple control points	Click one control point, and then Shift-click or lasso additional control points that you want to move. (Press ⌘-A to select all control points.) Drag one of the selected control points. All other selected control points move in unison.

Adding a Control Point

Placing more control points on an object enables the object to trace more detailed images. For example, if a segment of an object does not follow a curved section on a frame as well as you would like, and adjusting the control points and direction bars do not help, you can add a new control point.

To add a control point:



1. Select the object with the Selection Tool button.



2. Click the Reshape Tool button or double-click the object.
3. Click the selected object where you want to add a new control point.

A new control point appears and is calculated so that the original object, as you drew it, does not change dramatically in shape. The new control point appears as part of the object for all key frames in the segment.

Any changes you make to a control point, such as moving it or changing the angle of the associated curve, affects the key frames you have selected in the segment. If you change a control point at a selected key frame or add a key frame to make changes, the changes are interpolated between the selected key frame and adjacent key frames.

Moving to Adjacent Control Points



You can move from a control point to an adjacent control point without having to click the mouse. To use this feature, you must map the Fast Forward and Rewind buttons to your keyboard or a user-selectable button palette.

To move to an adjacent control point:

1. Select a control point.
2. Click Fast Forward to move in a clockwise fashion to the next control point, or click Rewind to move in a counterclockwise fashion to the next control point.

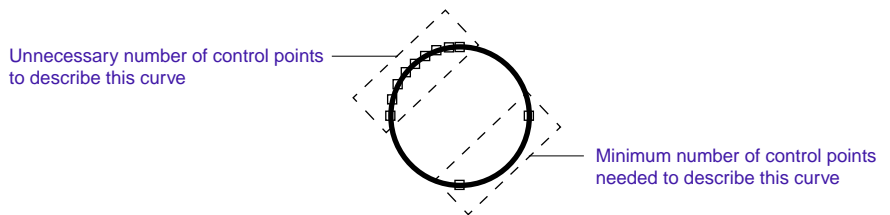
Moving Control Points and Objects in Small Increments

You can “nudge” one or more control points or an entire object in small increments by pressing and holding the Option key as you press one of the four arrow keys on your keyboard. You can use this feature to move any object or control point that is currently selected.

The Effect Preview monitor must be the active window for this feature to work. Additionally, if you have remapped the arrow keys on your keyboard, this feature might not function properly.

Removing a Control Point

Avid recommends that you remove a control point if the object does not need the control point to adequately define its shape. It is better to have fewer control points and to manipulate the direction bars to gain the same effect because fewer control points mean less work if you need to modify an object later.



To remove a control point, click the control point and press Delete. You also can Shift-click multiple control points and then delete them.

The Avid Composer system attempts to reconstruct the object so that it does not change. The results you see might vary because of the internal mechanics and geometry of Bezier curve technology. However, adding and then removing the same control point should not dramatically change the curve of that section of an object.

Using the Paint Tools

The Paint effect and the AniMatte effect include the following six paint tools:

- Brush Tool
- Rectangle Tool
- Oval Tool
- Polygon Tool
- Curve Tool
- Previsualization Marker Tool for film projects

You can use these tools for creating preset shapes or for painting with freehand capability to create vector-based objects and mattes with editable lines and Bezier curves. Additionally, the Selection Tool enables you to select painted objects and mattes to move them, rescale them, and change their parameters.

Brush Tool

With the Brush Tool, you can use the mouse or a pen tool with a tablet to paint objects or mattes with precision directly on the images in a sequence. You also can change and customize the brush shape, as well as determine the opacity of the paint or matte, adjust the outline feathering and softness values, and, for the Paint effect, define the color.

For the Paint effect, the Brush Tool includes twenty-one styles called *modes* that offer many creative and corrective possibilities. Available modes include solid (for traditional brushstrokes), erase, clone, colorize, emboss, and more.

The AniMatte effect provides the Key In and Key Out modes. These modes enable you to key in or key out an image in a sequence.



For more information on the characteristics of each paint mode, see [“Paint Modes” on page 297](#). For more information on the Key In and Key Out modes, see [“Key Modes” on page 315](#).

To paint an object with the Brush Tool:



1. Click the Brush Tool button in the Effect Editor.
2. Select a paint mode or key mode and parameters in the Effect Editor.
3. Position the cursor where you want to begin painting in the frame.
4. Press and hold the mouse button to begin painting.
5. Release the mouse button to complete the painted object.
6. Adjust the object’s parameters if needed.



For information on the shortcut method of selecting a color for the Brush Tool, see [“Shortcut for Selecting a Color with the Brush Tool” on page 301](#).

Rectangle Tool

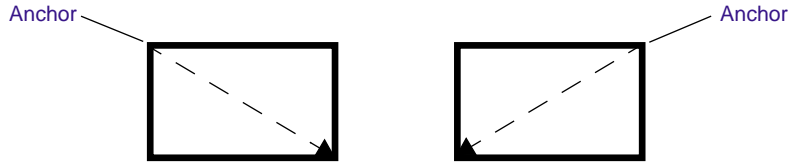
With the Rectangle Tool, you can paint rectangular shapes or mattes on images in a sequence. All the paint modes and parameters in the Effect Editor are accessible to the Rectangle Tool with the exception of the Brush category.

To paint with the Rectangle Tool:



1. Click the Rectangle Tool button in the Effect Editor.
2. Select a paint mode or key mode and parameters in the Effect Editor.
3. Position the cursor where you want to begin painting in the frame.
4. Press and hold the mouse button and drag the cursor to create the rectangle.

As you drag, you describe the diagonal of the rectangle. For example, if you drag to the right and in a downward fashion, the rectangle is anchored to its upper left corner.



5. Release the mouse button to complete the rectangle.
6. Adjust the object's parameters if needed.

Oval Tool

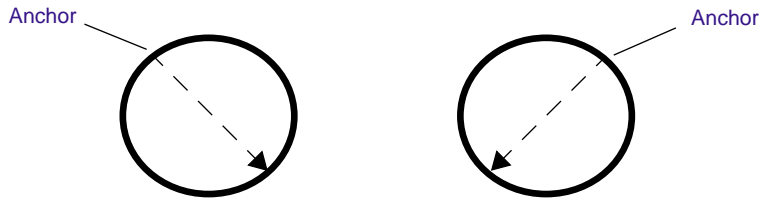
With the Oval Tool, you can paint oval shapes or mattes on images in a sequence. All the paint modes and parameters in the Effect Editor are accessible to the Oval Tool with the exception of the Brush category.

To paint with the Oval Tool:



1. Click the Oval Tool button in the Effect Editor.
2. Select a paint mode or key mode and parameters in the Effect Editor.
3. Position the cursor where you want to begin painting in the frame.
4. Press and hold the mouse button and drag the cursor to create an oval.

As you drag, you describe the diameter of the oval. For example, if you drag to the right and in a downward fashion, the oval is anchored to its upper left corner.



5. Release the mouse button to complete the oval.
6. Adjust the object's parameters if needed.

Polygon Tool

With the Polygon Tool, you can paint a variety of geometric objects and trace images in a frame. All the modes and parameters in the Effect Editor are accessible to the Polygon Tool with the exception of the Brush category. You can use the Polygon Tool to create objects and mattes composed of straight-line segments, curved segments, or a combination of both.

To take full advantage of the power of the Polygon Tool, you should be familiar with the concepts behind vector-based graphics. If you are not familiar with these principles, see [“Working with Vector-Based Objects” on page 255](#) for more information.

It is helpful to visualize the shape and the position of the polygon within the frame before you begin painting. By visualizing the object first, you will gain more control over the objects's attributes when you edit it later.

The general workflow for working with the Polygon Tool is:

1. Visualize the object you want to create.
2. Determine a location in the frame to begin painting and click that location to create the initial control point.
3. Click additional control points as you continue to define the shape of the object.

4. Double-click to create the final control point or click the initial control point to create the closed polygon.



Try to create the object with as few control points as possible. Fewer control points will eliminate more work if you need to modify the object later.

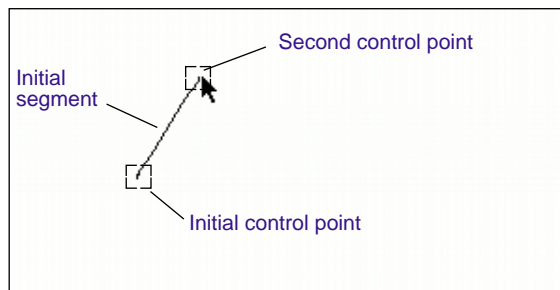
Creating Polygons with Straight-Line Segments

To create a polygon with straight-line segments:



1. Click the Polygon Tool button in the Effect Editor.
2. Select a paint mode or key mode and parameters in the Effect Editor.
3. Click in the frame where you want to place the initial control point.
4. Click in the frame where you want to place the next control point.

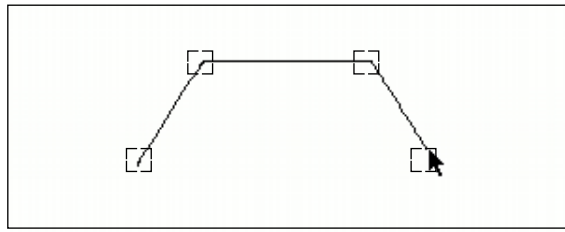
The control points do not appear as tiny rectangles while you are painting the object.



Segments appear as wire frames until you finish painting the object.

A straight-line segment is drawn between the initial control point and the control point you just created.

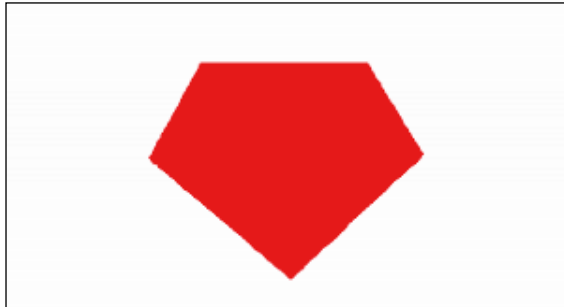
5. Click in the frame to create additional control points that further define the shape of the object.



A straight-line segment appears between each pair of adjacent control points.

6. When you are satisfied with the shape of the object, double-click in the frame to create the final control point or click the initial control point.

The object becomes a closed polygon.



7. Adjust the parameters of the polygon if needed.

Creating Polygons with Curved Segments

To create a polygon with curved segments:

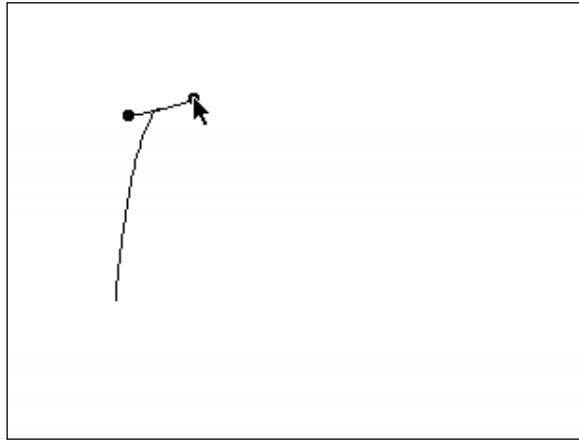


1. Click the Polygon Tool button in the Effect Editor.
2. Select a paint mode or key mode and parameters in the Effect Editor.

The control points do not appear as tiny rectangles while you are painting the object.

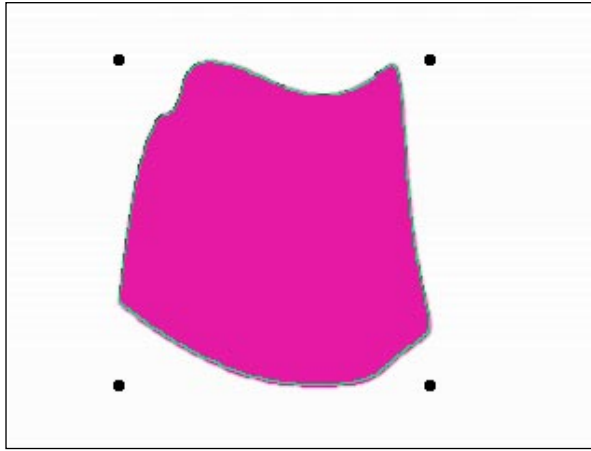
3. Click in the frame where you want to place the initial control point, and release the mouse button.
4. Drag the cursor to the location where you want to place the next control point.
5. Click *and hold* the mouse button to begin creating the first curved segment.

Direction bars with handles appear as a tangent to the curved segment. The cursor “leads” the direction handle that you will use to determine the direction and height of the curve.



6. Drag the cursor, which is attached to the direction handle, to adjust the direction and height of the curved segment.
7. Release the mouse button when you are satisfied with the height and angle of the curved segment.
8. Drag the cursor to the next location where you want to create a curved segment.
9. Repeat steps 3 to 8 to create additional curves if needed.
10. When you are satisfied with the shape of the object, double-click in the frame to create the final control point or click the initial control point.

The object becomes a closed polygon.

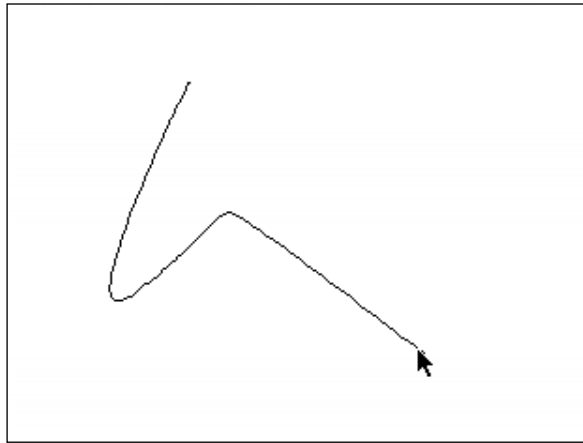


11. Adjust the parameters of the polygon if needed.

Creating a Straight Line Following a Curve

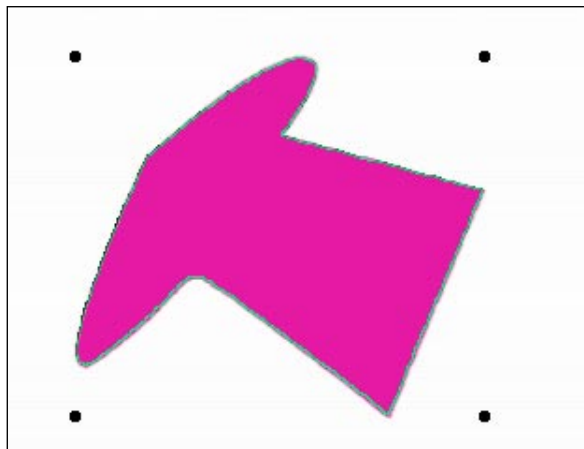
To create a straight line following a curved segment:

1. Create one or more curved segments as described in [“Creating Polygons with Curved Segments” on page 273](#).
2. Drag the cursor to the location where you want to begin painting the straight line.
3. Click and then release the mouse button to create the control point.
4. Drag the cursor to the location where you want the straight-line segment to end.
5. Click and then release the mouse button to create the control point.



6. Continue to create additional lines and curves.
7. When you are satisfied with the shape of the object, double-click in the frame to create the final control point or click the initial control point.

The object becomes a closed polygon.



8. Adjust the parameters of the polygon as desired.

Curve Tool

With the Curve Tool, you can trace curved objects with freehand capability. All the paint modes and parameters in the Effect Editor are accessible to the Curve Tool with the exception of the Brush category.

To paint with the Curve Tool:



1. Click the Curve Tool button in the Effect Editor.
2. Select a paint mode or key mode and parameters in the Effect Editor.
3. Position the cursor where you want to begin painting in the frame.
4. Press and hold the mouse button and drag the cursor as you paint a freehand curved shape on the frame.
5. When you are satisfied with the shape of the object, release the mouse button to complete the curved object.
6. Adjust the object's parameters if needed.

Previsualization Marker Tool for Film Projects

The Previsualization Marker Tool enables you to place a Marker effect in a segment that represents an effect that will be processed at an optical facility. This tool is applicable to 24-fps projects only and appears in the Effect Editor only when you are working in a film project with the Paint effect.

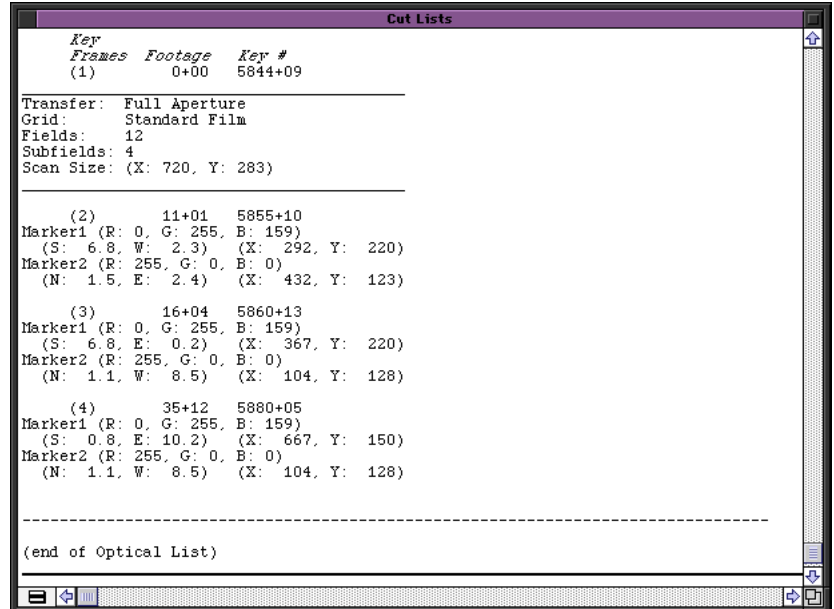
For information on optical lists, see the *Avid Film Composer User's Guide*.

When you create an optical list, each Marker, along with its positions in the segment in terms of key frames and color values, appears as an optical event. The editor at the optical facility can refer to the event as a cue for creating a visual effect, such as a rotoscoped object.

For more information on the Effect Grid, see [“Working with the Effect Grid” on page 78.](#)

For example, the optical editor’s assignment is to create an airplane that flies through the scene. He can use the key-frame information from the optical list to plot the exact path of the effect as it moves through the scene. The Marker’s position at each key frame is described with coordinates derived from the Effect Grid. Position is described in terms of compass coordinates (N, S, E, and W for North, South, East, and West) and X, Y coordinates.

Additionally, you can add multiple Markers to a single scene to represent different effects, and you can establish a unique color for each marker. The resulting optical list will display each Marker and its unique color values, which enables the optical editor to distinguish each Marker.



Applying the Marker Effect

To add a Marker effect to a segment:

1. Enable the Effect Grid and set the appropriate parameters for image scan size, aspect ratio, and film format.
2. Click the Previsualization Marker Tool button in the Effect Editor.
3. Adjust the sliders in the Color category to determine the color of the Marker.
4. Position the cursor at the location in the frame where you want to place the Marker, and click the mouse.
5. Use key frames to move the Marker throughout the segment.
6. To add more Markers, repeat steps 2 to 5.



For information on key frames, see [“Using Key Frames” on page 99](#).

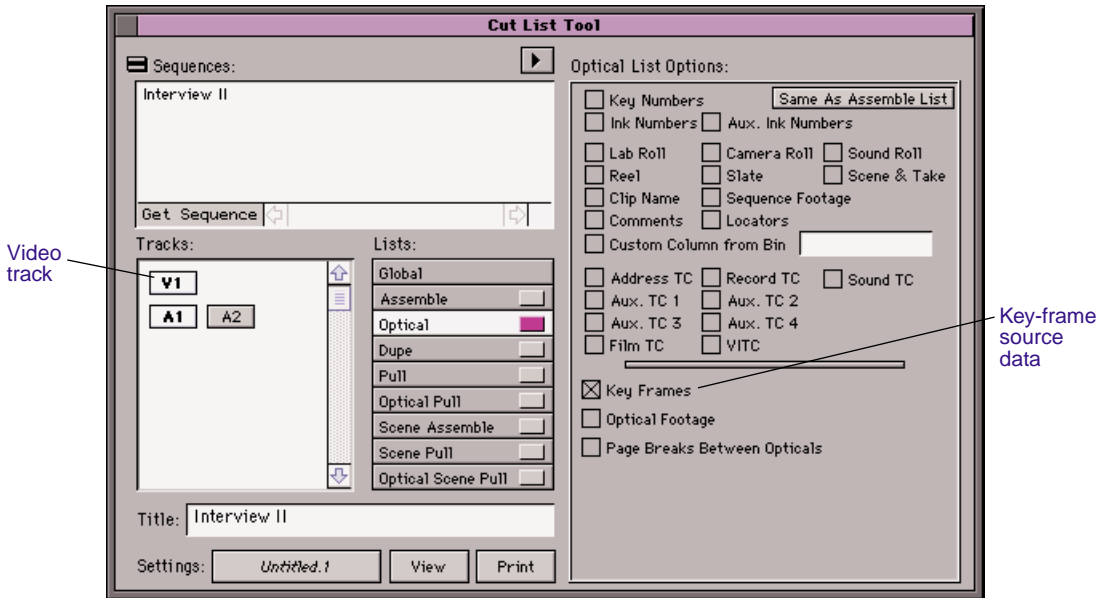
Creating a Cut List with Effect Grid Information

- d. This example shows how to move a Marker through an effect and save the results in a cut list. You could do the same with an object you draw with the Paint effect or with a matte you create with the AniMatte effect.

To create a cut list that contains the Effect Grid information for the Marker effect:

1. Choose Cut List from the Output menu.

The Cut List Tool appears.



2. Select the following options:
 - a. Choose Get Sequence and select the sequence.
 - b. Select the appropriate video tracks.
 - c. Select Optical and choose Key Frames as the source data.
3. Choose View.

The Avid Composer system displays the cut list. The following illustration shows an example cut list.

Key
Frames Footage Key #
(1) 0+00

Transfer: Full Aperture
Grid: Anamorphic
Fields: 12
Subfields: 4
Scan Size: (X: 720, Y: 243)

Grid information

Marker name and
color values

Marker 1 (R: 255, G: 0, B: 6)
(S: 5.0, W: 10.8) (X: 37, Y: 172)

Marker
coordinates for
each key frame

(2) 108+11
Marker 1 (R: 255, G: 0, B: 6)
(N: 2.0, E: 3.0) (X: 451, Y: 101)

(3) 220+04
Marker 1 (R: 255, G: 0, B: 6)
(N: 7.2, E: 11.0) (X: 690, Y: 49)

(end of Optical List)

Moving and Manipulating Painted Objects and Mattes

The Paint and AniMatte effects include editing tools and additional parameters that enable you to perform the following operations on painted objects and mattes:

- Reshape
- Z-rotation
- Rescale
- Movement around the screen and in relation to time
- Layers
- Group and ungroup
- Lock in place and unlock

Reshape

The Reshape Tool enables you to modify the shape of a painted object or matte on the screen. You also can change the shape of an object over time by making changes to the object on an individual key-frame basis. For information on working with key frames, see [“Using Key Frames” on page 99](#).

To reshape objects you paint with the Avid Composer system, you should be familiar with the concepts behind working with vector-based graphics. For more information, see [“Working with Vector-Based Objects” on page 255](#).

Selecting an Object or Matte with the Reshape Tool

To reshape a painted object or matte:

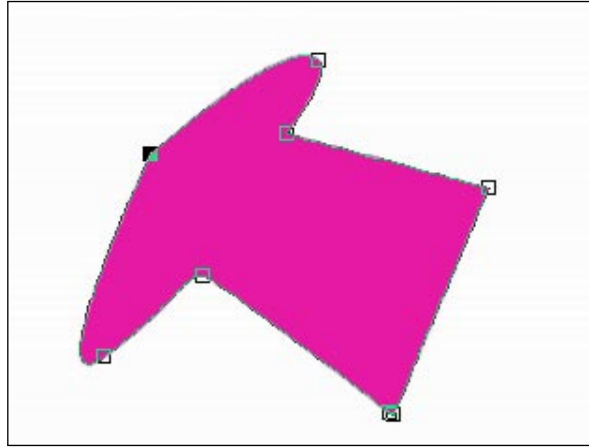


1. Select an object or matte with the Selection Tool.



2. Click the Reshape Tool button in the Effect Editor or double-click the selected object.

The outline of the object becomes highlighted, and control points appear at the midpoint of each straight line and curve.



If you want to drag the control points only, you can Option-click the Reshape Tool button to hide the direction handles.

Changing the Shape of an Object or Matte with the Reshape Tool

To edit an object or matte with the Reshape Tool:

- Click and drag one or more of the object's control points. For information on moving control points, see [“Moving a Control Point” on page 265](#).
- Edit the object by manipulating the direction bars at one or more control points. For information on editing straight-line segments and curved segments, see [“Modifying Lines and Curves Summarized” on page 263](#).

Editing Objects and Mattes Created with the Curve Tool

The default behavior of control points in an object or matte created with the Curve Tool differs slightly from those created with the Polygon Tool. When you drag one of the direction handles, the direction bar on the opposite side of the control point moves in unison but the length does not change in unison. The dimensions of the curved segments on each side of the control point are not equal because the Curve Tool creates curves with freehand capability, not with a mathematical formula that describes a Bezier curve in the way that the Polygon Tool does.

You can transform the direction bars at a control point so that their lengths change in unison when you drag one of the direction handles. To do so, Control-click one of the direction handles. For more information, see [“Modifying Lines and Curves Summarized” on page 263](#).

Z-Rotation

With the Z-Rotation Tool, you can select an object or matte and rotate it around the Z axis (clockwise or counterclockwise direction). You also can change the rotation of an object over time by rotating the object on an individual key-frame basis.

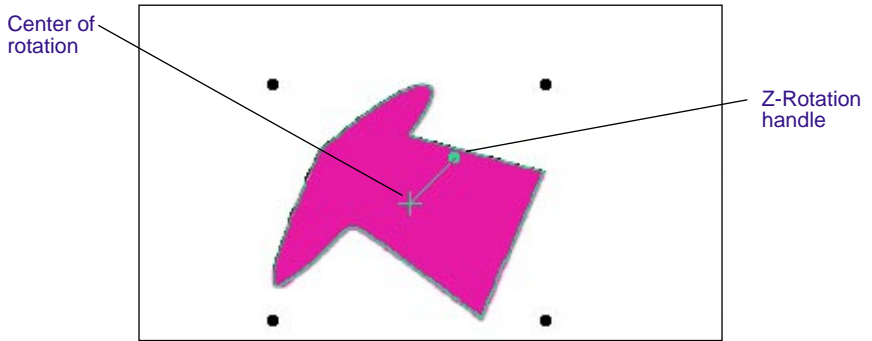
For an illustration of Z-rotation, see [“Rotation — Rotating an Effect” on page 495](#).

To rotate an object or matte around the Z axis:



1. Click the Z-Rotation Tool button in the Effect Editor.
2. Click the object you want to rotate.

The object outline becomes highlighted, and a rotation handle appears within the object.



The X on the rotation handle marks the default center of the Z axis for the object. You can click the X and drag it anywhere on the screen to change the center of the object's rotation.

3. Click the rotation handle and drag the mouse to rotate the object in either a clockwise or a counterclockwise direction.

Scaling Paint Objects and Mattes

You can rescale any object or matte that you create. Rescaling increases or decreases all dimensions of the object proportionately.

To rescale an object or matte:



1. Click the Selection Tool button in the Effect Editor.
2. Click the object you want to rescale.

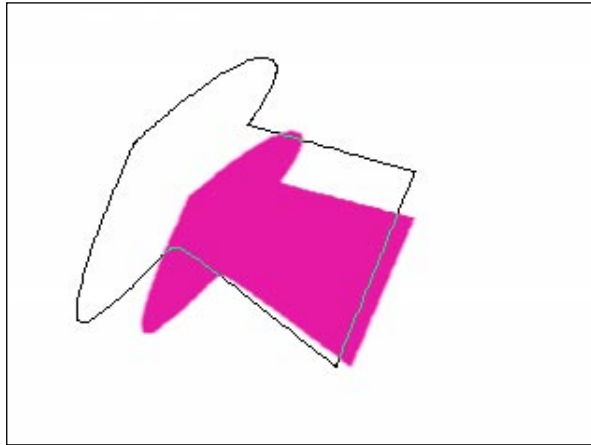
The object outline becomes highlighted, and four selection points appear around the object.

3. Rescale the object by using one of the following methods:

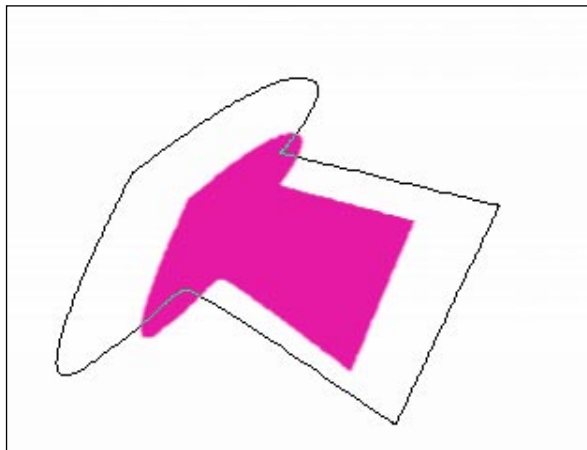
- Click and drag any of the selection points.

Dragging toward the center of the object decreases the overall size, while dragging away from the center increases the overall size. When you drag a selection point, the object is

anchored by the selection point that is diagonal to the one you are dragging.



- Option-click and drag any of the selection points to rescale the object using the center of the object as the anchor.



Moving Painted Objects

The Selection Tool also enables you to drag objects or mattes around the screen and in relation to the screen when you zoom out from a frame. You also can animate the object over time by changing the object's position on an individual key-frame basis. For more information on using key frames, see [“Using Key Frames” on page 99](#).

To move a painted object or matte:



1. Click the Selection Tool button in the Effect Editor.
2. Click the object you want to move.

The object outline becomes highlighted, and four selection points appear around the object.

3. Click the center of the object and drag it to a new location.
4. Release the mouse button when the object is positioned in the desired location.

Layering Objects and Matte Keys

The methods for moving painted objects forward and backward are described in the following sections.

Layering with the Paint Effect

When you paint on a frame, the paint appears as an object in the foreground, seeming closer to you in three-dimensional space than the video frame. You can change the parameters of each painted object independently, including the object's orientation in relation to another object. For example, if you have three painted objects, you can stack or cascade them over each other to create three separate layers of objects in the foreground.

All compositing of painted objects takes place in the foreground and is not destructive to the video background. Keep in mind that when you composite various Paint effects on a frame, the Avid Composer system renders the Paint effects to the screen beginning with the bottom layer.

Layering with the AniMatte Effect

Layering works similarly for matte keys, but the image that appears in the foreground is the video that you have chosen to key in or key out. Even though matte keys are rendered by the Avid Composer system starting with the highest track in a multilayer matte key, compositing of multiple AniMatte effects in the same segment occurs in the foreground and is not destructive to the video background.

Using the Outline/Path Button to Locate Layered Objects and Mattes

You can use the Outline/Path button to locate an object or matte that might be obscured by others on the screen. The Outline/Path button creates a wire-frame representation of each object, which enables you to locate, select, and manipulate the desired object. Clicking the Outline/Path button toggles the Path on or off.

To locate objects or mattes with the Path function:



1. Click the Outline/Path button in the Effect Editor.

Each object painted on the frame appears as a wire frame.

2. Select an object and change its location or parameters.
3. Click the Outline/Path button to return to normal viewing mode.

Bringing Objects and Mattes Forward by One Layer

You can use the Bring Forward function to bring a single object or matte forward by one layer (appearing *closer* to you in three-dimensional space).

To bring an object or matte forward by one layer:



1. Select an object on the screen with the Selection Tool.

If the object is obscured by other objects, use the Outline/Path feature to locate it as described in [“Using the Outline/Path Button to Locate Layered Objects and Mattes” on page 288](#).



2. Click the Bring Forward button, or choose Bring Forward from the Object menu.

The object moves one layer forward in the foreground.

Sending Objects and Mattes Backward by One Layer

You can use the Send Backward function to send a single object or matte backward by one layer (appearing *farther* away from you in three-dimensional space).

To send a painted object or matte backward by one layer:



1. Select an object on the screen with the Selection Tool.

If the object is obscured by other objects, use the Path function to locate it as described in [“Using the Outline/Path Button to Locate Layered Objects and Mattes” on page 288](#).



2. Click the Send Backward button, or choose Send Backward from the Object menu.

The object moves one layer backward into the layers of objects that appear in the foreground.

Bringing Objects and Mattes to the Front

You can use the Bring To Front function to bring a single object or matte to the front of the foreground layers (appearing *closest* to you in three-dimensional space).

To bring a painted object or matte to the front:



1. Select an object on the screen with the Selection Tool.

If the object is obscured by other objects, use the Path function to locate it as described in [“Using the Outline/Path Button to Locate Layered Objects and Mattes” on page 288.](#)



2. Option-click the Bring Forward button, or choose the Bring To Front option from the Object menu.

The object becomes the top layer in the foreground.

Sending Objects or Mattes to the Back

You can use the Send To Back function to send an object or matte to the bottom layer (appearing *farthest* away in three-dimensional space).

To send a painted object or matte to the back:



1. Select an object on the screen with the Selection Tool.

If the object is obscured by other objects, use the Path function to locate it as described in [“Using the Outline/Path Button to Locate Layered Objects and Mattes” on page 288.](#)



2. Option-click the Send Backward button, or choose the Send To Back option from the Object menu.

The object becomes the bottom layer in the layers of painted objects that make up the foreground.

Grouping and Ungrouping Objects or Mattes

The Avid Composer system enables you to group objects or mattes so that they behave as a single object. You then can move the new group and change its parameters as if it were a single object. If you want to separate the group and revert to working with the individual objects, you can do so by using the UnGroup function.

To group and ungroup painted objects or mattes:



1. Select an object on the screen with the Selection Tool.

If the object or matte is obscured by other objects, use the Path function to locate it as described in [“Using the Outline/Path Button to Locate Layered Objects and Mattes” on page 288](#).

2. Shift-click any additional objects you want to include in the group.
3. Choose Group from the Object menu.

The objects become grouped together, and you can manipulate the group as if it were a single object.

4. To ungroup the objects, select the group and choose UnGroup from the Object menu.



You also can group together groups of objects. If you then select the new group and choose UnGroup, all objects become ungrouped completely.

Locking and Unlocking Objects and Mattes

By using the lock feature, you can lock an object or a group in place on the screen. When you lock an object, the Avid Composer prevents you from moving the object accidentally while you add more effects and make additional edits to your sequence.

To lock and unlock a painted object or matte:



1. Select an object or group on the screen with the Selection Tool.

If the object is obscured by other objects, use the Path function to locate it as described in [“Using the Outline/Path Button to Locate Layered Objects and Mattes” on page 288](#).

2. Choose Lock from the Object menu.
3. To unlock the object at any time, select the object and choose Unlock from the Object menu.



CHAPTER 8

Using the Paint and AniMatte Effects

This chapter includes information on how to get started with the Paint and AniMatte effects and describes parameters that are specific to these effects. Before you begin reading this chapter, read [Chapter 7](#) to familiarize yourself with basic Intraframe Editing concepts and techniques.

- [Using the Paint Effect](#)
- [Using the AniMatte Effect](#)

Using the Paint Effect

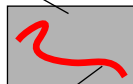
The Paint effect enhances the creative and corrective powers of the Avid Composer system by providing the following features:

- Customizable paint brushes with preset templates and parameters for adjustable softness and rotation
- Creation of vector-based objects that you can animate and edit
- A variety of paint modes including Erase, Clone, Colorize, Darken, Lighten, Blur, Unsharp Mask, Emboss, and more
- Object selection with rescale, lock/unlock, and group/ungroup capabilities
- Z-rotation of painted objects
- Outline feathering with bias control
- Magic Mask for quick and easy colorization
- Previsualization of painted objects in a film project for improving effects processing at the visual effects facility

Getting Started with the Paint Effect

The Avid Composer system provides twenty-one painting styles (modes) and a variety of painting tools and options. This section briefly describes how to use the Brush Tool and how to adjust the Paint effect parameters to get you started with the Paint effect.

Video background



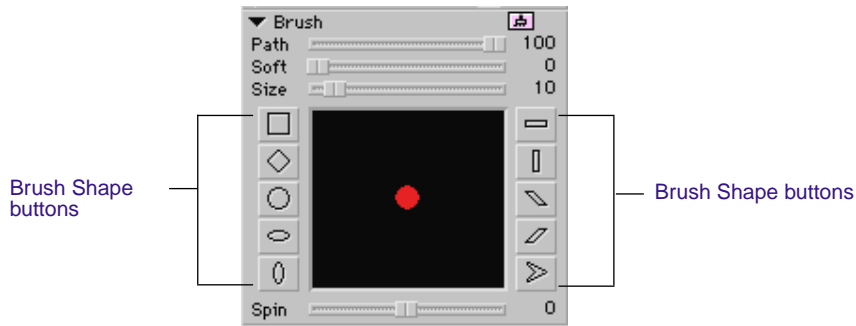
Paint

When you paint an object in a sequence, you paint on the frame displayed in the Record monitor. The painted object is superimposed over the video background, appearing closer to you in three-dimensional space. Each object you paint creates a foreground layer that you can work with individually or group with other painted objects in the segment.

Painting with the Brush

To begin painting:

1. Apply the Paint effect to a segment in the sequence as described in [“Applying the Paint Effect to a Sequence” on page 235](#).
2. Click the Brush Tool button to activate the Brush Tool.
3. Click one of the Brush Shape buttons in the Brush parameter pane of the Effect Editor.



The default shape of the brush head changes to your selection.

4. Position the cursor over the image in the Record monitor.
Notice that the cursor becomes a crosshair.
5. Click and drag to paint freehand style on the video background.
6. Release the mouse button when you have finished painting the object.

Painting Using Different Effect Parameters

To experiment with painting objects using different parameters:

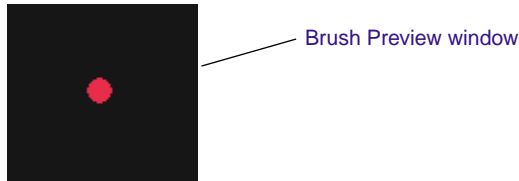
1. Apply the Paint effect to a segment in the sequence as described in [“Applying the Paint Effect to a Sequence” on page 235](#).



2. Click the Brush Tool button to activate the Brush Tool.
3. Click one of the Brush Shape buttons in the Brush parameter pane of the Effect Editor.

For information on control points, see [“Working with Vector-Based Objects” on page 255.](#)

Notice that the brush head in the Brush Preview window appears with control points where curves or straight lines meet.



4. Click and drag the control points to create a custom shape for the brush head.
5. Position the cursor over the Record monitor, and click and drag to paint an object on the screen.
6. Release the mouse button when you have finished painting the object.
7. Drag the Size slider to adjust the size of the brush head in the Brush Preview window.
8. Drag the Spin slider to rotate the brush head to a new position.
9. Drag the Soft slider to adjust the softness of the brush.
10. Position the cursor over the image in the Record monitor, and then paint a new object on the screen. Paint the new object anywhere you want on the screen, including on top of any previously painted objects.
11. Release the mouse button when you have finished painting the object.

For information on using the Rectangle, Oval, Polygon, and Curve Tools, see [“Using the Paint Tools” on page 268.](#)

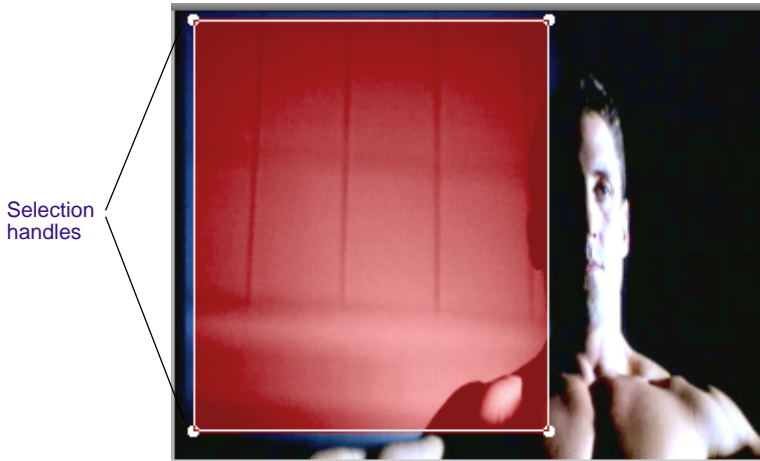
Changing the Parameters of a Painted Object

To change the parameters of an object you already have painted:



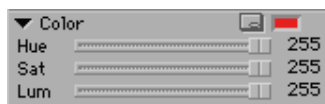
1. Click the Selection Tool button to activate it, and click an object you already have painted.

The Avid Composer system outlines the object and displays four selection handles for the object.

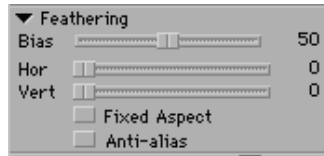


2. To move the object, click anywhere *within* the outline and drag the object to a new location.
3. To rescale the object, click and drag any one of the selection handles.
4. Click the triangle next to the Color category.

Press and hold the Option key to rescale the object from its center.



5. Drag the Hue, Sat, and Lum sliders to change the color of the object.
6. Click the triangle next to the Feathering category.



7. Drag the sliders in the Feathering parameter pane to change the edge feathering.
8. Press the Delete key to delete the object.
9. To undelete the object, choose Undo from the Edit menu.

Paint Effect Parameters

Many of the parameters you use with the Paint effect function similarly with the AniMatte effect. [Chapter 7](#) includes complete descriptions of these common parameters. The following sections describe parameters that are specific to the Paint effect.

Paint Modes

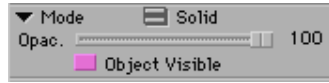
The Paint effect provides twenty-one modes that you can use to paint with a variety of styles. When you click a painting tool for the first time, the default setting is Solid mode, which enables you to paint an opaque object on the video background with a brushstroke.

To change the paint mode:



1. Select an object with the Selection Tool. If you do not select an object, the paint mode will be applied to the next object you create.

2. Click the triangle next to Mode if the Mode parameter pane is not open already.



3. Choose a mode from the Mode Fast menu.

When you finish painting, the mode you have chosen becomes the new default paint mode.

Table 8-1 briefly describes the characteristics of each mode.

Table 8-1 Paint Mode Descriptions

Mode	Description
Solid	Applies paint as an opaque object superimposed on the video background.
Erase	Removes paint from a frame.
Outline	Creates an outline that is useful for tracing images in a frame.
Clone	Duplicates an area from a frame and applies it to another area of the frame.
Colorize	Changes the tint in a selected area to the foreground color.
Hue	Changes the hue in a selected area to the foreground color without affecting the saturation and luminance levels.
Saturation	Changes the saturation in a selected area to the foreground color without affecting the luminance levels and the hue.
Luminance	Changes the luminance in a selected area to the foreground color without affecting the saturation levels and hue.
Darken Only	Reduces the luminance levels in a selected area only if the result would be darker than the background color.

Table 8-1 Paint Mode Descriptions (Continued)

Mode	Description
Lighten Only	Increases the luminance levels in a selected area only if the result would be lighter than the background color.
Darken	Reduces the luminance levels in a selected area.
Lighten	Increases the luminance levels in a selected area.
Add	Adds more of the foreground color to the colors in a selected area.
Subtract	Extracts the foreground color in a selected area.
Invert	Inverts the RGB values of the selected area.
Mosaic	Applies a tile effect to a selected area with horizontal and vertical controls.
Blur	Blurs a selected area with horizontal and vertical controls.
Median	Changes a selected area to the most typical (median) color value within the selection.
Unsharp Mask	Sharpens a selected area of an image to create more defined edges with horizontal and vertical controls.
Gradient	Dissipates the paint with controls to establish the direction of dissipation.
Emboss	Creates a three-dimensional extrusion effect in a selected area with controls for height and angle.

Choosing a Color

You can choose the color you want to paint with by using the eyedropper, the Color sliders, or the Macintosh Color Picker. You can select the color before you begin painting or after you have painted an object.

Using the Eyedropper

To use the eyedropper:



1. Select an object with the Selection Tool.

If you do not select an object, the color will be applied to the next object you create.

2. Position the cursor over the Color Preview window.

Other Options button



Color Preview window

The cursor becomes an eyedropper.

3. Click and hold the mouse button, drag the eyedropper to the location in the Record monitor that contains the color you want to pick, and release the mouse button.

The Avid Composer system applies the color to the selected object, and the color you picked becomes the new default color shown in the Color Preview window.

Selecting a Color with the Color Sliders

To select a color with the Color sliders:



1. Select an object with the Selection Tool.

If you do not select an object, the color will be applied to the next object you create.

2. Adjust the Hue, Sat, and Lum sliders to select a color.

The Avid Composer system applies the color to the selected object, and the color you picked becomes the new default color shown in the Color Preview window.

Selecting a Color from the Macintosh Color Picker

The Macintosh Color Picker is a standard application that ships with Macintosh systems. Its appearance varies depending on the current release of the Macintosh operating system. You can access the Macintosh Color Picker as follows:



1. Select an object with the Selection Tool.

If you do not select an object, the color will be applied to the next object you create.

2. Click the Other Options button in the Color parameter pane.

The Macintosh Color Picker dialog box appears.

3. Select a color as described in [“Using the Macintosh Color Picker” on page 105.](#)

Shortcut for Selecting a Color with the Brush Tool

When you use the Brush Tool to paint an object, you can select a color quickly from a video segment as follows:



1. Click the Brush Tool button to make it the active paint tool.
2. Press and hold the Option key, and drag the cursor to the Record monitor.

The cursor becomes an eyedropper.

3. Position the eyedropper over the color you want to select, and release the mouse button.

The color you picked becomes the new default color shown in the Color Preview window.

Using Magic Mask with the Paint Effect

Magic Mask enables you to isolate pixels within a specified color range in an image and apply the Paint effect to the chosen pixels. While you

can use Magic Mask in conjunction with any of the paint modes to generate custom effects, the primary benefit of this feature is localized colorization, which enables you to create garbage mattes and other chroma key functions.

The Magic Mask category contains a Color Preview window for use with the eyedropper and parameters for adjusting the hue, saturation, luminance, gain (color tolerance), and softness. These parameters are described in the following sections.

The general workflow for using Magic Mask is:

1. Select a paint mode, such as Lighten, Darken, or Colorize, that provides the colorization capabilities you desire.
2. Use one of the paint tools to trace the area of the image that you want to modify.
3. Click the Outline/Path button so you have an unobscured view of the object you want to colorize.
4. Use the eyedropper to pick the color that you want to change from your selection.
5. Click the Outline/Path button to disable Outline/Path mode.
6. Adjust the Magic Mask parameters, such as Gain and Softness, if necessary.
7. Use the sliders in the Color parameter pane in conjunction with the paint mode you have chosen to change the color you picked.

Getting Started with Magic Mask and the Paint Effect

To get started with Magic Mask:

1. Load a sequence into the Record monitor.

The video frame in this selection includes a young man wearing a yellow vest that we want to modify.



2. Select a paint mode that provides color modification, such as Hue.
3. Click the Curve Tool button.

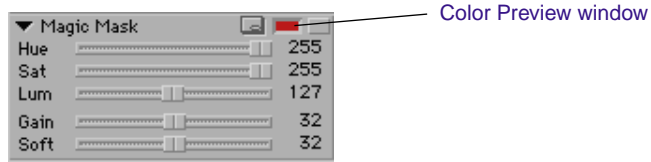


For more information on using the Curve Tool, see [“Curve Tool” on page 277.](#)

4. Click and drag to trace a freehand outline around the area in the Record monitor that you want to colorize.
5. Release the mouse button when you are finished with the outline.
6. Click the Outline/Path button to view the painted object as a wire frame.

The wire frame provides an unobscured view of the area in which you want to make the color change.

7. Position the cursor over the Color Preview window in the Magic Mask parameter pane.



The cursor becomes an eyedropper.

8. Click and hold the mouse button, drag the eyedropper to the location in the Record monitor that contains the color you want to modify, and release the mouse button.



For best results, pick the color from the center of the area that contains the color you want to change.

The color you picked becomes the new default color shown in the Color Preview window in the Magic Mask parameter pane.

9. Click the Outline/Path button to restore the painted object to the normal view.
10. Use the Hue, Sat, and Lum sliders in the Color parameter pane (not the Magic Mask parameter pane) to modify the hue of the color you picked.



Magic Mask Hue, Saturation, and Luminance Parameters

After you choose Magic Mask and pick a color with the eyedropper, you can adjust the Hue, Sat, and Lum sliders to refine the color selection. In most cases, you do not need to adjust these parameters, but the values reported by the sliders provide a useful reference.

The Hue slider affects the tint of the color selection. The tint refers to the name commonly associated with a color, such as red, green, or blue. The slider values range from 0 to 255.

The Sat (Saturation) slider affects the purity or intensity of the color selection. The color gray has no saturation at all; a fully saturated color produces the most intense representation of that color. The slider values range from 0 to 255.

The Lum (Luminance) slider affects the brightness of the color selection. The color black has 0 brightness. The slider values range from 0 to 255.



Keep in mind that the Hue, Sat, and Lum sliders in the Magic Mask parameter pane enable you to refine the color you select from the video background. Use the sliders in the Color parameter pane in conjunction with one of the paint modes to colorize your selection.

To adjust the Magic Mask Hue, Sat, and Lum sliders:

- Drag either the Hue, Sat, or Lum slider to attain the desired value.
- Click either the Hue, Sat, or Lum slider, and use the keyboard to enter a number from 0 to 255.

Gain

Use the Gain slider to increase or decrease the range of pixels surrounding the color you pick that Magic Mask will enable you to modify in conjunction with your chosen paint mode. Gain includes or excludes pixels surrounding the color you pick that fall within a speci-

fied color range, or tolerance. The tolerance you adjust with the Gain slider is relative to the RGB values of the color you picked.

Decreasing the gain lessens the color range and includes fewer pixels contiguous to your color selection. Increasing the gain expands the range and includes more pixels surrounding the color you picked.

To adjust the Gain slider, do one of the following:

- Drag the Gain slider to attain the desired value.
- Click the Gain slider, and use the keyboard to enter a number from 0 to 63.

Softness

You can use the Soft slider to increase or decrease the dissipation of the pixels in your color selection that Magic Mask will enable you to modify with the painting tools. The amount of dissipation you adjust with the Soft slider is relative to the RGB values of the color you picked in your selection.

To adjust the Soft slider, do one of the following:

- Drag the Soft slider to attain the desired value.
- Click the Soft slider, and use the keyboard to enter a number from 0 to 63.

Using the AniMatte Effect

The AniMatte effect enables you to generate custom matte effects that you can apply to a segment or transition in a sequence. You can use a variety of brushes and painting tools to create matte effects that you can animate — all from within Effect mode. The AniMatte effect including the following features:

- Modes for keying in and keying out images
- Key-frameable animation of matte effects
- Creation of mattes as vector-based objects that allow you to move, rescale, and reshape the mattes during a segment or transition
- Freehand painting ability to create organic matte wipes
- Magic Mask, Brush Shapes, Z-rotation, feathering, and more
- Export of mattes to create keys in third-party applications
- No additional hardware required

Getting Started with the AniMatte Effect

The AniMatte effect provides the Key In and Key Out modes for creating mattes. You use the same set of painting tools that are available to the Paint effect to build a variety of multitrack and single-track effects, including traditional matte keys, animated matte keys, chroma keys, and organic matte wipes.

For more information on creating matte keys, see [Chapter 4](#).

When you use the AniMatte effect as a multitrack effect, you isolate a region of the highest video track (foreground image) with the painting tools and then key in or key out the region. Keying in a region ensures that the selection is displayed over the image on the lower track (background image). Keying out a region ensures that the lower track is visible through the selection.

The following sections briefly describe how to use the AniMatte effect to create popular matte keys.

Creating a Multitrack Matte Key

To create a multitrack matte key:

1. Create a sequence with two video tracks. Edit the image you want to use as the background on V1 and the image you want to use as the foreground on V2.



V1 background image



V2 foreground image

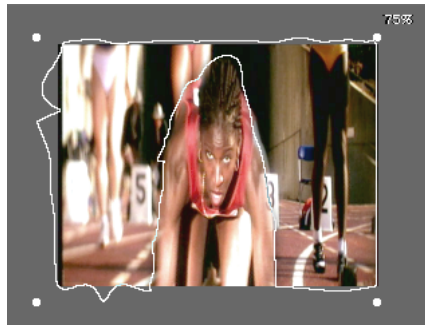
2. Monitor V2 by clicking the video monitor column next to V2.
3. Apply the AniMatte effect to the segment on V2, and click the Effect Mode button.
4. Click the Reduce Tool button if necessary to obtain a better view of the entire image.



5. Click the Curve Tool button.
6. Choose Key In from the Mode Fast menu in the Effect Editor.
7. Click and drag on the image on V2 to draw a matte with freehand capability.
8. When you are satisfied with the shape of the matte, release the mouse button.



The area outside the border of the matte reveals the underlying image on V1, and the area inside the border of the matte displays the image on V2.



9. Click the Reverse button in the Foreground parameter pane.

The area outside the border of the matte reveals the image on V2, and the area inside the border reveals the underlying image on V1. By enabling the Reverse option, you have changed the view of the matte from key in to key out.



Using the Reverse option provides a useful reference when you need to see the image on the track that becomes obscured when you apply the AniMatte effect. You might need to see these obscured areas to track the motion of the images so you can edit the matte to follow their movement.

10. Click the Reverse button to disable the Reverse option.

This restores your selection to a matte that keys in your selection.

Animating the AniMatte Effect

When you apply the AniMatte effect and create a matte key, the shape and location of the matte remain fixed over the course of the segment. The parameters of the matte are the same at both the first and last key frames in the segment.

When you have moving video on V1 and V2, the images are changing from frame to frame. Consequently, you must change the shape and location of the matte in order to follow the changes of the video over the course of the segment. You can add a key frame at each location in the segment where you make changes to the shape and position of the matte. Alternatively, you can make changes to the matte at various locations in the effect's Timeline, and the Avid Composer system inserts a new key frame where each change is made.

To animate a Matte Key effect:



1. Click the Step Forward button or the Step Backward button as many times as necessary to park on a frame in which the matte no longer provides a clean key due to the motion of the foreground or background image.

Subject has moved relative to the key.



2. Click the Add Key Frame button.
3. Click the Reverse button to swap the view of the foreground and background images.

4. To reposition the matte:
 - a. Click the Selection Tool button and select the matte.
 - b. Click within the border of the matte and drag the matte to the new location.
 - c. When you are satisfied with the position of the matte, release the mouse button.



5. To change the shape of the matte:



- a. Select the matte with the Selection Tool.
- b. Click the Reshape Tool button in the Effect Editor, or double-click the matte.

The outline of the matte becomes highlighted, and control points appear at the midpoint of each straight line and curve.

- c. Do one or more of the following to adjust the shape of the matte:
 - Click and drag one or more of the object's control points. For information on moving control points, see [“Moving a Control Point” on page 265](#).
 - Edit the object by manipulating the direction bars at one or more control point. For information on editing straight-line segments and curved segments, see [“Modifying Lines and Curves Summarized” on page 263](#).
6. Repeat steps 1 to 5 as needed to create a matte that keys the images cleanly over the course of the segment. A clean and accurate matte tracks the movement of the foreground and background images.

Creating a Single-Layer Organic Matte Wipe

While the Avid Composer system includes a wide variety of wipes in the Effect Palette, you can use the AniMatte effect to draw your own custom matte wipe. Additionally, you can create soft edges and other useful variations by adjusting the parameters of the AniMatte wipe. Multiple video tracks are not necessary. You apply the AniMatte effect to a transition on a single track of video and then draw the matte wipe as described in this section.

7. To create an organic matte wipe:

1. Create a sequence that contains a transition (an incoming and an outgoing segment).



Outgoing segment

Incoming segment

2. Apply the AniMatte effect to a transition as described in [“Applying an AniMatte Effect to a Sequence” on page 236](#).
3. Click the Effect Mode button to enter Effect mode.
4. Choose Key In from the Mode Fast menu.
5. Click the Reduce Tool button three times to reduce the image to 25 percent of its normal viewing size.
6. Click the first key frame in the effect’s Timeline.



The first key frame is highlighted, and the last key frame is deselected.



7. Click the Curve Tool button.

Draw a matte that is at least as wide as the frame in the Record monitor.

8. Press and hold the mouse button and drag to draw a custom shape to the right of the image displayed in the Record monitor.

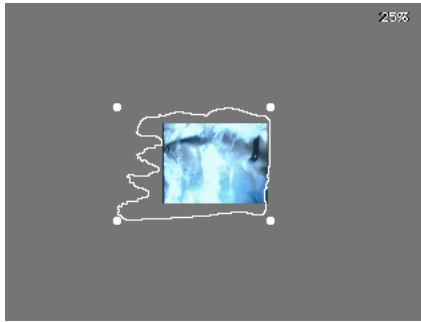


9. When you are satisfied with the shape of the object, release the mouse button to complete the matte wipe.

10. Click the last key frame in the effect's Timeline.

The last key frame is highlighted, and the first key frame is deselected.

11. Click the matte wipe within its borders and drag it so that it covers the frame in the Record monitor. Make sure to position the leading edge of the wipe so that it is beyond the left border of the frame.



12. Click the Enlarge Tool button three times to restore the video image to 100 percent.

Adding a Soft Edge to the Organic Matte Wipe

To add a soft edge to the organic matte wipe:



1. Shift-click the first key frame in the effect's Timeline so that both the first and last key frames are selected.
2. Select the matte wipe with the Selection Tool if it is not selected already.
3. Drag the position indicator under the monitor to the midpoint of the effect's Timeline.

The leading edge of the wipe appears in the Record monitor.



4. Click the triangle next to Feathering if the Feathering parameter pane is not open already.
5. Click the Anti-Alias button in the Feathering parameter pane.
6. Click the Fixed Aspect button in the Feathering parameter pane if it is not selected already.
7. Click the Hor slider, enter 50 by using the keyboard, and press Return.
Both the Hor and Vert sliders change to a value of 50.
8. Render the effect to play back the custom wipe with a soft edge in real time.

AniMatte Effect Parameters

Many of the parameters you use with the AniMatte effect function similarly with the Paint effect. [Chapter 7](#) includes complete descriptions of these common parameters. The following sections describe parameters that are specific to the AniMatte effect.

Key Modes

The AniMatte effect provides two modes, Key In and Key Out, that you can use to create matte keys and matte wipes.

Table 8-2 briefly describes the characteristics of each mode.

Table 8-2 Key Mode Descriptions

Mode	Description
Key In	Displays the image on the higher track (foreground) within the matte selection while revealing the image on the lower track (background) outside the matte selection for two-track video effects; displays the incoming segment within the matte selection for single-track matte wipes.
Key Out	Displays the image on the lower track (background) within the matte selection while revealing the image on the higher track (foreground) outside the matte selection for two-track video effects; displays the outgoing segment within the matte selection for single-track matte wipes.

To change the Key mode:



1. Select an object with the Selection Tool.

If you do not select an object, the Key mode will be applied to the next object you create.

2. Click the triangle next to Mode if the Mode parameter pane is not open already.



3. Choose Key In or Key Out from the Mode Fast menu.

When you finish drawing a matte, the mode you have chosen becomes the new default Key mode.

Using Magic Mask with the AniMatte Effect

Using Magic Mask with the AniMatte effect provides an alternative to the YUV Chroma Key effect in the Effect Palette. You isolate pixels within a specified color range in a matte to key in or key out those pixels. You can modify the color range to refine the key and to include contiguous pixels that fall within the color range in the key.

The Magic Mask parameter pane contains a Color Preview window for use with the eyedropper and parameters for adjusting the hue, saturation, luminance, gain (color tolerance), and softness. These parameters are described in the following sections.

The general workflow for using Magic Mask is:

1. Select either the Key In or Key Out mode.
2. Use one of the paint tools to draw a matte key.
3. Choose the opposite Key mode to view the foreground image within your matte selection.
4. Use the eyedropper to pick the color that you want to use as the basis for your chroma key.
5. Switch back to the original Key mode.
6. Adjust the Magic Mask parameters, such as Gain and Softness, as necessary.

Getting Started with Magic Mask and the AniMatte Effects

To get started with Magic Mask to create a chroma key:

1. Create a sequence with two video tracks. Edit the image you want to use as the background on V1 and the image you want to use as the foreground on V2.



V1 Background image



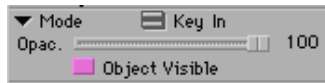
V2 Foreground image

2. Monitor V2 by clicking the video monitor column next to V2.
3. Apply the AniMatte effect to the segment on V2, and click the Effect Mode button.



4. Click the Curve Tool.

5. Click the triangle next to Mode if the Mode parameter pane is not open already.



6. Choose Key Out from the Mode Fast menu.



7. Click the Reduce Tool button if necessary to obtain a better view of the entire image.
8. Click and drag on the image on V2 to draw a matte with freehand capability.
9. When you are satisfied with the shape of the matte, release the mouse button.

The area inside the border of the matte reveals the underlying image on V1, and the area outside the border of the matte displays the image on V2.



V1 Background image

10. Choose Key In from the Mode Fast menu.

Now you can see the foreground image within the borders of the matte key.



Off-white will be the color selection.

11. Position the cursor over the Color Preview window in the Magic Mask parameter pane.



Color Preview window

The cursor becomes an eyedropper.

- Click and hold the mouse button, drag the eyedropper to the location in the matte key that contains the color you want to key out, and release the mouse button.



For best results, pick the color from the center of the area that contains the color you want to correct. In the example, the off-white color of the sky is the color selection.

The color you pick becomes the new default color shown in the Color Preview window in the Magic Mask parameter pane.

- Choose Key In from the Mode Fast menu.

The foreground image is keyed out based on your color selection.



- Adjust the Hue, Saturation, Luminance, Gain, and Softness parameters to refine your key. The following sections describe these parameters.

Hue, Saturation, and Luminance Parameters

After you use Magic Mask to pick a key color with the eyedropper, you can adjust the Hue, Sat, and Lum sliders to fine-tune the color selection. If you do not need to adjust these parameters, the values reported by the sliders provide a useful reference to the values that make up your color selection.

The Hue slider affects the shade of the color. The shade refers to the name commonly associated with a color, such as red, green, or blue. The slider values range from 0 to 255.

The Sat (Saturation) slider affects the purity or intensity of the color. The color gray has no saturation at all; A fully saturated color produces the most intense representation of that color. The slider values range from 0 to 255.

The Lum (Luminance) slider affects the brightness of the color. The color black has 0 brightness. The slider values range from 0 to 255.

To adjust the Hue, Sat, and Lum sliders:

- Drag either the Hue, Sat, or Lum slider to attain the desired value.
- Click either the Hue, Sat, or Lum slider, and use the keyboard to enter a value from 0 to 255.

Gain

You can use the Gain slider to increase or decrease the effect of Magic Mask on pixels that are contiguous to your color selection within the borders of a matte key. Gain applies color correction to pixels that fall within the specified color range, or tolerance, of the color you pick with the eyedropper. The tolerance you adjust with the Gain slider is relative to the RGB values of the color picked in your selection.

Decreasing the gain tightens the color range and restricts the key to fewer contiguous pixels. Increasing the gain expands the range and includes more pixels contiguous to the picked color in the key. You probably will need to make adjustments to gain to obtain a clean key.

To adjust the Gain slider, do one of the following:

- Drag the Gain slider to attain the desired value.
- Click the Gain slider, and use the keyboard to enter a number from 0 to 63.

Softness

You can use the Soft slider to increase or decrease the amount of softness applied to your color selection and contiguous pixels that fall within a specified tolerance. The tolerance you adjust with the Soft slider is relative to the RGB values of the color picked in the selection.

To adjust the Soft slider, do one of the following:

- Drag the Soft slider to attain the desired value.
- Click the Soft slider, and use the keyboard to enter a number from 0 to 63.

Exporting a Matte PICT File

For more information on creating matte keys, see [“Matte Key” on page 423](#).

You can create a matte with the AniMatte effect and export it from the Avid Composer system as a high-contrast matte — without having to leave Effect mode. The exported image is a high-contrast 32-bit PICT file that includes an alpha channel.

You can use the exported PICT file in the following ways:

- Import the file back into the Avid Composer system to create a real-time matte key clip that you can edit into a sequence. You can use this clip as a garbage matte or, if you have the 3D Effects option, promote the clip to 3D.
- Open the file in a third-party graphics application, edit the file, and import the file back into the Avid Composer system.
- Use the file as a graphic in an application other than Media Composer or Film Composer.

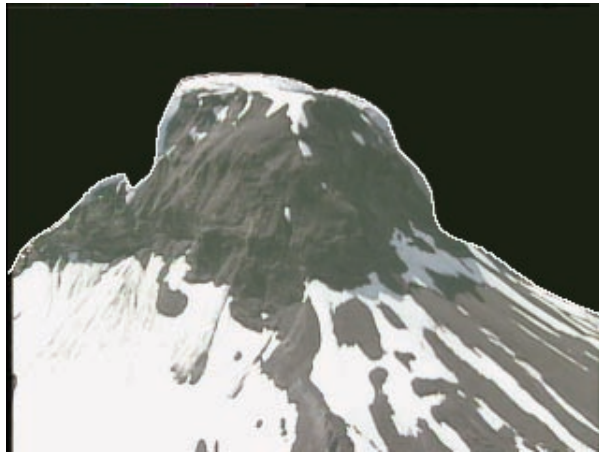
When you import the PICT file back into the Avid Composer system, the system creates a matte key clip in the bin that you select. You can load the matte key clip into the Source monitor and edit it into a sequence as you can with any other imported matte key. The matte key clip appears as a high-contrast matte with transparent (black) and

opaque (white) components. For more information on editing a matte key clip into a sequence, see [“Editing with Imported Matte Key Clips” on page 129](#).

When you open the high-contrast PICT file in a third-party application that supports alpha channels, select the file’s alpha channel to view the high-contrast components of the matte. However, if you open the PICT file in an application that does not support alpha channels, the image appears completely white.

To export a matte key created with the AniMatte effect:

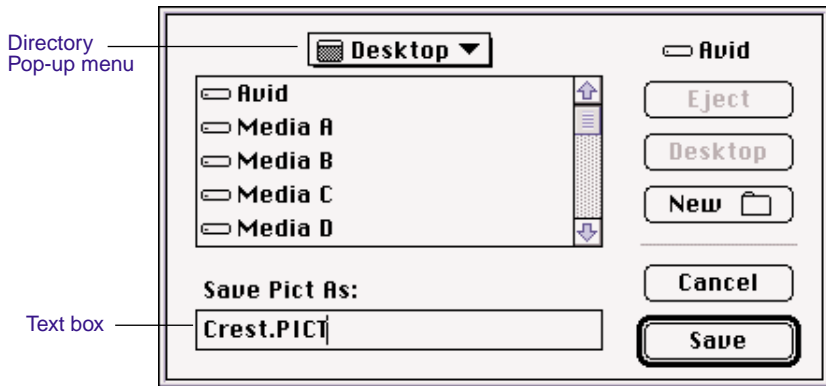
1. Create a matte key using the AniMatte effect in Effect mode.



To follow the remaining steps in this procedure, you must be working in Effect mode.

2. Move the position indicator in the effect’s Timeline to the frame you want to export.
3. Choose Export Matte PICT from the File menu.

A dialog box appears.



4. Use the Directory pop-up menu to choose the location where you want to save the PICT file.

5. Click Save.

The system saves the PICT file to the location you chose.

6. If necessary, open the PICT file in a third-party application and make changes to the file.

7. Select the bin into which you will import the PICT file, and choose Import from the File menu.

8. The Select Files to Import dialog box appears.

9. Click Options.

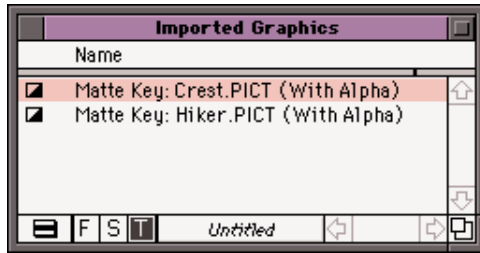
10. To use the existing alpha channel, deselect Ignore Existing Alpha Channel.

Depending on your needs, you might have to select Invert Existing Alpha; in a high-contrast matte key with an alpha channel on an Avid Composer system, the white regions are opaque, and the black regions are transparent. For more information on importing a matte key, see the "Importing Files" chapter in the *Avid Media Composer User's Guide* or *Avid Film Composer User's Guide*.

11. When you are finished selecting the options you need, click OK.

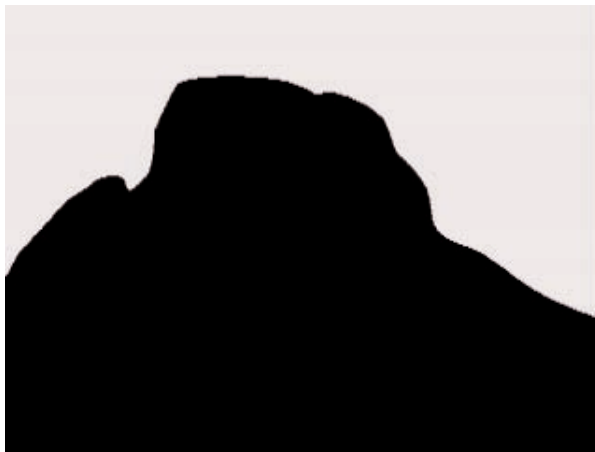
- Continue with the instructions in the “Importing Files” chapter in the *Avid Media Composer User’s Guide* or *Avid Film Composer User’s Guide* to complete the import of the file into the bin.

The PICT file appears as a Matte Key Effect clip in the bin you chose.



- Click the Source/Record Mode button.
- Load the matte key clip into the Source monitor.

The clip appears in the Source monitor as a black-and-white, high-contrast image.



- Edit the matte key into the sequence as described in [“Editing with Imported Matte Key Clips” on page 129](#).





CHAPTER 9

Working with 3D Effects

This chapter describes procedures for creating and manipulating 3D effects for systems equipped with the 3D Effects option. For reference information on the various parameters that apply to 3D effects and all the available 3D shapes, see [Chapter 11, “3D Effects Reference.”](#)

- [About the 3D Effects Option](#)
- [Accessing 3D Effects](#)
- [Understanding the 3D Effects Interface](#)
- [Creating Custom 3D Effects](#)
- [Using Avid Xpress 3D Effects](#)

About the 3D Effects Option

The 3D Effects option delivers a wide range of digital video effects, including the following.

- Image effects such as blur (defocus) and resize with rotation and perspective
- Two-channel segment effects including smooth motion picture-in-picture
- Shapes, including 3D spheres and four-way page curls

- Positioning, scaling, skewing, and rotation, with perspective
- Source cropping
- Internal borders including beveled and rounded edges
- Soft borders
- Trails and drop shadows with varying opacity
- Highlights, wipe generator, chroma keys, and luma keys

The 3D Effects option allow you to play effects in reverse, or to step through an effect frame by frame without any preroll. The 3D Effects option can also handle multiple layers of 3D effects through rendering.



For information on the hardware requirements for the 3D Effects option, see the *Avid Media Composer Products Setup Guide*.

Turning the 3D Effects Option On and Off

The 3D Effects option is on by default. However, the 3D Effects option is not compatible with multicamera AVRs 2m – 6m. In addition, 24-fps film projects are not compatible with the 3D Effects option.

If you need to use these AVRs, or if your 3D system is equipped with Film Options and you need to work on a 24-fps film project, you can temporarily disable the 3D Effects option.



While the 3D Effects option is disabled, the standard set of real-time 2D effects are available. For example, dissolves, superimpositions, and titles are real-time effects.

There are two methods for disabling the 3D Effects option, depending on your needs:

- You can disable the 3D Effects option during startup using a key sequence. In this case, the 3D Effects option will be re-enabled automatically the next time you start the system.

- You can disable the 3D Effects option with a Console command. In this case, the 3D Effects option will remain disabled until you enter another Console command.



The Console window gives you access to low-level commands that can alter the operation of the Avid Composer system. Use only Console commands that are documented in Avid Tech Notes or user manuals.

To turn off the 3D Effects option during startup:

1. Press and hold the F and X keys on the keyboard while launching the Avid Composer application.

A dialog box appears, with buttons for enabling or disabling the 3D Effects option.

2. Click the button for disabling 3D.

The system proceeds to start up with the 3D Effects option disabled.

After the application starts, the 3D Effect category is no longer available. The next time you relaunch the application, the 3D Effects option will be available unless you again press and hold the F and X keys.

To turn off the 3D Effects Option in the Console:

1. Choose Console from the Tools menu. The Console window appears.
2. Type the following command into the command line at the bottom of the Console window and press Return:

```
Disable3D
```

A message appears stating that the 3D Effects option is disabled.

3. Quit the Avid Composer system application, and restart it.

During startup a message indicates that the 3D effects are disabled. To re-enable the 3D effects, repeat this procedure and type "Enable3D" into the Console Window command line.



Any effects that were created with the 3D Warp option play as cuts (unless rendered) while the 3D Effects option is disabled.

Accessing 3D Effects

There are two basic ways to access the 3D effects parameters and controls: you can apply the 3D Warp effect to a transition or segment, or you can promote an existing 2D effect to 3D.

Applying a 3D Warp Effect

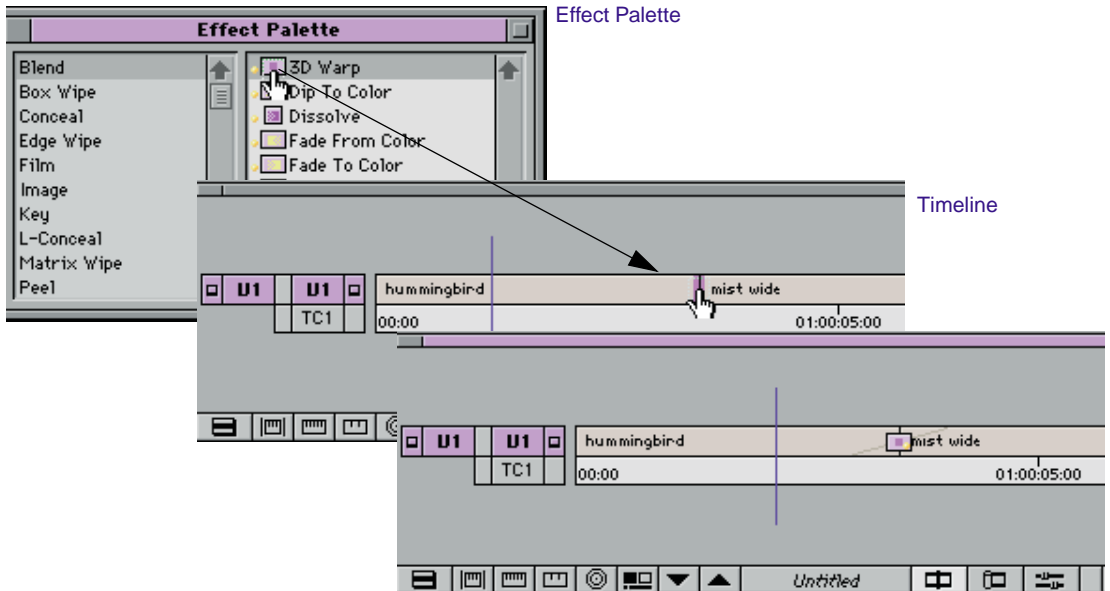
All the 3D Effects features are accessible through the 3D Warp effect in the Blend category.



This procedure assumes that you are familiar with adding effects to a sequence. For more information, see [“Applying Effects to a Sequence” on page 46](#).

To apply the 3D Warp effect:

1. Create a sequence in the Record monitor using the standard Avid Composer system editing procedures.
2. Choose Effect Palette from the Tools menu, or press ⌘-8.
3. In the Effect Palette, drag the 3D Warp Effect icon to the transition or a segment in the Timeline and release the mouse button. The 3D Warp Effect icon appears in the Timeline as shown in the following illustration.



4. In the Timeline, move the blue position indicator to the 3D Warp effect and click the Effect Mode button.

The Effect Editor and Effect Preview monitor appear. The two default key-frame indicators appear under the Effect Preview monitor. Now you can begin adjusting the 3D Warp parameters to customize your effects.

Promoting 2D Effects to 3D Effects

You can use 2D effects as building blocks for 3D effects. For example, if you have a 2D Picture-in-Picture effect, you can add 3D features like 3D borders, drop shadow, page curls, smooth curve movement, and rotation. You can also promote a Title effect created with the Title Tool to a 3D effect.



For information on creating a 2D Title effect, see [Chapter 5, “Creating Titles and Graphic Objects.”](#)

To promote a 2D effect or title to a 3D effect:

1. Click the Effect Mode button to open the Effect Editor.
2. Click the effect icon in the sequence to select it.
3. Double-click the 3D Warp icon in the Effect Palette, or click the 3D Promote button in the Effect Editor.



You cannot demote a 3D effect to a 2D effect. If you play a 3D effect on a system that does not have 3D hardware, the effect plays as a cut (unless the effect was rendered on the 3D system).

Using Matte Keys with 3D Effects

You can promote a 2D matte key to a 3D effect. A matte key is an effect made up of three components: the high-contrast image or matte, the background image (the image that shows through the lightest part of the matte), and the foreground image (the image that shows through the darkest part of the matte).



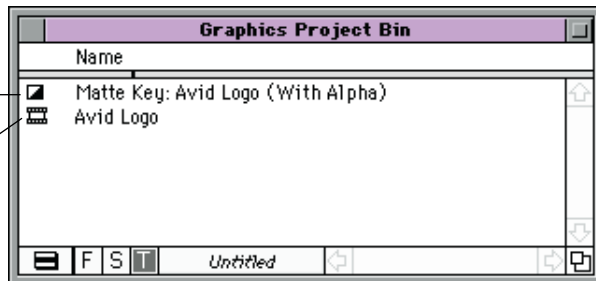
For more information on matte key clips, see [“Creating a Matte Key Effect” on page 127](#).

Use the following procedure to create a matte key for use with 3D effects:

1. Import a graphic file containing an alpha channel. The system creates a matte key clip when you import the file as shown in the following illustration.

Matte Key Effect clip
with alpha channel

Graphic master clip
with no alpha channel



2. Edit the matte key clip into your sequence as an overlay.

Make sure Render On-The-Fly is enabled (displays a check mark in the Special menu) so you can see the matte key as you are working with it.

3. Promote the matte key clip to a 3D Warp effect as explained in the section [“Promoting 2D Effects to 3D Effects” on page 331](#).



You cannot promote matte keys created using the Matte Key effect from the 2D Effect Palette to a 3D matte key.



You should reimport any matte keys you created in releases earlier than Media Composer or Film Composer Version 5.50 in order to promote them.

Understanding the 3D Effects Interface

This section provides basic information for using the 3D effects parameters and the Effect Preview monitor and controls.

Moving in 3D Space

You don't need to use a lot of math to create most 3D effects, but you do need some basic understanding of degrees of motion and geometry, as described in this section.

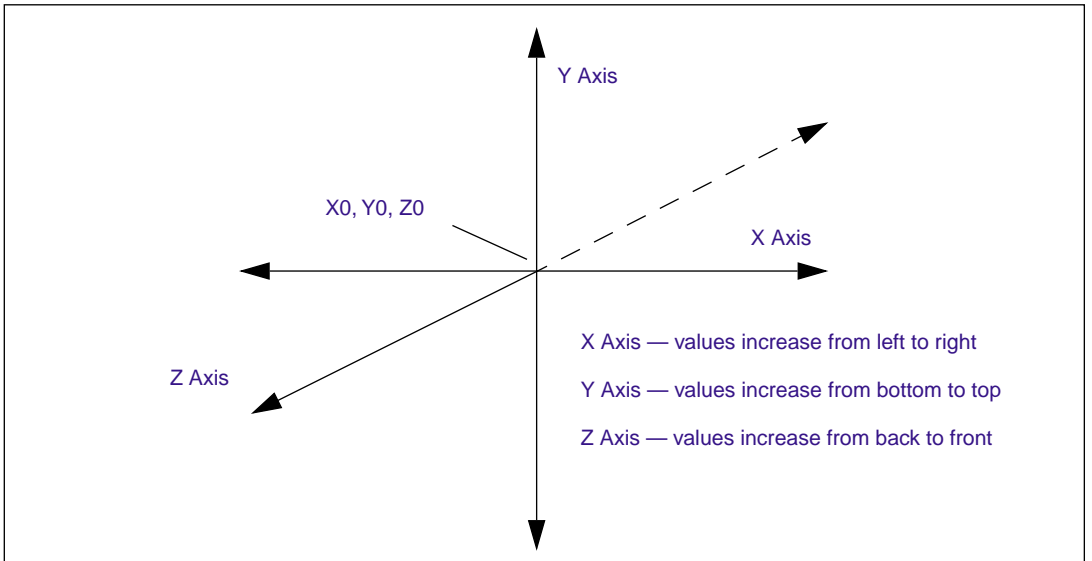


Moving objects in 3D space requires an understanding of each of the 3D effects parameters and their correct order in the effects parameters hierarchy. For more information, see [“About 3D Effects Parameters” on page 336](#).

The 3D Coordinate System

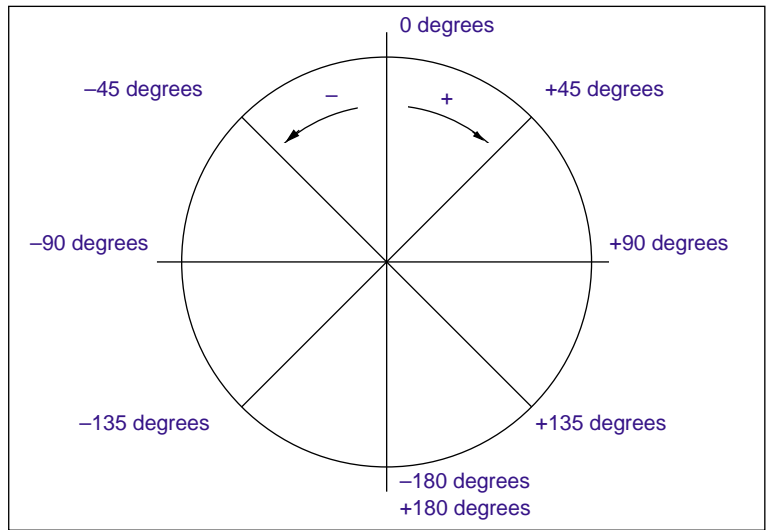
Throughout this chapter, the terms X, Y, and Z refer to the three axes or dimensions of the image that can be manipulated in the 3D effects coordinate space.

- X refers to the image's left/right direction.
- Y refers to the image's up/down direction.
- Z refers to the image's front/back dimension.

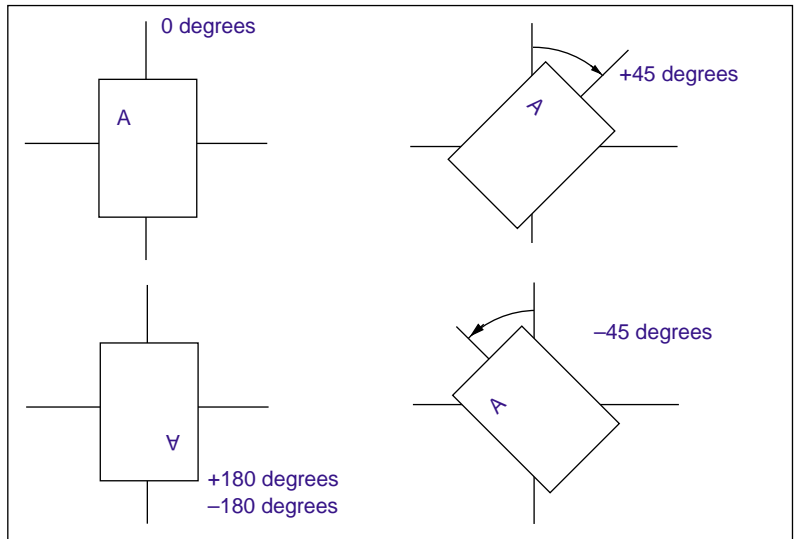


Rotation Axes

The Shape and Rotation parameters allow you to rotate the image around the X, Y, and Z axes. Note that you can rotate more than 360 degrees between key frames. The following illustration shows how angles of rotation are distributed around a circle.



The following illustration shows several rotation examples.



About 3D Effects Parameters

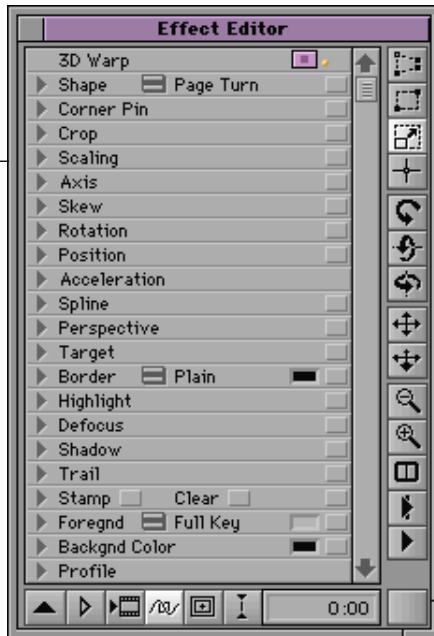
The following sections provide a basic introduction to 3D effects parameters. For specific information on each of the parameters available in the Effect Editor for the 3D Warp effect, see [Chapter 11, “3D Effects Reference.”](#)



Manipulating 3D effects parameters requires a basic understanding of degrees of motion and the system of geometry used in the Avid Composer system’s 3D Effects interface. For more information, see [“Moving in 3D Space” on page 333.](#)

The 3D Warp parameters list displays effect parameters grouped in collapsible panes. Each item in the list represents a specific type of manipulation, called a *category*, that you can apply to an image. You can apply effect parameters adjustments either individually or in combination.

3D Warp parameter categories

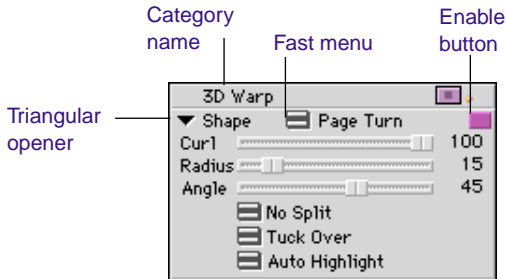


Effect Editor buttons

For a description of the Effect Editor buttons, see [“Effect Editor Buttons” on page 91](#). Effect Editor buttons are the same for both 2D and 3D effects.

Opening Parameter Panes

When a parameter pane is collapsed, only the triangular opener, category name, Fast menu (if any), and Enable button are visible.



Click the triangle next to the category name or double-click the category name to open the pane and view the parameter controls. When you open a parameter pane, a scroll bar appears, allowing access to other categories hidden from view.

To close a parameter pane, click the triangle or double-click the category name.



Option-click one triangle to open or close all the parameter panes.

Using the Enable Button

When you click the Enable button, the parameters of that category become active for all key frames and affect the displayed image. When the Enable button is not highlighted, the category is inactive and the Avid Composer system uses default values for those parameters. In this case, the Avid Composer system saves any changes to the parameters along with the effect but does not apply them to the image.

Resetting Default Values

To reset the parameters for a category to their default values, Option-click the Enable button. This operation affects only selected key frames.

Using Effect Templates

Once you create a 3D effect and adjust parameters, you can save the adjustments as a template for later use. This allows you to use the same effect parameters in multiple places in a sequence or in different sequences.

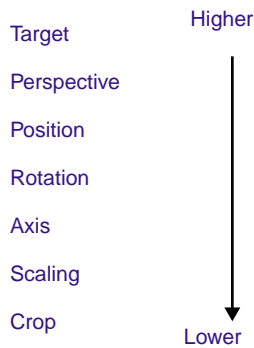
- Dragging and dropping an effect template onto the Effect Preview monitor or onto the effect segment in the Timeline applies all the values from the template.
- Dragging and dropping an effect template onto an open parameter pane resets the parameters of the category to those of the first key frame of the effect template. This allows you to use selected portions of effect templates.

For more information, see [“Applying an Effect Template” on page 113.](#)

The Hierarchy of Parameters

The Avid Composer system processes 3D Effects parameters in a specific order. Knowing the order will help you understand why something looks a particular way or why an object behaves the way it does on a motion path.

The hierarchy of 3D Effects parameters, and the relationships between them, are as follows:



- Parameters that are lower in the hierarchy, like Crop, are not affected by parameters that are higher in the hierarchy, such as Rotation. In an effect that has both rotation and cropping, for example, the same four edges are always cropped the same way no matter what angle you have chosen for the rotation.
- Parameters that are higher in the hierarchy will always take into account the parameters lower in the hierarchy when processing. For example, before an object is rotated, the system looks to see where the object is positioned in the frame to display the correct 3D point of view with the new angle.
- You always end up with the same effect no matter the order in which you change parameters. However, building an effect from the bottom of the hierarchy up will be easier to control. If you rotate an object, for example, and then move the axis (a lower parameter), your object may jump off the screen. It would be better to move the axis first, and then rotate the object.
- Parameters operate as 2D, 3D, and post-transformation. All these choices affect the 3D path of the object differently. 2D parameters, such as Scaling, are lowest in the hierarchy and do not affect the path through space. 3D parameters, such as Position, directly affect the shape of the motion path. Post-transformation parameters, such as Target, move the entire path.

Effect Parameters with 2D and 3D Versions

Several 3D effects parameters such as Position, Crop, and Border have corresponding 2D versions. In most cases, the 3D versions have more options and allow for finer adjustments. All the 3D-specific parameters are described in this chapter.

The following parameters have 2D and 3D versions:

- **Position**

In the 3D version, you can move images in the X, Y, and Z axes.

- **Scaling (Size)**

- **Border**

In the 3D version, you have multiple types of borders to choose.

- **Crop**

- **Luma and Chroma Keys**

Use Luma Key and Chroma Key from the Foregnd (foreground) category Fast menu.

- **Matte Key**

You can create 3D matte keys from imported PICT files as you can with 2D effects; see [“Using Matte Keys with 3D Effects” on page 332](#).

When performing dissolves in 3D, use the Opac (opacity) slider in the Foregnd parameter pane.



All effects that were real time in 2D are still real time when you upgrade to 3D with the exception of Dip to Color. Dip to Color is not a real-time effect with the 3D Effects option. In addition, all Peel effects are now real time with the 3D Effects option.












Manipulating 3D Effects in the Effect Preview Monitor

You can perform a number of operations on an image by clicking and dragging handles attached to the image in the Effect Preview monitor.

Zooming In or Out on the Effect Preview Monitor

Because you can move the bounds of a 3D effect outside the bounds of the enclosing frame, the Avid Composer system lets you view an outline of the image area at a reduced scale. Use the Enlarge and Reduce buttons under the Effect Preview monitor. These buttons serve the same function as the Enlarge Outline Scale and Reduce Outline Scale selections on the Edit menu.

Manipulating Effect Handles

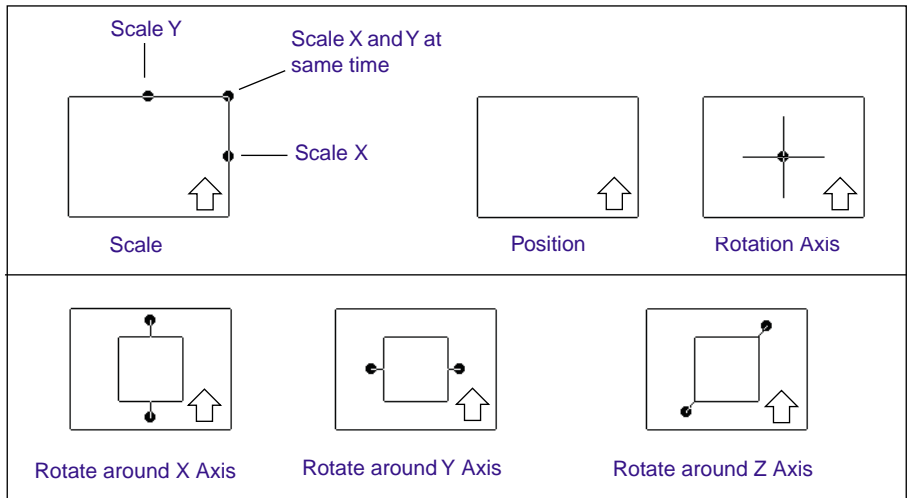
	Corner Pin
	Crop
	Scale
	Axis
	Z Rotation
	X Rotation
	Y Rotation
	XY Position
	XZ Position
	Reduce
	Enlarge

You determine the direction and type of manipulation performed in the Effect Preview monitor by selecting one of the image manipulation buttons on the Effect Editor.

To manipulate a 3D effect handle in the Effect Preview monitor:

1. Click one of the image manipulation buttons on the Effect Editor to activate the specific handles.
2. Click and drag the handles to manipulate the image.
3. Click the image manipulation button a second time to turn off the handles.

The following illustration shows the handles for several of the image manipulation buttons.



Using the Motion Path Editor



Use the Outline/Path button when you want to see the path an image takes on the screen (for example, moving a Picture-in-Picture effect). The motion path editor displays the path between key frames as either a straight line or a smooth curve. Click the Spline category Enable button to switch between a straight line and smooth curve. For a description of the Spline parameters, see [“Spline — Moving the Image Along a Smooth Path” on page 498](#). For an example, see [“Using the Spline Parameters” on page 356](#).

Creating Custom 3D Effects

This section provides examples of some basic 3D effects, including the steps and values used in creating the effects. You can use them to practice creating 3D effects or you can use them to get ideas for building your own effects. Examples of both segment effects and transition effects are included.

If you need more information while you are trying to complete the examples shown here, refer to the following sources:

- [Chapter 2](#), for basic information on effects editing
- [“Understanding the 3D Effects Interface” on page 333](#) for information on the 3D interface, moving in 3D space, and descriptions of all the parameter panes and shapes
- [Chapter 11](#), for reference information on all 3D Warp Effect parameters and controls
- *The Avid Media Composer User’s Guide* or *Avid Film Composer User’s Guide*, for basic information on using the Media Composer and Film Composer

In addition to re-creating the examples in this chapter, you can experiment with the default shape effects. Each Shape effect has default values for the first and last key frames. Examples of the default shapes are provided in [Chapter 11](#).

Some Tips for Creating 3D Effects

The following tips apply to the examples in this chapter:

- **Creating the segment:** Transition effects require only a two-clip sequence. Some of the segment effects require at least two tracks.
- **Avoiding Insufficient Source errors:** Several of these examples assume that you are creating a transition effect centered on the cut between the incoming and outgoing video. Make sure you leave

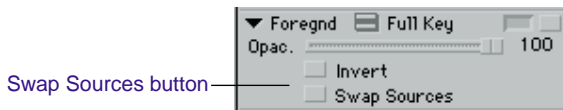
enough material for the overlapping portions of the transition when you mark the source material. For example, the following illustration shows the Source monitor position bar for the outgoing video clip.

Source monitor position bar



If you get an “Insufficient Source” message when you apply the 3D Warp effect to the transition, it means you didn’t leave enough source material behind for the system to create the transition.

- **Using the Swap Sources button:** When you use the 3D Warp effect as a transition and click on the effect for the first time, the Avid Composer system applies the effect to the incoming video. To apply the effect to the outgoing video, click the Swap Sources button in the Foregnd (Foreground) parameter pane. Click anywhere in the effect’s Timeline to view the results.



The following illustration shows the display for [“Creating a Page Curl Transition” on page 346](#), and identifies several areas that are referred to throughout the chapter.

3D Warp parameters list

Effect name

Effect icon

Effect Preview monitor



Incoming video

Outgoing video

Key-frame indicators in the effect's Timeline

3D Warp used as a transition effect

A simple two-clip sequence

Creating a Page Curl Transition

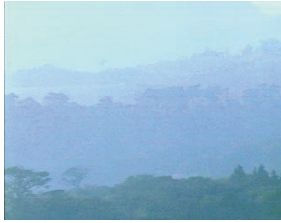
This example uses the Page Curl effect. This effect treats the foreground video channel as though it were a sheet of paper being rolled up to reveal another page beneath. Page Curl supports two highlights on the curl. The following illustrations show the effect created in this example.



Page Curl, 45 degrees



Outgoing video

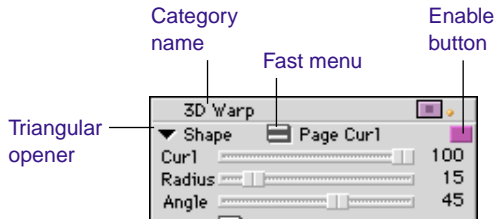


Incoming video

To create the Page Curl effect:

1. Create a sequence and apply the 3D Warp effect as described in the previous section.
2. In the 3D Warp parameter list, click the triangle for Shape, and choose Page Curl from the Shape Fast menu.



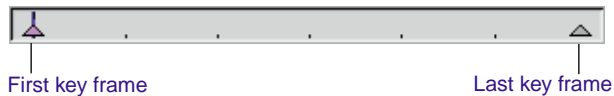


The default Page Curl effect appears on the incoming video. To apply the effect to the outgoing video, swap the video sources as follows:

- a. Scroll down to display the Foregnd category, and click the triangular.
 - b. Click the Swap Sources button.
 - c. Click anywhere in the effect's Timeline, and the Avid Composer system displays the effect on the outgoing video.
3. Locate the Highlight category and click the Enable button.



4. Click the first key-frame indicator.



The 3D Warp parameters list for the first key frame is now active.

5. In the Shape parameter pane, set the Curl slider to 0 (no curl).
6. Click the last key-frame indicator.
7. Set the Curl slider to 80. This takes the curl completely off the underlying video.



8. Click the Play button to preview the effect.



You might want to use the Transition parameters to lengthen the effect. See [“Using the Transition Parameters” on page 59](#) for more information.

A Simple Variation on the Page Turn Transition

This example describes how to make some simple changes to the Page Turn transition to create a dramatically different effect. To create this variation, use the example you created in the previous section.

For the previous example, you used the default No Split option on the Split Fast menu. This example uses the Quad Split option.

1. Click the first key-frame indicator, and choose Quad Split from the Split Fast menu for the Shape parameter.
2. Click the Angle slider, type 135 on the numeric keypad, and press Enter to set the Angle for the first key frame to 135 degrees.
3. Click the last key frame and set the Angle to 135. The following table shows the values for each key frame.

Effect Parameter	First Key Frame	Last Key Frame
Shape	Curl = 0	Curl = 80
Page Curl	Radius = 15	Radius = 15
	Angle = 135	Angle = 135
	Quad Split	Quad Split
Highlight	Enabled	Enabled

Now step through or play the effect. The following illustrations show the effect.



Page Curl effect
Quad Split 135 degree angle

Creating a Splash Dissolve

This example creates a Splash effect and uses it as a dissolve. Use the Opac. (opacity) slider in the Foregnd (foreground) parameter pane to create the dissolve. Changing the opacity value from solid to transparent creates the same effect as a dissolve.

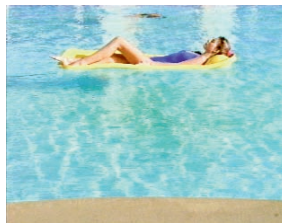
The following illustrations show the effect and the outgoing and incoming video.



Splash dissolve



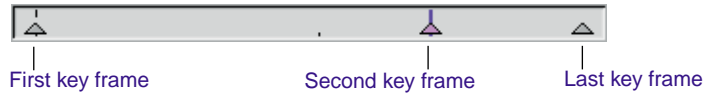
Outgoing video



Incoming video

Here are some tips for creating this effect:

- Use the Multi Wave shape and increase the radius throughout the effect, starting at 0 and ending at 55.
- Add a new key frame (shown as the second key frame below) to provide a starting point for the dissolve. The complete dissolve occurs between the second and last key frames.



For information on working with key frames, see [“Using Key Frames” on page 99](#).

To create the Splash effect:

1. Create a sequence with two video clips as you did in the Page Curl examples, and drag the 3D Warp effect onto the transition point in the Timeline.
2. Click the effect in the Timeline and enter Effect mode (click the Effect Mode button).



3. Choose Multi Wave from the Shape Fast menu. The Avid Composer system displays the default Multi Wave effect on the incoming video.
4. Enable the Swap Sources button in the Foregnd parameter pane to display the effect on the outgoing video.

Now click anywhere in the effect’s Timeline, and the Avid Composer system displays the effect on the outgoing video.

5. Click the first key-frame indicator.
6. In the Shape parameter pane, set the Radius value to 0.
7. Click the last key-frame indicator.
8. In the Shape parameter pane, set the Radius value to 55.

9. With the last key frame still selected, set the Opac value to 0 in the Foregnd parameter pane.
10. Add a new key frame approximately three-quarters of the way through the effect.
This key frame will have a predetermined radius value (calculated by the Avid Composer system to create a smooth splash between radius values 0 and 55). You don't need to change this value.
11. For the key frame you just added, set the Opac. slider to 100 in the Foregnd parameter pane.
12. Click the Play or Play Loop button to preview the effect.

The following table shows the nondefault key-frame values for this example.

Effect Parameter	First Key Frame	Second Key Frame	Last Key Frame
Shape Multi Wave	Radius = 0	Let the Avid Composer system set the Radius.	Radius = 55
Foregnd Full Key	Opac = 100	Opac = 100	Opac = 0

Try experimenting with the Highlight parameter for this effect. Open the Highlight parameter pane and adjust the Inty (intensity) value.

Turning a Splash into a Flat Image

The following techniques show two different ways to turn a Splash into a flat image.

- Set the Radius value to 0. This setting conceals the ripples entirely. It allows you to create splash sequences simply by increasing the Radius.
- Bring Amplitude and Automatic Highlight intensity down to 0. Lowering the amplitude reduces the distortion. Reducing the highlight intensity to 0 eliminates highlights and shading. This allows you to:
 - Bring up a full-sized Splash from beneath the center of the picture by keeping the Radius constant and increasing the Amplitude and Highlight intensity settings.
 - Create a Splash that starts small, becomes a full-sized Splash, and then changes to a flat picture. The following example shows how to do this.

This example creates a splash that grows from the center of the screen. As the splash begins to cover the screen, the splash slowly fades away so that the final scene is completely flat. Fade the splash by lowering the Amplitude and Highlight intensity values to 0. The following illustrations show several stages of the effect.



Multi Wave Splash starts at center



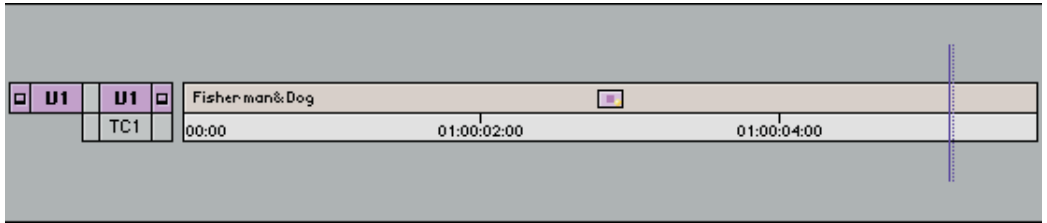
Splash at peak



Splash slowly fades to flat

To turn a Splash into a flat image:

1. Apply the 3D Warp effect as a segment effect as shown in the following illustration.



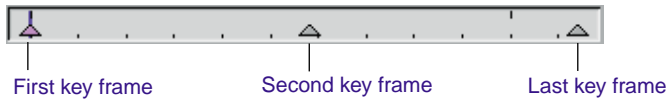
2. Click the Effect Mode button to enter Effect mode.



3. Choose Multi Wave from the Shape Fast menu.
4. Set Highlight parameter values for the first and last key frames by using values from the following table.

Effect Parameter	First Key Frame	Second Key Frame	Last Key Frame
Shape Multi Wave	Radius = 0	Let the Avid	Radius = 50
	Freq = 70	Composer sys-	Freq = 70
	Ampl = 36	tem set the	Ampl = 0
		Radius.	
		Freq = 70	
		Ampl = 36	
Highlight	Inty = 20	Inty = 20	Inty = 0

5. Create a new key frame in approximately the center of the effect's Timeline. This new key frame is shown as the second key frame in the following illustration.



The Avid Composer system automatically calculates a radius size for this new key frame in order to continue the smooth transition from 0 radius to a radius of 50.

6. Set the Shape and Highlight values for the second key frame as shown in the above table.
7. Step through or play the effect.

Experiment with the X Pos and Y Pos Shape parameter values to reposition the splash on the screen. Also experiment with the Aspct and Angle parameters to stretch and rotate the splash.

Creating a Scaled Picture-in-Picture

This example shows how to create a picture-in-picture sequence that you can use to experiment with different 3D Warp parameters. It is particularly useful to scale the top video image because it allows you to easily view the effects of spinning, rotating, and distorting the image. This example uses two video tracks.





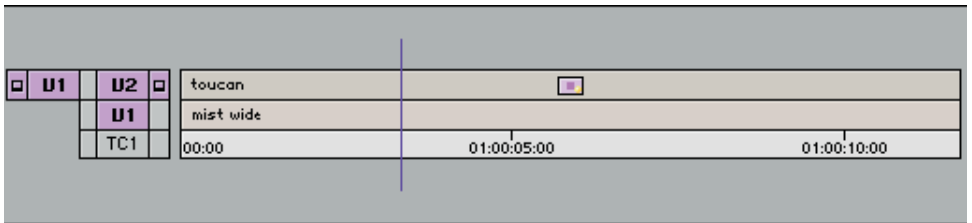
Top video track



Bottom video track

To create a scaled picture-in-picture:

1. Apply the 3D Warp effect to the top video track.



2. Click the top video segment, and click the Effect Mode button to enter Effect mode.

Now you are ready to select and adjust the 3D Warp parameters.

3. If both key-frame indicators are not already highlighted, press ⌘-A or ⌘-click one key frame to select both key frames.

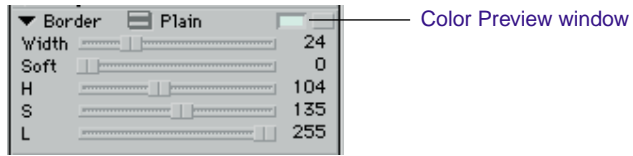
Now you can change parameters for both key frames at the same time.

4. Open the Scaling parameter pane, and set the scale to 75 percent in X and Y.

The easiest way to set a slider to an exact value is to click the slider, type the number on the numeric keypad, and press Enter.

5. Open the Border parameter pane.
6. Click the Enable button, and use the eyedropper to choose a color from the Effect Preview monitor.

7. Click the Color Preview window to activate the eyedropper.



For a description of how to use the eyedropper, see [“Adjusting a Color Parameter” on page 104.](#)

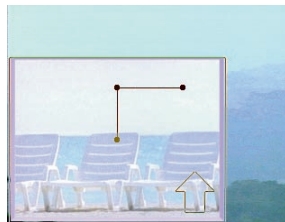
8. Select a border style from the Fast menu and use the H, S, and L sliders to adjust the color. Adjust the width to the size you want.
9. Click the Play or Play Loop button to preview the effect.

You can modify this effect by changing the size (scaling) of the image at different key frames or by changing the position so the image moves up or down across the screen.

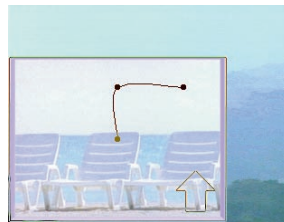
Using the Spline Parameters

This example shows how to use the Spline parameters to create a smooth path for moving a Picture-in-Picture effect. The example uses the Picture-in-Picture effect that you created in the previous example.

The following illustrations show the motion path editor with the Spline parameter turned on and off.



Motion path editor with Spline turned off



Motion path editor with Spline turned on

1. Enter Effect mode and click the first key-frame indicator (on the left side of the effect's Timeline).



2. Click the Outline/Path button in the Effect Editor.

A dot appears in the center of the image, and the arrow indicator appears to show the orientation of the image.

3. Click anywhere on the foreground video, and move the image to the bottom left corner of the Effect Preview monitor.

4. Click the last key-frame indicator, and move the image for that key frame to the top right corner of the monitor. Notice that the two dots are connected by a straight line.

5. Add a key frame approximately halfway through the effect's Timeline.

6. Move the image for the center key frame to the top left corner of the monitor.

7. Play the effect. Notice that the image moves along straight lines.

8. Click the Enable button in the Spline parameter pane.



Notice that the straight line connecting the dots turns into a curve.

9. Play the effect again and notice the smooth movement.

Experiment with the XY Position and XZ Position buttons at any one of the key frames. Also experiment with the Rotation buttons.



You can move the image for a key frame by first clicking the dot instead of the key-frame indicator.

Corner Pinning an Image

Corner pinning is a way of precisely positioning a foreground image over an image in the background video track. This example shows the background and foreground videos used to create a segment transition using corner pinning. The segment starts with an image appearing on a TV screen; the image then moves off the TV and eventually fills the screen.

If you want to leave the image static — that is, to have it playing just on the TV screen — you need to corner pin only the foreground video. However, to have the foreground image move off, as the example shows, you must position it in 3D space first to get the trajectory you want. Once it is positioned correctly, then you corner pin it so that it looks at first as though it is playing on the TV screen.



Foreground video corner pinned to background image



Foreground video moving off background image



Foreground video continuing to move off background image



Background video



Foreground video

To corner pin an image:

1. Create a segment with two video tracks, placing the foreground video on the top track.
2. Apply the 3D Warp effect to the top track.
3. Enter Effect mode.
4. Scale your image if necessary.
5. Position the corners using one of the methods described in the following sections.
6. To review your edit, click the Play or Play Loop button.

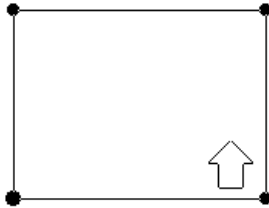


To return a corner to the default position, click the corresponding corner button in the parameter pane, and Option-click the Enable button in the Corner Pin parameter pane.

To use the Corner Pin button:



1. Click the Corner Pin button in the Effect Editor to activate the handles.
2. Click and drag the handles to manipulate the image.
3. Click the Corner Pin button a second time to turn off the handles.



To use the Quick Pin Feature:

1. Click the Corner Pin button in the Effect Editor to activate the handles.

2. Press and hold the Control key, position the cursor where you want the highlighted corner to be corner pinned, and click.

The next corner is highlighted.

3. Continue using the Control key and clicking until the image is positioned where you want it.

The next corners continue to be highlighted in a clockwise rotation each time you click.

4. Click the Corner Pin button a second time to turn off the handles.

To use the parameter pane:

1. Click the Corner Pin Enable button.
2. Use the X and Y sliders in the Corner Pin parameter pane to position the image.

The Corner Pin parameter pane has a button for each corner, letting you pin one corner at a time.

Creating a Stamp

In the example below, three Title effects are applied sequentially on the top track, each containing one of the words. Each one has Stamp enabled on the last key frame. Enabling Stamp lets each word remain in place as the next word moves across the screen.

All three words will remain stamped in place, and you could add additional stamps until you enable Clear to clear the Stamp buffer.



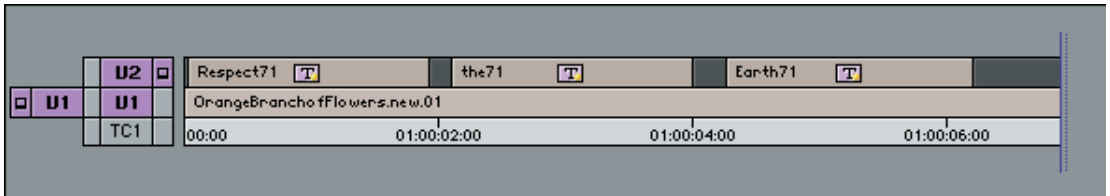
Title one stamped in place
Title two moving into position



Titles one and two stamped in place
Title three moving into position



All three titles stamped in place



To create a stamp:

1. Create the image you want to use as a stamp.

For example, you can use the Title Tool to create a title or you could import a PICT image.

2. Create a segment with at least two video tracks.

If you want the stamp to be in the foreground, it has to be on the top track.

3. Add the track with your stamp image to the segment.

4. Enter Effect mode.



5. Click the 3D Promote button to turn on 3D effects.

6. Select the key frame where you want the stamp to occur.

If you don't want to use the first or last key frame, add a key frame where you want the stamp to occur.

7. Click the Enable button in the Stamp parameter pane.

You can enable Stamp on more than one key frame by repeating steps 6 and 7.

8. To review your edit, click the Play or Play Loop button.

To clear a stamp:

1. Select the key frame where you want the stamp to be cleared.
2. Click the Clear button in the Stamp parameter pane.

Everything in the Stamp buffer is cleared.

Using Axis for a Transition

The effect created in this example uses changes to axis and rotation to create a transition. If you move the axis in Z, the point of rotation moves off the object and creates a “barrel roll” effect as if the object is inside a rolling barrel. By breaking the move into two parts, you can add another shot on the reverse side of the image.

To use axis for a transition:

1. Create a two-track sequence.
2. Apply the 3D Warp effect to the segment on the second track.
3. Make the effect at least five seconds long.
4. With both key frames selected, set Z to -90 in the Axis parameter pane.
5. Select the second key frame and set Y to -180 in the Rotation parameter pane.
6. Play the effect to see the simple YZ barrel roll.
7. Go back three seconds from the end of the effect and add a new key frame.
8. Copy the last key-frame values to the new key frame.
9. Duplicate this new key frame one second later by copying and pasting so that the last three key frames are identical.

The frame stays at the half barrel roll position for three seconds.

10. Select the last key frame and set Z to 180 in the Position parameter pane.

This should bring the frame full screen for the new ending position.

11. Play the effect.

It should do a half barrel roll back, stay in position, and then move forward.

12. Find the point during the half barrel roll where the image is edge on to the viewer.

The image should disappear and reappear with the back of the image showing.



13. Perform an add edit at this point.

This divides the effect in two with the correct key frames being sent to the correct parts of the clip.

14. Load the incoming video into the Source monitor, and mark it so that you can use it for the back of the image.

15. Step into the second part of the effect until all you see in the Timeline is the original video.

16. Mark the clip and replace it with the new shot.

17. Step out and play the effect.

Notice that the new incoming shot is reversed.



18. Step back in and apply a Flop to the incoming image.

19. Render the Flop.

20. Step out again and watch the effect.

The incoming shot correctly transitions to full screen at the end of the effect.

Applying a Chroma Key

Like matte keys, chroma keys are used to replace an area of one shot with another shot. However, unlike matte keys, the area of replacement is determined by a single highly saturated color, usually a distinctive blue or green. The foreground object, such as a person, is shot in a studio in front of a screen of the selected color. Then the background is keyed out with a more desirable background, such as a weather map, an outdoor scene, or computer-generated animation.

Chroma keys work better when you use component sources that have been digitized as a component signal. You can achieve this by using a component format, such as Betacam SP or D1, and a transcoder or the Avid video I/O baseboard. Proper lighting is also crucial to separating the foreground image from the chroma key color background.

To apply a Chroma Key effect:

1. Edit the foreground image onto V2 and the background image onto V1 in the Timeline.
2. Apply the 3D Warp effect to V2.
3. Choose Chroma Key from the Fast menu in the Foregnd (Foreground) parameter pane.
4. Click the Color Preview window, and press and hold the mouse.
5. When the eyedropper appears, drag it to the most representative area of color to be keyed and release the mouse.

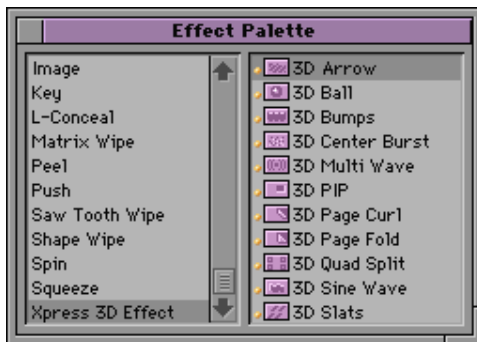
When choosing a color, stay away from corners of the frame or the area immediately around the foreground because these areas may contain subtle shades of gray.

When you are finished, the system replaces the color with the video on V1.

Since it is often difficult to create a perfect key on the first try, use the sliders on the Foregnd parameter pane to make value adjustments.

Using Avid Xpress 3D Effects

The Effect Palette — on systems equipped with the 3D Effects option — contains an Xpress 3D Effect category.



The Xpress 3D effects have the following uses:

- Xpress 3D effects are completely compatible with Avid Xpress systems that are also equipped with the 3D Effects option. As a result, you can move sequences containing Xpress 3D effects between Avid Composer systems and Avid Xpress systems.



To maintain compatibility when transferring sequences between Avid Composer systems and Avid Xpress systems, use only Xpress 3D effects (do not use the 3D Warp effect to create 3D effects).

- Xpress 3D effects provide a fast way to apply basic 3D effects to your sequence, without making custom adjustments using the 3D Warp effect. For example, the 3D Page Curl effect automatically creates a page curl effect when you apply it.



You can further adjust Xpress 3D effects in the Effect Editor; use the 3D Warp effect, however, when you need finer control of 3D effects parameters.



CHAPTER 10

2D Effects Reference

This chapter describes 2D parameters and summarizes 2D effects in alphabetical order within each effect category. For information on effects editing, see [“Applying Effects to a Sequence” on page 46](#).

- [2D Effect Parameters Reference](#)
- [Plug-in Effects](#)
- [Blend Effects](#)
- [Conceal Effects](#)
- [Film Effects](#)
- [Image Effects](#)
- [Key Effects](#)
- [L-Conceal Effects](#)
- [Motion Effects](#)
- [Peel Effects](#)
- [Push Effects](#)
- [Spin Effects](#)
- [Squeeze Effects](#)
- [Wipes](#)
- [Comparison of Similar Effects](#)

2D Effect Parameters Reference

This section provides a general description of all 2D parameters, in alphabetical order. Each effect includes a subset. If there is information about a parameter that is unique to a specific effect, it is explained in the description of that effect in this chapter. Some parameters have corresponding 3D versions. The 3D versions are described in [Chapter 11, “3D Effects Reference.”](#)

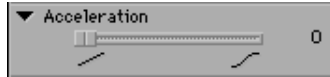
Effect parameters are grouped in the following categories:

- [Acceleration Parameter](#) (see 3D version on [page 497](#))
- [Background Parameter](#) (see 3D version on [page 518](#))
- [Border Parameters](#) (see 3D version on [page 505](#))
- [Color Effect Parameters](#)
- [Crop Parameters](#) (see 3D version on [page 491](#))
- [Foreground Parameter](#)
- [Key Control Parameters](#) (see 3D version on [page 511](#))
- [Matrix Parameters](#)
- [Motion Effect Parameters](#)
- [Position Parameters](#) (see 3D version on [page 496](#))
- [Blowup Parameters](#) (see 3D version on [page 519](#))
- [Transition Parameters](#) (see 3D version on [page 492](#))

For effect parameters specific to the Color Effect, see [“Color Effect” on page 407](#).

For an explanation of how to change a parameter, see [“Changing a Parameter” on page 96](#).

Acceleration Parameter



Acceleration adjusts the effect's speed over time by having the effect ease in and ease out. This gives the effect a more natural appearance. The Acceleration parameter applies to the entire effect, not to specific key frames.

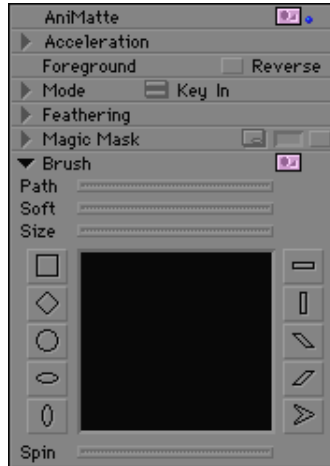
The overall speed of an effect is determined by the duration of the effect, which is determined by the length of the clip in the sequence. If you want to slow down or speed up the movement of an effect, you will need to change the length of your sequence; or use add edits to limit the portion of the clip affected by the effect.



If your system has the 3D Effects option, see the 3D version on [page 497](#).

AniMatte Parameters

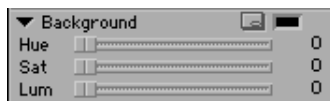
The AniMatte effect parameters allow you to adjust a drawn matte on one or more frames to create multilayer matte keys and single-layer organic matte wipes.



For an in-depth discussion of AniMatte parameters, see [“Working with Intraframe Editing Parameters” on page 242](#) and [“AniMatte Effect Parameters” on page 315](#).

Background Parameter

The Background parameter sets the color for the background in effects that display a background. For example, the background parameters determine the color to be used in a Fade to Color, Fade from Color, or Dip to Color effect, and the color to be replaced with video in a Chroma Key effect.





If your system has the 3D Effects option, see [“Background – Add a Background Color” on page 518](#).

Other Options Button



The Other Options button in the Background parameter opens the Macintosh Color Picker for precise color selection. For more information on using the Macintosh Color Picker, see [“Using the Macintosh Color Picker” on page 105](#).

Hue

Hue identifies the background color. The Hue parameter is measured as values on a color wheel ranging from 0 to 255. The start (0) and ending (255) values are both red.

Saturation (Sat)

Saturation specifies the amount or intensity of the color. Values range from 0 to 255, where 0 is no chrominance and 255 is a fully saturated color.

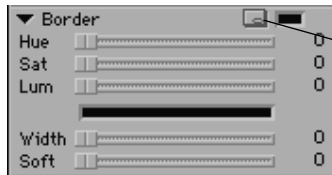
Luminance (Lum)

Luminance specifies the brightness of the color. Values range from 0 to 255, where 0 is black and 255 is full brightness or white.

Border Parameters

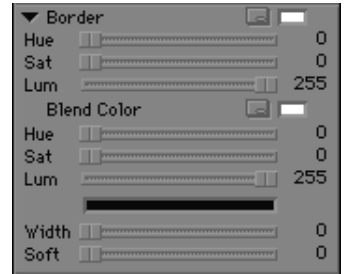
Many effects allow you to place a border on the inner or incoming picture in the effect. The Border parameters allow you to specify color, softness, and width of the border. Some effects also include Blend Color parameters for blending border color.

Border without the Blend
Color parameters



Other
Options
button

Border with the Blend
Color parameters



If your system has the 3D Effects option, see the 3D version on [page 505](#).

Other Options Button



The Other Options button in the Border parameter opens the Macintosh Color Picker for precise color selection. For more information on using the Macintosh Color Picker, see [“Using the Macintosh Color Picker” on page 105](#).

Hue

Hue identifies the border or blend color. The Hue parameter is measured as values on a color wheel ranging from 0 to 255. The start (0) and ending (255) values are both red.

Saturation (Sat)

Saturation specifies the amount or intensity of the color. Values range from 0 to 255, where 0 is no chrominance and 255 is a fully saturated color.

Luminance (Lum)

Luminance specifies the brightness of the color. Values range from 0 to 255, where 0 is black and 255 is full brightness or white.

Width

Border Width specifies the width of the border. Values range from 0 (no border) to 63 (widest border).

Softness (Soft)

Border Softness blends the border with the background image, giving the border a soft appearance. Values range from 0 (no softness) to 63 (maximum softness).

Color Effect Parameters

For an explanation of the parameters listed below, see [“Color Effect” on page 407](#).

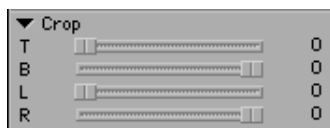
- Luma Adjust – brightness, contrast, and clip
- Chroma Adjust – hue and saturation
- Color Style – posterization and solarization
- Color Gain – red, green, and blue

Crop Parameters

The Crop parameters remove video from the top, bottom, left, and right edges of the video.



Cropping is available only if your Avid Composer system has an Advanced JPEG compression board and, on some systems, a Mandrill DVE daughter board.



Top

Removes video from the top of the inner or incoming video. Values range from 0 to 999; 0 is the top of the screen, 500 is the middle of the screen, and 999 is the bottom of the screen.

Bottom

Removes video from the bottom of the inner or incoming video. Values range from -999 to 0; 0 is the bottom of the screen, -500 is the middle of the screen, and -999 is the top of the screen.

Left

Removes video from the left side of the inner or incoming video. Values range from 0 to 999, 0 is the left side; 500 is the middle, and 999 is the right side.

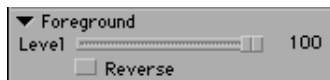
Right

Removes video from the right side of the inner or incoming video. Values range from -999 to 0; 0 is the right side, -500 is the middle, and -999 is the left side.



If your system has the 3D Effects option, see the 3D version on [page 491](#).

Foreground Parameter



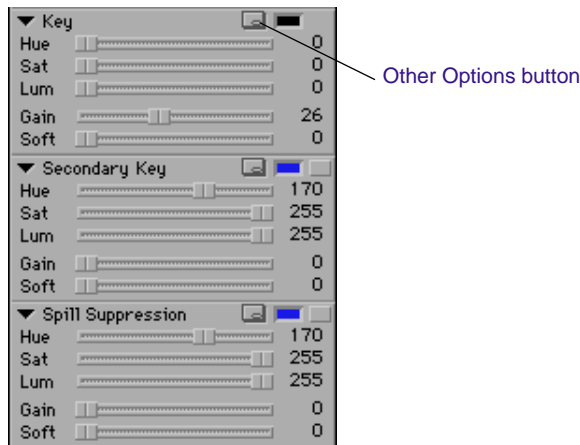
The Foreground parameter is used, together with key frames, to set the relative amount of the effect to be displayed over time.

The Foreground Level slider controls the opacity of the foreground image. A Level of 0 is 0 percent opacity (the foreground is transparent), a Level of 50 is 50 percent opacity, and a Level of 100 is 100 percent opacity (no transparency).

Select the Reverse option to reverse the background and foreground video, with the same opacity setting.

Key Control Parameters

Key control parameters appear only in YUV Chroma Key and Luma Key effects, and control the primary key color and the amount of video replacement for the key. Secondary Key and Spill Suppression parameters appear when you use the YUV Chroma Key effect.



If your system has the 3D Effects option, see the 3D version on [page 511](#).

Use Key, Secondary Key, and Spill Suppression as follows:

- Use the Key parameters to select the primary key color to be replaced by video.

- Use the Secondary Key parameters to key out a second background color. For example, for bluescreen footage, the floor may be a slightly different shade of blue than the background. You can choose the floor color as your secondary color and key it out. The secondary color is also useful when uneven lighting introduces additional shades of the background color.
- Use the Spill Suppression key color to fix the following problems:
 - Remove background color spill from the foreground image. Color spill occurs when the background color is present in the foreground image due to backdrop reflection.
 - If the foreground object retains an outline of the chroma key color, you can use spill suppression to reduce the color effect in the outline.

The spill suppression key neutralizes the selected color without affecting the luminance. The Avid Composer system changes the spill color to a gray-scale, allowing it to blend more easily with the foreground image.

Other Options Button



The Other Options button in the Key parameter opens the Macintosh Color Picker for precise color selection. For more information on using the Macintosh Color Picker, see [“Using the Macintosh Color Picker” on page 105](#).

Hue

Hue identifies the key color. The Hue parameter is measured as values on a color wheel ranging from 0 to 255. The start (0) and ending (255) values are both red.

Saturation (Sat)

Saturation specifies the amount or intensity of the color. Values range from 0 to 255, where 0 is no chrominance and 255 is a fully saturated color.

Luminance (Lum)

Luminance specifies the brightness of the color. Values range from 0 to 255, where 0 is black and 255 is full brightness or white.

Gain

The Gain parameter specifies how much of the foreground and the background video will be displayed. Values range from 0 to 63. A Gain of 0 shows only the foreground. A Gain of 63 replaces all the foreground video with the background video.

Softness (Soft)

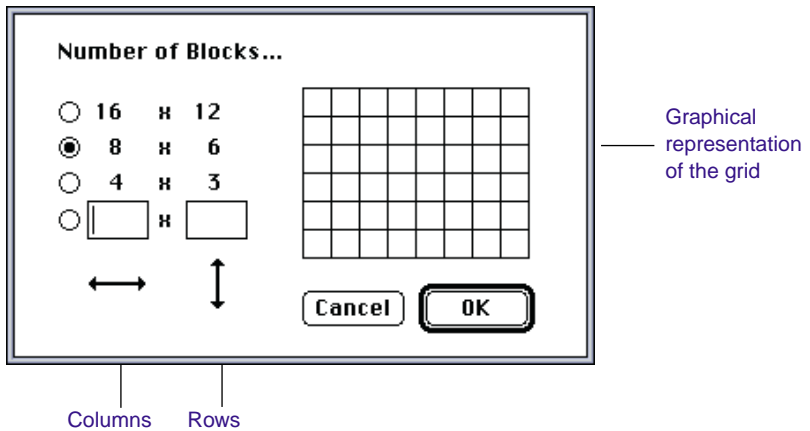
The Softness parameter determines how the bordering colors along the edge of the key are processed in the effect. Colors that border the luminance or chroma specified for the key are displayed as a blend of the foreground and the background video. The higher the Softness value, the more of the background video will be blended in the border colors. Use the Soft slider to improve the appearance of the edges of the keyed areas.

Matrix Parameters

Matrix effects are effects that use a grid to define the position or progress of the effect over time. The Matrix parameters define the grid to be used in the effect.

Other Options Button

The Other Options button in the Matrix effects opens the Matrix effect's dialog box shown below.



You can select a standard grid or enter a custom number of rows and columns. The minimum number of rows and columns is 2 x 2.

Columns

Number of columns in the effect.

Rows

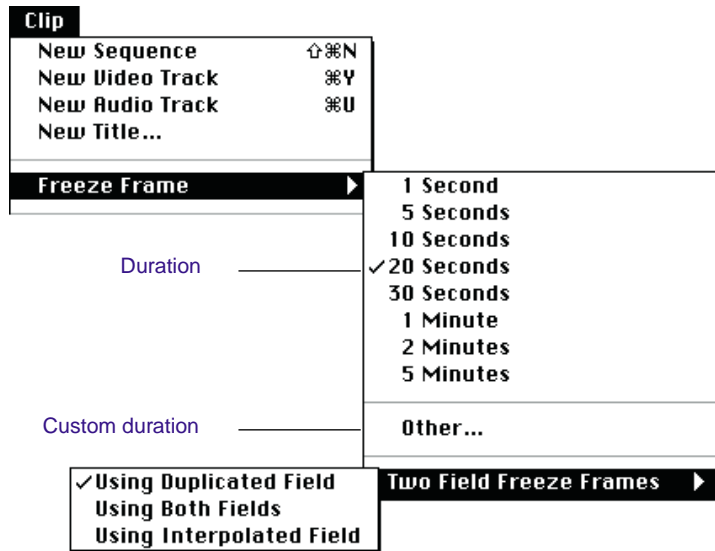
Number of rows in the effect.

Motion Effect Parameters

Motion effect parameters apply to freeze frame, variable speed, and strobe motion effects. For information applying and editing Motion effects, see [“Creating Motion Effects” on page 64](#).

Freeze Frame Parameters

You access Freeze Frame parameters by choosing Freeze Frame from the Clip menu.



Duration

The Duration parameter specifies the length of the freeze frame clip that will be created in the Source monitor. You can either select a duration from the Freeze Frame pop-up menu or select Other to enter a custom duration.

Other

Other opens a dialog box that allows you to specify a custom duration for the freeze frame clip.

Two Field Freeze Frames

The Two Field Freeze Frames parameter determines how two-field media will be processed to create the Motion effect.

- Using Duplicated Field — A single field is displayed in the effect.
- Using Both Fields — Both fields are displayed in the effect.

- Using Interpolated Field — A second field is created for the effect by combining scan line pairs from the first field in the original media.

Variable Speed and Strobe Motion Parameters



You access Variable Speed and Strobe Motion parameters by clicking the Motion Effect button to open the Motion Effect Parameters dialog box.

Variable Speed effect

Motion Effect Parameters

Variable Speed

	Current	New	
Duration	60	120	frames
Rate	30	15.00	FPS
		50.00	% speed

Fit To Fill

Strobe Motion

Update every frames

Render 2-Field Motion Effect Using

Duplicated Field
 Both Fields
 Interpolated Field

Target Disk

Preview

create Cancel

Create and Render

Variable Speed

Select Variable Speed, and set the parameters based on the following:

- Duration — The duration of the effect in frames. Doubling the number of frames causes the frame rate to be half the current rate.
- Rate — The rate of speed in frames per second (fps) at which the video will be played. Normal speed is 30 fps for NTSC video, 25 fps for PAL video, and 24 fps for film.

- **% speed** — The percent of speed at which the video will be played. 100% is normal speed.
- **Fit To Fill** — Sets the Variable Speed parameters, so the duration of the Motion effect will match the IN to OUT duration marked in the Record monitor.



To indicate reverse motion at full play rate, slow or fast, enter a negative play rate or a percent.

Strobe Motion

Select Strobe Motion and specify the update rate in frames for the Strobe effect. For example, a rate of 5 causes every fifth frame to be displayed in the Strobe effect.

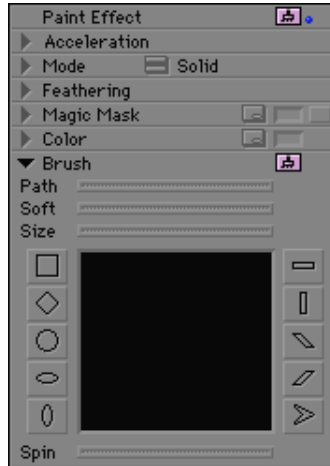
Render 2-Field Motion Effect

The Render 2-Field Motion Effect parameter determines how two-field media will be processed to create the Motion effect.

- **Duplicated Field** — A single field is displayed in the effect.
- **Both Fields** — Both fields are displayed in the effect.
- **Interpolated Field** — A second field is created for the effect by combining scan line pairs from the first field in the original media.

Paint Effect Parameters

The Paint effect parameters provide control when painting an object directly on an individual frame or series of frames (a segment of a sequence or subsequence).



For an in-depth discussion of Paint effect parameters, see [“Working with Intraframe Editing Parameters” on page 242](#) and [“Paint Effect Parameters” on page 297](#).

Position Parameters

Position parameters set horizontal and vertical position.



If your system has the 3D Effects option, see the 3D version on [page 496](#).

Horizontal Position (H Pos)

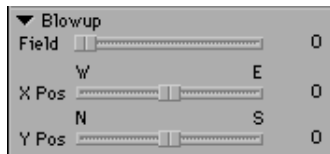
Moves the video from side to side. Values range from -999 to 999. Negative values move the image to the left. Positive values move the image to the right.

Vertical Position (V Pos)

Moves the video up and down. Values range from -999 to 999. Negative values move the image to the top. Positive values move the image to the bottom.

Blowup Parameters

The Blowup effect for film projects uses the following parameters to set the effect's position and size:



Field

The Field parameter controls the size of the image. A field of 1 leaves the image size unchanged, and a field of 10 increases the image to the maximum size.

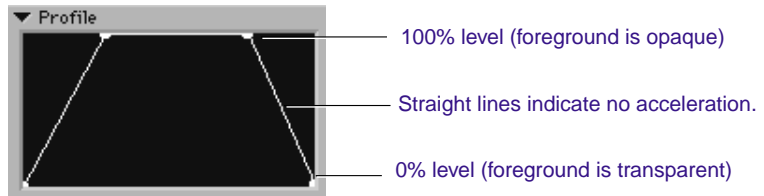
X Position (X Pos)

The X Pos slider allows you to position the image horizontally on the screen. The X Position varies on a scale of West 20 to East 20, where 0 is unchanged. This matches the description in the cut list.

Y Position (Y Pos)

The Y slider allows you to position the image vertically on the screen. The Y Position varies on a scale of North 20 to South 20, where 0 is unchanged. This matches the description in the cut list.

Profile



The Profile window in the Effect Editor is a graphical representation of the foreground level and acceleration applied to effect key frames:

- **Foreground level** affects the opacity of the effect. The greater the opacity, the closer to the top of the Profile graph the key frame appears. For more information, see the following section, "[Adjusting Foreground Level in the Profile Window](#)."
- **Acceleration** affects the rate of movement into and out of key frames. The greater the acceleration, the more rounded the lines appear in the Profile window. You can adjust Acceleration with the Acceleration slider only. For more information, see "[Acceleration Parameter](#)" on page 368.

Adjusting Foreground Level in the Profile Window

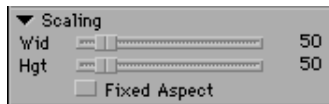
Foreground level controls the opacity of a 3D effect layer. You can adjust levels for various key frames directly in the Profile window. This is the same as using the Level slider in the Foreground parameter pane, as described in "[Foreground Parameter](#)" on page 373. Adjustments you make with the Level slider are also represented in the Profile graph.

To adjust foreground level within the Profile window:

1. Select the appropriate key frame in the effect's Timeline.
2. Click on the round white key-frame indicator that appears on the Profile graph, and drag it up or down to increase or decrease the opacity of the foreground image.

Scaling Parameters

Scaling involves resizing the effect by adjusting height and width.



Width (Wid)

Controls the width of the image when the Fixed Aspect parameter is disabled. Values range from 0 to 400.

Height (Hgt)

Controls the height of the image when the Fixed Aspect parameter is disabled. Values range from 0 to 400.

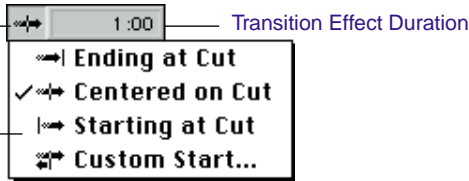
Fixed Aspect

The Fixed Aspect parameter determines which position and size parameters are displayed. When the Fixed Aspect parameter is enabled, the aspect ratio of the picture cannot be changed, and the Width and Height parameters' sliders are replaced with a Size parameter slider.

Transition Parameters

The Transition parameters appear in the bottom tool bar of the Effect Editor.

Click the Transition Effect Alignment button to select a position from the pop-up menu.



Transition Effect Alignment

The Transition Effect Alignment parameters specify the start of the transition effect relative to the cut point in the sequence. Click the button to the left of the Transition Effect Duration parameter, and select a position from the Transition Effect Alignment pop-up menu:

- **Ending at Cut** — The transition effect will start a number of frames before the cut defined by the duration, such that the effect completes at the cut point in the video.
- **Centered on Cut** — The transition will be centered on the cut so that half the effect will occur before the cut point and half will occur after the cut point in the sequence.
- **Starting at Cut** — The transition effect will start immediately after the last frame of the outgoing video is displayed.
- **Custom Start** — Allows you to specify the number of frames before and after the cut to be included in the effect.

Transition Effect Duration

The Transition Effect Duration parameter specifies the length of time that the effect will span the transition. The duration of a segment effect is determined by the length of the segment. The Transition Effect Duration format that is displayed (for example, 1:00 is one second and

0 frames) is determined by the Transition Effect Duration setting you selected at the top of the Source/Record mode window.



For more information about using transition effects, see [“Working with Transition Effects” on page 58](#).

Plug-in Effects

If you install third-party plug-in effects that are compatible with Adobe Photoshop Version 2.50 or greater, those effect categories will appear in the Effect Palette. For information on installing and using third-party plug-in effects, see [“Installing Third-Party Plug-in Effects” on page 35](#).

Blend Effects

Blend effects are general two-channel effects. They include:

- [Dip to Color](#)
- [Dissolve](#)
- [Fade from Color](#)
- [Fade to Color](#)
- [Picture-in-Picture](#)
- [Superimpose](#)



If your system has the 3D Effects option, see [“Understanding the 3D Effects Interface” on page 333](#) for a description of the 3D Warp effect.

Dip to Color



Effect Category

Blend

Apply to

Transitions

Parameters

Profile – Foreground level

Foreground – level

Background – hue, saturation, and luminance

Acceleration

Transition – Transition effect alignment and duration

Reversible

No

Description

Fades from the outgoing video to black, white, or any color and then fades up to the incoming video. Color is specified using the Lum, Chroma, and Sat sliders.



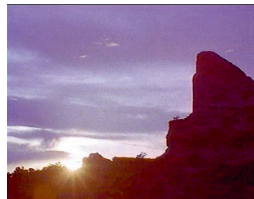
Dip to Color effect



Image dips to white



Outgoing video



Incoming video

Dissolve



Effect Category	Blend
Apply to	Transitions
Parameters	Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	No
Description	Blends images from the outgoing video with the incoming video over time.



Dissolve effect



Incoming video



Outgoing video

Fade from Color



Effect Category	Blend
Apply to	Transitions
Parameters	Profile – Foreground level Foreground – level Background – hue, saturation, and luminance Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Fades from any color to incoming video.

Fade to Color



Effect Category	Blend
Apply to	Transitions
Parameters	Profile – Foreground level Foreground – level Background – hue, saturation, and luminance Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Fades from the outgoing video to any color.

Picture-in-Picture



Effect Category	Blend
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Scaling – height, width, and fixed aspect Position – horizontal position, vertical position Crop – left, right, top, and bottom Transition – Transition effect alignment and duration
Reversible	No
Description	Creates a picture within a picture. Video from the higher layer, where the effect is applied, is displayed inside the video on the lower layer. When used on a transition, the incoming video appears inside outgoing video.



Picture-in-Picture effect



Video layer 1



Video layer 2

Superimpose



Effect Category

Blend

Apply to

Multilayer segments

Parameters

Profile – Foreground level

Foreground – level

Acceleration

Reversible

No

Description

Blends the image from the upper video track (where the effect is applied) with the image from the lower video track over time. Level set at 100 percent shows only the video image from the upper track where the effect is applied. Level set at 0 percent shows only the video image from the lower video track.



Superimpose effect



Video layer 1



Video layer 2

Conceal Effects

Conceal effects overlap one video channel over another video channel using a predefined path. They include:

- [Bottom Left to Top Right](#)
- [Bottom Right to Top Left](#)
- [Bottom to Top](#)
- [Left to Right](#)
- [Right to Left](#)
- [Top Left to Bottom Right](#)
- [Top Right to Bottom Left](#)
- [Top to Bottom](#)

For an example of a Conceal effect, see [“Top Left to Bottom Right” on page 397](#).

For examples of similar effects, see [“Comparison of Similar Effects” on page 487](#).

Bottom Left to Top Right



Effect Category

Conceal

Apply to

Transitions, single-layer and multilayer segments

Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	The outgoing video slides on top of the incoming video from the bottom left to the top right of the screen.

Bottom Right to Top Left



Effect Category	Conceal
Apply to	Transitions, single-layer and multilayer segments
Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	The outgoing video slides on top of the incoming video from the bottom right to the top left of the screen.

Bottom to Top



Effect Category	Conceal
Apply to	Transitions, single-layer and multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	The incoming video slides on top of the outgoing video from the bottom to the top of the screen.

Left to Right



Effect Category	Conceal
Apply to	Transitions, single-layer and multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration

Reversible

Yes

Description

The incoming video slides on top of the outgoing video from the left edge to the right edge of the screen.

Right to Left



Effect Category

Conceal

Apply to

Transitions, single-layer and multilayer segments

Parameters

Border – hue, saturation, luminance, width, and softness

Profile – Foreground level

Foreground – level

Acceleration

Transition – Transition effect alignment and duration

Reversible

Yes

Description

The incoming video slides on top of the outgoing video from the right edge to the left edge of the screen.

Top Left to Bottom Right



Effect Category	Conceal
Apply to	Transitions, single-layer and multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	The incoming video slides on top of the outgoing video from top left corner to bottom right corner of the screen.



Conceal effect



Incoming video



Outgoing video





For examples, see [“Comparison of Similar Effects” on page 487](#).

Top Right to Bottom Left



Effect Category	Conceal
Apply to	Transitions, single-layer and multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	The incoming video slides on top of the outgoing video from the top right corner of the screen to the bottom left corner of the screen.

Top to Bottom



Effect Category	Conceals
Apply to	Transitions, single-layer and multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	The incoming video slides on top of the outgoing video from the top of the screen to the bottom of the screen.

Film Effects

Film effects emulate many of the effects an optical house can produce. They include:

- [1:1.66 Mask](#)
- [1:1.85 Mask](#)
- [1:2.35 Mask](#)
- [16 x 9 Mask](#)
- [Blowup](#)
- [Film Dissolve](#)
- [Film Fade](#)
- [Mask](#)



Film effects are available only on Media Composer systems with Film Options and on Film Composer systems.

1:1.66 Mask



Effect Category	Film
Apply to	Single-layer segments
Parameters	Background – hue, saturation, luminance Scaling – height, width, and fixed aspect Position – horizontal position, vertical position
Reversible	No

Description

Masks out any area of the image that is not inside a centered rectangle. The centered rectangle is 1.66 times wider than it is tall. The area surrounding the rectangle is masked by a black background.

1:1.85 Mask



Effect Category

Film

Apply to

Single-layer segments

Parameters

Background – hue, saturation, luminance

Scaling – height, width, and fixed aspect

Position – horizontal position, vertical position

Reversible

No

Description

Masks out any area of the image that is not inside a centered rectangle. The centered rectangle is 1.85 times wider than it is tall. The area surrounding the rectangle is masked by a black background.



Original image



1:1.85 Mask effect

1:2.35 Mask



Effect Category	Film
Apply to	Single-layer segments
Parameters	Background – hue, saturation, luminance Scaling – height, width, and fixed aspect Position – horizontal position, vertical position
Reversible	No
Description	Masks out any area of the image that is not inside a centered rectangle. The centered rectangle is 2.35 times wider than it is tall. The area surrounding the rectangle is masked by a black background.

16 x 9 Mask



Effect Category	Film
Apply to	Single-layer segments
Parameters	Background – hue, saturation, luminance Scaling – height, width, and fixed aspect Position – horizontal position, vertical position
Reversible	No
Description	Masks out any area of the image that is not inside a centered rectangle. The centered rectangle is 16 units wide by 9 units high. The area surrounding the rectangle is masked by a black background.

Blowup



Effect Category	Film
Apply to	Single-layer segments
Parameters	Background – hue, saturation, luminance Blowup – field, X position, and Y position
Reversible	No
Description	<p>Blowup modifies the size and portion of the picture that is displayed.</p> <p>The X Position varies on a scale of 20 West to 20 East, where 0 leaves the image unchanged.</p> <p>The Y Position varies on a scale of 20 North to 20 South, where 0 leaves the image unchanged.</p> <p>The Field slider increases the size of the picture and is set from 0 to 10, where 0 leaves the image unchanged and 10 increases the image to the maximum size.</p>



Original image



Blowup effect

Film Dissolve



Effect Category	Film
Apply to	Transitions
Parameters	Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	No
Description	<p>Blends the outgoing frame to the incoming frame over time. The Level parameter has been preset according to Kodak specifications. Avid does not recommend adjusting the Level parameter on this effect.</p> <p>The Level set at 0% shows all of the outgoing frame. The Level set at 100% shows all of the incoming frame.</p> <p>This dissolve has preset parameters that emulate film’s response to light when dissolving to another (nonblack) picture.</p>



Film Dissolve effect



Outgoing video



Incoming video

Film Fade



Effect Category	Film
Apply to	Transitions
Parameters	Profile – Foreground level Foreground – level Acceleration
Reversible	No

Description

Blends the outgoing pictures to the incoming pictures over time. The Level parameter has been preset according to Kodak specifications. Avid does not recommend adjusting the Level parameter on this effect.

The Level set at 0% shows all of the outgoing frame. The Level set at 100% shows all of the incoming frame.

This dissolve has preset parameters that emulate film's response to black material. Use this effect for fade ins and fade outs.

Mask**Effect Category**

Film

Apply to

Single-layer segments

Parameters

Background – hue, saturation, luminance

Scaling – height, width, and fixed aspect

Position – horizontal position, vertical position

Reversible

No

Description

Masks out any area of the image that is not inside a rectangle defined by the Scaling, Fixed Aspect, and Position parameters of the effect.

The area surrounding this rectangle is masked by the effect's background color.

Image Effects

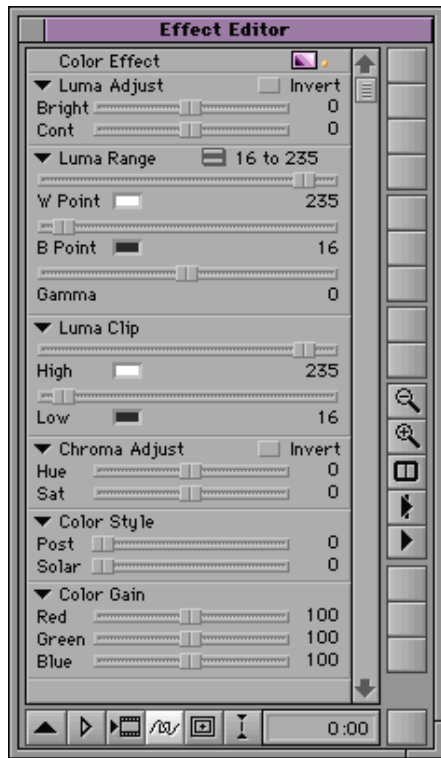
Image effects are general effects that apply to a single stream of video. They include:

- [Color Effect](#)
- [Flip](#)
- [Flip-Flop](#)
- [Flop](#)
- [Mask](#)
- [Paint Effect](#)
- [Resize](#)
- [Submaster](#)

Color Effect



Effect Category	Image
Apply to	Single-layer segments
Parameters	Luminance – brightness, contrast, range, clip, and invert Chroma – hue, saturation, and invert Color Style – posterization and solarization Color Gain – red, green, and blue
Reversible	Both Luma Adjust and Chroma Adjust can be reversed.
Description	The Color Effect modifies the luminance, chroma, style (posterized or solarized), and color gain of the segment.



Color Effect parameters

Luminance (Luma Adjust)

Brightness (Bright)

Brightness changes the brightness of the picture. The parameter ranges from -100 to $+100$, where a value of 0 indicates no change. A value of -100 darkens the image; a value of $+100$ brightens the image.



Original – Brightness 0



Brightness -50



Brightness $+50$

Contrast (Cont)

Contrast controls the contrast of light and dark areas in the picture. Values range from -100 to $+100$, where a value of 0 indicates the image is unchanged. A negative value is less contrast; a positive value is more contrast.



Original – Contrast 0



Contrast -50



Contrast $+50$

Invert

Invert reverses the image's brightness, such that the brightest parts become the darkest and the darkest parts become the lightest.

Luma Range

Luma Range parameters allow you to determine the range of brightness from black to white:

- Fast Menu – there are two selections: “16 to 235” and “0 to 255.” This menu allows you to specify the output range of the Black Point and White Point parameters. It is set to 16 to 235 by default, which is the default for video images.

Select 0-255 if you want to map normal video to alpha ranges. This is useful if you have a high-contrast image that you want to expand to the full dynamic range. For example, use this value when you want to convert video to alpha for Matte Key effects.

- W Point (White Point) – allows you set the white point in the image. All pixels with that value become white, and all pixels with

higher values are also clipped to white. The default is 235 (the broadcast value for white).

- B Point (Black Point) – Allows you set the black point in the image. All pixels with that value become black, and all pixels with lower values are also clipped to black.

For example, you could use the eyedropper to select a shadow on the floor and change it from gray to black, clipping everything below that shade to black. The default is 16 (the broadcast value for black).

- Gamma – Allows you to adjust the midtones in an image without affecting the extreme white or black values. Lowering the value darkens midtones and brings the image closer to black. Raising the value lightens the midtones and brings the image closer to white.

For example, a person shot in front of a window in daylight may be very dark, almost in silhouette. You can use gamma correction to increase the midtones without changing the blacks or whites. Values range from -100 to +100 with 0 being no change.

The number of shades of gray in an image are determined by the W Point, B Point, and Luma Clip sliders. The Gamma point allows you to move the distribution of the shades closer to black or closer to white. Negative values move the distribution closer to black. Positive values move the distribution closer to white.

Raising the Black Point and lowering the White Point values increases the contrast by reducing the number of shades of gray in an image. The number of shades are reduced because you map some to extreme black and others to extreme white.



When you change the Luma Range to 0 to 255, the system attempts to go from 0 to 255 but will be clipped by the Low Clip and High Clip values. If it is your intent to “open up” the image to the full dynamic range, you need to change the Low Clip and High Clip values to 0 and 255, respectively.



Black Point control does not change the Black setup level. That is done on the Video Output Tool.

Luma Clip

Luma Clip parameters allow you to determine the levels at which the Avid Composer system limits the brightness or darkness in the picture:

- **High** – Provides a simple clip function for brightness values. When you specify a value for High, no pixel in the image can be brighter than that value. The default is 235 (the broadcast value for white).
- **Low** – Provides a simple clip function for darkness values. When you specify a value for Low, no pixel in the image can be darker than that value. The default is 16 (the broadcast value for black).

When preparing video for broadcast, normally you do not adjust these values. They allow you to adjust the brightness and contrast (using other controls in the Color Effect) while still maintaining legal broadcast values for black and white.

Chrominance (Chroma Adjust)

Hue

Hue varies the tint of all colors in the image. The Hue parameter is measured as degrees on a color wheel from -180 to $+180$, where 0 does not change the hue. Changing the value of the Hue causes all colors in the image to rotate around the color spectrum. For example, a Hue setting of -20 causes skin tones to look more red, while a Hue setting of $+20$ causes skin tones to look more green.

Saturation (Sat)

Saturation varies the amount of all colors in the image. The Saturation parameter has a value of -100 to $+100$. Zero is the default. A value of $-$

100 displays as gray tones. Positive values display all colors with more saturation.

Invert

Invert reverses the colors in both Hue and Saturation such that all colors display as their complement.

Color Style

Posterization (Post)

Posterization allows you to limit the number of colors in the image by controlling the number of luminance steps that are displayed. This gives the image a graphic appearance. The range of values is 0 to 25, where 0 displays all colors and 25 displays the least number of colors.



Original image



Posterization 18

Solarization (Solar)

Solarization allows you to make the lightest points in the image dark to achieve a partial inversion of the luminance. Values above the threshold set for the parameter will be inverted. Solarization can have a value of 0 to 255, where 0 is normal luminance and 255 inverts all luminance values in the picture. Values of 0 to 127 display the lightest points in the image as dark. Values of 128 to 255 display both the lightest points as dark and the darkest points as light, which gives the appearance of overexposed film.



Original image



Solarization 100



Solarization 150

Color Gain

The Color Gain parameters allow individual control of the Color Gain for each of the three color components: red, blue, and green. The value range for each Color Gain parameter is a percentage with a range from 0 to 200, where a value of 100 indicates that the color is unchanged.

Red

Changes the amount of red in the whole image.

Blue

Changes the amount of blue in the whole image.

Green

Changes the amount of green in the whole image.

Flip



Effect Category	Image
Apply to	Single-layer segments
Parameters	Border – hue, saturation, luminance, width, and softness
Reversible	No
Description	Video image is flipped vertically.

Flip-Flop



Effect Category	Image
Apply to	Single-layer segments
Parameters	Border – hue, saturation, luminance, width, and softness
Reversible	No
Description	Video image is flipped both horizontally and vertically.

Flop



Effect Category	Image
Apply to	Single-layer segments
Parameters	Border – hue, saturation, luminance, width, and softness
Reversible	No
Description	Video image is flipped horizontally, which reverses the camera angle.



Original image



Flop effect

Mask



Effect Category	Image
Apply to	Single-layer segments

Parameters	Background – hue, saturation, luminance Scaling – height, width, and fixed aspect Position – horizontal position, vertical position
Reversible	No
Description	Masks out any area of the image that is not inside a rectangle defined by the Scaling, Fixed Aspect, and Position parameters of the effect. The area surrounding the rectangle is masked by the effect's background color.

Paint Effect



Effect Category	Image
Apply to	Singe-layer or multiple segments
Parameters	Acceleration Mode Feathering Magic Mask Color Brush
Reversible	No
Description	Enhances the creative and corrective powers of the Avid Composer system by allowing you to create vector-based objects that you can animate and edit with customizable paint brushes on one frame or a series of frames.

Resize



Effect Category

Image

Apply to

Single-layer segments

Parameters

Background – hue, saturation, luminance

Scaling – height, width, and fixed aspect

Position – horizontal position, vertical position

Crop – top, bottom, left, and right

Reversible

No

Description

Resize modifies the size and position of the video. The background color displays where no video is present. Use the H Pos and V Pos and Size sliders to specify the size and position of the video. Use the Crop parameters to remove the edges of the picture.



Original image



Resize effect – reduced image



Resize effect – enlarged image

Submaster



Effect Category	Image
Apply to	The top video track under which are the video tracks that will be included in the Submaster effect.
Parameters	None
Reversible	No
Description	When rendered, the Submaster effect creates a single media file for all the video on the layers below the Submaster effect. This allows you to group several effects, that reside on different video layers, and render them as one effect which is quicker than rendering each effect separately.



Because the Submaster effect does not render each track separately, after rendering you cannot play each track separately.

Key Effects

Key effects combine two streams of video using components from one of the streams. They include:

- [AniMatte](#)
- [YUV Chroma Key](#)
- [Luma Key](#)
- [Matte Key](#)



If your system has the 3D Effects option, see the 3D version on [page 511](#).

AniMatte



Effect Category	Key
Apply to	Transitions, multilayer segments
Parameters	Acceleration Foreground Mode Feathering Magic Mask Brush
Reversible	Yes – foreground
Description	Enables you to generate custom matte effects that you can apply to a segment or transition in a sequence. You can use a variety of brushes and painting tools to create matte effects that you can animate.



Effect Category	Key
Apply to	Transitions, multilayer segments
Parameters	Key – hue, saturation, luminance, gain, and softness Secondary Key – hue, saturation, luminance, gain, and softness Spill Suppression – hue, saturation, luminance, gain and softness Profile – Foreground level Foreground – level Acceleration Scaling – height, width, and fixed aspect Position – horizontal position, vertical position Crop – top, bottom, left, and right Transition – Transition effect alignment and duration
Reversible	Yes – inverts the key
Description	Replaces one part of the video image with another video image based on color. The key color in the video on the higher track is replaced with the video from the lower track number. Chroma Key is used most frequently with a foreground image shot in front of a highly saturated color screen.



Chroma Key effect



Background – video layer 1



Key image – video layer 2

Luma Key



Effect Category

Key

Apply to

Transitions, multilayer segments

Parameters

Key – hue, saturation, luminance, gain and softness

Profile – Foreground level

Foreground – level

Acceleration

Scaling – height, width, and fixed aspect

Position – horizontal position, vertical position

Crop – top, bottom, left, and right

Transition – Transition effect alignment and duration

Reversible

Yes – inverts the key

Description

Replaces one part of the video image with another video image based on luminance.



Luma Key effect



Key image



Background image



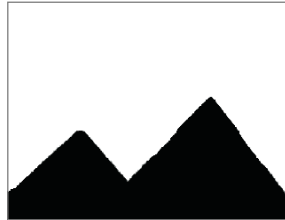
Effect Category	Key
Apply to	Multilayer segments
Parameters	Profile – Foreground level Foreground – level Acceleration Scaling – height, width, and fixed aspect Position – horizontal position, vertical position Crop – top, bottom, left, and right Transition – Transition effect alignment and duration
Reversible	Yes
Description	A three-layer track effect. The bottom layer (V1) is the background image, the middle layer (V2) is the foreground image, and the top layer (V3) contains the matte or alpha channel. The bottom layer shows through the lightest part of the matte. The middle layer shows through the darkest part of the matte. The darker the matte, the more the middle layer will show through.



Matte Key effect



Matte key original PICT



Video layer 3 – matte key



Video layer 2 – foreground



Video layer 1 – background

L-Conceal Effects

L-Conceal effects overlap one video channel over another using a pre-defined L-shaped path. They include:

- [Bottom Left](#)
- [Bottom Right](#)
- [Top Left](#)
- [Top Right](#)

Bottom Left



Effect Category	L-Conceal
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	The incoming video slides, in an L-shape, on top of the outgoing video from the bottom left to the top right of the screen.

Bottom Right



Effect Category	L-Conceal
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	The incoming video slides, in an L-shape, on top of the outgoing video from the bottom right to the top left of the screen.

Top Left



Effect Category	L-Conceal
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	The incoming video slides, in an L-shape, on top of the outgoing video from the top left to the bottom right of the screen.

Top Right



Effect Category	L-Conceal
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	The incoming video slides, in an L-shape, on top of the outgoing video from the top right to the bottom left of the screen.

Motion Effects

A motion effect is applied to a clip in the Source monitor and controls the rate at which the video channel is played. Motion effects include:

- Freeze Frame
- Variable Speed
- Strobe Motion



When you use motion effects to slow down a clip, the effect is real time. When you use motion effects to speed up a clip, the effect is non-real-time and must be rendered before it can be played.

Freeze Frame

Effect Category	Motion
Apply to	Current frame in the Source monitor
Parameters	Motion effects – duration and two-field media
Reversible	No
Description	This effect repeats the current frame in the Source monitor for the specified duration.

Variable Speed and Strobe Motion

Effect Category	Motion
Apply to	The clip marked by the IN and OUT marks in the Source monitor.
Parameters	Motion effects – variable speed, strobe motion, and two-field media
Reversible	Yes, by typing a minus sign (-) in front of the speed percent.
Description	Variable Speed creates slow motion, fast motion, or reverse motion. Strobe Motion creates a stuttering effect. The Strobe Motion effect can be used in combination with the Variable Speed effect.

Peel Effects

Peel effects treat one video channel as though it were a sheet of paper being peeled from the other video channel. They include:

- [Bottom Left Corner](#)
- [Bottom Right Corner](#)
- [Bottom to Top](#)
- [Left to Right](#)
- [Right to Left](#)
- [Top Left Corner](#)
- [Top Right Corner](#)
- [Top to Bottom](#)

For an example of a Peel effect, see [“Top Left Corner” on page 433](#).

Bottom Left Corner



Effect Category	Peel
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video material is peeled from outgoing video from the bottom left corner to the top right corner of the screen.

Bottom Right Corner



Effect Category	Peel
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video material is peeled from outgoing video from the bottom right corner to the top left corner of the screen.

Bottom to Top



Effect Category	Peel
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video material is peeled from outgoing video from the bottom edge to the top edge of the screen.

Left to Right



Effect Category	Peel
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video material is peeled from outgoing video from the left edge to the right edge of the screen.

Right to Left



Effect Category	Peel
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video material is peeled from outgoing video from the right edge to the left edge of the screen.

Top Left Corner



Effect Category	Peel
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video material is peeled from outgoing video from the top left corner to the bottom right corner of the screen.

The following example includes a Border Color and Border Blend.



Peel effect with border



Outgoing video



Incoming video

Top Right Corner

Effect Category

Peel

Apply to

Transitions, multilayer segments

Parameters

Border – hue, saturation, luminance (includes Color Blend), width, and softness

Profile – Foreground level

Foreground – level

Acceleration

Transition – Transition effect alignment and duration

Reversible	Yes
Description	Incoming video is peeled from outgoing video from the top right corner to the bottom left corner of the screen.

Top to Bottom



Effect Category	Peel
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video material is peeled from outgoing video from the top to the bottom of the screen.

Push Effects

Push effects move one video channel to fill the screen while the other video channel is pushed out of the screen. They include:

- [Bottom Left to Top Right](#)
- [Bottom Right to Top Left](#)

- [Bottom to Top](#)
- [Left to Right](#)
- [Right to Left](#)
- [Top Left to Bottom Right](#)
- [Top Right to Bottom Left](#)
- [Top to Bottom](#)

For an example of a Push effect, see [“Top Left to Bottom Right” on page 440](#).

For examples of similar effects, see [“Comparison of Similar Effects” on page 487](#).

Bottom Left to Top Right



Effect Category	Push
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video pushes out outgoing video from the bottom left corner to the top right corner of the screen. Border is on incoming video.

Bottom Right to Top Left



Effect Category	Push
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video pushes out outgoing video from bottom right corner to top left corner of the screen. Border is on incoming video.

Bottom to Top



Effect Category	Push
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video pushes out outgoing video from the bottom to the top of the screen. Border is on incoming video.

Left to Right



Effect Category	Push
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video pushes out outgoing video from the left edge to the right edge of the screen. Border is on incoming video.

Right to Left



Effect Category	Push
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video pushes out outgoing video from the right edge to the left edge of the screen. Border is on incoming video.

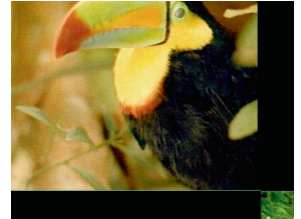
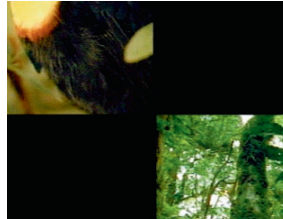
Top Left to Bottom Right



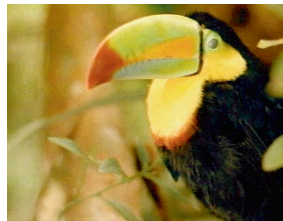
Effect Category	Push
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video pushes out outgoing video from the top left corner to the bottom right corner of screen. Border is on incoming video.



Push effect



Outgoing video



Incoming video



For examples of similar effects, see [“Comparison of Similar Effects” on page 487.](#)

Top Right to Bottom Left



Effect Category	Push
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video pushes out outgoing video from the top right corner to the bottom left corner of the screen. Border is on incoming video.

Top to Bottom



Effect Category	Push
Apply to	Transitions, multilayer segments

Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video pushes out outgoing video from the top to the bottom of the screen. Border is on incoming video.

Spin Effects

Spin effects rotate one or more video channels. They include:

- [X Spin](#)
- [Y Spin](#)
- [Z Spin](#)

X Spin



Effect Category	Spin
Apply to	Transitions
Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Outgoing video is squeezed until it appears as a vertical line. The incoming video then expands from that vertical line until it fills the screen. Border appears only on the incoming video. See the following example.



X Spin effect with pink background



Outgoing video



Incoming video

Y Spin



Effect Category

Spin

Apply to

Transitions, multilayer segments

Parameters

Border – hue, saturation, luminance (includes Color Blend), width, and softness

Profile – Foreground level

Foreground – level

Acceleration

Transition – Transition effect alignment and duration

Reversible

Yes

Description Outgoing video is squeezed until it appears as a horizontal line. The incoming video then expands from that horizontal line until it fills the screen.

Z Spin



Effect Category Spin

Apply to Transitions, multilayer segments

Parameters Border – hue, saturation, luminance, width, and softness
Profile – Foreground level
Foreground – level
Acceleration
Transition – Transition effect alignment and duration

Reversible Yes

Description The incoming video starts as a dot in the center of the screen and then enlarges to full screen while rotating counter clockwise one full revolution covering the outgoing video.



Z Spin effect inverted



Outgoing video

Incoming video

Squeeze Effects

Squeeze effects expand a video channel from a single point or line until it fills the screen, obscuring the second video channel. They include:

- [Bottom Centered](#)
- [Bottom Left](#)
- [Bottom Right](#)
- [Bottom to Top](#)
- [Centered Zoom](#)
- [Horizontal Centered](#)
- [Left Centered](#)
- [Left to Right](#)
- [Right Centered](#)
- [Right to Left](#)
- [Top Centered](#)
- [Top Left](#)
- [Top Right](#)
- [Top to Bottom](#)
- [Vertical Centered](#)

For an example of a Squeeze effect, see [“Top Left” on page 455](#).

For examples of similar effects, see [“Comparison of Similar Effects” on page 487](#).

Bottom Centered

Effect Category	Squeeze
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video squeezes over the outgoing video, beginning as a rectangle in the center bottom edge of the screen and expanding to fill the screen.

Bottom Left

Effect Category	Squeeze
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video squeezes over the outgoing video, beginning as a rectangle in the bottom left corner and expanding to fill the screen.

Bottom Right



Effect Category	Squeeze
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video squeezes over the outgoing video, beginning as a rectangle in the bottom right corner and expanding to fill the screen.

Bottom to Top



Effect Category	Squeeze
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video squeezes over the outgoing video, beginning at the bottom of the screen and filling to the top of the screen.

Centered Zoom



Effect Category	Squeeze
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video starts as a rectangle in the center of the screen and zooms to fill the screen.

Vertical Centered

Effect Category	Squeeze
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video starts as a horizontal band squeezed in the center of the screen and expands horizontally to fill the screen.

Left Centered



Effect Category	Squeeze
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video squeezes over the outgoing video, beginning as a rectangle in the center left edge of the screen and expanding to fill the screen.

Left to Right



Effect Category	Squeeze
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video squeezes over the outgoing video, beginning at the left edge of the screen and filling to the right edge of the screen.

Right Centered



Effect Category	Squeeze
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video squeezes over the outgoing video, beginning as a rectangle in the center right edge of the screen and expanding to fill the screen.

Right to Left



Effect Category	Squeeze
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video squeezes over the outgoing video beginning at right edge of the screen and filling to the left edge of screen.

Top Centered



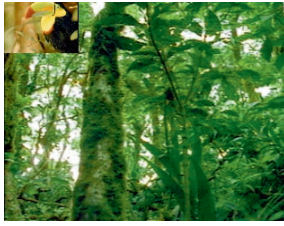
Effect Category	Squeeze
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video squeezes over the outgoing video, beginning as a rectangle in the center top edge of the screen and expanding to fill the screen.

Top Left



Effect Category	Squeeze
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video squeezes over the outgoing video, beginning as a rectangle in the top left corner and expanding to fill the screen.



Squeeze effect



Outgoing video



Incoming video



For examples of similar effects, see [“Comparison of Similar Effects” on page 487.](#)

Top Right



Effect Category

Squeeze

Apply to

Transitions, multilayer segments

Parameters

Border – hue, saturation, luminance, width, and softness

Profile – Foreground level

Foreground – level

Acceleration

Transition – Transition effect alignment and duration

Reversible

Yes

Description

Incoming video squeezes over the outgoing video, beginning as a rectangle in the top right corner and expanding to fill the screen.

Top to Bottom



Effect Category

Squeeze

Apply to

Transitions, multilayer segments

Parameters

Border – hue, saturation, luminance, width, and softness

Profile – Foreground level

Foreground – level

Acceleration

Transition – Transition effect alignment and duration

Reversible

Yes

Description

Incoming video squeezes over the outgoing video, beginning at the top edge of the screen and filling to the bottom edge of the screen.

Horizontal Centered



Effect Category

Squeeze

Apply to

Transitions, multilayer segments

Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video starts as a vertical band squeezed in the center of the screen and expands vertically to fill the screen.

Wipes

A wipe is an effect in which a transition line literally “wipes” across the screen to reveal the incoming video. The transition line can be in many shapes and can come from many directions, hence the numerous types of wipe effects listed in this section. You can also apply many of these wipes to segments to form split-screens and other segment effects.

Box Wipes

Box Wipes reveal one video channel on top of another video channel, using predefined growing rectangular shapes. They include:

- [Bottom Box](#)
- [Left Box](#)
- [Lower Right Corner](#)
- [Lower Left Corner](#)
- [Upper Right Corner](#)
- [Right Box](#)
- [Top Box](#)
- [Upper Left Corner](#)
- [Upper Right Corner](#)

For an example of a Box Wipe effect, see [“Upper Left Corner” on page 464.](#)

For examples of similar effects, see [“Comparison of Similar Effects” on page 487.](#)

Bottom Box



Effect Category	Box Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins as a rectangle in the center of the bottom edge of the screen and wipes out outgoing video as it expands to fill screen.

Left Box



Effect Category	Box Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration

Reversible Yes

Description Incoming video begins as a box in the center of the left edge of the screen. The incoming video wipes out the outgoing video as the box expands to fill the screen.

Lower Left Corner



Effect Category Box Wipe

Apply to Transitions, multilayer segments

Parameters Border – hue, saturation, luminance, width, and softness

Profile – Foreground level

Foreground – level

Acceleration

Transition – Transition effect alignment and duration

Reversible Yes

Description Incoming video begins as a box in the bottom left corner of the screen. The incoming video wipes out the outgoing video as the box expands to fill the screen.

Lower Right Corner



Effect Category	Box Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins as a box in the bottom right corner of the screen. The incoming video wipes out the outgoing video as the box expands to fill the screen.

Right Box



Effect Category	Box Wipe
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video begins as a box on the right edge of the screen. The incoming video wipes out the outgoing video as the box expands to fill the screen.

Top Box



Effect Category	Box Wipe
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video begins as a rectangle in the center of the top edge of the screen and wipes out outgoing video as it expands to fill the screen.

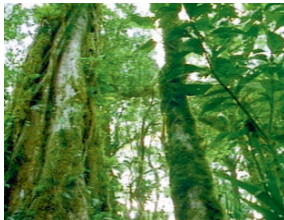
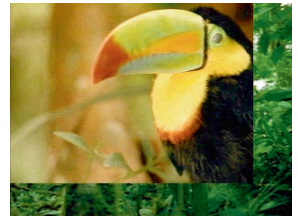
Upper Left Corner



Effect Category	Box Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins as a box in the top left corner of the screen. The incoming video wipes out the outgoing video as the box expands to fill the screen.



Box Wipe effect



Outgoing video



Incoming video

Upper Right Corner



Effect Category	Box Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins as a box in the top right corner of the screen. The incoming video wipes out the outgoing video as the box expands to fill the screen.

Edge Wipes

Edge Wipes reveal one video channel on top of another video channel by wiping an edge across the screen. They include:

- [Vertical](#)
- [Vertical Open](#)
- [Lower Left Diagonal](#)
- [Lower Right Diagonal](#)
- [Upper Left Diagonal](#)
- [Upper Right Diagonal](#)
- [Horizontal](#)
- [Horizontal Open](#)



Effect Category	Edge Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins at the left edge of the screen and moves to the right edge, wiping out the outgoing video.



Edge Wipe effect



Outgoing video



Incoming video

Vertical Open



Effect Category	Edge Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	The incoming video begins as a vertical band in the center of the screen. This band expands to the left and right edges of the screen, wiping out the outgoing video.

Lower Left Diagonal



Effect Category	Edge Wipe
Apply to	Transitions, multilayer segments

Parameters Border – hue, saturation, luminance, width, and softness
Profile – Foreground level
Foreground – level
Acceleration
Transition – Transition effect alignment and duration

Reversible Yes

Description The incoming video begins in the bottom left corner of the screen and wipes out the outgoing video as a diagonal line moves from the bottom left corner to the top right corner of the screen.

Lower Right Diagonal



Effect Category Edge Wipe

Apply to Transitions, multilayer segments

Parameters Border – hue, saturation, luminance, width, and softness
Profile – Foreground level
Foreground – level
Acceleration
Transition – Transition effect alignment and duration

Reversible Yes

Description The incoming video begins in the bottom right corner of the screen and wipes out the outgoing video as a diagonal line moves from the bottom right corner to the top left corner of the screen.

Upper Left Diagonal



Effect Category	Edge Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	The incoming video begins in the top left corner of the screen and wipes out the outgoing video as a diagonal line moves from the top left corner to the bottom right corner of the screen.

Upper Right Diagonal



Effect Category	Edge Wipe
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	The incoming video begins in the top right corner of the screen and wipes out the outgoing video as a diagonal line moves from the top right corner of the screen to the bottom left corner.

Horizontal



Effect Category	Edge Wipe
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video begins at the top edge of the screen and expands downward to fill the screen.



Effect Category	Edge Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins as a horizontal band in the center of the screen. This band expands up and down to fill the screen.

Matrix Wipes

Matrix Wipes reveal one video channel on top of another video channel, using blocks or bands that appear in a predefined position or path. They include:

- [Block Spiral](#)
- [Grid](#)
- [One-Way Row](#)
- [Speckle](#)
- [Zig-Zag](#)

For an example of a Matrix Wipe, see [“Grid” on page 472.](#)

Block Spiral



Effect Category	Matrix Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Other Option buttons – Matrix columns and rows Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	The incoming video spirals over and wipes out the outgoing video using blocks of screen space starting in the bottom left corner of the screen, and spirals inward in a counterclockwise movement.

Grid



Effect Category	Matrix Wipe
Apply to	Transitions, multilayer segments

Parameters

Border – hue, saturation, luminance (includes Color Blend), width, and softness

Other Options buttons – Matrix columns and rows

Profile – Foreground level

Foreground – level

Acceleration

Transition – Transition effect alignment and duration

Reversible

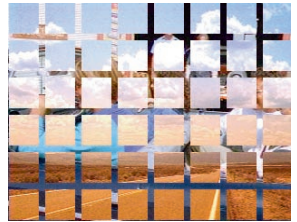
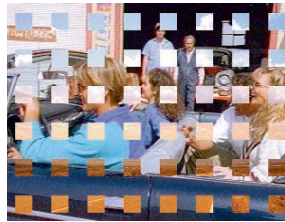
Yes

Description

Incoming video begins as blocks in a grid pattern that wipe out the outgoing video as the blocks expand to fill the screen. The Columns and Rows parameters change the size of the grid.



Grid Wipe effect



Outgoing video



Incoming video

One-Way Row



Effect Category	Matrix Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance (includes Color Blend), width, and softness Other Options buttons – Matrix columns and rows Profile – Foreground level Foreground – level Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins as a block at the top left corner of the screen that wipes out the outgoing video as the band expands horizontally across the screen from left to right. When the first horizontal band has reached the right edge of the screen, a second band appears on the left edge of the screen, just below the first band, and repeats the process until the incoming video has wiped out all of the outgoing video.

Speckle



Effect Category	Matrix Wipe
Apply to	Transitions, multilayer segments

Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Other Options buttons – Matrix columns and rows</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	The incoming video appears in a random series of blocks that wipe out the outgoing video until the blocks have filled the screen.

Zig-Zag



Effect Category	Matrix Wipe
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance (includes Color Blend), width, and softness</p> <p>Other Options buttons – Matrix columns and rows</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes

Description

Incoming video begins as a single block at the top left corner of the screen that wipes out the outgoing video as the band expands horizontally across the screen from left to right. When the first horizontal band reaches the right edge of the screen, a second band appears and expands horizontally across the screen from right to left. Succeeding bands repeat the process until the wipe is completed.

Saw Tooth Wipes

Saw Tooth Wipes are described in this section. They include:

- [Vertical Open Saw Tooth](#)
- [Vertical Saw Tooth](#)
- [Horizontal Open Saw Tooth](#)
- [Horizontal Saw Tooth](#)

For an example of a Saw Tooth Wipe effect, see [“Horizontal Open Saw Tooth” on page 478](#).

Vertical Open Saw Tooth



Effect Category	Saw Tooth Wipe
Apply to	Transitions, multilayer segments
Parameters	Profile – Foreground level Foreground – level Background – hue, saturation, luminance Other Options button – Matrix columns and rows Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins as a vertical saw tooth in the center of the screen. The saw tooth then expands outward to the left and right edges of the screen to display the incoming video in the center while covering the outgoing video.

Vertical Saw Tooth



Effect Category	Saw Tooth Wipe
Apply to	Transitions, multilayer segments

Parameters	Profile – Foreground level Foreground – level Background – hue, saturation, luminance Other Options button – Matrix columns and rows Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video appears with a saw tooth on the left edge of the screen. The saw tooth edge moves to the right edge of the screen, revealing the incoming video.

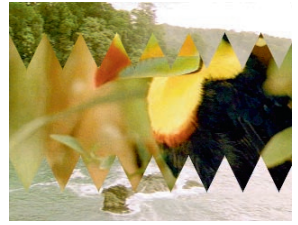
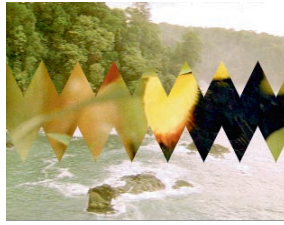
Horizontal Open Saw Tooth



Effect Category	Saw Tooth Wipe
Apply to	Transitions, multilayer segments
Parameters	Profile – Foreground level Foreground – level Background – hue, saturation, luminance Other Options button – Matrix columns and rows Acceleration Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins as a horizontal saw tooth in the center of the screen. The saw tooth expands up and down revealing the incoming video.



Saw Tooth Wipe effect



Outgoing video



Incoming video

Horizontal Saw Tooth



Effect Category

Saw Tooth Wipe

Apply to

Transitions, multilayer segments

Parameters

Profile – Foreground level

Foreground – level

Background – hue, saturation, luminance

Other Options button – Matrix columns and rows

Acceleration

Transition – Transition effect alignment and duration

Reversible

Yes

Description

The saw tooth edge moves from the top of the screen down, covering the outgoing video and displaying the incoming video above the saw tooth.

Shape Wipes

Shape Wipes reveal one video channel on top of another video channel, using a growing or moving geometric shape. They include:

- [Center Box](#)
- [Circle](#)
- [Clock](#)
- [Diamond](#)
- [Ellipse](#)
- [Four Corners](#)
- [Vertical Bands](#)
- [Vertical Blind](#)
- [Horizontal Blind](#)

Center Box



Effect Category	Shape Wipe
Apply to	Transitions, multilayer segments
Parameters	Border – hue, saturation, luminance, width, and softness Profile – Foreground level Foreground – level Acceleration Scaling – height, width, fixed aspect Position – horizontal position, vertical position Transition – Transition effect alignment and duration

Reversible	Yes
Description	Incoming video begins as a box in the center of the screen and wipes out the outgoing video as it expands to fill the screen.



Effect Category	Shape Wipe
Apply to	Transitions, multilayer segments
Parameters	<p>Border – hue, saturation, luminance, width, and softness</p> <p>Profile – Foreground level</p> <p>Foreground – level</p> <p>Acceleration</p> <p>Scaling – height, width, fixed aspect</p> <p>Position – horizontal position, vertical position</p> <p>Transition – Transition effect alignment and duration</p>
Reversible	Yes
Description	Incoming video begins as a circle in the center of the screen and wipes out the outgoing video as it expands to fill the screen.



Circle Wipe effect



Outgoing video



Incoming video

Clock



Effect Category

Shape Wipe

Apply to

Transitions, multilayer segments

Parameters

Profile – Foreground level

Foreground – level

Background – hue, saturation, luminance

Acceleration

Transition – Transition effect alignment and duration

Reversible

Yes

Description

Incoming video appears as a vertical line from the center of the screen to the top edge. The incoming video replaces the outgoing video in a clockwise motion as if it were the hand on a clock.

Diamond



Effect Category	Shape Wipe
Apply to	Transitions, multilayer segments
Parameters	Profile – Foreground level Foreground – level Background – hue, saturation, luminance Acceleration Scaling – height, width, fixed aspect Position – horizontal position, vertical position Transition – Transition effect alignment and duration
Reversible	Yes
Description	Incoming video begins as a diamond in the center of the screen and wipes out the outgoing video as it expands to fill the screen. Use the Position and Size parameters to change the size, shape, and position of the diamond.

Ellipse



Effect Category	Shape Wipe
Apply to	Transitions, multilayer segments

Parameters

Border – hue, saturation, luminance, width, and softness

Profile – Foreground level

Foreground – level

Acceleration

Scaling – height, width, fixed aspect

Position – horizontal position, vertical position

Transition – Transition effect alignment and duration

Reversible Yes

Description Incoming video begins as an ellipse in the center of the screen and wipes out the outgoing video as it expands to fill the screen.

Four Corners



Effect Category Shape Wipe

Apply to Transitions, multilayer segments

Parameters

Border – hue, saturation, luminance, width (with Color Blend), and softness

Profile – Foreground level

Foreground – level

Acceleration

Transition – Transition effect alignment and duration

Reversible Yes

Description

Incoming video begins as blocks in four corners of the screen and wipes out the outgoing video as the blocks expand to fill the screen.

Vertical Bands**Effect Category**

Shape Wipe

Apply to

Transitions, multilayer segments

Parameters

Border – hue, saturation, luminance, width (with Color Blend), and softness

Other Options – Matrix rows and columns

Profile – Foreground level

Foreground – level

Acceleration

Transition – Transition effect alignment and duration

Reversible

Yes

Description

Horizontal bands expand toward the center of the screen to reveal incoming video between alternate shrinking bands of outgoing video.

Vertical Blind**Effect Category**

Shape Wipe

Apply to

Transitions, multilayer segments

Parameters Border – hue, saturation, luminance, width (with Color Blend), and softness
 Other Options – Matrix rows and columns
 Profile – Foreground level
 Foreground – level
 Acceleration
 Transition – Transition effect alignment and duration

Reversible Yes

Description Vertical bands expand horizontally to fill the screen with the incoming video.

Horizontal Blind



Effect Category Shape Wipe

Apply to Transitions, multilayer segments

Parameters Border – hue, saturation, luminance, width (with Color Blend), and softness
 Other Options – Matrix rows and columns
 Profile – Foreground level
 Foreground – level
 Acceleration
 Transition – Transition effect alignment and duration

Reversible Yes

Description Incoming video begins as horizontal bands on the screen that wipe out the outgoing video as the incoming bands expand vertically to fill the screen.

Comparison of Similar Effects

There are four effects that have a similar result: Box Wipe, Conceal, Push, and Squeeze. Examples of these effects are shown here to assist you in using these effects. Each of these effects was created with the same outgoing and incoming video.



Outgoing video



Incoming video

Box Wipe – Upper Left Corner



Box Wipe effect

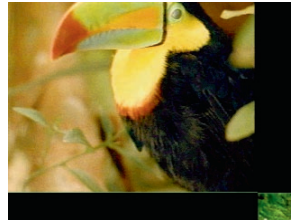
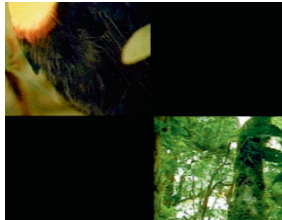
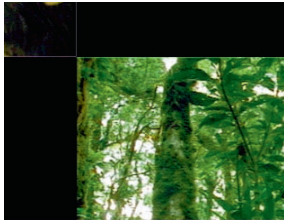


Conceal – Top Left to Bottom Right



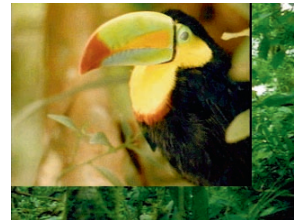
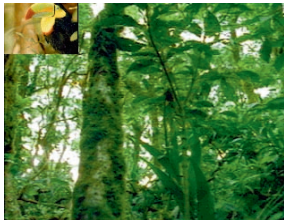
Conceal effect

Push – Top Left to Bottom Right



Push effect

Squeeze – Top Left



Squeeze effect

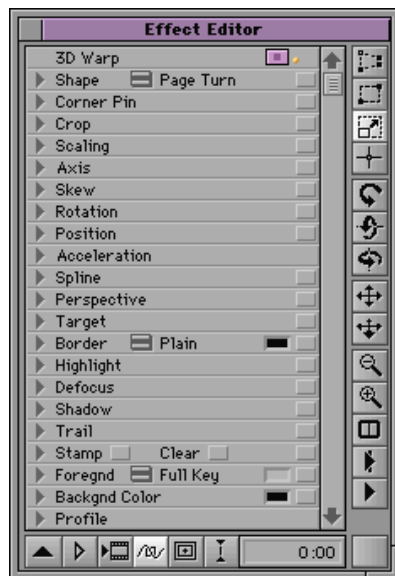


CHAPTER 11

3D Effects Reference

This chapter provides reference information on parameters and effect shape options that appear in the Effect Editor when you apply the 3D Warp effect to a transition or segment. For information on applying and editing 3D effects, see [Chapter 9, “Working with 3D Effects.”](#)

- [Basic 3D Effects Parameters](#)
- [3D Shape Effects](#)



Basic 3D Effects Parameters

The parameters described in this section are available for all 3D effects, regardless of the shape of the effect. The parameters and controls appear in the Effect Editor after you apply the 3D Warp effect to a transition or segment.

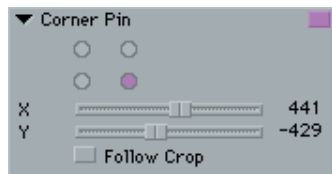
Setup Versus Key-Frame Parameters

3D Effects parameters are divided into two logical groups:

- **Setup parameters** cannot change between key frames. When you change one of these parameters, the Avid Composer system automatically sets the value for all key frames. The list below describes the setup parameters that cannot change between key frames.
 - Acceleration
 - Shape selection and highlight type
 - Border type and border color
 - Foregnd (foreground) Swap Sources button
 - Chroma key gain, threshold, hue, or high and low saturation
- **Key-frame parameters** are adjustable on an individual key-frame basis, so that the parameters can change over time. This category includes the remainder of the 3D Effects parameters. Most of these parameters interact with each other. For example, you can rotate the image with perspective, skew the image so that it slants to the right, apply a page curl, and add highlights and a semitransparent drop shadow — all of which can change over time, independent of each other.

Corner Pinning

Corner pinning is a way of positioning a 3D effect in a foreground video track over an object in a background video track. For example, you might want to have the foreground video appear to be playing on a TV set in the background video.



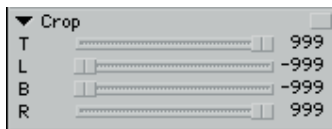
Corner Pin button

X pins the image along the X axis.

Y pins the image along the Y axis.

Follow Crop lets you pin the corners of a cropped image rather than pinning the corners of the whole frame.

Crop — Cropping the Image



Crop button

At the bottom of the effects parameters hierarchy is Crop. It always crops the same four edges of the object no matter what orientation the object has. Cropping works only in 2D space so that 3D parameters such as Rotation and Position, which are higher in the hierarchy, take effect later in the processing. You don't need to adjust cropping before the other parameters, but it is difficult to crop edges if they are rotated

to the vanishing point. Use Crop to trim an image's top, bottom, left, or right edges.

T (top) crops the top edge of the image. Values range from -999 (bottom) to 999 (top).

L (left) crops the left edge of the image. Values range from -999 (left) to 999 (right).

B (bottom) to crop the bottom edge of the image. Values range from -999 (bottom) to 999 (top).

R (right) crops the right edge of the image. Values range from -999 (left) to 999 (right).

For cropping, the values -999 to 999 are relative to the edges of the image. Zero is the center of the image.

Scaling — Changing the Size



Scale button

Just above Crop, near the bottom of the effects parameters hierarchy, is Scaling. Scaling an image also takes place in 2D but it may create the illusion that the image has moved away from the screen. This is because the surface of the video monitor, in reality, is only a 2D surface and there is no way of turning the monitor sideways to see if an object is smaller or has “moved away” from the screen. You can create many moves with Scaling that appear to move toward or away from the screen. In fact, because of its ease of use, the Scale button on the tool bar may be the most direct method to create moves that appear to move toward or away from the screen.

The difference between Scaling and other motion parameters, such as Position, is that the point of view of the object does not change. Point

of view changes only when you move an object in 3D space. Therefore, if you want to change only the size of an object, Scaling is an appropriate choice. For example, if you have rotated an object and it is too large, Scaling resizes it while maintaining the same position and point of view on the screen.

You can change X and Y together or separately. If you change values separately, you change the aspect ratio of the image.

X stretches or compresses along the X axis (horizontally). Values range from 0 to 400, where 100 indicates 100 percent scaling.

Y stretches or compresses along the Y axis (vertically). Values range from 0 to 400, where 100 indicates 100 percent scaling.

To adjust X and Y at the same time (and maintain the aspect ratio), use the Scale button.

Axis — Moving the Center of Rotation



Axis button

Axis is the center of the rotation for X, Y, and Z rotation parameters. It defaults to the center of the object at the beginning of any effect. An image has no fixed rotation axis. The axis is independent of the image, and movable. For example, the rotation axis can be placed in the center of, on the edge of, or off the image.

You should enable the Axis button on the direct manipulation tool bar when working with axis to see easily where the crosspoint will be. It is also useful to zoom out with the Enlarge tool to graphically see the movement of the axis over time. [“Zooming In or Out on the Effect Preview Monitor” on page 341](#)

Axis precedes Rotation in the hierarchy for the very important reason that Rotation requires an axis point to be set first. If you set Rotation and then move the axis point, the object will jump to an unpredictable place based on the new center of rotation.

If the axis moves to the bottom corner of the object, then that is the point of rotation for the object. If the axis moves off the actual object, then the radius of the rotation gets larger.

You can move the axis between key frames to allow a shape to rotate in on one axis and rotate out on another. Generally there should be a pair of static frames to allow the axis to move invisibly. There are, however, some interesting effects in which the axis moves during the motion. This is an easy way to make an otherwise normal move have an unusual path.

X moves the center of rotation along the X axis (right or left). Values range from -999 to +999, where 0 is the center of the X axis.

Y moves the center of rotation along the Y axis (up or down). Values range from -999 to +999, where 0 is the center of the Y axis.

Z moves the center of rotation along the Z axis. Values can range from -999 to +999, where 0 is the center of the Z axis. Positive values are closer and negative values are farther away. Adjusting the Z value moves the center of rotation off the plane of the video screen.

Skew — Tilting the Image



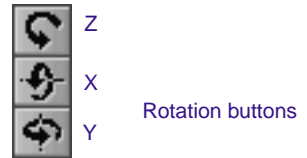
Use Skew to skew or tilt an image in the X or Y direction.

X skews the image along the X axis. The orientation of the top and bottom edges remains fixed, while the left and right edges are tilted along

the X axis into a parallelogram. Values range from -999 to +999, where 0 represents no change.

Y skews the image along the Y axis. The orientation of the left and right edges remain fixed, while the top and bottom edges are tilted along the Y axis into a parallelogram. Values range from -999 to +999, where 0 represents no change.

Rotation — Rotating an Effect



You can rotate an object on the X, Y, and Z axes. Once an object is rotated, the perspective changes depending on Position, the lower parameter in the hierarchy.

Rotation does not affect the path of the object. Thus, you will not see changes in Rotation when you click the Outline/Path button. This means that Spline does not smooth out rotational stops and starts.

Because you are working with the illusion of 3D space in a 2D environment, a certain anomaly occurs when an object rotates until you see it from the side. If the edge is straight on to the viewer, the object actually disappears from sight. This can be a useful way to rotate an object into view or to change the backside of an object as it flips around.

Z rotates the image around the Z axis (clockwise or counterclockwise). Values range from -720 to +720, where 0 is the default.

X rotates the image around the X axis. Values range from -720 to +720, where 0 is the default.

Y rotates the image around the Y axis. Values range from -720 to +720, where 0 is the default.

The 720-degree value allows you to spin the image more than once between two key frames. For an explanation of rotation angles, see [“Rotation Axes” on page 334](#).

Position — Moving the Image



Position is a true 3D parameter because it allows you to move objects away from the screen and change the perspective when the object begins to rotate. This more closely simulates human perception of objects in space. The difference in perspective between an object that is scaled and an object that is moved backward on the Z axis is subtle but is a factor when rotation and perspective are important. Notice how the point of view changes if you rotate an object and then move it with Position on any axis.

To create a smooth landing when an object is moving away or toward the screen, use Position in conjunction with Spline. See [“Spline — Moving the Image Along a Smooth Path” on page 498](#)

X moves the image along the screen’s X axis (horizontally). Values range from -3000 to +3000, where 0 is the center of the X axis. Negative values move the image to the left and positive values move the image to the right.

Y moves the image along the screen’s Y axis (vertically). Values range from -3000 to +3000, where 0 is the center of the Y axis. Negative values move the image down and positive values move the image up.

The large X and Y values allow you to move the image completely off the screen if you have Z perspective turned on and you are using a large Z value.

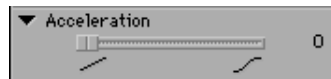
Z moves the image along the screen's Z axis (front/back). Values range from -999 to +249, where 0 is the center of the Z axis. Relative to the "plane" of the video screen, positive values move the image closer to you, and negative numbers move the image farther away.

For an illustration of the XYZ coordinate system, see [“The 3D Coordinate System” on page 333](#).

The perspective point remains fixed when you use Position. For more information, see [“Perspective — Moving the Perspective Point” on page 503](#).

The Position parameter pane and the Position buttons create pretransformation effects. This means that if you apply a perspective to the image and then move it with Position, the foreshortening changes. To move an image without changing the foreshortening effect, use the Target parameters as described in [“Target — Post-Transformation Position and Scaling” on page 503](#).

Acceleration — Smoothing Out Key-Frame Transitions



Acceleration changes the speed of movement into and out of key frames. This is also known as *ease in* and *ease out*. Zero on the slider is no acceleration; 100 is full acceleration.



Acceleration applies to every key frame in the same way. The last time you change this parameter determines the acceleration for all key frames in the effect.

You can apply acceleration to a number of 3D Effects parameters. For example, you can use key frames and acceleration to adjust the speed of a rotating Picture-in-Picture effect.

Acceleration affects the following 3D Effects parameters:

- Shape (X and Y position)
- Position (if Spline is disabled)
- Scaling
- Rotation
- Axis
- Target
- Perspective
- Skew
- Crop
- Shadow (X and Y position)

Spline — Moving the Image Along a Smooth Path



Outline/Path button

Spline is the parameter that smooths the Position changes between key frames. It helps to reproduce the natural motion path of an object through 3D space.

Sometimes you want objects to settle gently into place at each key frame and other times you may want objects to move in a swooping arc, connecting the key frames. Spline helps to achieve both. It looks ahead and takes into account the motion approaching a key frame and

the motion immediately after a key frame and averages the changes for the smoothest possible transition.

When you are working with Spline, it is a good idea to click the Outline/Path button in the direct manipulation tool bar. This displays the wire-frame line that represents the path between key frames. It also shows how the change in the Spline settings affects the motion.

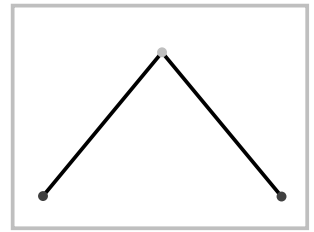
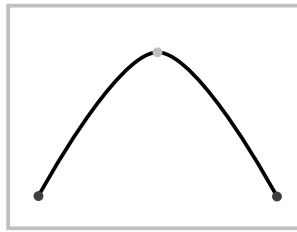
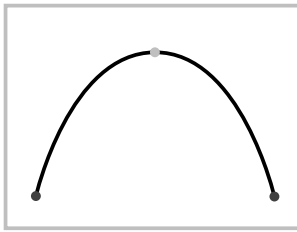
Enabling Spline automatically smooths the motion between key frames. Even when all the Spline settings are 0, the optimum smoothing results. Therefore, Spline is often helpful for putting the finishing touches on a move.

You cannot turn Spline on or off for individual key frames but you can set it to behave as though it had been turned off by changing the settings. You may find that two key frames with no changes between them now have some slight motion when Spline is turned on. This is usually undesirable and is the main reason why you would want to change the settings to behave as if Spline had been turned off between those key frames.

To achieve more variations to the “standard” way Spline operates, you can adjust the Spline settings for tension, continuity, and bias, as described in the following sections.

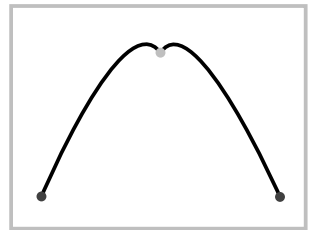
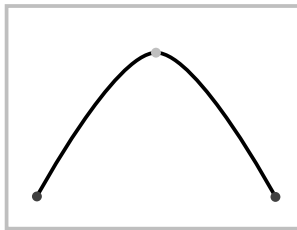
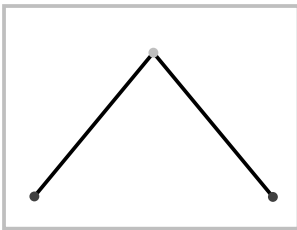
Tension (Tens.)

Tension controls how sharply the curve bends at a key frame. The default or 0 setting is the average of the changes before and after the key frame. Decreasing it to -100 doubles the amount of bending from the original 0 position and creates more slack in the curve. Increasing it to 100 tightens the curve and makes the change in direction more severe.



Continuity (Cont.)

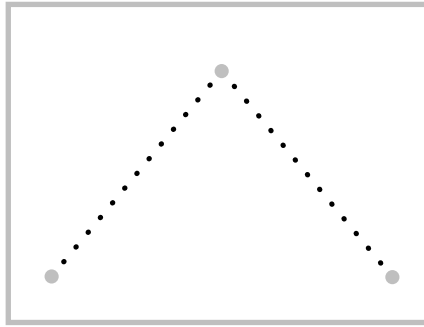
Continuity controls the amount of direction change between the incoming motion and outgoing motion around the key frame. Usually the motion should be as smooth as possible, reducing sharp, unnatural corners (the default setting of 0). However, when you want to simulate bouncing or punching, you must turn the Continuity down (-100) to make the quick, hard direction changes more obvious. Turning it up to 100 forces the motion to begin going in the opposite direction at the previous key frame, changing to the new direction for the outgoing motion.



Difference Between Tension and Continuity

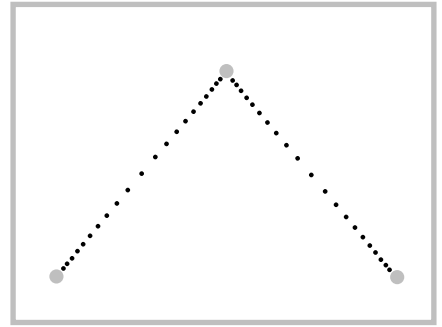
There appears to be no difference between the motion path of an object with maximum Tension and an object with minimum Continuity. The

motion dynamics of the two moves, however, are quite different. Even though both motion paths have severe direction changes, Tension causes the object to start slowly, speed up, slow down, and pause at the key frame, then speed up and slow down again at the next key frame. This is referred to as an ease in/ease out motion.



Tens.
Cont.
Bias

Continuity

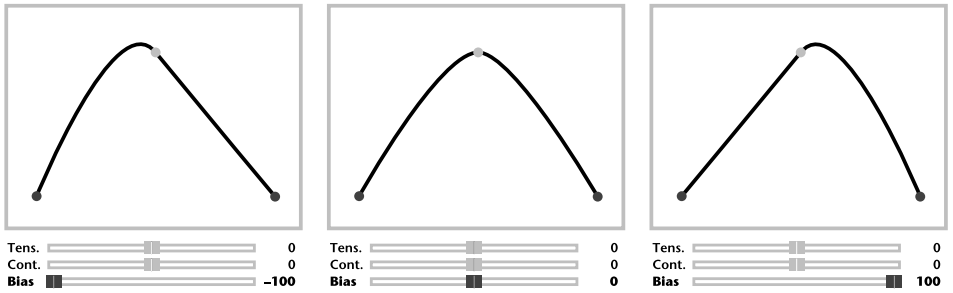


Tens.
Cont.
Bias

Tension

Bias

Bias assigns a different weight to either the incoming or the outgoing motion. Set at 0, it averages both incoming and outgoing motion. When set to -100, it “undershoots” the key frame; at 100 it “overshoots” the key frame. This causes the curve to occur either before or after the key frame it passes through.



You can use a combination of the Tens., Cont., and Bias sliders to achieve effects similar to the 2D Acceleration feature described in [“Adjusting the Acceleration” on page 110](#).



To move the entire curve, use the Target category as described in [“Target – Post-Transformation Position and Scaling” on page 503](#).

Adding a New Point to a Spline Curve

If you add a key frame when using the Spline category, the Avid Composer system displays the new point on the curve. However, it does not recalculate the curve until you use one of the Position parameters to move one of the points.

Mathematically speaking, when you add a point to a spline curve, the curve changes shape, even if the new point is on the curve. Sometimes you will want to add a new point on the curve to change the path. However, sometimes you may simply want to add a new key frame to change a parameter such as Rotation or Scaling without affecting the curve. In order to account for both cases, the Avid Composer system uses the following rule:

Once you move one of the points, the Avid Composer system incorporates all the existing key frames into the curve. You can move any of the points to readjust the curve.

Perspective — Moving the Perspective Point



Use Perspective to move the perspective point (where parallel lines appear to converge) along the screen's X, Y, and Z axes. This changes the way the image is visually projected onto the video screen.

X and Y move your horizontal or vertical "point of view." An X adjustment moves the projected screen image farther to the left or right. Y adjustments allow you to view the image from a higher or lower angle. Values range from -999 to +999, where 0 is the default.

Z moves the perspective point closer to and farther from the observer. Perspective increases as the point moves inward, and decreases as the point moves outward from the screen. Moving the perspective point in Z changes the amount of foreshortening on an image that is rotated around the X or Y axis.

Target — Post-Transformation Position and Scaling



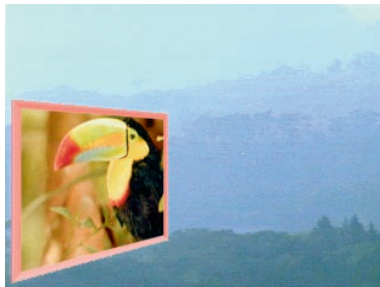
Use Target to change the X Y positioning and the sizing and to maintain the current perspective.

Target is a post-transformation parameter. In other words, it is the last step of the hierarchy and affects objects after all the other parameters have affected it. If an object has been rotated and has perspective added to it, Target moves the object without changing the relationship

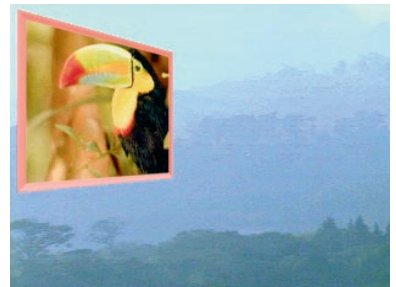
of the other parameters. Think of it as moving the entire 3D world where point of view does not change.

Target can be used in many cases as a *global* parameter. If you have already created an effect and want the whole effect to move higher across the frame or to appear inside another frame, such as a television on a set, Target is the way to move it. It is also good for offsetting another track slightly if you want to use a black graphics image as a drop shadow.

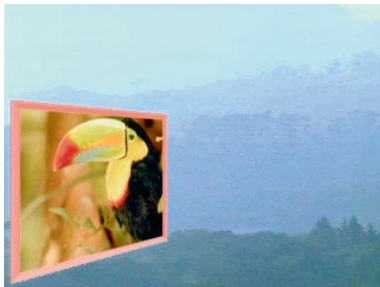
The following illustrations compare the Target and Position effects:



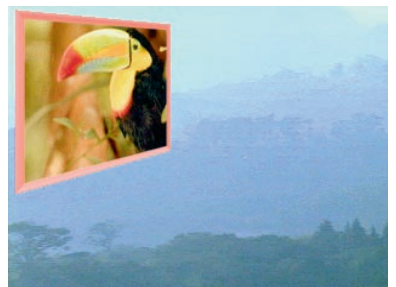
Before



After moving with Position



Before



After moving with Target

In the above illustrations, notice the differences between the top and bottom edges of the image. The foreshortening does not change on the image moved with Target.

The following operations were performed on the image in this example before applying the Target or Position effects:

- The foreground image was scaled to create a Picture-in-Picture effect.
- The image was rotated +55 degrees around the Y axis.
- The image was moved with the XY Position button to the bottom-left corner.
- A Z Perspective value of 232 was applied.

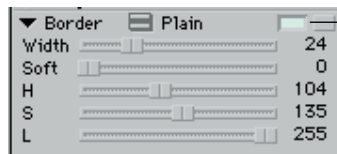
The Target parameter pane contains the following parameters:

X moves the image along the screen's X axis (horizontally). Values range from -999 to +999, where 0 is the default.

Y moves the image along the screen's Y axis (vertically). Values range from -999 to +999, where 0 is the default.

Size scales the image and maintains the aspect ratio. Values range from 0 to 400, where 100 is the default scale of 100 percent.

Border



Move the mouse to the Color Preview window to activate the eyedropper.

You can blend the foreground video with the background video if you enable Border, choose zero width, and adjust the Soft parameter.

Use Border to place a border around the image. Use the Fast menu to select the border style. Border style options include Plain (the default), Metal, Bevel 1, Bevel 2, 3D Frame, and Round.

Width changes the width of the border. Values range from 0 (no border) to 100, where 50 is the default.

Soft (softness) values range from 0 (hard edge) to 255 (a very soft edge), where 0 is the default. Border softness blends the border with the background image, giving the border a soft appearance.

Use the following color parameters or use the eyedropper to select a color from the video in the Effect Preview monitor:

H (hue) specifies the hue or shade of the color. Values range from 0 to 255.

S (saturation) specifies the amount or intensity of the color. Values range from 0 (no chrominance) to 255 (fully saturated color).

L (luminance) specifies the brightness of the color. Values range from 0 (black) to 255 (full brightness).

The default border color is black for Plain borders and shades of gray for other border types.

For a description of how to use the eyedropper, see the topic [“Adjusting a Color Parameter” on page 104](#).

Highlight



The Highlight window allows you to:

- Enable Automatic Highlighting for Shapes and adjust the intensity of automatic highlighting

- Adjust the highlights for Manual Highlighting and Rev (reverse) Manual Highlighting

You can use manual highlights even when a shape is not active. The default manual highlight creates a blurred disk in the center of the image.

Soft (softness) controls the softness of the highlight's edge. Softness values range from 0 (hard edge) to 100 (a very soft edge), where 50 is the default.

Inty (intensity) controls the brightness of the highlight. Values range from 0 to 100, where 50 is the default intensity.

Rad (radius) controls the size of the highlight. Values range from 0 to 100, where 50 is the default radius.

Angle rotates the highlight. This has an effect only when the aspect ratio is not zero. Values range from -180 degrees to $+180$ degrees, where 0 is the default.

Aspect (aspect ratio) changes the shape of the highlight from a perfect circle (0) to an oval or a band. Values range from -100 to $+100$, where 0 is the default. The -100 band is at right angles to the $+100$ band.

X moves the center of the highlight from left to right. Values range from -999 to $+999$, where 0 is the default. Positive values move the highlight to the right.

Y moves the center of the highlight from top to bottom. Values range from -999 to $+999$, where 0 is the default. Positive values move the highlight up.

Defocus — Controlling the Sharpness of Focus



Use Defocus to control the image's sharpness. This gives you the ability to blur the picture both horizontally and vertically in order to simulate a camera's focus.

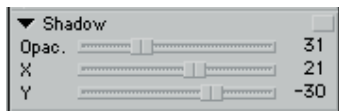
Horz (horizontal) increases or decreases horizontal sharpness. Values range from 0 to 15, where 0 represents no change.

Vert (vertical) increases or decreases vertical sharpness. Values range from 0 to 15, where 0 represents no change.



When you enable Defocus, the default values are 10 for Horz and Vert. This produces a slight softening effect.

Shadow



Use Shadow to place a shadow beneath an image, adjust its offset, and adjust its transparency.

Opac. (opacity) changes the shadow's opacity from fully transparent (0) to fully opaque (100), where 50 is the default.

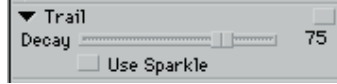
X changes the shadow's left/right offset. Values range from -100 to +100, where 50 is the default.

Y changes the shadow's top/bottom offset. Values range from -100 to 0, where -50 is the default.



Shadow, Trail, and Stamp (described in the following sections) are mutually exclusive. This means that you can have only one enabled at a time.

Trail — Adding a Trail to a Moving Image



Use Trail to add a trail to an effect as it moves across the screen.

Decay changes the rate of the trail's decay, from a quick decay (close to 0) to a slower decay (close to 100), where 75 is the default.

Use Sparkle instructs the Avid Composer system to paint a trail with sparkles. When Use Sparkle is not selected, the Avid Composer system paints a trail using the image itself.



You do not see the trail when you step through the effect because it is a cumulative effect. Also, you cannot render a Trail effect.

Stamp

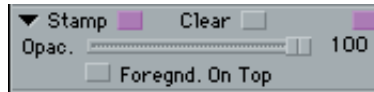
Stamp lets you imprint a video or graphic element into an independent Stamp buffer. You can “fly on” multiple elements of video, text, and graphics, stamping them over the foreground image to create effects that would otherwise require rendering or additional real-time streams of video. For an example of how to create a stamp, see [“Creating a Stamp” on page 360](#).

Three of the most common uses for Stamp are:

- **Real-time title builds:** You fly on multiple text, graphic, and video elements and stamp them over or under the foreground image when they come to rest. Once the image is stamped, you can fly on additional layers.

- **Downstream key:** You add an image that stays in place. For example, you could create a logo that you want to just stay on the screen.
- **Video montage:** You bring in a variety of video images, where each one stays in place as you continue to add new ones.

The illustration below shows the Stamp parameter pane.



Opac. (opacity) changes the stamp’s opacity from fully transparent (0) to fully opaque (100), where 100 is the default.

Foregnd. On Top (foreground on top) switches the Stamp buffer to the background; without Foregnd. On Top enabled, the Stamp buffer is always in the foreground.

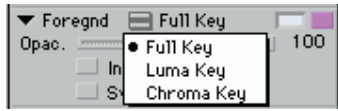
Clear lets you clear the stamp buffer of everything in it.



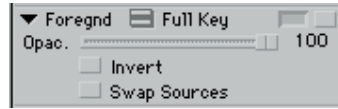
You cannot render Stamp effects; they are real-time effects. Also, the Stamp, Shadow, and Trail parameters are mutually exclusive. This means that you can only have only one enabled at a time.

Foreground — Selecting Between Full, Chroma, and Luma Keys

The Foregnd (foreground) Fast menu has three choices as shown in the illustration below. Each of the three keys has different values you can adjust. When you enable a key, its value options are automatically revealed. The values are described in the sections that follow.



Full Key



Full Key is the default for all 3D effects. Use Full Key to:

- Create dissolves using the Opac. slider
- Switch an effect from one video track or segment to another by using the Swap Sources button

Opac. (opacity) modifies the transparency of the foreground image. Values range from 0 (transparent) to 100 (opaque).



You can also use the Level slider to adjust the foreground opacity. See [“Adjusting Foreground Level in the Profile Window” on page 519.](#)

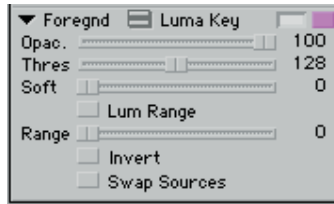
You cannot rotate the key independently of the image.

Invert inverts the key. This setting is most noticeable for effects that scale the foreground video, such as a Picture-in-Picture effect. The bottom track shows through the Picture-in-Picture effect key unscaled. The area outside the Picture-in-Picture effect key is black.

Swap Sources switches the effect to the top or bottom track. For example:

- If you use the Scaling parameter to create a 3D Picture-in-Picture effect, you can use Swap Sources to swap the image in the Picture-in-Picture effect.
- For 3D transition effects, you can use this function to apply the effect to either the incoming or outgoing video tracks.

Luma Key



Use Luma Key to replace portions of the foreground video with the background video based on brightness or luminance. The Luma Key sliders allow you to select a brightness value or a range of brightness values in the foreground video. The system replaces the corresponding portions of the foreground video with background video.



Luma Key effect



Foreground video



Background video

Opac. (opacity) adjusts the transparency of the foreground image from 0 (transparent) to 100 (opaque).

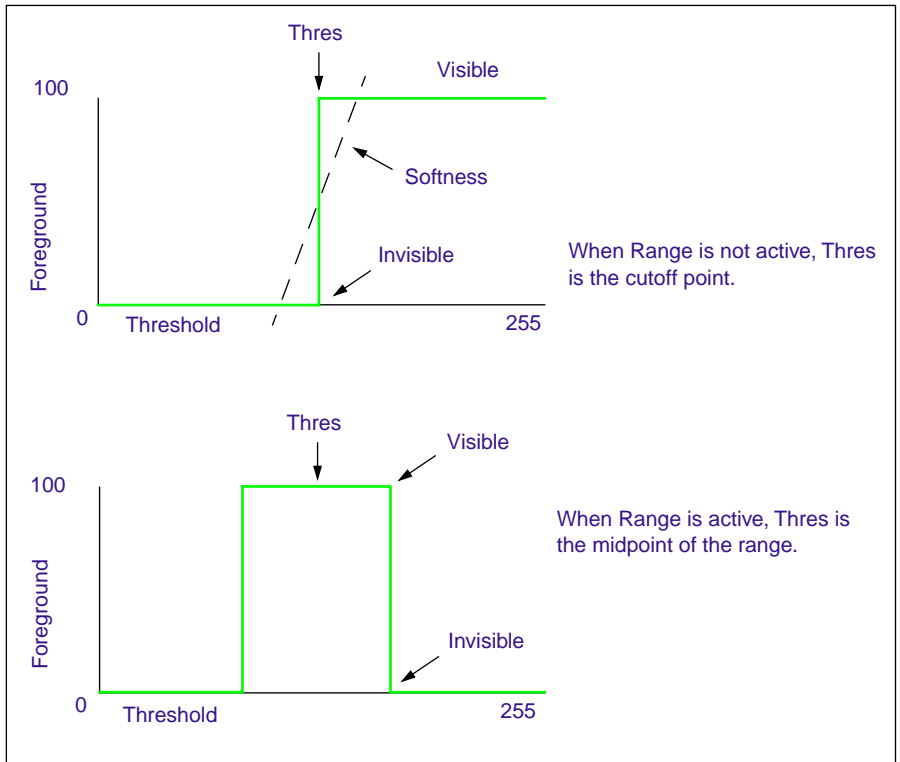
Thres (threshold) identifies either the brightness threshold for the foreground image or the center of the luma range.

Soft (luma softness) allows you to soften the edge of the cutoff line. Pixel values slightly above or below the threshold are included, depending on the softness value.

Lum Range turns the Range slider on and off.

Range slider works as follows.

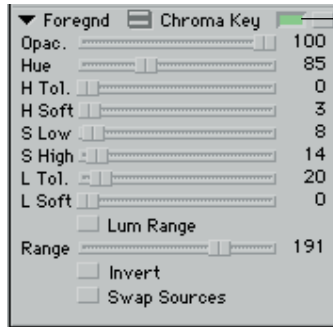
- When Lum Range is not active, the Thres value is a cutoff point. All brightness values above the Thres value are displayed (you see the foreground). Values below the Thres value are not displayed (you see the background).
- When Lum Range is active, Thres becomes the median point of the range. This allows you to leave in a specific range of brightness values as shown in the following illustration.



Invert inverts the key. Portions of the foreground that were visible are now invisible and vice versa.

Swap Sources switches the effect to the top or bottom track.

Chroma Key



Move the mouse to the Color Preview window to activate the eyedropper.

Use Chroma Key to replace one part of the video image with another video image based on color. The key color in the video on the higher track is replaced with the video from the lower track.

Chroma keys are often used with a foreground image shot in front of a highly saturated color screen as shown in the following illustrations.



Chroma Key effect



Background – video layer 1



Key image – video layer 2

When you use the eyedropper, the Avid Com-
poser system uses the
hue only from the
selected color. It
ignores the saturation
and luma values.

Opac (opacity) varies the foreground's opacity from fully transparent (0) to fully opaque (100), where 100 is the default.

Hue identifies the color. The hue color is replaced with video from the lower track. Either use the slider to select the hue, or use the eyedropper with the Color Preview window.

H Tol. (hue tolerance) controls how many similar shades of the hue will be replaced by the background (the bottom video track). Use this when the ranges of luminance and saturation of the chroma key color are too wide.

H Soft (hue softness) allows you to soften edges that are too aliased or sharp.

S Low (low saturation) allows you to remove low saturation colors by raising the lower limit. For example, sometimes portions of clothing or faces may contain subtle variations of a hue. To keep these portions of the image visible, you can try adjusting the S Low value.

S High (high saturation) allows you to remove high saturation colors by moving the upper limit down. For typical chroma keys with high saturation colors, you usually leave this value at the default of 255.

Invert inverts the chroma key. Portions of the foreground that were visible are now invisible and vice versa.

Swap Sources switches the effect to the top or bottom track.

The following parameters are used only for special applications. These parameters actually create a mask rather than a key. They determine a range of values to retain rather than defining a range of values to key out.

Lum Range (luma range) allows you to retain values within a certain luminance range.

L Tol (low tolerance) specifies a tolerance level — retain everything below the level.

L Soft (low softness) softens the key created by L Tol.

Using the Chroma Key Sliders

The most common procedure for using Chroma Key sliders is:

1. Use the eyedropper to select a hue.

For best results, pick a color that is well within the field of color. For example, the following illustration shows a good area to select for the purest hue. The area near the figure may contain gradations of the desired hue. Corner areas often contain subtle shades of gray.

Good area for eyedropper selection of hue

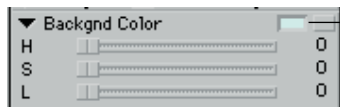


Not good areas for eyedropper selection of hue

2. Adjust H Tol (hue tolerance) to replace the hue with the background.
3. If low saturation grays are keyed out (for example, portions of faces or clothing), try adjusting S Low (low saturation) to put them back into the foreground.
4. Use L Soft (low softness) to fine-tune the edges of the key.

You usually keep the S High, L Tol., and L Soft at their default settings.

Background — Add a Background Color



Move the mouse to the Color Preview window to activate the eyedropper.

You can achieve interesting effects on a two-track sequence by using a background color for the bottom track and using a luma key on the top track.

Use Backgnd (background) Color parameters to replace the bottom video track with a background color.

Use the eyedropper to select a color from the video in the Effect Preview monitor, or use the following color parameters:

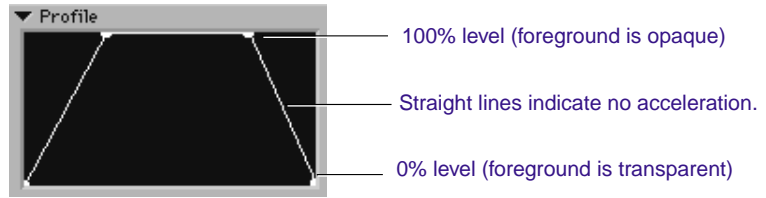
H (hue) identifies the color. Values range from 0 to 255.

S (saturation) specifies the amount or intensity of the color. Values range from 0 (no chrominance) to 255 (fully saturated color).

L (luminance) specifies the brightness of the color. Values range from 0 (black) to 255 (full brightness).

For a description of how to use the eyedropper, see [“Adjusting a Color Parameter” on page 104](#).

Profile



The Profile window in the Effect Editor is a graphical representation of the foreground level and acceleration applied to effect key frames:

- **Foreground level** affects the opacity of the effect. The greater the opacity, the closer to the top of the Profile graph the key frame appears. For more information, see the following section, [“Adjusting Foreground Level in the Profile Window.”](#)
- **Acceleration** affects the rate of movement into and out of key frames. The greater the acceleration, the more rounded the lines appear in the Profile window. You can adjust Acceleration with the Acceleration slider only. For more information, see [“Acceleration — Smoothing Out Key-Frame Transitions” on page 497.](#)

Adjusting Foreground Level in the Profile Window

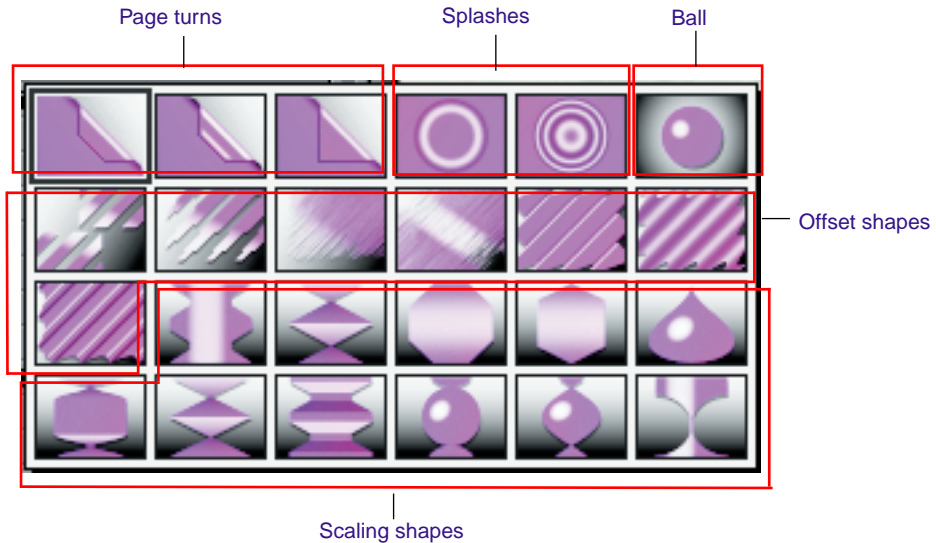
Foreground level controls the opacity of a 3D effect layer. You can adjust levels for various key frames directly in the Profile window. This is the same as using the Opac. slider in the Forgn (foreground) parameter pane, as described in [“Foreground — Selecting Between Full, Chroma, and Luma Keys” on page 510.](#) Adjustments you make with the Opac. slider are also represented in the Profile graph.

To adjust foreground level within the Profile window:

1. Select the appropriate key frame in the effect’s Timeline.
2. Click on the round white key-frame indicator that appears on the Profile graph, and drag it up or down to increase or decrease the opacity of the foreground image.

3D Shape Effects

3D shape effects allow you to map the foreground video channel to various geometric shapes. You do this by selecting a shape from the Fast menu in the Shape parameter pane. The following illustration shows the Shape menu and the five main categories of shapes.



Each shape has its own parameter pane containing controls that are specific to that shape. In addition, you can use any of the other 3D Effects parameters such as Border, Scaling, Position, and Trail. To experiment with the parameter controls, create a test sequence similar to the one in [“Creating a Scaled Picture-in-Picture” on page 354](#).

Page Turns

Page Fold



A Page Turn effect treats the foreground video channel as though it were a sheet of paper being turned over or rolled up to reveal another page beneath. You can think of the paper as a clear sheet of plastic or Mylar™ because you can see the video on either side when you rotate the image or curl the edges.

The portion of the image that folds over or rolls up is referred to as the *flap*. The flap folds over the *top* portion of the image.

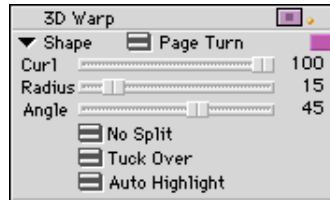
There are three Page Turn shapes accessible from the Fast menu on the Shape Parameter pane.

- **Page Turn** creates the illusion of the top image rolling up into a scroll. This effect has one highlight.
- **Page Curl** is the same as Page Turn except that there are two highlights. One highlight is slightly wider and more intense than the other.
- **Page Fold** creates an illusion similar to turning a page in a book. The top image curls over and then becomes flat.

Page Turn Parameters

To soften the edges of a Page Turn, enable the Border parameter and adjust the Soft slider. You can soften a border of zero width.

This section describes parameters that are common to all three Page Turn effects. For example, the following illustration shows the Shape parameter pane with Page Turn selected:



The following slider parameters are common to all Page Turn effects:

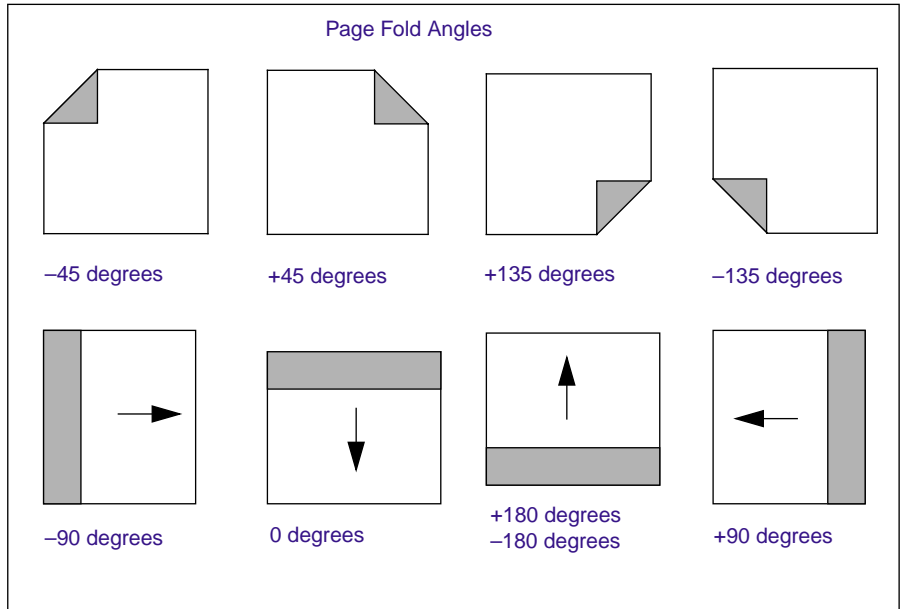
- **Curl** controls the amount of the rollup. It specifies how far the “rolling up” has progressed. Values range from 0 to 100, where 0 represents no rollup. Vary the Curl value from 0 to 100 with the default radius to take the page from a flat, centered image to one that is completely off the screen.
- **Radius** controls the tightness of the curl. Values range from 0 to 100, where 15 is the default.
- **Angle** controls the direction of the fold or scroll. Values range from -180 degrees to $+180$ degrees, where 45 degrees is the default.

In addition, there are three Fast menus: **No Split**, **Tuck Over**, and **Auto Highlight**. These Fast menu values are described in the sections that follow.

Use other parameters such as Border, Scaling, Position, Rotation, or Trail to enhance the effect.

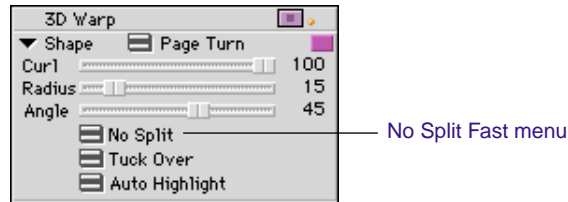
Page Fold Angle Values

The following illustration shows how the Avid Composer system interprets several angle values for the Page Fold with the default No Split option. Experiment with incremental angle values. Also experiment with changing angle values at different key frames.



While you are experimenting with angle and offset values, it is useful to scale down the top video layer. This allows you to see the full effect as the video peels off the screen. For example, scaling 75 percent in both X and Y axes displays the page fold as a Picture-in-Picture effect.

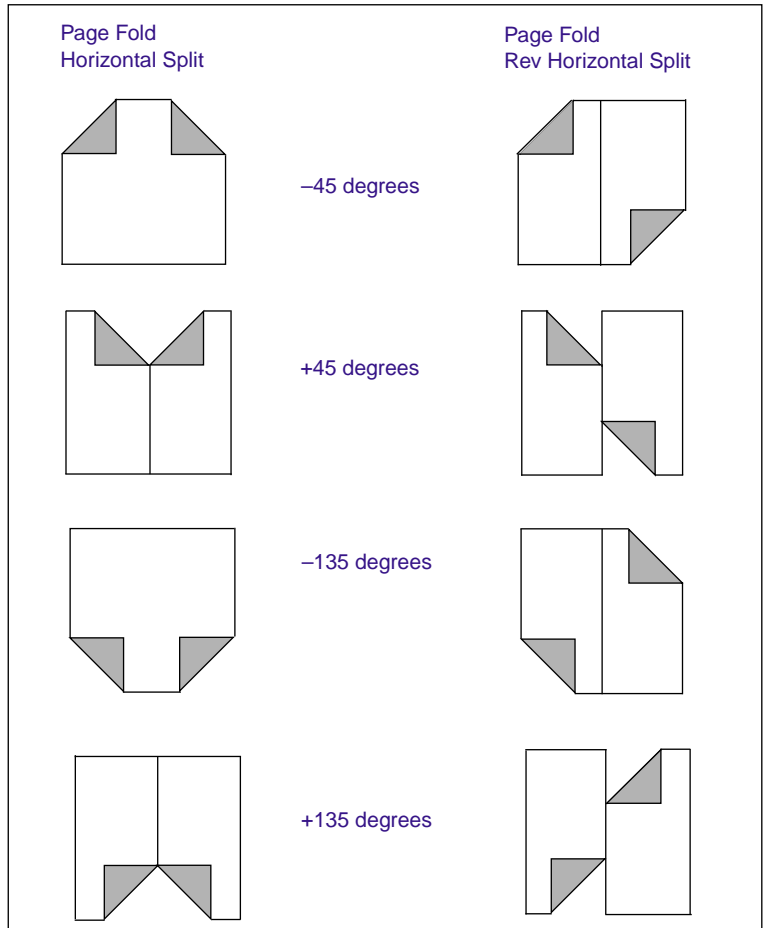
Splitting a Page Turn or Page Fold Effect



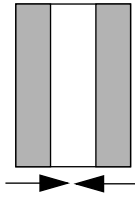
You can access the splitting options through the **No Split** Fast menu on the Shape parameter pane. A split gives the illusion of cutting the top image with a pair of scissors and folding or scrolling the resulting pieces. Splitting options include:

- **No Split** (default) folds or scrolls a single corner or edge, depending on the angle.
- **Horizontal Split** cuts the image in half horizontally. The two images are tied together so that they appear to scroll or fold in unison. The image separates from left to right.
- **Rev Horizontal Split** (reverse horizontal split) is similar to Horizontal Split except that the image folds or scrolls from opposite sides at the same time.
- **Vertical Split** cuts the image in half vertically. The two images are tied together so that they appear to scroll or fold in unison. The image separates from top to bottom.
- **Rev Vertical Split** is similar to Vertical Split except that the image folds or scrolls from opposite sides at the same time.
- **Quad Split** divides the image into four equal parts. Results depend on the starting and ending angle values (specify the starting and ending angles on different key frames). For example, for a starting and ending angle of 135 degrees, the split begins in the center and the four inside corners roll outward.
- **Doubled Split** displays two scrolls of live video on the screen at the same time. Both scrolls roll off the video underneath.

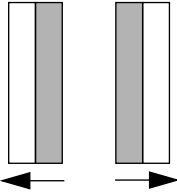
The following illustrations show how the Horizontal Split and Rev Horizontal Split options interpret angles.



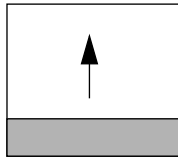
Page Fold
Horizontal Split
(continued)



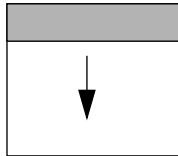
-90 degrees
(same for both)



+90 degrees
(same for both)

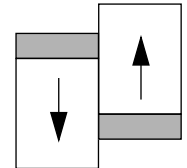
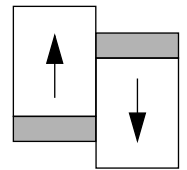
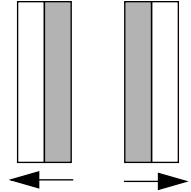
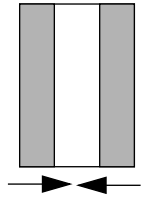


-180 degrees
+180 degrees

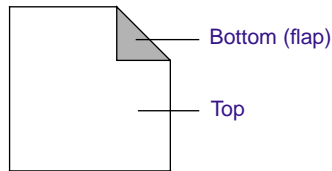
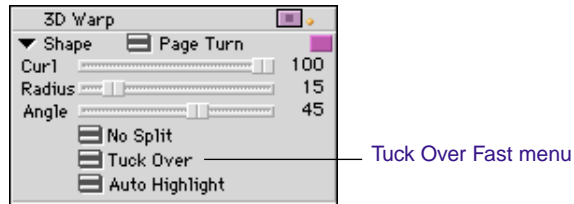


0 degrees

Page Fold
Rev Horizontal Split
(continued)



Manipulating the Flap and Bottom of a Page Fold



You can access the tuck and flap options through the **Tuck Over** Fast menu on the Shape parameter pane. Tuck and flap options include:

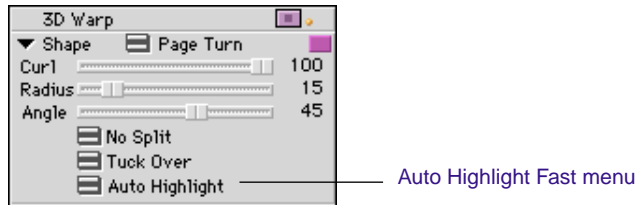
- **Tuck Over** (default) folds the flap over the top.
- **Tuck Under** folds the flap under the top.
- **Show Top Only** shows the top without the flap.
- **Show Bottom Only** shows the flap (bottom) without the top.

Use Show Top Only and Show Bottom Only when you want to control the image in the flap or top. These are commonly used with two video channels. One channel shows the top and the other shows the bottom (the flap).

For example, if you want an opaque top and a partially transparent flap, set a transparency value for the video channel containing Show Bottom Only. Use the opacity value in the Foregnd parameter pane to adjust transparency. Note that in this example you would have to render one of these effects to see the result.

Show Top Only and Show Bottom Only are also useful when you want to apply an effect such as Defocus on just the flap or the top.

Highlight Options



You can access the Highlight options through the Auto Highlight Fast menu on the Shape parameter pane. Tuck and flap options include:

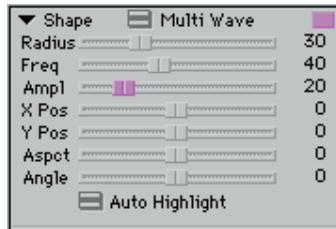
- **Auto Highlight** (default) lets the Avid Composer system control the highlighting. It applies to all shapes except for the Ball shape. You need to enable highlighting in the Highlight parameter pane in order for highlights to appear. You can also vary the intensity of the highlight in the parameter pane. The system takes care of the positioning automatically.
- **Manual Highlight** lets you use the Highlight parameter pane to control the highlighting. In this case you need to set the angle, aspect ratio, radius, and so forth.

Use the Highlight window (located near the bottom of the 3D Warp parameter list) to control manual highlighting. See [“Highlight” on page 506](#).

- **Rev Manual Highlight** reverses the effect of manual highlighting you set up.

Manual Highlight and Rev Manual Highlight work for all shapes, including the Ball shape.

Splashes



Splashes create a wave effect as if you dropped a stone into still water. There are two choices on the Shape Fast menu:

- **Single Wave** creates a splash with one wave, as if you dropped a pebble into a very still pool.
- **Multi Wave** creates a splash with many waves or ripples, as if you dropped a stone into a pond.

The following parameters apply to the Splash effects:

- **Radius** controls the size of the waves and, therefore, the movement of the waves through the video. Values range from 0 to 100.
- **Freq** (frequency) differs for each Splash effect:
 - For Single Wave, the Frequency parameter determines the width of the single wave. Reduce the Frequency value to increase the width of the wave.
 - For Multi Wave, Frequency controls the width and number of waves present at any given time. Increase the Frequency value to increase the number of waves. Decrease the Frequency value to create fewer, wider waves.

Frequency values range from 0 to 100.

The Splash shapes allow you to move the effect on the video image. The effect uses a 2D coordinate system that has its origin in the center of the image. X increases as you move to the right and Y increases as you move down.

- **Ampl** (amplitude) controls the depth of the troughs of the ripples, and the height of the crests of the waves. You can think of this as the depth to which the image is distorted to produce the Splash effect. Values range from 0 to 100.
- **X Pos** moves the splash to the right or left. The values range from -999 to +999, where 0 is the center of the image. Values increase to the right and decrease to the left.
- **Y Pos** moves the splash up or down. Values range from -999 to +999, where 0 is the center of the image. Values increase as you go down and decrease as you go up.
- **Aspct** (aspect) distorts the shape from a circle to variations on an oval shape. Values range from -100 to +100, where 0 is a circle.
- **Angle** rotates the splash. This parameter has a visible effect only when the aspect ratio is other than zero. Values range from -180 to +180.

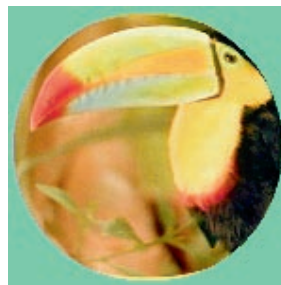
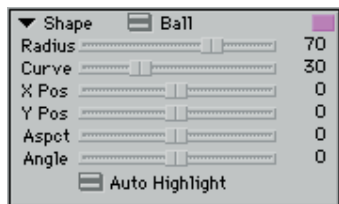
Limitations to Splashes

The following limitations apply to splashes:

- You cannot apply the Z perspective to a Splash effect.
- The X and Y direct manipulation handles do not work for a Splash effect. Use the Rotation sliders in the Rotation parameter pane instead.

For a visual explanation of this limitation, see [“Limitations to Ball Shapes” on page 532](#).

Ball



Use Manual Highlight to apply highlights to a Ball shape.

The Ball shape lets you treat the video as a rubbery, rectangular sheet stretched around a sphere. If the radius of the sphere is very large, the corners of the sheet curve along the surface like a rubber patch on a ball. If the radius is small, the corners disappear, wrapping completely around the sphere's surface.

The following parameters apply to a Ball effect:

- **Radius** changes the size of the ball. Values range from 0 to 100.
- **Curve** gives the ball a 3D effect. A value of zero looks like a flat circle (and can be used as a circle wipe). Higher values give more depth to the ball's shape. Values range from 0 to 100.
- **X Pos** moves the shape to the right or left in relation to the image. The values range from -999 to +999, where 0 is the center of the image. Values increase to the right and decrease to the left.
- **Y Pos** moves the shape up or down in relation to the image. Values range from -999 to +999, where 0 is the center of the image. Values increase as you go down and decrease as you go up.
- **Aspct** (aspect) changes the shape from perfectly round to a distorted shape. Values range from -100 to +100, where 0 is a circle.
- **Angle** rotates the axis of the shape. This effect is visible only when the aspect ratio is not zero. Values range from -180 to +180.

The Ball shape allows you to move and rotate the ball. The effect uses a 2D coordinate system that has its origin in the center of the image. X increases as you move to the right and Y increases as you move down.

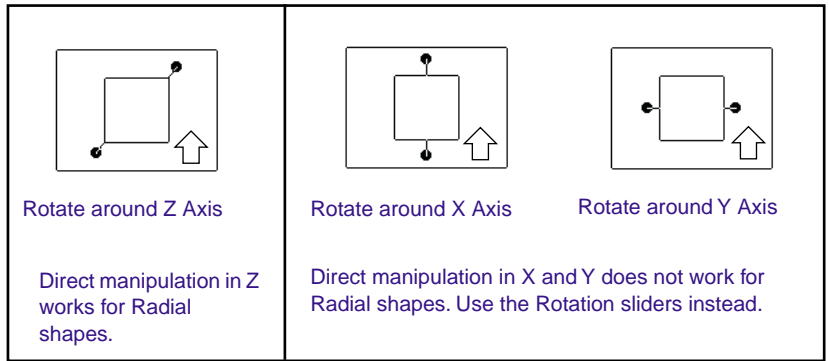
Limitations to Ball Shapes

The following limitations apply to Ball shapes:

- You cannot apply the Z perspective to a Ball.
- The X and Y direct manipulation handles do not work for a Ball. Use the Rotation sliders in the Rotation parameter pane instead.

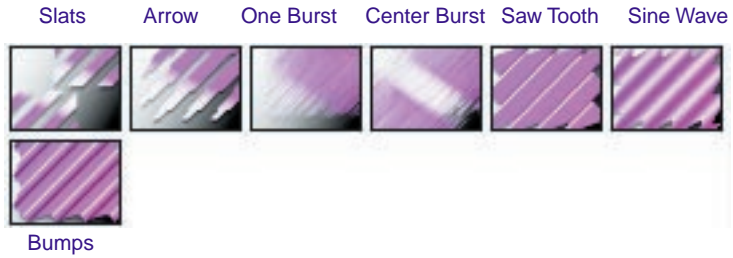


Once you rotate a Radial effect in X or Y using the sliders, no direct manipulation other than XY position will work. To regain access to the direct manipulation Z handle, reset the X and Y Rotation sliders to 0.

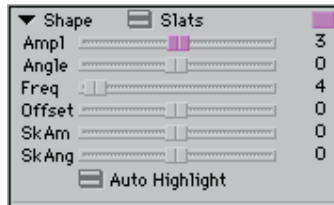


Offset Shapes

Offset shapes are separate portions of a live video image moving at the same time, in different directions, and at varying speeds. Offset shapes are shown below. You can access the Offset shapes through the Fast menu on the Shape parameter pane.



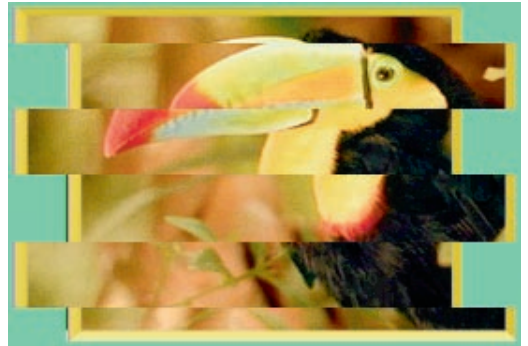
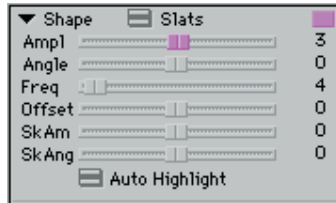
The slider parameters are common to all Offset shape effects. For example, the following illustration shows the Shape parameter pane with Slats selected.



When experimenting with these shapes, start with a Frequency value of 1 and an Amplitude of 0. This makes it easier to see how changes in these values affect the image.

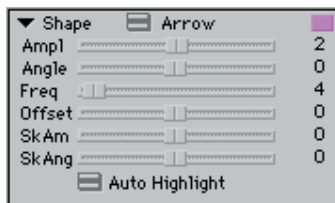
- **Ampl** (amplitude) controls the distance the shape moves. For transition effects, increase the amplitude to take the effect off the screen.
- **Angle** changes the line along which the video pieces move. Values can range from -180 to $+180$. Use 0 for horizontal and 90 for vertical.
- **Freq** (frequency) controls how many copies of the offset shape appear on the screen.
- **Offset** repositions the shape on the image.
- **Sk Am** (skew amplitude) weaves the image through the slats. Think of this as weaving a “video cloth” through a loom.
- **Sk Ang** (skew angle) rotates the image through the slats.

Slats



Slats split the image into thin parallel rectangles of separated live video. The rectangles are stacked on top of each other in tight rows. Change the Amplitude to make the slats move in opposite directions.

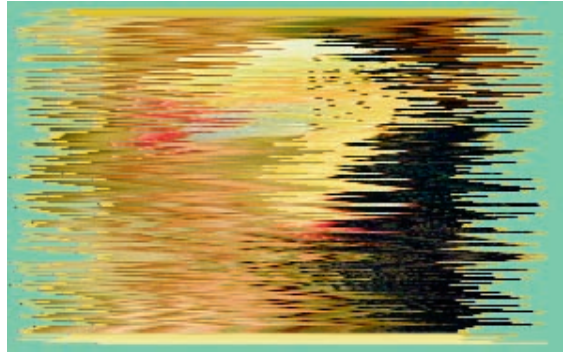
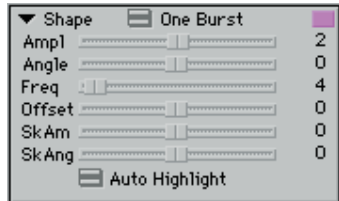
Arrow



You can think of Arrow as a specialized form of Slats. Each arrow contains seven rectangles that move at slightly different speeds. The difference in speed creates the arrow shape. Use Frequency to change the

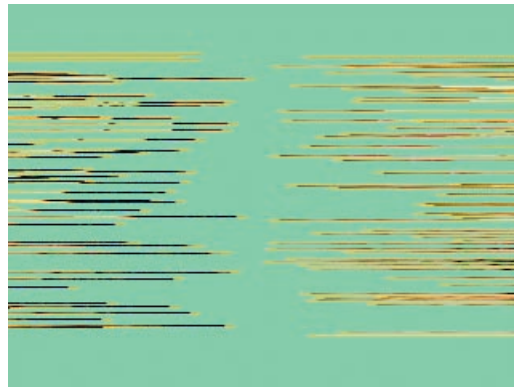
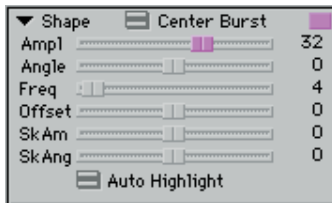
number of arrows that appear on the screen at any given time.
See [“Offset Shapes” on page 532](#) for a description of the other sliders.

One Burst



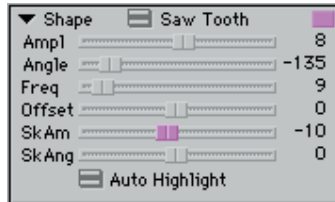
This is a burst in one direction. The Avid Composer system separates the image into many straws, each with a height of one line. All straws move in the same direction but at different (random) speeds. Use Amplitude to increase the speed.

Center Burst



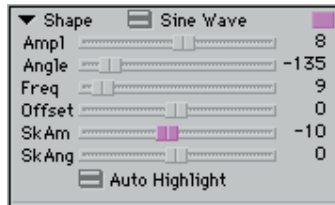
This is similar to One Burst except that the burst begins in the center of the image and the straws move in opposite directions rather than in one direction. Use Amplitude to increase the speed. See [“Offset Shapes” on page 532](#) for a description of the other sliders.

Saw Tooth



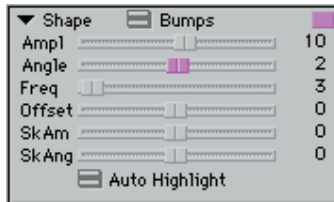
This is similar to a Saw Tooth Wipe except that you have more control over the shape. Amplitude changes the tilt of the slats. Frequency changes the size and number of the slats. Higher values increase the number of slats.

Sine Wave



This effect applies the image to a general sine curve, as seen on a mathematical graph. You can also think of it as a progression of connected waves. Amplitude stretches or compacts the waves. Frequency increases the number of waves.

Bumps



You can think of this effect in terms of a sheet of video fabric tacked to an imaginary fence. The fence is made up of horizontal beams, placed at regular, parallel intervals. As the wind pushes from behind, those

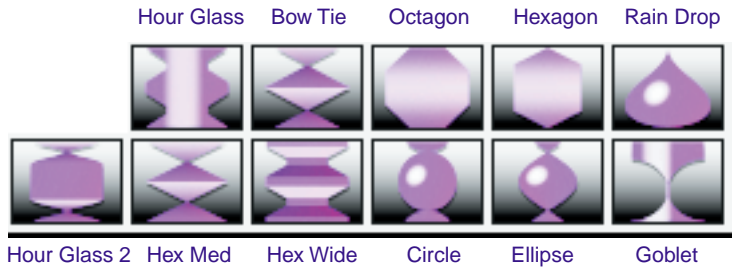
areas not held firmly down by the beams blow forward into rounded, uniform bumps.

- Amplitude stretches or compacts the bumps. Think of this as making the wind blow harder against the video fabric.
- Frequency increases the number of bumps (puts more beams on the fence).
- Change the Angle to change the line along which the video pieces move.

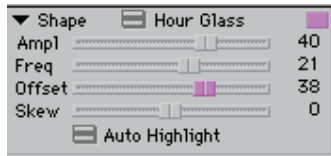
Scaling Shapes

The following illustration shows the Scaling shapes. They are called Scaling shapes because they give the illusion of the video “pouring” from one portion of the shape to the other. The image is scaled as it pours through a narrower or wider portion of the shape.

Scaling shapes are shown below. You can access the Scaling shapes through the Fast menu on the Shapes parameter pane.



The slider parameters are common to all Scaling shapes. For example, the following illustration shows the Shape parameter pane with Hour Glass selected.



Ampl (amplitude) controls the width of the shape. Negative values flip the image within the shape. Values range from -100 to $+100$.

Freq (frequency) controls how many copies of the shape appear on the screen. Values range from -100 to $+100$.

Offset moves the shape along the image from bottom to top. As one shape moves down, another shape “pulls down” from above. For an example, see the illustrations on the next page. Values range from -100 to $+100$.

Skew moves the shape and the image together to the left or right. Values range from -999 to $+999$, where 0 is the center of the display area.



The interactive scaling feature is very useful when working with these effects.

Scaling shapes scroll down over the image as you increase the Offset value. The following illustrations show the progression using an Octagon shape. Notice how the shape moves down and the image flows through the shape.

1



4



2



5



3

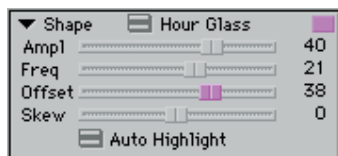


6

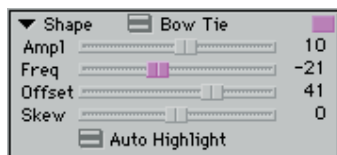


The following illustrations show examples of Scaling shapes and the values used to obtain the image shown.

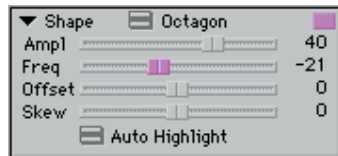
Hour Glass



Bow Tie



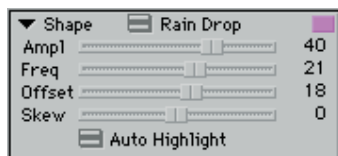
Octagon



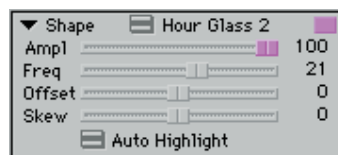
Hexagon



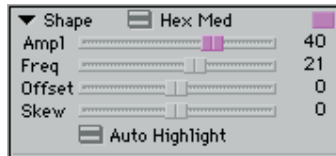
Rain Drop



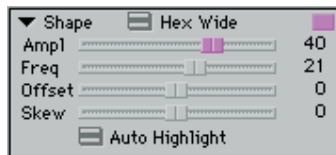
Hour Glass 2



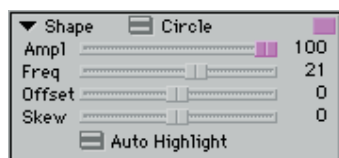
Hex Medium



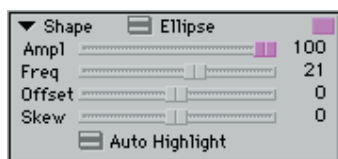
Hex Wide



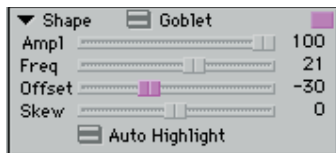
Circle



Ellipse

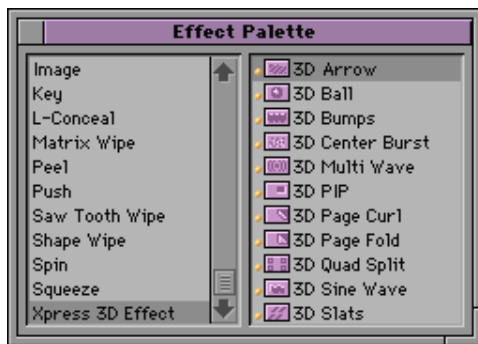


Goblet



Avid Xpress 3D Effects

The Effect Palette — on systems equipped with the 3D Effects option — contains an Xpress 3D Effect category.



The Xpress 3D effects are completely compatible with Avid Xpress systems that are also equipped with the 3D Effects option. As a result, you can move sequences containing Xpress 3D effects between Avid Composer systems and Avid Xpress systems.



To maintain compatibility when transferring sequences between Avid Composer systems and Avid Xpress systems, use only Xpress 3D effects (do not use the 3D Warp effect to create 3D effects).

The Xpress 3D effects include:

- 3D Arrow
- 3D Ball
- 3D Bumps
- 3D Center Burst
- 3D Multi Wave
- 3D PIP
- 3D Page Curl
- 3D Page Fold
- 3D Quad Split
- 3D Sine Wave
- 3D Slats

Xpress 3D Effects Parameters

Xpress 3D effects use a subset of the parameters that are available for the 3D Warp effect. For more information about a specific parameter that appears in the Effect Editor for an Xpress 3D effect, see [“Basic 3D Effects Parameters” on page 490.](#)



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ABCDEFGHIJKLMNOPQRSTUVWXYZ

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