Avid® DekoCast™ Products

User's Guide

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Using This Guide

Congratulations on your purchase of the Avid® DekoCast™ application. Avid DekoCast provides broadcasters with a wide range of on-air edge applications including channel branding, in-program promotions and advertising, sophisticated credit sequences, and weather and other data-driven alerts. The Avid DekoCast family consists of the Avid DekoCast and Avid DekoCast Authoring Station systems, which are available as either standard definition (SD), high definition (HD), or hybrid (SD/HD) models.The following applications are included with all DekoCast and DekoCast Authoring systems: Avid DekoCast, Avid PostDeko Lite, Avid Sequence, and Avid DekoCast Central.

This guide provides task-oriented instructions, conceptual information, and reference material for using the features of the DekoCast family of products. This guide is intended for all DekoCast users who develop, manage, and control edge applications in a broadcast environment. The audience includes artists who create edge graphics, operators who control video output, and video engineers who configure the DekoCast system.

The DekoCast products are installed and run on the Microsoft® Windows® XP operation system. This guide assumes that you have a basic working knowledge of Windows XP.

This documentation describes the features and hardware of all models. Therefore, your system might not contain certain features and hardware covered in the documentation.

If you are reading a black-and-white hardcopy printout of this document, you will find it useful to view the color images in the online PDF version of this document, which is available in the Online Library for your application.

Symbols and Conventions

Avid documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
▤	A note provides important related information, reminders, recommendations, and strong suggestions.
⚠	A caution means that a specific action you take could cause harm to your computer or cause you to lose data.
>	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.
▶	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
Italic font	Italic font is used to emphasize certain words and to indicate variables.
`Courier Bold font`	Courier Bold font identifies text that you type.
Ctrl+*key* or *mouse action*	Press and hold the first key while you press the last key or perform the mouse action, for example, Ctrl+drag.

If You Need Help

If you are having trouble using Avid DekoCast:

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

2. Check for the latest information that might have become available after the documentation was published.

   - A ReadMe file is supplied on your Avid application CD as a PDF document (ReadMe.pdf).

   - The latest version is available online on the Avid Knowledge Base. To view the online version, select ReadMe from the Help menu or visit the Knowledge Base at www.avid.com/readme

⚠ **You should always check online for the most up-to-date release notes or ReadMe because the online version is updated whenever new information becomes available.**

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

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

Accessing the Online Library

The Avid DekoCast Online Library CD-ROM contains all the product documentation in PDF format.

📄 *You need Adobe® Reader® to view the documentation online. You can download the latest version from the Adobe web site www.adobe.com.*

To access the online library from the Online Library CD-ROM:

1. Insert the Online Library CD-ROM into the drive.

2. If the opening screen of the library does not open automatically, double-click the appropriate CD drive letter. If necessary, double-click the Mainmenu file.

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Chapter 1
Getting Started

Avid DekoCast combines real-time video, graphics, effects, and audio capabilities into a single system that you can operate manually from Master Control or integrate with any traffic or automation system. The following sections provide basic information about DekoCast and its components:

- Why Use DekoCast?
- DekoCast Products and Applications
- DekoCast Workflow
- Controlling DekoCast On-Air Video Output
- Before You Begin
- Starting and Closing DekoCast Applications
- Switching Between Video Formats
- Configuring Your DekoCast System
- Basic Components
- Understanding Files and File Types
- Viewing Information About Your DekoCast System
- Quick Start: Fading a Graphic On and Off
- Using the Sample Scenes and Media

Why Use DekoCast?

DekoCast provides you with tools that you can use for channel branding, in-program promotions and advertising, sophisticated credit sequences, and data-driven alerts such as weather and school closings. DekoCast combines a comprehensive set of real-time capabilities — including character generator (CG), video, graphics, effects, and audio — into a single system that you can integrate with any traffic or automation system. DekoCast generates real-time Deko graphics layers, including multi-row crawls, rolls, still images, and animated text. DekoCast can also capture and play back independent video clips. DekoCast's audio capture, playback, and mixing system can mix audio stored with video clips, in addition to audio files such as sound effects and brand music stored on DekoCast.

For example, DekoCast lets you create a layout that modifies the studio camera input of a news anchor with the following additions:

• Crop the anchor video and add a moving background.

• At the bottom of the screen, add a national headline news crawl.

• Add stock quotes and RSS data feeds.

• Add a weather or traffic report graphic that is a looping cel animation or a static graphic.

• Include a time-of-day stamp that loops through each time zone of the region.

The following illustration shows an example of a DekoCast layout.

DekoCast makes the design of your layout more flexible by letting you associate objects with defined areas of the video output frame called *target rectangles*. When confined to a target rectangle, objects always display in the same position on the video output, which allows you to develop one scene for both standard- and high-definition output.

The following illustration shows the target rectangles used to create the layout in the preceding example.

Layout with target rectangles

For more information, see "Arranging Objects for Video Output" on page 86.

DekoCast Products and Applications

The Avid DekoCast family consists of Avid DekoCast and the Avid DekoCast Authoring Station. These products are available in three models:

*   **DekoCast SD (standard definition)**

    The current version of DekoCast SD ships with the Corsica video board. Older SD systems were shipped with the TARGA® board. There are differences between these two models. For example, Corsica-based systems use MPEG-2 MXF I-Frame as the native file format for clip capture and playback, while TARGA-based systems use either DV 25, MPEG-2 LongGOP, or MPEG-2 I-Frame. Where appropriate, these differences are described in this guide.Where appropriate, these differences are described in these Help topics.

*   **DekoCast HD (high definition)**

    The current version of DekoCast HD ships with the Corsica video board. Older HD versions were also shipped with the Corsica board. There is no functional difference between these models.

*   **DekoCast SD/HD (hybrid)**

    DekoCast SD/HD systems allow you to work in either standard definition or high definition. This model ships with the Corsica video board. For more information, see "Switching Between Video Formats" on page 29.

Artists can develop on-air edge graphics using either DekoCast or the DekoCast Authoring Station. The Authoring Station is a fully featured DekoCast system designed for creating and previewing content, but is not intended for on-air use. (Authoring Station video output is watermarked.) For information on moving projects from one system to another, see "Copying Files" on page 42.

📄 *The user interface for the DekoCast and DekoCast Authoring Station applications are identical.*

Two options are available for DekoCast:

• The Clip Player is an option that provides multi-stream clip playback and storage for clips. See "Playing Back Clips" on page 140.

• The Cel Animation Player is an option that lets a DekoCast system import and cycle through a series of numbered image files for animated playout. See "Creating Cel Animations" on page 173.

The following applications are included with all DekoCast and DekoCast Authoring systems:

• **Avid PostDeko Lite**

PostDeko Lite is a full-color video-character generator provided as a graphics creation tool for DekoCast. Although PostDeko Lite does not support features found in on-air Deko® systems, such as motions, cel animations, effects, and sequences, it does have all of the power of Deko 3000 for building text and graphic layers. Graphic files built in PostDeko Lite (.dko files) can be used seamlessly in other Deko products (and files built in Deko products can be used in PostDeko Lite).

PostDeko Lite controls the default directories for the Deko graphics files used by DekoCast (see "Setting Up Directories" on page 37). For information about using PostDeko Lite to create content for DekoCast, see the *Avid Deko Products User's Guide*, which is included with your DekoCast documentation.

• **Avid DekoCast Central**

You can use DekoCast Central as a standalone playout application or in conjunction with a station's automation system to control playout of a scene on the on-air DekoCast system. For more information, see "Using DekoCast Central" on page 351.

• **Avid Sequence**

The Sequence application controls the playback and timing of actions in scenes without using or modifying original scenes or actions. For more information, see "Using Sequence to Play Back Actions" on page 401.

DekoCast Workflow

How you integrate DekoCast into your workflow depends on the requirements of your facility. Here is one typical workflow for creating DekoCast scenes and controlling video output:

1. Create or otherwise obtain the content for DekoCast source files.

   Content includes graphics, animations, clips, and audio. Artists create graphics content for DekoCast using Deko, PostDeko Lite, or other image-editing applications. You must use Deko files (.dko) if the text information is to be updated with automation or text files. Crawls are usually linked to a Deko graphic that contains a text layer. Cel animations, clips, and audio files are typically created in other programs and linked within DekoCast.

2. Using an offline DekoCast or DekoCast Authoring Station, assemble a *scene,* which is the basic file for DekoCast output.

3. Transfer all of the scene files to the local disk of the on-air DekoCast system. Ensure that all of the files, file names, and the complete paths for scenes are the same on both DekoCast systems.

   All DekoCast systems in a workflow must be configured to use the same drive structure. Use drive D for elements, scenes, and graphics that are static images. Use drive E for clips and audio files. You can save cel animation source files in a directory on either drive D or E.

📑 *Always copy the DekoCast source files to the on-air DekoCast system's local disk. A network failure that prevents a DekoCast system's access to files stored over a network might interrupt on-air broadcasting.*

4. Use DekoCast Central to play the DekoCast scene to air.

The following illustration shows a possible configuration and workflow.
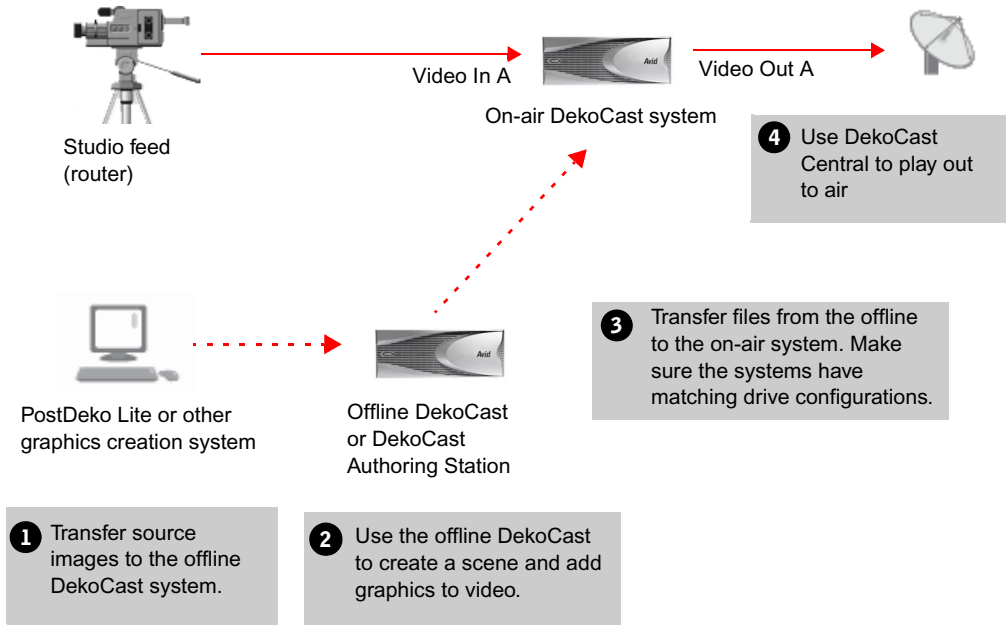
Controlling DekoCast On-Air Video Output

There are several ways to control the DekoCast on-air video output:

- Use DekoCast Central, which you can control through a graphical-user interface (GUI) or by General Purpose Interface (GPI) and Triple i automation. Automation control can be through RS-232 (COM 1 or COM 2) or RS-422 (COM 3 or COM 4). For more information, see "Using DekoCast Central" on page 351.

- Use XML to control DekoCast. This involves a user-written or third-party application that sends XML commands through either a serial connection (COM port) or a network socket. If you have such an application, specify the COM port or network port used to send XML commands. For more information, see "XML Configuration" on page 427.

- Use a custom Application Programming Interface (API) developed by third-party developers. For COM control, use the application API. For serial control, use the Byte Stream Command Interface (BCI). See the Rocket Engine API documentation and the Rocket Engine BCI documentation, which are available on the Avid Customer Service Knowledge Base (www.avid.com/onlinesupport).

- Use the Avid Sequence application to set up a series of actions from scenes whose playout can be controlled by GPIs. For more information, see "Using Sequence to Play Back Actions" on page 401.

⚠ **Before running DekoCast on air, close all applications not directly related to on-air play to conserve resources. If DekoCast is on air, do not use the DekoCast authoring interface. DekoCast must be offline to preview or add scenes. Close DekoCast before running DekoCast Central on air.**

Before You Begin

Before you start DekoCast, set up your system and install the DekoCast product applications as described in the *Avid On-Air Graphics Setup and Configuration Guide*.

Make sure that all DekoCast systems in a workflow are configured to use the same drive structure. Use drive D for elements, scenes, and graphics that are static images. Use drive E for clips and audio files. You can save cel animation source files in a folder on either drive D or drive E. For more information, see "Setting Up Directories" on page 37.

DekoCast operates with Serial Digital Interface (SDI) video. To have video input, your system needs to be connected to an SDI input device such as a router.

DekoCast does not display any output on your Windows desktop. To view work in progress, attach a video output monitor to your DekoCast system. Always set your video output monitor to the underscan setting to prevent peripheral material from being present in the video output that displays on this monitor.

⚠ **Installing any third-party software on your DekoCast that has not been explicitly recommended by Avid could void your support agreement. Never install third-party software without first consulting both the third party and Avid Technology, Broadcast Support.**

Starting and Closing DekoCast Applications

After installation, there are five Avid desktop shortcuts on your desktop: DekoCast, PostDeko Lite, Sequence, DekoCast Central, and Transcode. Double-click a shortcut to open its application.

▤ *See the* Avid On-Air Graphics Setup and Configuration Guide *for complete instructions on using the physical components of your system.*

To start the DekoCast application:

1. Set the two switches for the dual power supply at the rear of the unit to the On position.

2. Turn on the DekoCast system by pressing the On button on the front of the unit.

3. Log on to Windows XP Professional.

4. Do one of the following:

   ▶ Double-click the DekoCast shortcut on the desktop.

   ▶ Click the Start button and select All Programs > DekoCast > DekoCast.

   The DekoCast main window opens.

If you have a DekoCast SD/HD hybrid system, see "Switching Between Video Formats" on page 29.

To exit the DekoCast application, do one of the following:

▶ From the menu bar, select File > Exit.

▶ Click the close button in the main DekoCast window.

   When you exit DekoCast, you are prompted to save each scene that you have changed, one scene at a time.

To start PostDeko Lite, Sequence, DekoCast Central, or Transcode, do one of the following:

▶ Double-click the shortcut on the desktop.

▶ Click the Start button and select All Programs > PostDekoLite > PostDekoLite.

▶ Click the Start button, select All Programs > DekoCast, and select the appropriate application.

You can run DekoCast and the other applications simultaneously. Press Alt + Tab to switch between open applications.

• For information on using PostDeko Lite, see the *Avid Deko Products User's Guide* or the Avid Deko Help.

• For information on using Transcode, see "Transcoding SD Clips to MPEG-2 MXF I-Frame" on page 149.

• For information on using Sequence, see "Using Sequence to Play Back Actions" on page 401.

• For information on using DekoCast Central, see "Using DekoCast Central" on page 351.

Switching Between Video Formats

If you have a DekoCast SD/HD hybrid system, you can switch from an SD format to an HD format, or from an HD format to an SD format. For example, you can work in an NTSC project, and then switch to a 1080i/59.94 HD project.

For more information about available formats, see "Video Hardware Options" on page 416.

To switch from one video format to another:

1. Select Options > Preferences.
2. Click the Video Hardware Options tab.
3. In the Video Format section, select the desired format from the Standard list.
4. If necessary, select the appropriate aspect ratio (4 x 3 or 16 x 9).
5. Click OK.
6. If you are switching from HD to SD, or SD to HD, follow the screen prompts to restart the application.

   Restarting the application is not required when switching between NTSC and PAL or between HD formats.

Configuring Your DekoCast System

Before using your DekoCast system, you need to configure DekoCast for your particular installation. Configuration includes defining input and output channels and other hardware settings. For complete information, see "Configuring DekoCast" on page 415.

A DekoCast system has two video input ports. By default, a DekoCast system is configured for one video input, but you can configure it to have two video inputs, or to have one video input and one key input.

A DekoCast system is configured by default with one video output. A second video output port exists that can be configured as a key channel. A DekoCast system is usually installed downstream of the switcher. When a DekoCast system is installed upstream as a keying device into the switcher, it must be configured with Output A as the video fill and Output B as the key signal. Use the Video Hardware Options tab in the Options dialog box to configure DekoCast's input and output ports. See "Hardware Configuration Settings" on page 419.

TARGA-based SD systems support 16-bit audio. Corsica-based SD systems support 20-bit audio, and Corsica-based HD systems support 24-bit audio.

Basic Components

This section presents an overview of the most important components of DekoCast. For an example of how to use these component to build and play out a scene, see "Quick Start:

DekoCast Main Window

After you start the DekoCast application, the DekoCast main window opens with a set of empty panes. This window provides the interface for developing DekoCast projects.
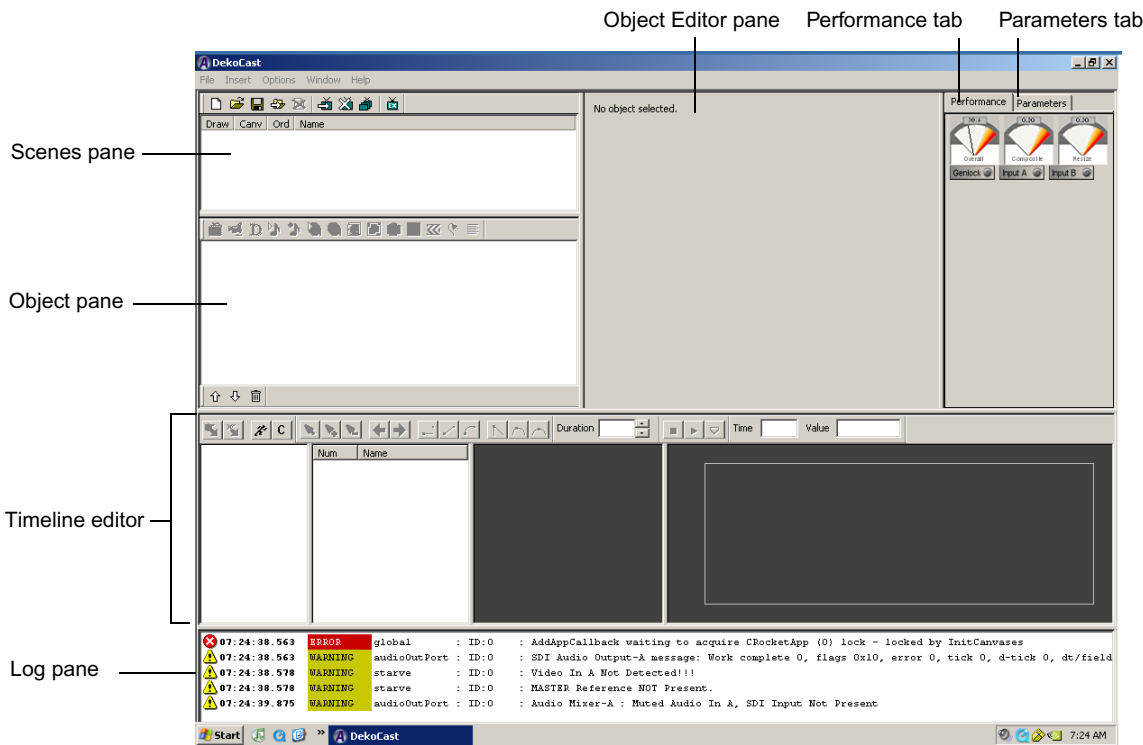
The major areas (or panes) of the window are the Scenes pane, the Object pane (where the Scene Tree is displayed), the Object Editor pane, the Timeline editor, and the Log pane. You can resize each of these panes to suit your current working style by selecting a border of a pane and dragging it to another position.

Scenes

The main organizing tool for creating DekoCast projects is the *scene*. A scene consists of a set of objects that you assemble and animate through actions and save as a scene file. The DekoCast system composites one or more scene files for on-air broadcast.

Scenes are displayed in the Scenes pane.

Scenes Pane
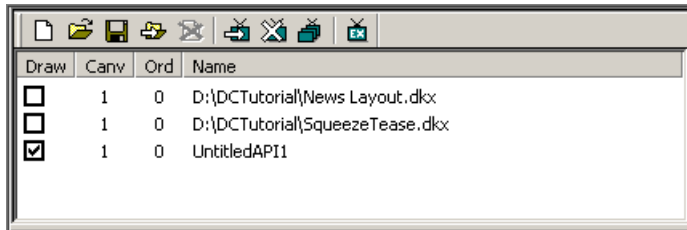
The Scenes pane includes a toolbar and a shortcut menu that you access by right-clicking the pane. For more information, see "Working with Scenes and Objects" on page 59.

Objects

Objects are the "actors" that you explicitly add to a scene to perform a task. An object can represent live video, video clips, audio clips, Deko graphics (either the entire graphic or selected layers), charts, and cel animations (*bugs*). When you add an object, it appears in the Scene Tree in the Objects pane.

Objects Pane

Objects in a Scene tree
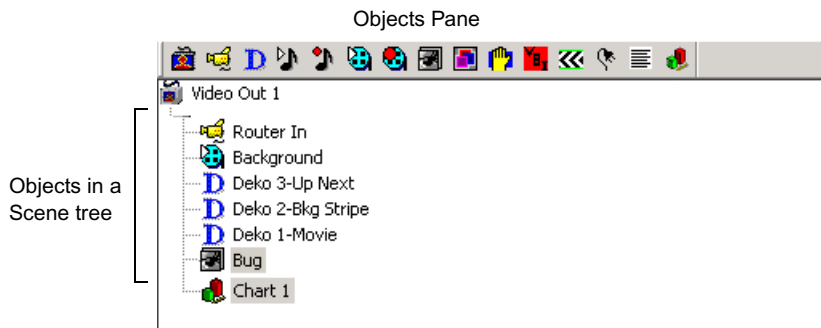
You can control an object's appearance and behavior by changing its properties, such as scale, position, and opacity (see "Object Editors" on page 33).

📧 *Avid does not recommend accessing linked files over a network due to performance variability.*

The Objects pane includes a toolbar and a shortcut menu that you access by right-clicking the pane. For more information, see "Editing Objects in the Scene" on page 79.

The content that you assemble in DekoCast to create projects is developed outside of DekoCast using PostDeko Lite or third-party graphics applications. For example, a graphic artist might use Adobe® Photoshop® to create a static image file to use in a Deko graphic.You can then use PostDekoLite to create a finished graphic that combines the image with text, including text that you update in DekoCast through text files or object parameters. An artist might use Adobe After Effects® to create a series of images to be linked to a cel animation object or a video clip to be linked to a clip object. You can use Digidesign® Pro Tools® to create audio clips.

You link source files to objects through file selections you make in the object editor. For information about supported file types, see "Supported File Formats" on page 41.

Scene Tree

Objects in the Scene Tree are organized hierarchically in a tree structure. The position of an object in the tree determines the order in which the application draws it for video output. The application composites the objects in the Scene Tree object-by-object, from the top of the tree downward, and displays them as video output. The lowest object in the tree is processed last (and appears in front of all other objects). For more information, see "How Objects Are Composited" on page 72.

Objects Pane

Objects in a Scene tree
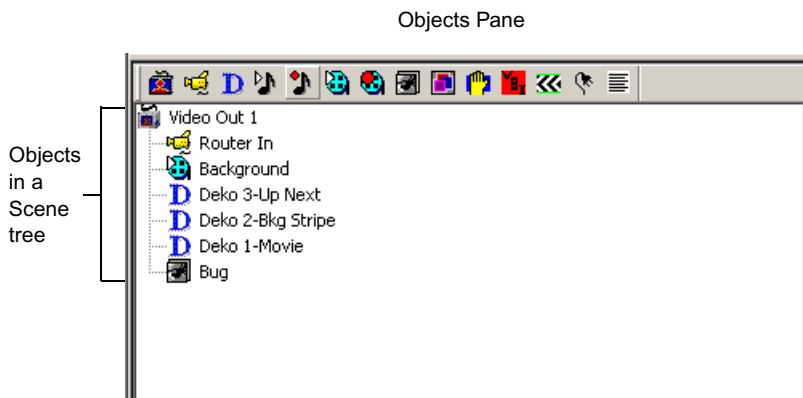
According to how you arrange objects within the tree hierarchy, objects can function as independent objects, as parent objects with child objects, or as child objects under the control of a parent object. Individual objects that are combined into a group object are child objects of the group. Groups can be nested within other groups. See "Using Group Objects" on page 181.

Object Editors

When you select an object, its object editor displays to the right of the Scene Tree. Each object type has its own editor. Using the editor, you link an object, such as a Deko graphic or clip, to its source file on your hard drive. The editor also allows you to configure *parameters,* which control the object's behavior, such as its position on video output, scale, opacity, and playback commands. Each object type has its own set of parameters. Select each tab in an object editor to view the controls that you can set for that object.

Object editor for Cel Animation object (Bug)
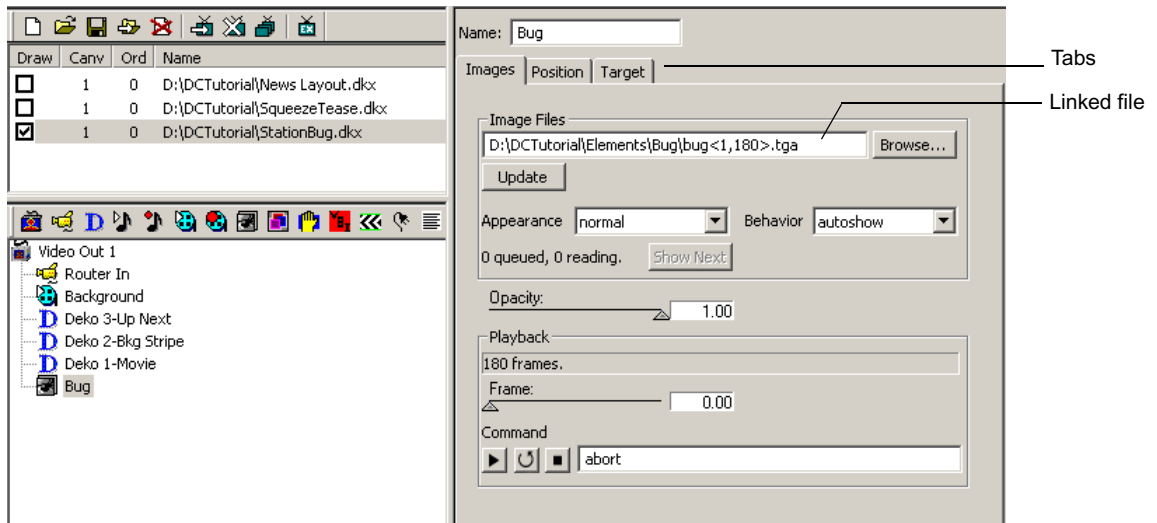
For more information, see "Editing Objects in the Scene" on page 79.

Actions and the Timeline Editor

Scenes are animated through *actions*, which are recorded changes in object parameters over time, such as an object's position, size, and opacity. Actions can turn clips on and off, start and stop cel animations (bugs), and squeeze back a video input frame. Any parameter value that can be changed is a potential action, and an action can control multiple parameters. You can define any number of actions for a scene. Actions allow you to control multiple parameters simultaneously in a user-definable order.

The Timeline editor has four sections: the Action list, the Action Parameter list, the Timeline Bar editor, and the Timeline graph. The Timeline editor includes a toolbar. The Action list and Action Parameter list include shortcut menus that you access by right-clicking within the list.

Action list   Action Parameter list   Timeline Bar editor   Timeline graph   Keyframes
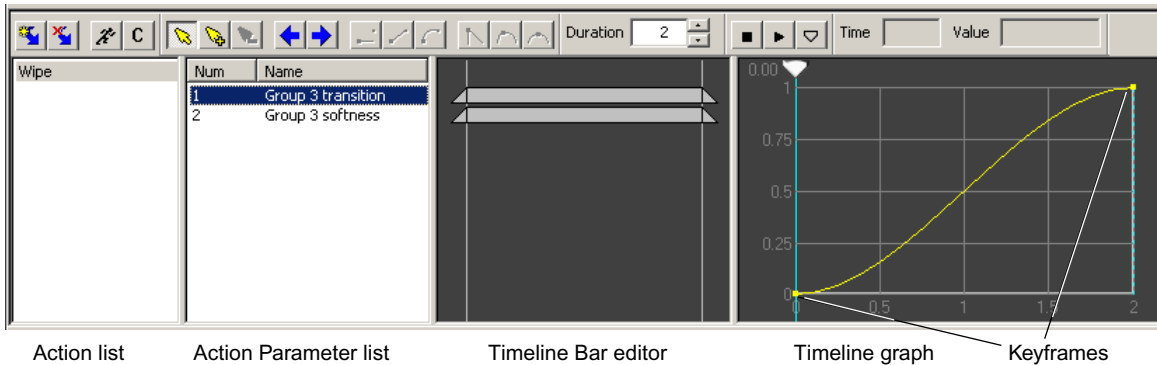
You animate actions using the keyframe-based Timeline graph. You can set the parameters for an action to occur at beginning and ending points (*keyframes*) on the Timeline graph. You can also add keyframes and set parameters at any other point on the Timeline graph.

For more information, see "Adding Actions to a Scene" on page 297.

Performance Tab

The Performance tab gives you an overview of the state of the application's current processing through a set of three meters (one set for each installed video board).

• The Overall meter measures total system performance.

• The Composite meter measures layer-by-layer compositing of objects in the Scene Tree.

• The Resize meter measures the amount of resources DekoCast utilizes as it resizes an object, such as the resizing required to create a squeeze-back.

While the application processes your work, pay attention to the meters. Video processing resources have been exceeded when the meters enter the red zone. As you develop scenes, Avid recommends not exceeding 80 percent on any meter. Otherwise, you might be exceeding the system's processing capability, which could compromise your output.

Lights below the meters indicate whether a source is present for Genlock, Input A and B, or Audio A and B. A green light means that the source is available. If the light is not green, the source is not available.
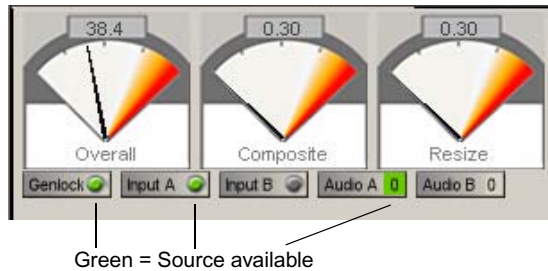
Green = Source available

The Performance tab and the Parameters tab share the same pane in the upper-right corner of the DekoCast window. Click the Performance tab to bring the tab to the front.

Parameters Tab

The Parameters tab consolidates the scene's parameter data. It lists parameters and their values for the currently selected scene, the objects within that scene, and installed video boards. You can search for parameters, change their values, and even define your user parameters to expedite scene creation. For information on how to use the Parameters tab, see "Working with Parameters" on page 335.

Deko Object editor with Opacity parameter
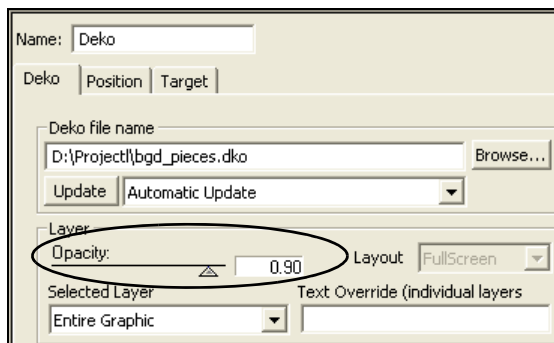
Parameters tab showing
Opacity parameters in a scene

The Performance tab and the Parameters tab share the same pane in the upper-right corner of the DekoCast window. Click the Parameters tab to bring the tab to the front.

⚠️ **After you are finished using the Parameters tab, click the Performance tab. Keeping the Parameters tab displayed might slow down updating of the user interface for a large scene.**

Log Pane

System-generated information about DekoCast's activity displays in the Log pane of the DekoCast window. You can set the severity level of the information to be recorded in this log. In certain cases, DekoCast might generate many warnings that are insignificant.

To restrict logging messages:

1. Select Options > Preferences.

2. Change the minimum logging severity level from Warning to Severe.

   For more information, see "Application Options" on page 428.

📄 *To hide the Log pane, click the lower border of the Timeline Editor window and drag it over the log pane.*

Adjusting the DekoCast Window

You can adjust the DekoCast window for your current tasks. For example, if you are working exclusively in the Timeline editor, you might increase its size and reduce the size of other panes. You can adjust and save up to three custom window layouts (Layout 1, 2, and 3). Layouts persist after you exit the application.

To save a custom layout:

1. Open the layout you want to save by selecting Window > Layout *x*.

2. Resize the DekoCast main window's panes as you desire.

   The layout is associated with the currently selected layout (1, 2, or 3) and remains the same until you change it.

To switch to a different layout:

▶   Select Window > Layout *x*.

To return all layouts to their default configuration:

▶   Select Window > Reset to Default.

Online Help

DekoCast includes online Help. The Help is a searchable, hypertext version of this guide, the *Avid DekoCast Products User's Guide*.

To view online Help for DekoCast:

1. Do one of the following:

   ▶   Select Help > DekoCast Help.

   ▶   Press F1.

2. Use the Contents, Search, or Index tab to find the information you need.

For complete information on using Help, including options for Search, see "Using Help" in the DekoCast Help.

Understanding Files and File Types

This section describes the application's file types and file-naming conventions. It also covers steps to take when copying files from one DekoCast system to another. When you transfer files from an Authoring Station to an on-air DekoCast system, all of the scene's source files must be copied to the local disk of the on-air DekoCast system.

Setting Up Directories

The DekoCast system includes two physical drives. As shipped, one drive has two partitions: C: System and D: Graphics. The other drive has a single partition: E: Clips. These partitions function as drives.

Avid recommends that you organize your files in directories and save them to the following drives:

• Drive C: All applications.

• Drive D: DekoCast projects and all static components and elements.

• Drive E: All clips and audio files.

You can save cel animation source files in a directory on either drive D or drive E.

You need to make sure PostDeko Lite and DekoCast use the same directories. If the applications are on different machines, the paths need to match. The default directories that you set in PostDeko Lite are used by DekoCast to process Deko graphics and all components of Deko graphics. The PostDeko Lite application defines the default directories in DekoCast for these kinds of files:

- Graphics and automation

- Styles, preset styles, and shaders

- Macros

- Custom typeface files

Avid recommends that you use the same directory for all types of Deko files and their components. If you use many custom typefaces, you might want to set up a separate directory for custom typefaces.

To set the default directories in PostDeko Lite:

1. Start PostDeko Lite.

2. Select Options > Preferences.

3. Click the Paths tab.

   In the current directory text box, type the complete path for the directory, such as D:\Dekographics or D:\News. This is the directory where this file type is automatically saved.

If you need to set up a directory for custom typefaces, do not use a space or an underscore in the name. Use the same custom typefaces directory for all projects at the same location.

If DekoCast fails to find a graphic by searching the path listed in the Current Directory, it searches the paths listed in the Search Path.

Current directory ——
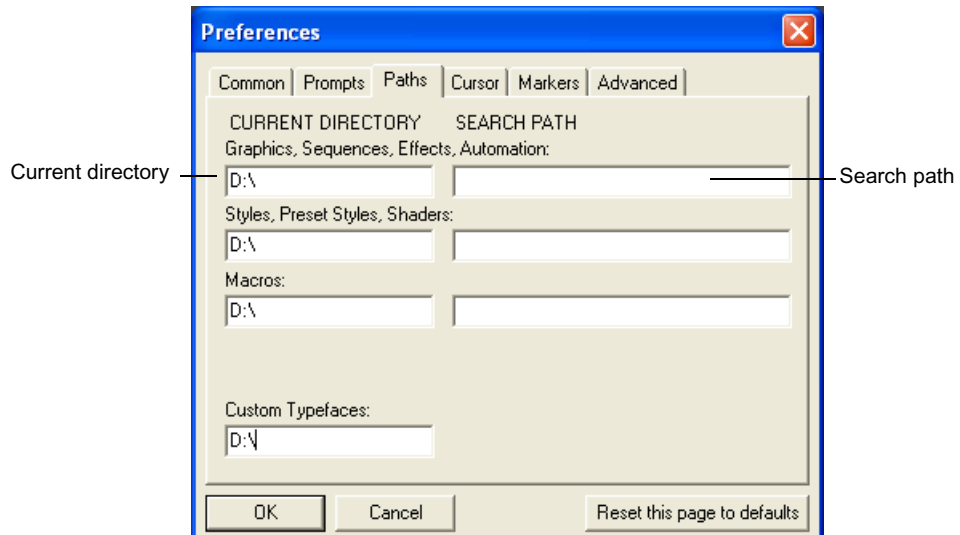
Search path

4. In the Search Path text box, type one or more additional paths where DekoCast can search for the file. Type the complete path and include semicolons to separate multiple search paths; for example: D:\Deko; E:\DekoBugs.

If DekoCast opens a file from the search path, that search path becomes the Current Directory.

5. To save changes, select Options > Save Settings Now.

6. Click OK.

If a graphic does not appear in the scene, make sure the graphic and its components are saved in the default directories. Open the graphic in PostDeko Lite and check where it is saved.

If a scene opens with a letter where you expected to see an image, check the Custom Typefaces path.

Scene Files

A scene file is saved with all its objects, links to files associated with objects, and animated actions in the DKX file format.

Prior to DekoCast 4.0, DekoCast scene files were binary files with the DKC format. Although you can open these older files, you must save them in the DKX format to take advantage of DekoCast's newest features. By default, DekoCast saves DKC files as DKX files but does not modify the previous DKC file.

When prompted to delete the DKC version of the file, click Yes. Avid recommends that you delete DKC versions of files that were saved as DKX files to avoid having two versions of the same file.

After you have upgraded a scene to the newer format, the scene is not compatible with earlier versions.

If you open a scene that references files that the application cannot find, it prompts you to search or browse for them. After you select a folder, the application searches this folder for any other missing scene files.

If your facility has more than one DekoCast or DekoCast Authoring station, Avid recommends that you upgrade all units to DekoCast 4.0 simultaneously. Also upgrade all scenes to the DKX format in all online and offline directories.

DekoCast Central supports DKX and the older DKC format.

Supported File Formats

DekoCast supports specific file formats for specific objects. You can view the supported file formats for an object after you click the Browse button to navigate to a file. Supported file formats are listed in the Select File dialog box's "Files of type" menu. The supported source file formats for objects are listed in the following table.

Supported File Formats

Object Type	Supported Formats	Requirements
Clip Capture and Clip Playback		
SD video clip files (TARGA® systems)	AVI, DV, and DIF	DV 25 compression
	MXF	DV 25 MPEG-2 4:2:0 MPEG-2 4:2:2 I-Frame or IBP compression
Clip Capture and Clip Playback		
SD and HD video clip files (Corsica systems)	MXF	MPEG-2 4:2:0 MPEG-2 4:2:2 (playback only) I-Frame compression
		📄 *You can convert clips to these supported formats with the Transcode feature (see "Transcoding SD Clips to MPEG-2 MXF I-Frame" on page 149).*
Clip Capture and Clip Playback		
Key video clip files	Same as for Clip Playback video objects	
Audio Capture and Playback:		
Audio files	WAV AVI (playback only)	48khz, 16-bit stereo
Cel animation	Usually a series of TGA or TIF files. Other supported formats are AVI, BMP, DIB, G (Avid Thunder format), GIF, JPG, PCD, PCT, PSD, and SGI.	

Supported File Formats (Continued)

Object Type	Supported Formats	Requirements
Deko	DKO, AUT, and ATX	
	Key: Deko and PostDeko Lite accept static images with key from other graphics applications in the following formats: TIF, TGA, PICT, and PSD.	
	Full-screen image formats (no key): JPG, BMP, PCD, G (Avid Thunder format), PCS, WMF, DIB, RLE, PCT, and PNG. To use these formats, open the file in PostDeko Lite and save it as a Deko (*.dko) graphic.	
Text Data	TXT, AUT, and ATX	
Frame Grab	TGA	

Copying Files

You can develop DekoCast scenes using a different DekoCast system than the one that plays scenes on air. In this case, ensure that all of the scene's source files have been copied to the local disk of the on-air DekoCast system. The file names and complete path for scenes should be the same on the authoring system and the on-air system.

You need to update all of the asset files on all DekoCast systems. Be aware, however, that one asset type—the Deko graphic—might contain many related files. The PostDeko Lite application provides a way for you to copy all of the components of a Deko graphic, as long as all components reside in the same directory. If you have a Deko graphic in a scene that uses textures, macros, and custom typefaces, you must copy all reference, source, or component files, such as source texture files and source text files (TXT), and save them on the alternate DekoCast system with the identical directory structures and file names.

To copy all the components of a Deko graphic from PostDeko Lite:

1. Open PostDeko Lite and select Files > Copy File.
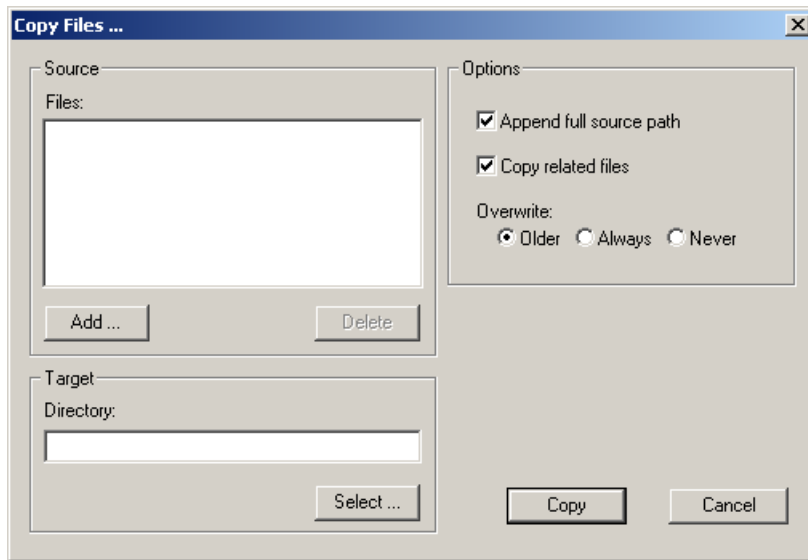
To copy the contents of a folder, select Files > Copy Directories.

2. In the Source pane, click Add and select one or more Deko graphics.
3. In the Target pane, click Select and navigate to the Target directory where you want the files copied.

4. Select the options that you want:

- Select "Append full source path" if you want the source folder structure recreated in the target directory.

- Select "Copy related files" to copy all files that are associated with the graphic.

- Select an overwrite option.

5. Click Copy to copy all the components of a Deko graphic to the target directory.

TrueType fonts are not included in the Copy File feature. In PostDeko Lite, select File > Information, and open the graphic. A macro window opens that displays which TrueType fonts are used. You need to copy these fonts manually.

Alternatively, you can examine a Deko graphic layer-by-layer in PostDeko Lite to determine its components and manually copy those components.

Viewing Information About Your DekoCast System

To view information about your DekoCast system:

▶   Select Help > About DekoCast.
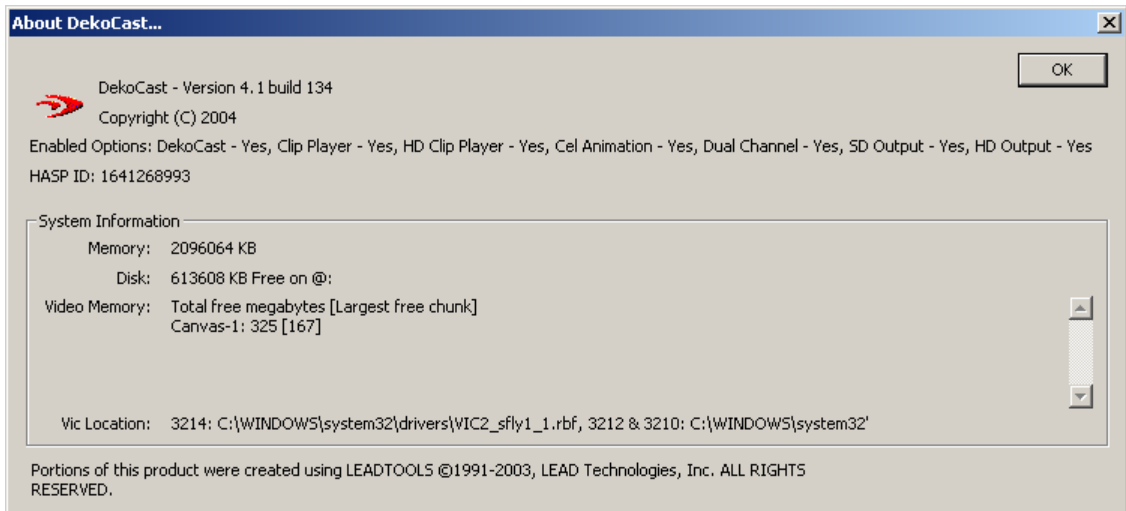
The "Enabled Options" line indicates which options are installed on your system. The Clip Player and Cel Animation Player are optional features and must be purchased for DekoCast systems (see "DekoCast Products and Applications" on page 23).

The HASP ID number is the number of your application key (dongle).

The System Information pane indicates how much CPU memory is installed, how much space is available on drive C, and the largest amount of contiguous video memory (free chunk of memory, in megabytes) available on the video board.

To view your system's configuration settings:

▶ Select Options > Preferences.

If necessary, ask your video engineer to select the correct video format and other settings, as described in "Configuring DekoCast" on page 415.

Quick Start: Fading a Graphic On and Off

This section takes you step-by-step through the process of creating a simple scene. You'll be adding two objects to your scene:

- A Video In object for a studio feed
- A Deko object linked to a Deko graphic

You'll also be creating two actions:

- Fading a graphic on
- Fading a graphic off

A typical application of this type of scene is displaying a station ID.

Before You Begin

This example requires a graphic that has already been created in a graphics program such as PostDeko Lite. An ideal graphic would be a station logo that appears a corner of the screen, but if necessary you can use any type of image.

This scene also requires a video input into your DekoCast system for the Video In object, such as a studio feed. If you don't have access to a studio feed, the background appears black.

New DekoCast systems are supplied with sample scenes and media. See "Using the Sample Scenes and Media" on page 57.

Creating a Scene

Start by creating a scene, which is the basic file for DekoCast output. For information about scenes, see "Working with Scenes and Objects" on page 59.

To create a new scene:

1. Do one of the following:

   ▶ Select File > New.

   ▶ Click the New button in the toolbar.

   A new, untitled scene appears in the Scene Pane. Notice the draw box and the Video Out object, which are added by default.
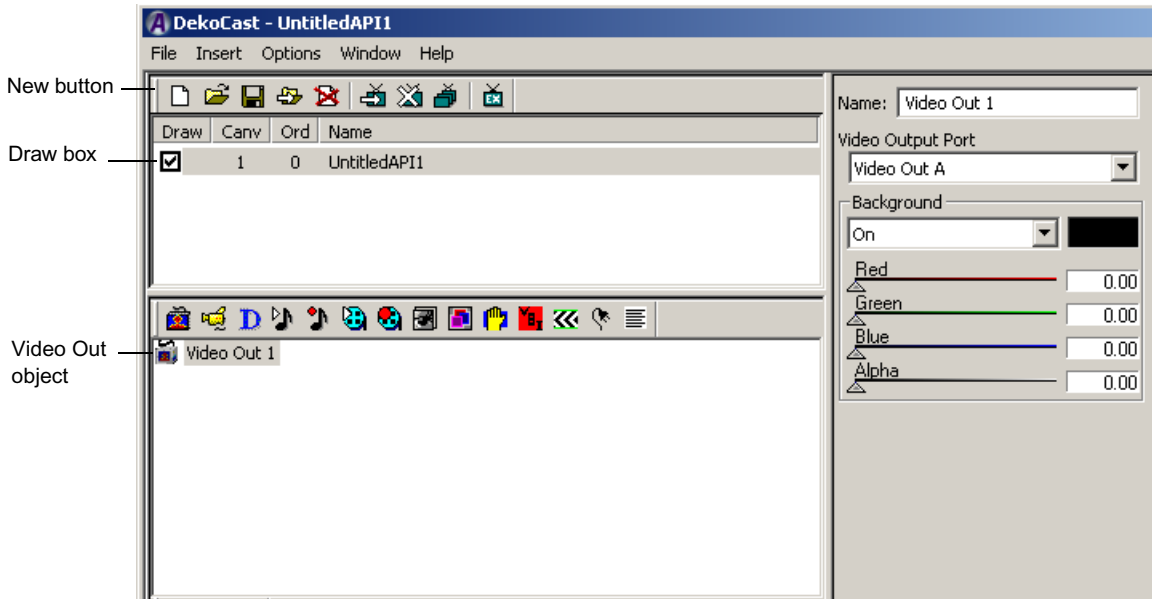
The draw box is selected (checked) by default. If the draw box is selected, your scene can be played out through your Video Out channel. The Video Out object enables all other objects in the scene to play out. There is only one Video Out object in a scene. The Video Out object is the top of your Object Tree.

2. Do one of the following:

   ▶ Select File > Save.

   ▶ Click the Save icon.

3. Navigate to a folder, type a name for your scene (for example, MyScene), and click Save.

The scene is saved as MyScene.dkx. The extension .dkx indicates a DekoCast scene file.

⚠ **DekoCast does not include an Undo, so save early and save often.**

Adding Objects

Now that you've created a scene, you can add objects to it. In this example, you will add a Video In object (a studio feed) and a Deko object (a graphic). For more information about objects, see "Editing Objects in the Scene" on page 79.

To add objects to your scene:

1. Click the Video Out object that appears in the Object Tree to select it.

2. Click the Video In icon to add a Video In object to the Object Tree.
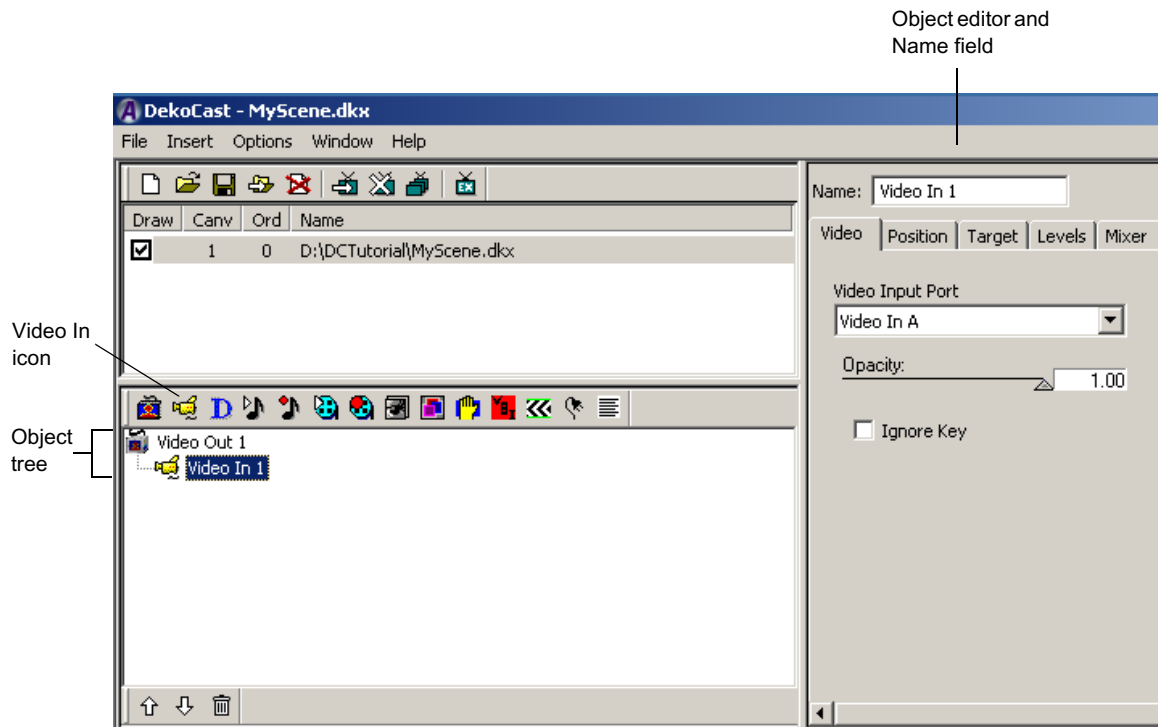
Notice that the Video In object appears indented from the Video Out object, which indicates that it is a child of the Video Out object. This relationship is required so that the Video In object plays out to air.

If video is physically connected to an input on your DekoCast system, it should now be playing full screen through DekoCast to the Video Out channel and should be displayed on your video output monitor. It does not appear on your computer monitor.

3. Select the Video In object.

   The object editor now displays parameters for the Video In object. There are multiple tabs that organize the types of parameters.

4. Select the Name field at the top of the object editor and type "Studio Feed."

   It's a good idea to always name objects in a meaningful way.

5. Select the Video Out object.

6. Click the Deko object icon in the toolbar.

   DekoCast adds the Deko object to the Object Tree. The object editor now reflects parameters for a Deko object.

7. In the object editor, rename the Deko object "Static Deko Graphic."

Object editor and Name field   Browse button
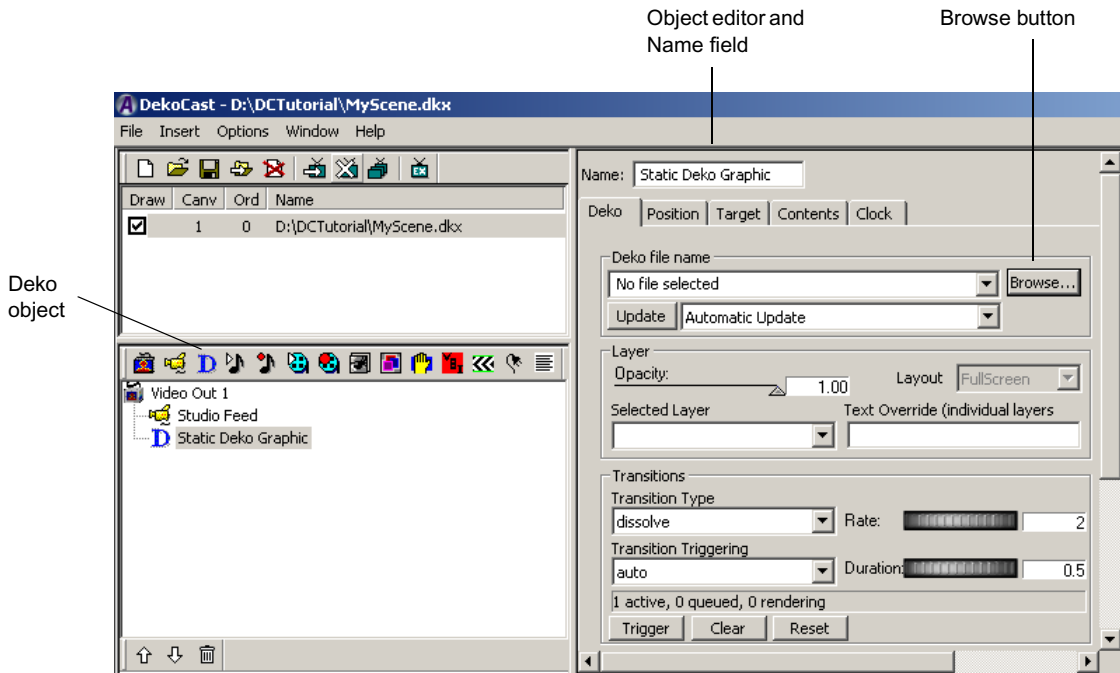
Deko object

8. In the object editor, click the Browse button and navigate to the graphic file you want to add to a scene.

   This graphic could be a static station ID that was created in PostDeko Lite or in Deko. See "Before You Begin" on page 45.

9. Click Open.

The Deko object is now linked to the Deko graphic.

Linked file →

Selected layer list →
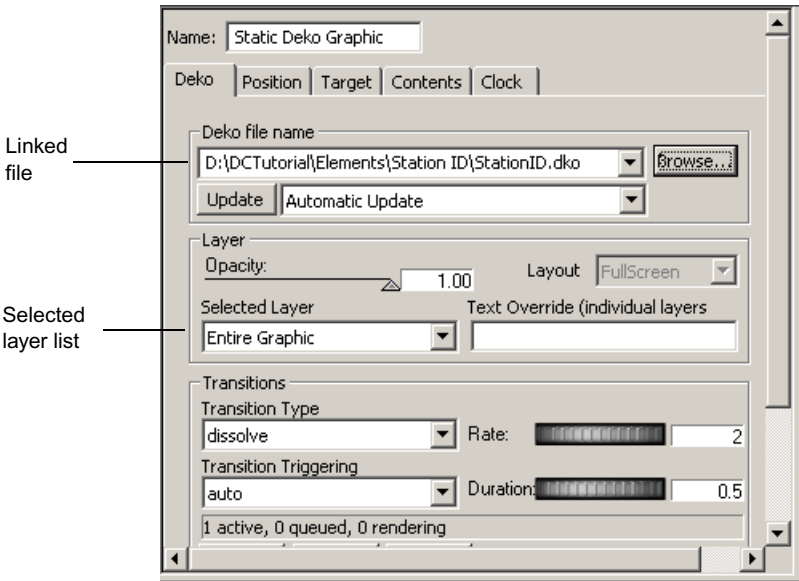
You should see the graphic on your video output monitor, on top of the video feed. The following illustration is an example of a station ID on top of a video feed.

If you are using a full-screen graphic without an alpha channel, the graphic might completely cover the video feed. You can crop the graphic as described in the next step.

Notice that Entire Graphic is selected in the Selected Layer list of the Deko object editor. If a graphic is created with layers, you can select individual layers, which results in more efficient processing. Processing an entire screen of pixels can take a lot of system resources, so in this example you can save processing power by cropping.

10. If necessary, click the Position tab of the Deko object editor and use the Cropping controls to remove the unused part of the graphic.

Cropping parameter labels
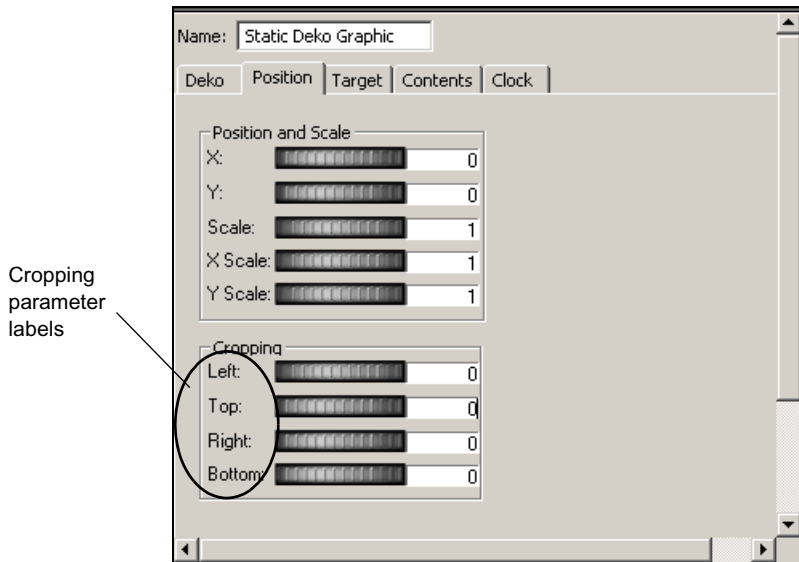
Use the thumbwheels or type a number so that you remove blank parts of the graphic while keeping the image itself visible.

The controls are based on an X/Y grid, with dimensions based on the video format. For example, in NTSC, the full screen width is 720 pixels, so a Left crop of 360 crops off everything from the middle of the screen to the left edge. To return to the default setting, click the parameter label.

11. (Option) If you want to change the position or scale of the graphic, use the Position and Scale controls.

12. Select the Deko object (named Static Deko Graphic) in the Scene Tree.

13. In the object editor, click the Deko tab and locate the Opacity parameter.
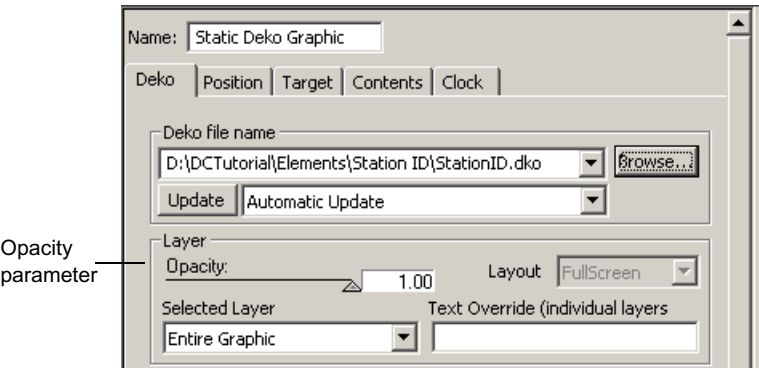
You'll be creating an action for this parameter. Drag the arrow back and forth between 0 (no opacity) and 1 (completely opaque) to view how this parameter changes the graphic.

Adding Actions

Now that you have your objects, you need to animate them by adding actions to the scene. In this example, you will create two actions in the Timeline editor. For more information about actions, see .

To add actions to your scene:

1. Add an action by clicking the Create Action button on the Timeline editor toolbar.

    A new action appears in the Actions List.
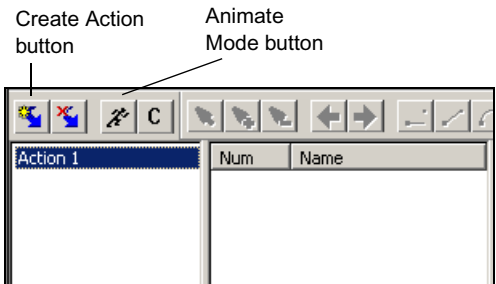
2. Rename the action Fade ON by pressing F2 or right-clicking and selecting Rename.

    Now that you've created an action, associate it with an object and change the parameters. You do this by entering Animate mode.

3. Click the Animate Mode button on the Timeline editor toolbar.

The icon on the Animate Mode button resembles a running man. When the Animate Mode button is selected (depressed), you are in Animate mode.

Animate Mode button selected

Duration: 2 seconds

Timeline graph: Scrub bar at 0 seconds
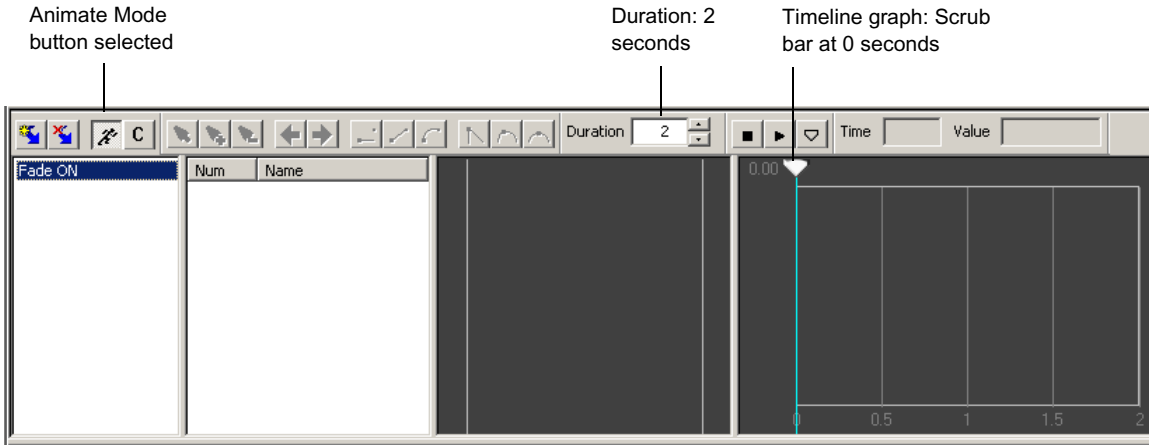
Animate mode creates keyframes for every parameter that you select while you are in this mode. The time value (the time when the keyframe plays in the action) is determined by the placement of the Scrub bar. The Scrub bar defaults to the first keyframe with all new actions.

⚠ **Keep the Animate Mode button selected only when necessary. Any parameters you click or select are recorded in Animate mode.**

4. In the Timeline graph, make sure the scrub bar is all the way to the left (0 seconds).

Positioning the scrub bar at 0 seconds lets you create a keyframe at the beginning of the action. The Duration box shows that the action is 2 seconds long. This duration is also shown on the X axis of the Timeline graph.

5. Select the Static Deko Graphic object. In the object editor, drag the Opacity slider all the way to the left, or type 0.00 in the object editor's Opacity field.

With Opacity set to 0, the graphic is not visible. Notice how the parameter is added to the Action Parameter list. The name of the parameter is the object name plus the type of parameter.

Opacity parameter in the
Action Parameter list.
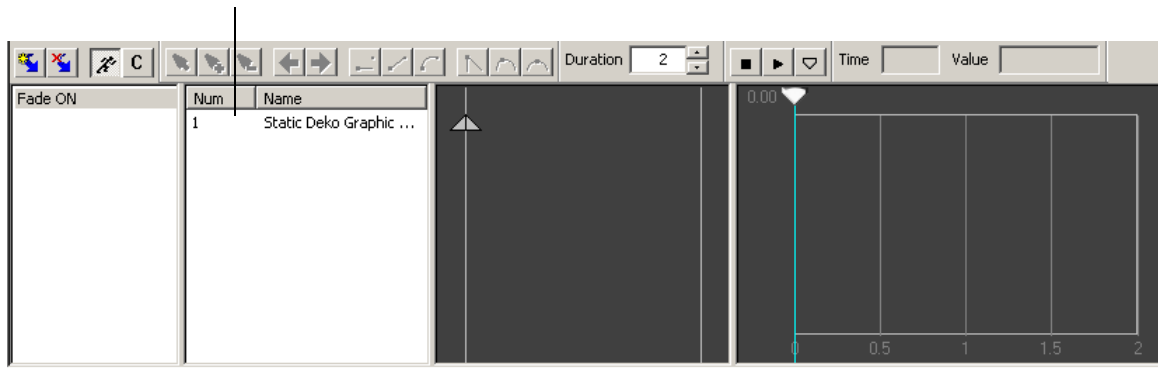
6. Create a final keyframe by dragging the scrub bar all the way to the right and setting the Opacity level at 1.00 (drag the slider all the way to the right or type 1.00).

You now have a complete action that fades the graphic on. Select the parameter in the Action Parameter list to view a graphical representation of the action: a graphic changing from not visible to completely visible over 2 seconds.

If more than one parameter appears in your Action Parameter list, you accidently created parameters by clicking in the object editor. Delete all but the Opacity parameter by right-clicking the parameter and selecting Delete.
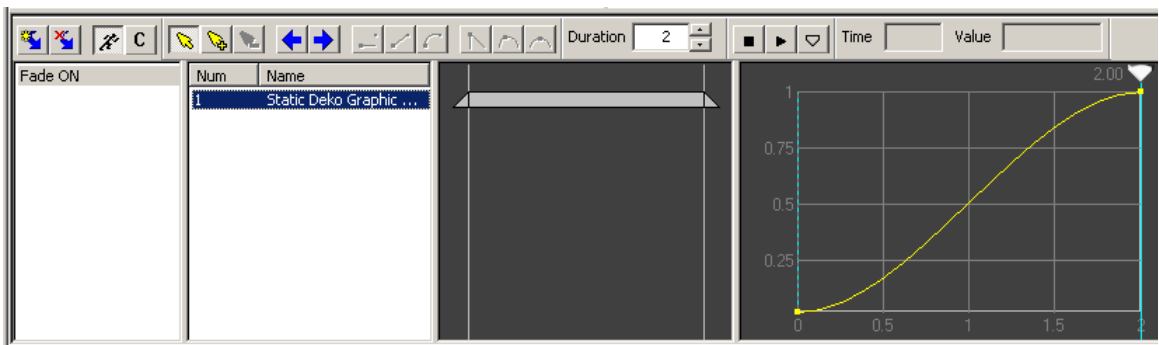
7. Preview the action by selecting the Action in the Action list and pressing the space bar.

   You should see the graphic fade up in the video output monitor.

   Now create another action that fades down the graphic. Remember that you're still in Animate mode (the Animate Mode button is selected), so be careful to click or select only the parameters you want to record. If you create an extra parameter, you can always delete it.

8. To create a new action, click the Create Action button.

9. Rename the second action Fade OFF.

10. In the Timeline graph, make sure the Scrub bar is all the way to the left (0 seconds, the default). Drag the Opacity slider to 1 (100% opacity), or type 100 in the Opacity field, or click the Opacity label to reset it to the default (1). The graphic should be completely visible on your video output.

11. Create a final keyframe by dragging the scrub bar all the way to the right and setting the Opacity level at 0 (drag the slider all the way to the left or type 0).

   You now have two complete actions: one that fades the graphic on and one that fades the graphic off.
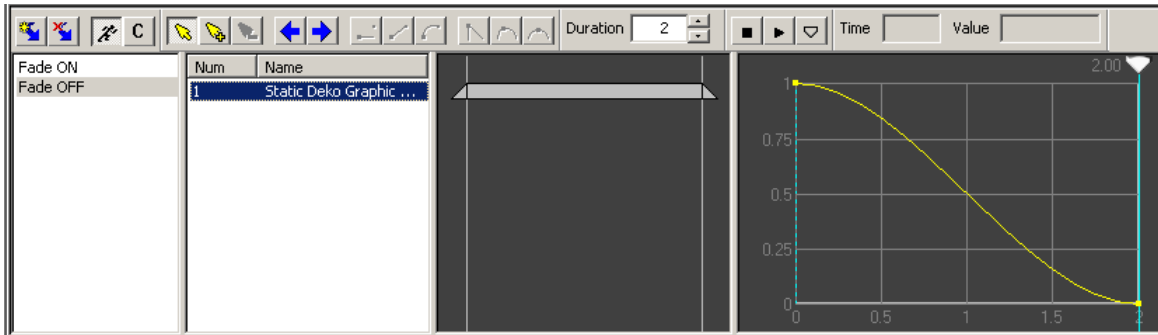
12. Preview the Fade OFF action.

13. Click the Animate Mode button to leave Animate mode.

    Remember to deselect the Animate Mode button after creating parameters for an action.

14. Save the scene.

Playing the Scene in DekoCast Central

You can use DekoCast Central to play the actions. For more information about playout and DekoCast Central, see "Using DekoCast Central" on page 351. These instructions describe the basics of playing actions in the Graphical User Interface (GUI).

To load a scene and play an action:

1. Do one of the following:

   ▶ Double-click the DekoCast Central desktop icon.

   ▶ Click the Start button and select All Programs > DekoCast > DekoCast Central.

   The DekoCast Central application opens. The following illustration shows the GUI.
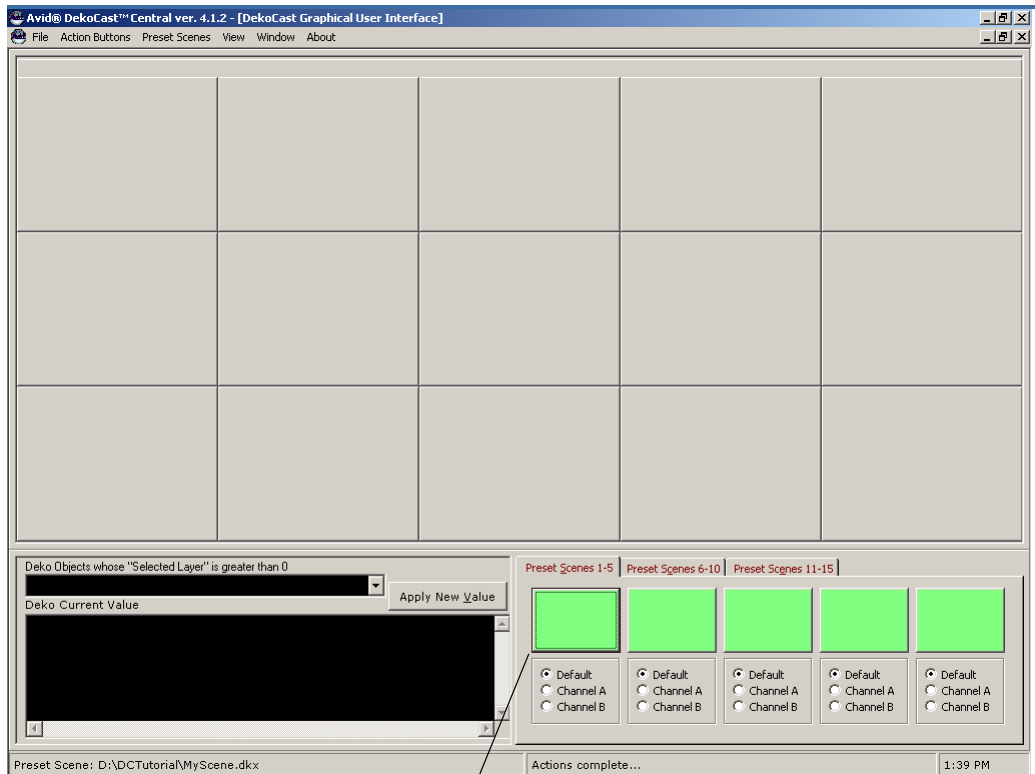
Preset Scene button

2. If the GUI is not displayed, select View > Graphical User Interface.

3. Assign your scene to a Preset Scene button by doing one of the following:

  - Right-click the Preset Scene button and select Assign Scene from the menu.

  - Select Preset Scenes > Assign Scene.
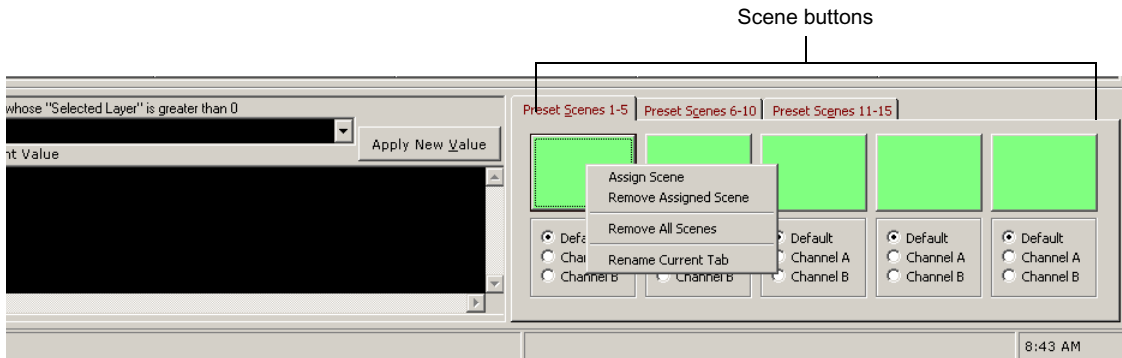
Scene buttons

4. In the Assign DekoCast Scene files dialog box, navigate to the scene you created.

5. Click Open.

   The scene is listed on the Scene button you selected.

6. Click the Scene button.

   The button turns red and a button is displayed for each action in the scene.
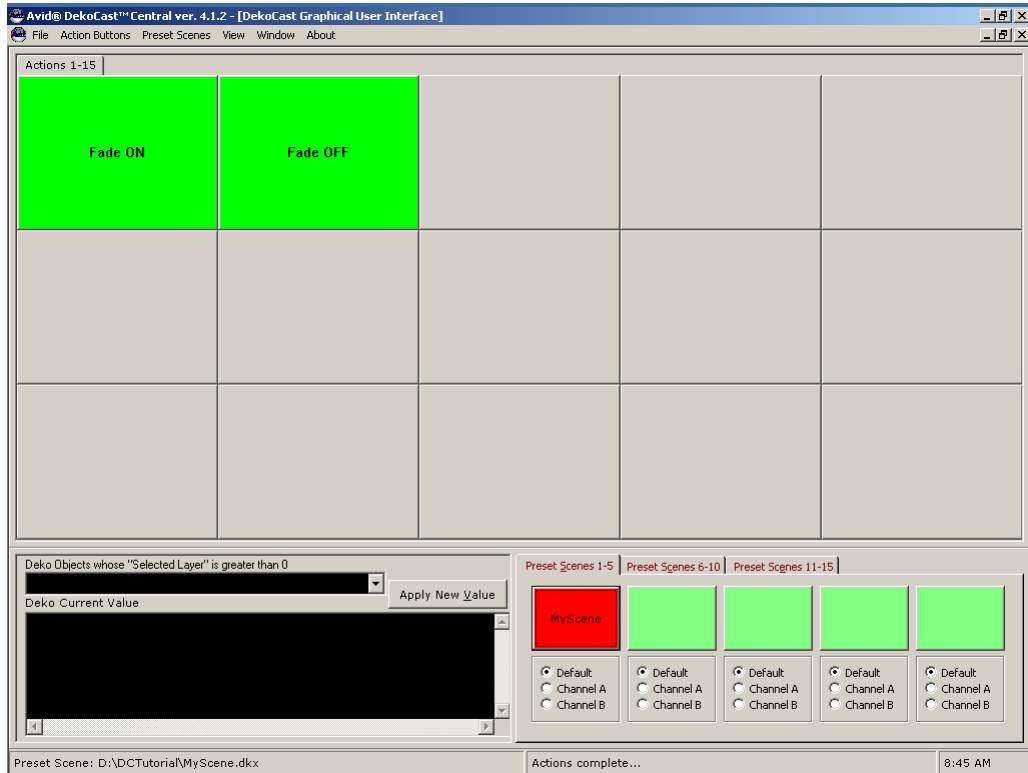
7. Click the Fade ON button to play the action, then left-click the Fade OFF button.

You've now completed the Quick Start. The following chapters provide detailed conceptual information and step-by-step instructions for using DekoCast.

Using the Sample Scenes and Media

New DekoCast systems are shipped with sample scenes and media in the following locations:

• D:\DekoCast4.0\Finance (graphics, scenes, text files)

• E:\DekoCast_Media (audio, cel animations, clips)

If your system includes this material, you can use it explore the capabilities of DekoCast. If you are new to DekoCast, consider completing the Quick Start before using the sample material. As you learn more about DekoCast, you can use the sample material to understand how particular features can be implemented.

Several versions of the sample scene are included with the installed material. Select the video format that is appropriate for your system.

To play a sample scene:

1. Select File > Open or click the Open button and navigate to the following folder:

   D:\DekoCast4.0\Finance

2. Select a scene in the appropriate video format (for example, Test_PowerFinance_1080i5994.dkx).

3. In the Scene pane, check the Draw box.

   Because of the way the scene is created, you need to play an action to see the components of the scene.

4. In the Actions pane, double-click the "On" action.

   The scene should resemble the following illustration. If your system is configured for a video input, the video appears in the upper left area.

5. Explore the various objects in the scene tree and how they appear in the scene.

6. To stop the action, double-click "Off."

Chapter 2
Working with Scenes and Objects

A scene consists of objects, such as passthrough video, Avid Deko graphics, animated logos, and internal video clips that you organize in a Scene Tree. You then animate the objects by creating actions that modify the object's parameters.

The following topics provide basic information about how to work with scenes and objects:

- Scenes Pane and Toolbar
- Creating a New Scene
- Renaming and Saving a Scene
- Opening an Existing Scene
- Working with Objects
- Working with the Scene Tree
- Selecting Scenes for Output
- Multiple Scenes and Stacking Order

Scenes Pane and Toolbar

The Scenes pane is the area of the DekoCast window in which you organize DekoCast scenes for a project. As you create new scenes and open existing ones, they are listed in the Scenes pane.

Scenes toolbar

New scene

Saved scene with Draw box selected for video output.

Draw	Canv	Ord	Name
☐	1	0	UntitledAPI1
☑	1	0	D:\DCTutorial\StationBug.dkx

Scenes are listed in the Scenes pane by name. A new scene is named *UntitledAPI* (*API* stands for Application Program Interface) and numbered according to the number of scenes you have added during the DekoCast session. You can rename a scene only when you save it.

The Scenes pane includes four columns:

- Draw: The Draw box determines if a scene is played to video output. See "Selecting Scenes for Output" on page 75.

- Canv (Canvas): The Canvas number indicates which video board is being used for processing. Currently shipping systems include only one video board.

- Ord (Order): The Order number determines the order in which multiple scenes are processed. See "Multiple Scenes and Stacking Order" on page 76.

- Name: The default filename or the complete file path for a saved scene.

The Scenes pane has its own toolbar and shortcut menu.
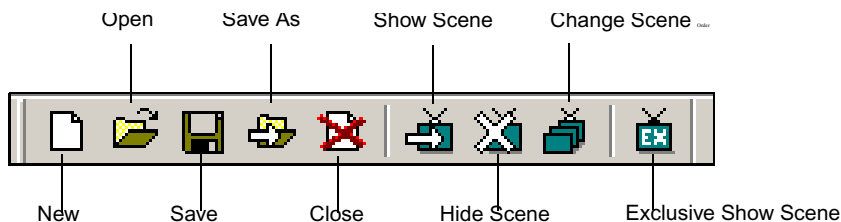
The New Scene, Open Scene, Save Scene, Save As Scene, and Close Scene tools have equivalent commands in the main File menu. The Show Scene, Hide Scene, Change Scene Order, and Exclusive Show Scene tools can be accessed only through their toolbar buttons.

📖 *To display a brief description of a tool, move the mouse pointer over its button without clicking.*

The shortcut menu commands are New (Insert), Open (Ctrl+O), Close (Del), and Save (Ctrl+S). Select a scene in the Scenes pane and right-click it to display this menu.

Scenes that you have created using the DekoCast application appear in the Scenes pane in black typeface. The Scenes pane also contains scenes that are open in DekoCast Central. These names are italicized and in blue typeface.

Scenes created through another program, such as a program developed using the Application Programming Interface (API), also appear in blue italics. If you modify scenes not created in DekoCast, save them with another name using the Save As command before closing the

scene to avoid changing the original scene file. When you rename a scene, DekoCast considers it created in DekoCast, and when you reopen it, the renamed scene appears in the list in black typeface

Creating a New Scene

To create a new scene, do one of the following:

▶ Select File > New.

▶ Click the New icon in the Scene Pane toolbar.

Video Out object editor

New scene with Draw box selected for video output.

Video Out object
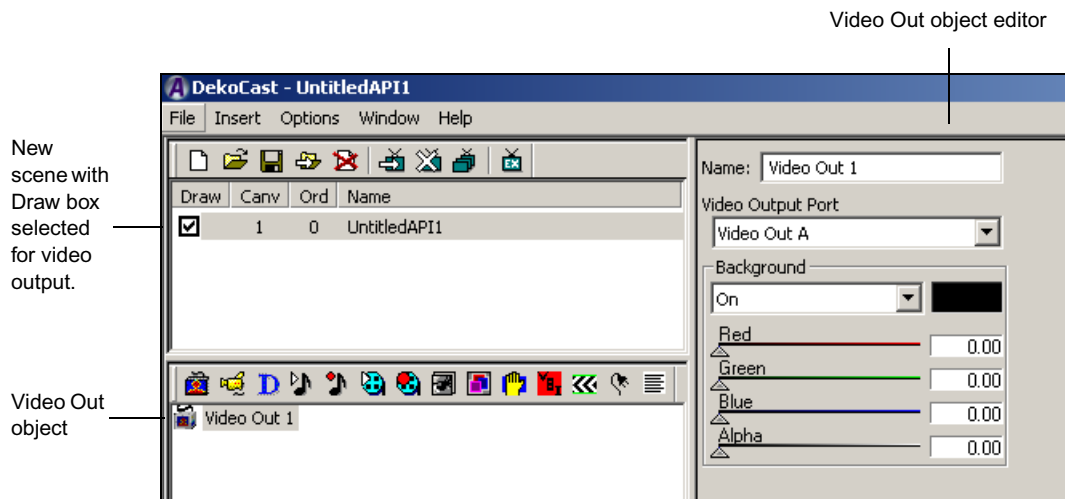
After DekoCast creates a new scene, the following changes appear in the DekoCast window:

• A new, untitled scene is added to the Scenes pane. Scenes that you add during a DekoCast session are named sequentially. New scenes that you add to the Scene Tree are always selected to be drawn to video output (the scene's Draw box is selected).

• A Video Out object is added to the Object pane. When you create a scene, it automatically has video output associated with it.

  Video output is required if the result of your DekoCast scene is to be output to a monitor or played to air. DekoCast draws changes you make to this scene in real-time and can display them on a video output monitor.

• The Video Out object editor is displayed. Object editors allow you to control an object's parameters. The Video Out object editor lets you select the port and adjust the video frame's background color and opacity.

For more information about the Video Out object editor, see "Editing Video Out Objects" on page 81.

When creating scenes, pay attention to the Performance meters in the upper-right corner of the DekoCast window (see "Performance Tab" on page 34). Video processing resources have been exceeded when the meters enter the red zone. As you develop scenes, try not to exceed 80 percent on any of the meters. See "DekoCast Tips" on page 435 for suggestions on the most efficient use of system resources.

Renaming and Saving a Scene

To rename a scene, you need to save it with a new name.

To rename a scene:

1. Do one of the following:

   ▶ Select File > Save As.

   ▶ Click the Save As button.

   The Save As dialog box opens.

2. Navigate to the directory where you want to save the scene, type a new name, and click Save.

By default, DekoCast scene files are saved as DKX files in the directory in which you last opened or saved a scene.

To save a scene:

1. Select File > Save.

   If the scene has not yet been saved, the Save As dialog box opens.

2. Navigate to the directory where you want to save the scene, type a name, and click Save.

⚠ **Save your work frequently to avoid losing any part of your project. DekoCast does not have an autosave feature or an undo function.**

To close a DekoCast scene:

1. Select the scene.

2. Do one of the following:

   ▶ Select File > Close.

   ▶ Click the Close button on the Scenes Pane toolbar.

   You are prompted to save any changes.

📄 *Although you can modify scenes created in other applications (their names appear in the Scenes list in italics and blue typeface), you must save them with another file name using the Save As command. See "Scenes Pane and Toolbar" on page 59.*

Opening an Existing Scene

A scene always opens in the state in which it was last saved or closed.

An existing scene file that you open is not automatically enabled. After adding an existing scene to the Scenes pane, select its Draw box to have DekoCast draw the scene to video output.

New scene

Saved scene with
Draw box
selected for video
output.
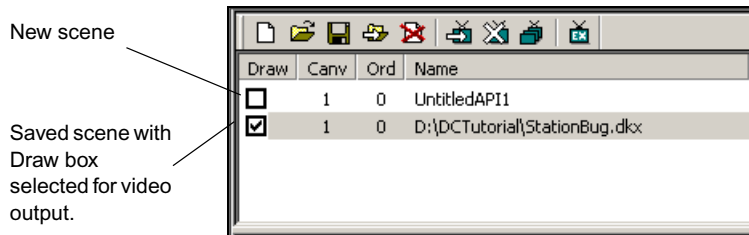
DekoCast scenes are saved as DKX files. Although you can open older DKC files, you must save them in the DKX format to take advantage of DekoCast's newest features. DekoCast automatically adds the .dkx extension when you attempt to save an older DKC file. When prompted to delete the DKC version of the file, click Yes.

📄 *Avid recommends that you delete DKC versions of files that were saved as DKX files to avoid having two versions of the same file.*

To open an existing scene:

1. Do one of the following:

   ▸   Select File > Open.

   ▸   Click the Open icon on the Scenes Pane toolbar.

2. Navigate to the file you want to open and click Open.

   The scene is added to the Scenes pane.

Working with Objects

A scene can have any number of objects. Depending on how you arrange objects within the tree hierarchy, objects can function as independent objects, parent or group objects with child objects, or child objects under the control of a parent or group object. The arrangement of objects in a scene is called a Scene Tree.

Object editor

Object toolbar

Objects in a Scene Tree
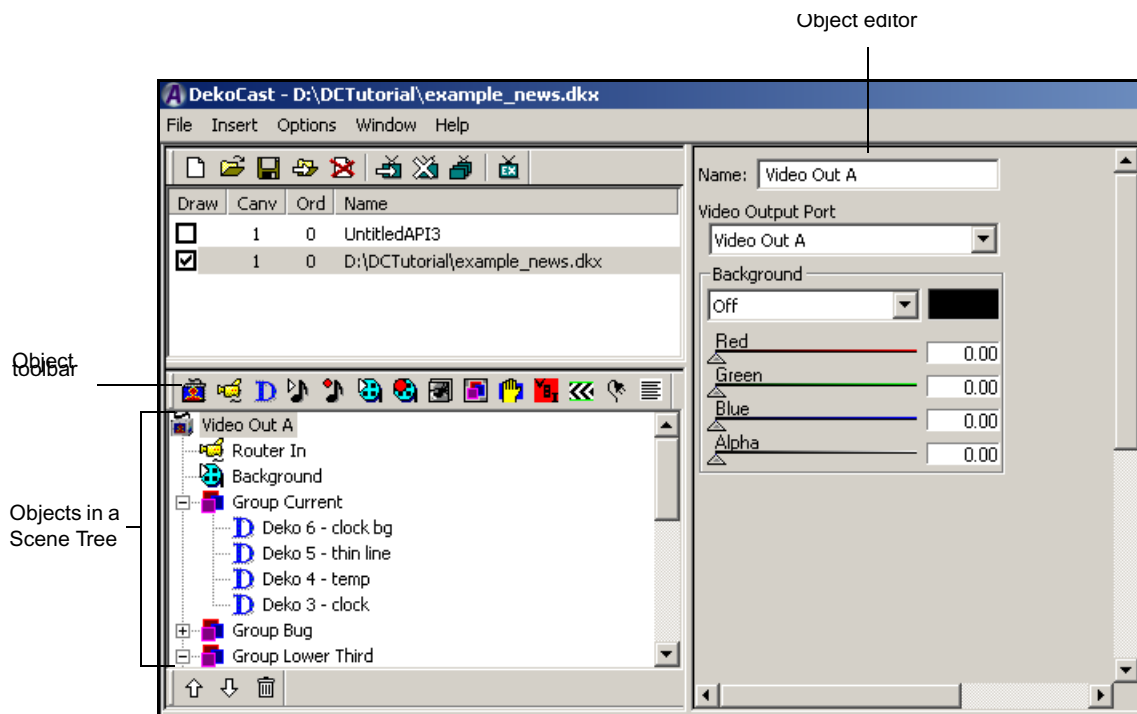
The following topics describe how to add objects to a Scene Tree and provide basic information about objects. Additional information about the Scene Tree is provided in "Working with the Scene Tree" on page 70.

Adding Objects to the Scene Tree

A new scene always begins with a Video Out object. When you create a scene, a Video Out object labeled *Video Out 1* is automatically added to the Scene Tree. As you build your scene, you add other objects to the Scene Tree.

Newly added objects are placed as the last object in the Scene Tree list unless you select an object in the Scene Tree before adding an object. In this case, the new object is placed directly below the selected object. In this way the new object becomes a *child* of the *parent* object.

To add an object to the Scene Tree:

1. If you want to add an object as a child, select the parent object.

   For example, select the Video Out object before adding a Video In object. Some objects cannot be added as children. See "Understanding Parent-Child Relationships" on page 74.

2. Do one of the following:

   ▸ Select the object from the Insert menu.

   ▸ Click the object's icon in the Object toolbar.
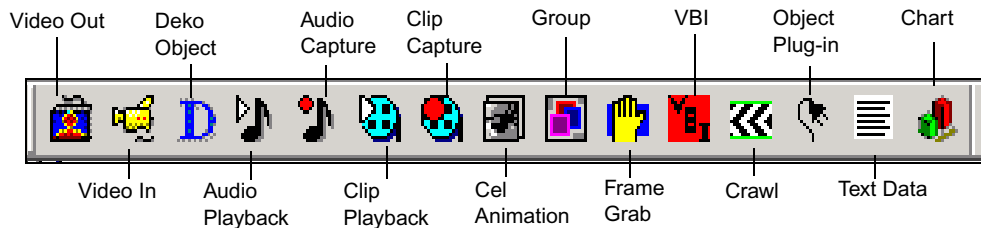
To display a brief description of a tool, hold the cursor over its button without clicking.

When you add an object to the Scene Tree, the application assigns it a default name, ending in a number, starting at 1. You should rename objects appropriately as described in "" on page 66.

If you are adding a Deko object, you need to decide which method to use: adding it from the Insert menu or adding it from the Object toolbar. The method you choose determines the characteristics of the Deko object. For more information, see "Adding a Deko Object to a Scene" on page 109.

Objects Overview

This topic provides a brief description of each of the application objects. Detailed information about working with an object are provided in "Editing Objects in the Scene" on page 79. A specific cross-reference is provided for each of the objects.

Object Icon	Object Name	Description
	Video Out	A Video Out object makes a composite of objects placed beneath it in the Scene Tree and sends the result to a video output port. Everything that is placed below a Video Out object is layered as a single SDI video signal (with encoded audio).
		If you delete the Video Out object, its child objects remain in the Scene Tree but cannot can be drawn to output. See "Editing Video Out Objects" on page 79.
	Video In	A Video In object takes live video from a physical input port and passes it to Video Out. It also patches and mixes the embedded audio present at the input port. Your system should have its Video Input port connected to a device with an SDI feed such as a router. Although you can add multiple Video In objects to the Scene Tree, video input functioning is determined by the number of actual video input ports that the system supports.
		You must explicitly add a Video In object to the Scene Tree.
		Using the Video In object editor, you can position, crop, change the opacity, and scale the Video In signal. The application also provides level and routing controls for audio embedded in the video. See "Editing Video In Objects" on page 83.

Object Icon	Object Name	Description
D	Deko	Deko objects include text and graphic elements generated in PostDeko Lite or other applications. These graphics can have borders, drop shadows, extrusions, kerning and leading, and textures. The Deko object's editor allows you to control cuts and dissolves between text fields, and to roll and crawl text fields.
		You can import a Deko graphic object as an entire Deko graphic (the layers are flattened into a single layer), a single layer, or instruct the application to create a separate Deko object for each layer in the graphic.
		The text displayed in a Deko object can be changed at any time, independent of other scene elements. You can edit Deko objects within a scene by opening their files in PostDeko Lite and saving them with the same file name. See "Working with Deko Objects" on page 110.
	Audio Playback	The application recognizes WAV and AVI files as source files for Audio Playback objects. After you select an audio file, it plays back from the system's hard drive. Playback controls allow you to queue, play, and stop the audio file, either manually or through actions that you define in the Timeline Editor. See "Playing Back Audio" on page 136.
	Audio Capture	The Audio Capture object records audio and saves it to files in the WAV format. See "Capturing Audio" on page 137.
	Clip Playback	Clip Playback (available with the Clip Player option)
		With the Clip Playback object, you can use internally stored video clips with associated key files in much the same way as Video In. See "Playing Back Clips" on page 139.
	Clip Capture	The Clip Capture object encodes video and writes the encoded stream with audio to the hard disk. After you record clips, you can play them back using the Clip Player. See "Capturing Clips" on page 161.

Object Icon	Object Name	Description
	Cel Animation	Cel Animation (available with the Cel Animation Player option)
		A Cel Animation object, sometimes called a *bug*, consists of a series of similar images, each with a slightly different orientation. When played back in rapid succession, these images create the illusion of motion. The application reads the first file in the series and continues loading files until it encounters a break in the numbering sequence.
		Because of the amount of video processing resources required to process a cel animation, **s**maller cel animations are preferable to larger ones. Pay attention to the Performance meters when working with cel animations. See "Creating Cel Animations" on page 169 and "DekoCast Tips" on page 429.
	Group	Group objects are collections of other objects. By grouping objects, you can set parameters and actions that affect the entire group and continue to work with each object separately.
		For example: A scene includes text that crawls over a banner and a logo. With the Group object selected, add three Deko objects to the group—one for the banner layer, one for the text layer, and one for the logo graphic layer. Then you can assign the Group object a position, opacity, and actions that affect all three Deko objects. See "Using Group Objects" on page 177.
	Frame Grab	The Frame Grab object can capture one or more images from a video source and saves each image, or frame, as a TARGA (TGA) file. See "Capturing Video Images (Frame Grab)" on page 183.
	VBI	The VBI (Vertical Blanking Interval) object extracts timecode and closed-caption data, making it available to API clients to trigger events based on time codes or command streams contained in closed-caption data. See "Working with VBI Objects" on page 186.
		You need to include a VBI object in your scene only if your installation has a special program that can use this data.
	Crawl	A Crawl object moves a continuous stream of text, cel animations, or clips from one side of the output frame to the other, or for a roll, from the bottom to the top of the output frame. A crawl object can also include audio playback. See "Creating Crawls" on page 190.

Object Icon	Object Name	Description
🖑	Plug-Ins	These are special utilities provided by Avid and third parties that add functionality to the application. See "Adding Plug-in Objects" on page 217.
☰	Text Data	A Text Data object, which is automatically added when you add a Crawl object, can read plain text, AUT, and ATX files to drive crawls. This object includes rules that you set to determine how non-text objects are inserted between lines of text in crawls. Source text files can include programming tags to control how DekoCast formats the text and how non-text objects are inserted between lines of text. See "Creating Crawls" on page 190.
		📑 *Do not add Text Data as a separate object.*
📊	Chart	Chart objects are charts that are created by using the Chart Designer.
		See "Working with Charts and Graphs" on page 219.

Renaming Objects

When you add an object to the Scene Tree, the application assigns it a default name that ends in a number. For example, a new scene always begins with a Video Out object, which the application adds automatically as the first item in the Scene Tree. The first Video Out object you add after launching the application is labeled *Video Out 1*. Every time you create a new scene in the session, the number is incremented by one. To avoid being confused by a scene that begins with an object named *Video Out 4* or *Video Out 7*, specify an appropriate name for each object.

An object's name should reflect its object type and be as specific as possible. For example, if you are adding multiple Crawl objects, the first might be *lower third crawl* and the second *coming_up_next*. When working with a multiple-layer Deko graphic, your naming scheme might be as follows: *bar yellow L3*, *bar thin white*, *bkg photo*, *crawl tex*t, *headline text*, and *image for OTS*. Assign descriptive names for audio files and clips, such as *jungle audio*, *purple swirl clip*, or *purple clip for L3*.

To rename an object in the Scene Tree:

▶ Edit the name in the object editor's Name text box.

The name you use is a descriptive name for your organizational purposes only, and can contain any characters.

📑 *When editing a text box, press the Esc key if you need to cancel your changes.*

> *To better distinguish between objects and groups in Action parameters, use lower-case letters for object names and capital letters for group names.*

Working with the Scene Tree

The following topics describe how to build and use the Scene Tree as part of your scene.

Expanding or Collapsing a Branch

Adding objects as children of a parent object creates a child-parent branch in the Scene Tree. Objects in the Scene Tree that are preceded by a plus or minus sign can be expanded or collapsed. Collapsing a branch you are not working with provides a better view of other objects in the Scene Tree.
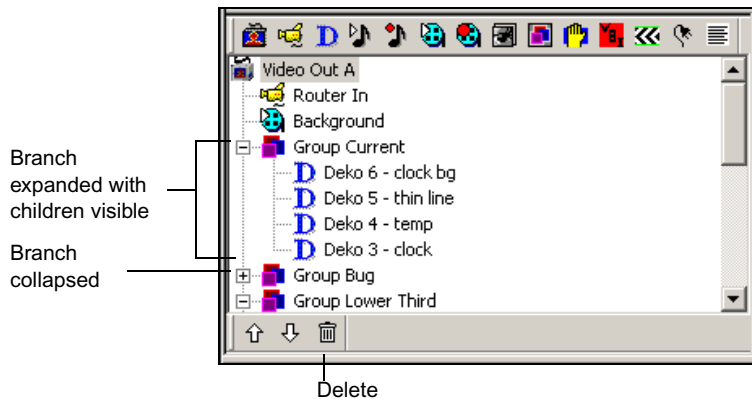
To expand a branch:

▶   Click the plus sign (+).

All children of the parent object are displayed.

To collapse a branch:

▶   Click the minus sign (–).

Only the parent object is visible.

Deleting Objects

To delete an object from the Scene Tree:

▶ Select it and click the Trash icon at the bottom of the Object pane.

Deleting a collapsed parent object deletes all of its child objects. Deleting a Group object deletes all of the children within the group. If you delete a Video Out object, every child object associated with it no longer appears in the video output.

Inserting a Scene within a Scene Tree

If you have created scenes that you want to combine into a single scene, you can insert the scenes into an existing scene.

To insert a DekoCast scene:

1. Select the location in the Scene Tree for the new scene.

   If the scene to be inserted does not have a Video Out object at the top of its own Scene Tree hierarchy, it is inserted in the current scene under the currently selected object. Otherwise, it is inserted as a separate scene at the bottom of the Scene Tree.

2. Select Insert > Scene.

   The Open dialog box opens.

3. Select an existing DekoCast scene file (.dkx).

4. Click Open.

   An entire DekoCast scene, including objects, along with their parameters, hierarchical order, and actions, is added to the Scene Tree in the selected location.

How Objects Are Composited

DekoCast composites the objects in the Scene Tree object-by-object, from the top of the tree downward, with the last object appearing on top in the video output. This last object has *priority* in the Scene Tree. When positioning objects in the Scene Tree, visualize how the application prioritizes each object and how one object affects all other objects.

The following illustration shows a Scene Tree with various objects arranged in priority order, with the object at the bottom of the tree appearing on top in the video output.

Objects are composited from the top of a Scene Tree downward.

The object at the bottom of the tree appears on top in the video output
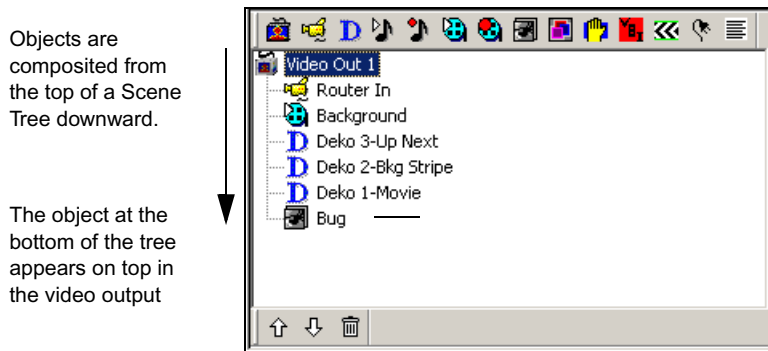
The position of objects in the Scene Tree determines how the objects are displayed in the video output. When a Video In object (Router In), which is full-frame, is placed below the Video Out object, it completely fills the video output. Therefore, any image in the Video Out object is completely covered and cannot be viewed. Then, because a full-frame Clip Playback object (Background) has a higher priority, it completely obscures the Video In object. For at least part of both objects to be visible simultaneously, you must position, scale, crop, or make transparent the topmost object in the Scene Tree.

📖 *The Position tab in the object editor provides controls for cropping visible objects. A visible object is an object that is drawn to video output.*

In this example, a Cel Animation object (Bug) is the topmost object and has the highest priority. When the application composites the scene, the bug overlays all of the other objects, but covers only a small part of the video output in the upper-left corner—not the full frame. How the application prioritizes objects becomes apparent when you add objects to a Scene Tree and observe the results on a video output monitor.

📖 *You can bring a Deko graphic into the application with layers or flattened to one layer. When you add the Deko object to a Scene Tree, the application composites a Deko graphic layer the same as it does any other layer.*

Understanding Grouped Objects

Objects that you organize into groups within the Scene Tree are composited from the top of the group downward. This processing order works the same way for objects in groups as it does for objects in a Scene Tree. The last object in a group, which appears at the bottom of the group, appears on top of the other objects in the video output.

Groups have parental status while objects under the control of a group are its children. Grouping enables you to set parameters for a set of objects as if they were a single object, but you must consider how the application layers each of the group's component objects.

Group objects are composited from the top of a group downward

Group object (parent)

First child in Group

Last child in Group (In a Wipe this object obscures child objects above it.)
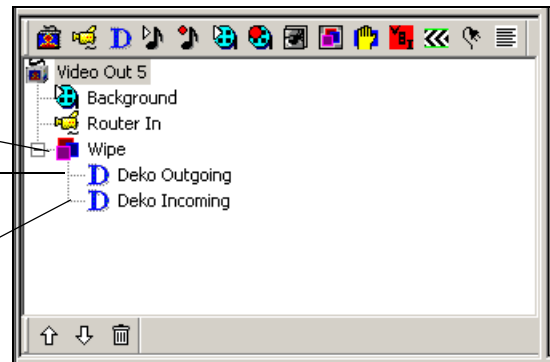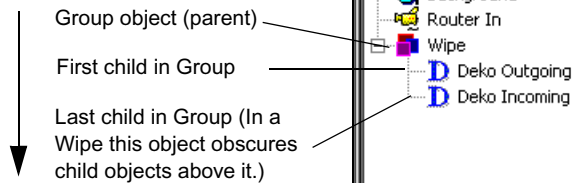
Information about working with Group objects is provided in "Using Group Objects" on page 181.

Rearranging Objects in the Scene Tree

You might need to rearrange the priority of objects in the Scene Tree to produce the desired video output. The bottom object in a Scene Tree or group appears on top of those above it in the video output.

To rearrange objects in the Scene Tree, do one of the following:

▶ Right-click an object in the Scene Tree and select Copy. Position the cursor in another location, right-click, and select Paste. If you want to delete the object you copied, select the object and click the Trash icon.

▶ Select a child object and drag it to another parent object. You can also select a group object and drag it (and its children) onto a Group object, which then becomes its parent.

▸   Select the object and click the Up or Down Arrow buttons at the bottom of the Scenes
pane window.

Move
object
up
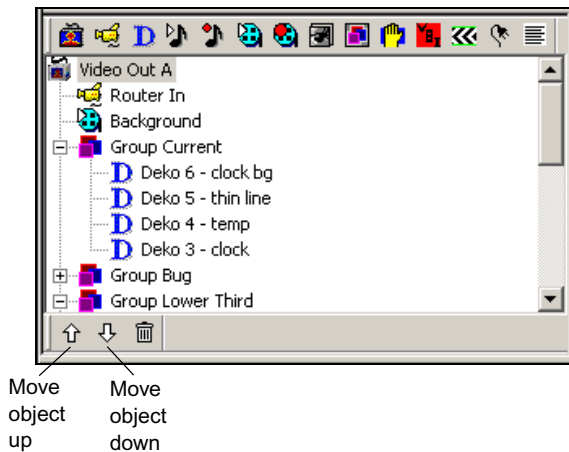
Move
object
down

You can move objects (or groups) to other positions in the tree hierarchy and place them as
children of parent objects as long as the object is capable of serving in that role. If it is not, a
message informs you that the object cannot be a parent or child for the specified object and
you are not allowed to insert it.

Understanding Parent-Child Relationships

A scene's objects are organized hierarchically in the Scene Tree. Within the tree, an object
might be a separate object, a parent object with children, or the child of a parent object. The
application prevents you from setting up parent-child relationships that are not allowed.

The following rules apply to parent-child relationships in the Scene Tree:

•   A Video Out object is the parent object for all other play-to-air objects in the Scene
Tree. It is required for video output of its child objects. Any object other than objects
that record input must be a child of a Video Out object in order to be displayed.

•   The objects that record input — Video Out, Clip Capture, Audio Capture, and Frame
Grab — are root objects and can have no parents.

•   Only Video Out, Group, Crawl, and Text Data objects can have children.

•   If you delete a collapsed parent object in the Scene Tree, all of its children are also
deleted.

•   Groups have parental status while objects under the control of a group are its children.

Opacity levels for child objects are determined by their parent's opacity level. For example, if a child object has 50 percent opacity and its parent has 50 percent opacity, then the child object's opacity is 25 percent (half that of its parent).

Selecting Scenes for Output

Several DekoCast scenes can be open simultaneously, and some, all, or none of them can be active on the outputs simultaneously. Scenes whose Draw boxes are selected (checked) are *active*. When you add a new scene, its Draw box is selected automatically.
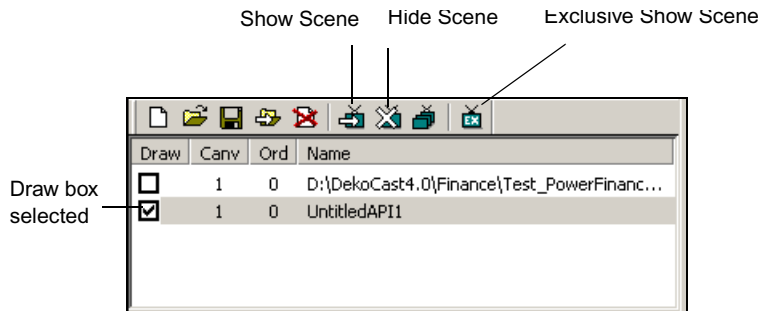
To select a scene for video output:

▶ Select the scene's Draw box.

To remove a scene from video output:

▶ Deselect the scene's Draw box.

You can also use the Show Scene and Hide Scene tools in the Scene toolbar to select and remove scenes.

To set one scene as the exclusive scene for output:

▶ Select the scene and click the Exclusive Show Scene tool in the Scene toolbar. The selected scene is selected for drawing and the others are removed from output (and deselected).

The Exclusive Show Scene tool switches between being active and inactive. When it is active, only one scene (the last one you checked) is active. Click the tool again to allow multiple scenes to be selected as active scenes for output.

Multiple Scenes and Stacking Order

DekoCast gives you the option of using a single scene or multiple scenes.

📄 *A typical project consists of a single scene. If you work with multiple scenes, be aware that each scene is independent. You cannot control one scene from another scene without using an API program developed for that purpose.*

The Order (shown in the *Ord* column) refers to the stack order for video processing and video output. The stacking order is important only if your project contains multiple scenes, and then only when the video output for a scene overlays another scene.

When DekoCast processes multiple scenes, it places scenes in a buffer queue and draws them according to their assigned stack number, beginning with the highest number and ending with the lowest number. For example, for scenes assigned stack number 1, 2, and 3, the scene assigned as stack number 3 (the highest number) is placed first in the queue for processing. The scene assigned stack number 2 is placed directly behind stack number 3 in the queue and is processed next. The scene assigned stack number 1 (the lowest number) is placed last in the queue, following the other two scenes. This final scene, which has the highest priority, appears on top in the video output.

The following illustration shows this stacking order and priority.

Change Scene Order

Processed last (highest priority)

Processed first

Draw	Canv	Ord	Name
☑	1	1	D:\DCTutorial\TopScene.dkx
☑	1	2	D:\DCTutorial\MiddleScene.dkx
☑	1	3	D:\DCTutorial\BottomScene.dkx
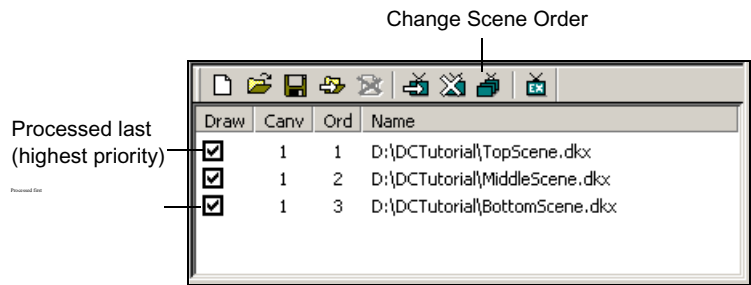
To display objects in scenes that overlay other scenes, turn off the Background of the Video Out object for all scenes except the scene with the highest order number (see "Editing Video Out Objects" on page 81.

📄 *If you have multiple scenes for output, you must set the stack order for each scene. Otherwise DekoCast draws the scenes in a random order and then outputs the drawn scene to video.*

To set the stack order for a scene:

1. Select the scene in the list.

2. Click the Change Scene Order tool on the Scenes toolbar.

3. Enter the new number, and click OK.

⚠ **Scenes stacked in the queue might consume resources even if they are inactive. For example, if a clip associated with an inactive scene in the stack is running, the codec is in use and not available to the active scene as it is being drawn to video output. When working with multiple scenes, consider how all scenes interact. Try to ensure that active scenes have sufficient resources.**

Chapter 3
Editing Objects in the Scene

Each object type has an object editor that allows you to view and edit its properties, which are called parameters. Actions that you create using the Timeline editor reflect changes made to an object's parameters.

The following topics describe how to edit objects in the scene:

- Using an Object Editor
- Editing Video Out Objects
- Editing Video In Objects
- Using the Target and Position Tabs
- Using the Levels and Mixer Tabs
- Working with Deko Objects
- Playing Back Audio
- Capturing Audio
- Playing Back Clips
- Capturing Clips
- Creating Cel Animations
- Using Group Objects
- Capturing Video Images (Frame Grab)
- Working with VBI Objects
- Creating Crawls
- Adding Plug-in Objects
- Working with Charts and Graphs

Using an Object Editor

Each object is associated with an editor, as shown in the following illustration. The object's editor opens whenever you select an object in a Scene Tree or add an object to it. The following illustration shows the Video Out object and the Video Out Object editor.

Video Out Object editor

Video Out object
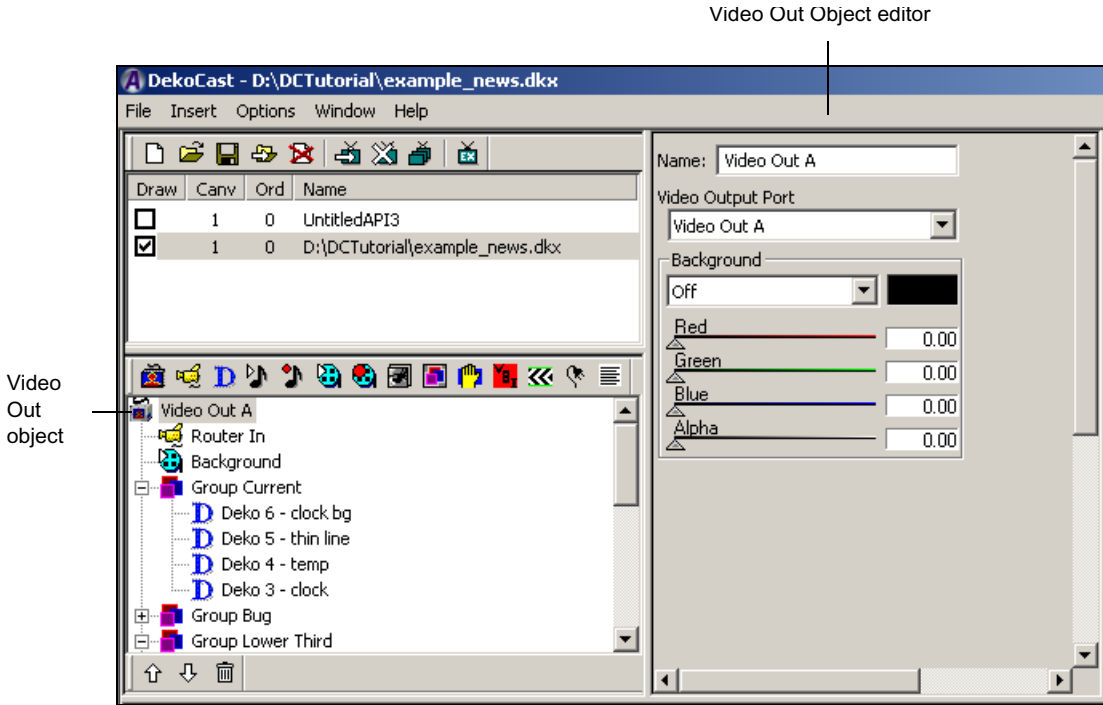
An object editor includes settings, filenames, and other properties that define the object. These properties are referred to as an object's *parameters*. You animate an object by creating actions that control the object's parameters, as described in "Adding Actions to a Scene" on page 297.

You can also use the Parameters tab to modify parameters. See "Working with Parameters" on page 335.

Editing Video Out Objects

Video Out button

When you create a new scene, the Video Out object is added as the first object in the Scene Tree. A DekoCast system has one video output. You can, however, set up a second video output for a key signal. When a DekoCast system is installed upstream as a keying device into the switcher, it must be configured with Output A as the video fill and Output B as the key signal.

Use the Video Hardware Options tab in the Options dialog box to configure DekoCast's input and output ports. See "Video Hardware Options" on page 416.

To specify a video output port:

▶ Select a port from the Video Output Port menu:

- For video only, select Video Out A.

- For key signal only, select Video Out B.
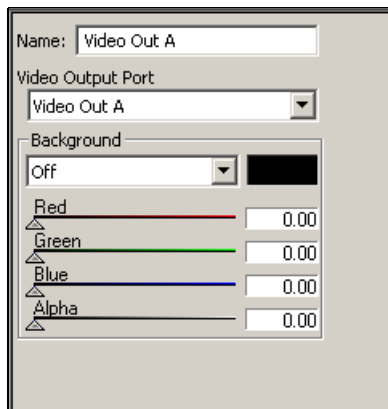
The Video Out editor also allows you to control the opacity, color, and transparency of areas of the video frame that are not covered by objects.

Setting Background Color and Opacity

You can select a color for the background of a scene. This is useful if you do not have Video In input into your device and need to view an object that includes black, such as a black banner of a Deko object. Because the default background is black, the black banner will be invisible unless you have video coming in or the Background turned on. You can turn the Background on, change it to a color other than black, and use it for testing. A Background matte set to a color is not recommended for use on air.

When the Background is set to On, the color of the background behind the objects in a scene is controlled by the Red, Green, and Blue sliders on the Video Output object editor. If the system is configured with a key output, then the value of the key signal is controlled by the Alpha slider. A typical scene has a single Video Out object.

On a Corsica-based system, the Red, Green, and Blue background colors are multiplied by the value of the Alpha slider to determine the background color. You need to set a value for the alpha even if the video output is not configured for key.

Any Video Out objects lower in the bottom-to-top compositing order are obscured by the Background. This situation might occur if you are combining multiple scenes (see "Multiple Scenes and Stacking Order" on page 76.

When the Background is set to Off, the Red, Green, Blue, and Alpha sliders have no effect, and the background is black.

To set the background color and opacity:

1. In the Background section of the Video Out object editor, select On.

2. Click a color slider and drag it to change the selected color from full transparency (0.00) to full opacity (1.00).

   Any background color you select is displayed in the adjacent color rectangle.

   To preview the output on a Corsica based system, drag the Alpha slider to a value other than 0.

3. (Option) Click and drag other color sliders to blend the background color.

   If Red, Green, and Blue are set to 1.00, the background is white. If set to 0.00, the background is black. If Red and Green are set to 1.00 and Blue is set to 0.00, the background is yellow. The individual values for Red, Green, and Blue can vary from 0.00 to 1.00.

To set the value of the key signal:

▶ Adjust the Alpha slider.

Selecting a Custom Background Color

You can use the color palette to select a custom color for the background opacity.

Custom Colors are remembered within your current session only.

To select a custom color:

1. In the Video Out object editor, click the color rectangle.

   The color palette opens.
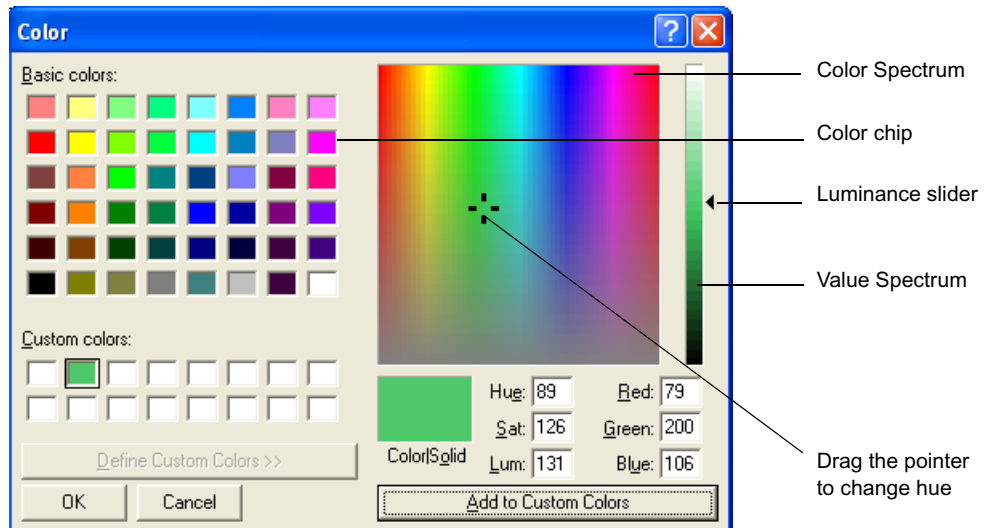
2. Do one of the following:

   ▶ Select one of the color chips

   ▶ Click a hue in the Color Spectrum.

   ▶ Drag the pointer in the Color Spectrum.

3. To change the color's value (relative darkness or lightness), select and drag the Luminance slider.

4. Click OK.

📄 *When Luminance is set to 0, which is black, dragging the Luminance Slider upward displays lighter colors.*

To modify a value using the keyboard:

▶ Edit the values for the Hue, Sat (Saturation), Lum (Luminance)**,** or Red, Green, and Blue text boxes and click OK.

To add a new color for this session only:

▶ Adjust the color using the Color Spectrum and Value Spectrum controls, then click Add to Custom Colors and click OK.

   Your currently selected color is displayed in the Color/Solid area.

Editing Video In Objects

Video In
button

The Video In object editor allows you to select the video input port, set the opacity of the video input, and define video input key information.

The Video In object editor has the following tabs: Video, Position, Target, Levels, and Mixer. Only the Video tab is unique to the Video In object.

```
Name: Video In 1

 Video  Position  Target  Levels  Mixer

 Video Input Port
 Video In A              ▼

 Opacity:
                    △      1.00

  ☑ Ignore Key
```
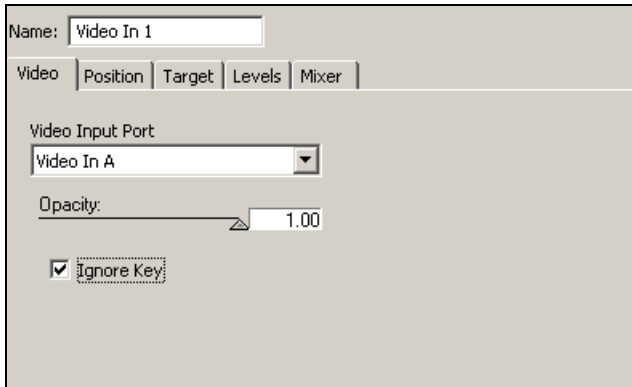
The Target and Position tabs, which enable you to position and size objects for video output, are the same for all objects that the application draws to video output. All audio-related objects share the Levels and Mixer tabs. For instructions on using the Position and Target tabs, see "Using the Target and Position Tabs" on page 86. For instructions on using the Levels and Mixer tabs, see "Using the Levels and Mixer Tabs" on page 103.

When the scene is used upstream from a switcher, do not add a Video Input object to the Scene Tree. The Video Input key is a full-raster key that prevents objects underneath the Video Input object from being drawn to output.

Selecting a Video Input Port

A DekoCast system has two video input ports. By default, a system is configured for one video input, in the Video Hardware Options tab (see "Video Hardware Options" on page 416). You can configure it to have two video inputs (such as a facility feed and video from a server), or to have one video input and one key input. Use the Video Hardware Options tab to configure the DekoCast system's input ports. To use two video inputs, you need to add two Video In objects to the Scene Tree and select a different port for each.

To select a video input port:

▸ In the Video Input object editor, select a port from the Video Input Port menu:

- For video input only, select Video In A.

- For a second video input, or for a key input, select Video In B.

You might need to author and transfer a scene to a different system in which Input B has been enabled and set as key, even though your system is not configured for video key input. In this case, you can select an option while authoring a scene so that the your system discards the video input key information. Deselect this option before you transfer the scene.

To have the application discard key information while authoring:

▸ Select the Ignore Key option.

To add the key information before transferring:

▸ Deselect the Ignore Key option.

Changing the Opacity of a Video Input Object

You might want to set the opacity of a Video Input object, for example, when creating an action to fade in the video.

To change the opacity of a video input object:

▸ In the Video Input object editor, drag the Opacity slider to vary the Video In object's opacity from full transparency (0.00) to full opacity (1.00).

⚠ **As of the DekoCast 4.0 release, you have to explicitly add a Video In object to the Scene Tree.**

Using the Target and Position Tabs

The Target and Position tabs are common to most *visible objects*, that is, objects the application draws to video output. These objects include Video In, Deko, Clip Playback, Cel Animation, and Group.

The Target and Position tabs are related, but have different functions. These functions are described in the following topics:

Arranging Objects for Video Output

By default, DekoCast aligns the top-left corner of most visible objects with the top-left corner (0,0) of the video output frame. (The exception is the Crawl object, which by default is placed in the lower portion of the video output.) You can change this default behavior by using the Position and Target tabs in the object editor to position objects anywhere on the video output frame.

Use of the Position and Target tabs is optional. If you do not apply either tab, the entire object is displayed as normal size and placed in its default location.

Avid recommends that you use the Target tab to arrange objects for video output. By using the Target tab, you can associate an object with a defined area of the video frame called a *target rectangle*. For example, to have movie credits play alongside local news teasers, define a target rectangle for a Clip object (movie credits) on one side of the output frame and define a target rectangle for the source Video In object (news feed) on the other side.
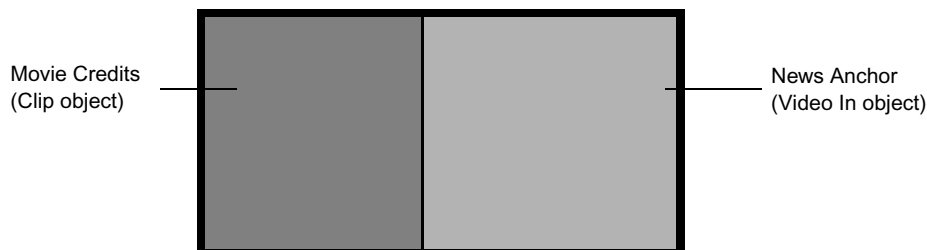
Movie Credits
(Clip object)

News Anchor
(Video In object)

The purpose of using target rectangles is to create scenes in an aspect ratio that is video-resolution independent. By using target rectangles to scale and align elements in a scene, you can create a scene in 16:9 SD and it will be ready to air from a 16:9 HD system. If you use the Position tab to scale and align elements in a scene, you must recreate the scene for playing out at a different video resolution.

Using target rectangles does not allow scenes built in one aspect ratio to work in another. For example, a 16:9 SD scene converts well to a 16:9 HD scene, but a 4:3 SD scene does not convert well to a 16:9 HD scene.

For information about creating target rectangles, see "Using the Target Tab" on page 89. For examples of how to use target rectangles in a page layout, see "Designing Your Layout" on page 96.

If you link a Deko object to one or more layers in a graphic, and you want to control a layer's position with a target rectangle, you must select Layer as the Layout option in the Deko object editor. See "Guidelines for Adding Deko Objects" on page 113.

Another advantage to using target rectangles is that you can prevent overlapping objects, because the objects are confined to the corresponding target rectangles.

Both the Target tab and the Position tab allow you to scale an object and to change its default position for video output. However, you can crop an image only in the Position tab. The application applies parameters set by the Position tab to an object *after* it applies any parameters set by the Target tab. After defining a target rectangle for an object, you can use the Position tab to fine-tune the scale and position of the entire target rectangle, and crop it.

Scenes that are built with only Position parameters are still valid, and you can continue to build scenes using only the Position tab. If you import scene files with only Position parameters, you can either use these parameters or define new target rectangles.

Using Screen Coordinates

Both the Position tab and the Target tab use the X- and Y- coordinates of the screen. When you place an object using Position tab parameters, you use X- and Y- coordinates to identify the object's position on the video output. However, when you place an object using Target tab parameters, you use the coordinates to identify the *target rectangle's* position. Then the object's position on video output is defined in relation to its target rectangle's top, bottom, left, and right coordinates.

The default coordinates used by both tabs are determined by the video standard. For example, the X-coordinates for Standard Definition NTSC range from left (0) to right (720), and the Y-coordinates range from top (0) to bottom (487).

Default point of origin ——— 0,0   0,720

0,487
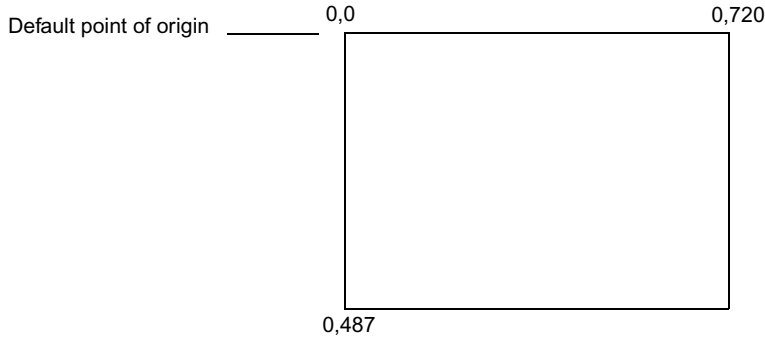
📖 *By default, screen coordinates are set with 0, 0 as the top left corner. To revise these coordinates, select Options > Preferences and click the Coordinates tab. See "Output Frame Coordinates" on page 429.*

Using Thumbwheel Controls

The Target and Position tabs have thumbwheel controls that use screen coordinates to determine position. You select and drag to define values for an object or a target rectangle. This example shows the thumbwheel controls for defining a target rectangle.

Click the text label to return to the default value. ———

Left:		0
Top:		0
Right:		720
Bottom:		487

Reset

Type a value in text box and press Enter.

Select and drag thumbwheel.
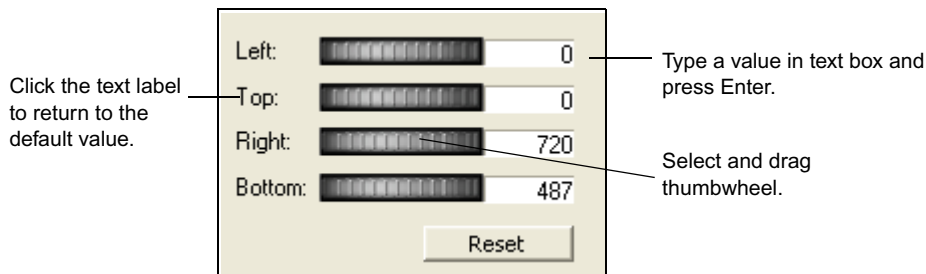
Use the thumbwheels in the following ways:

- To make coarse adjustments, hold down the Shift key while dragging a thumbwheel to the right or left. To make fine adjustments, hold down the Ctrl key while dragging.

- Type an integer or decimal number in the text box to the right of a thumbwheel and press Enter.

- To revert to a thumbwheel's default value, click the text description to the left of the thumbwheel. For example, to return to the default target rectangle parameters (full screen), click the text that reads Left, Top, Right, or Bottom.

- To revert to the default target rectangle full-screen coordinates, click the Reset button.

📑 *You can disable rounding to whole pixels through the App Options tab. Select Preferences > Options and click the App Options tab. See "Application Options" on page 428.*

Using the Target Tab

Visible objects are objects that the application draws to video output, such as the Deko, Clip Playback, and Cel Animation objects. A visible object's editor includes a Target tab, which enables you to define the location and size of an object's target rectangle. You then specify how the object is to be placed on the video output *in relation to its target rectangle*.

The purpose of using target rectangles is to create scenes in an aspect ratio that is video-resolution independent. See "Arranging Objects for Video Output" on page 86.

📑 *Use of an object's Target tab is optional. If you do not want to define a rectangular area of the video frame for an object, select Disable in the Target tab.*

Defining a Target Rectangle

The application places most visible objects in the upper-left corner of the video output, where the X and Y coordinates are 0,0. Using a target rectangle lets you specify how the object is to be placed on the video output in relation to the target rectangle. The following illustration shows the default target rectangle and a smaller target rectangle you could define.

Default point of origin ____ 0,0

A defined target rectangle is a subdivision of the output frame

The entire output frame is the default target rectangle ____
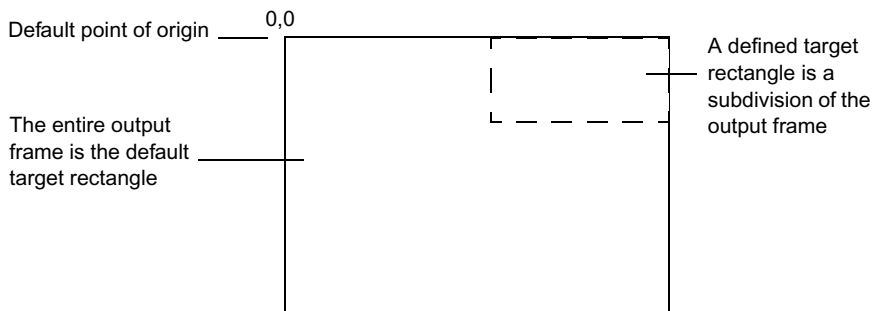
📑 *To practice using a target rectangle, add a visible object such as Video In or a Deko object to the Scene Tree and work with its Target tab while reading these instructions.*

To define a target rectangle for a visible object in a scene:

1. Select the object's Target tab in the object editor.

Coordinates of target rectangle

Locked option

Autoscale option

Reset button
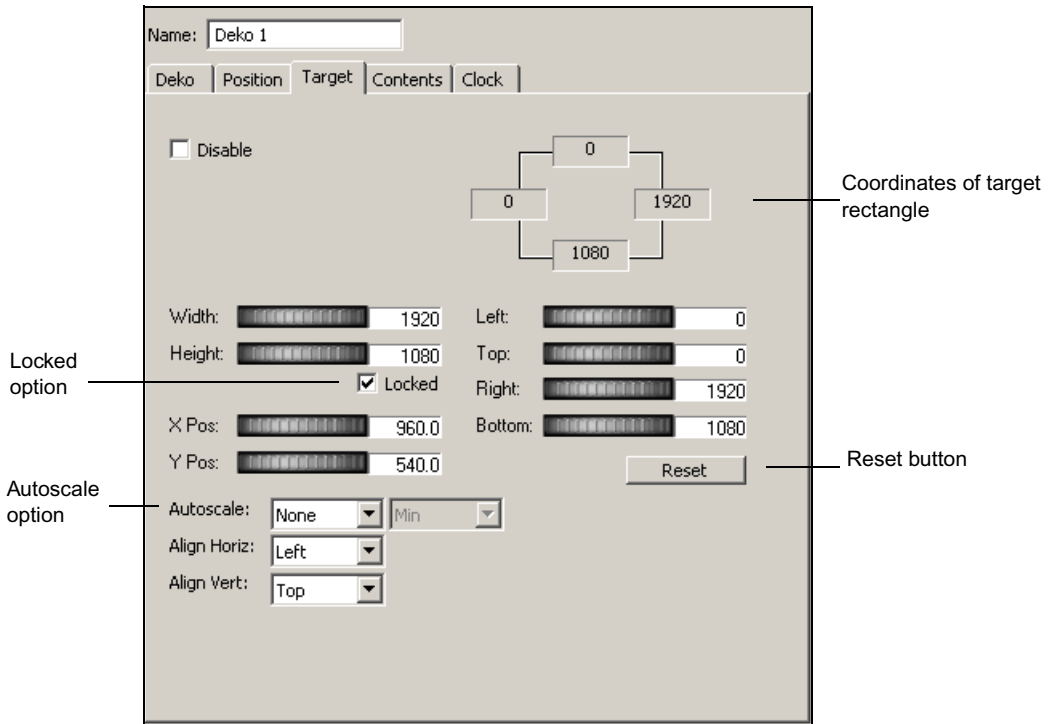
2. Make sure the Disable option is not selected if you want to define a target rectangle.

3. Select and drag the Left, Top, Right, and Bottom thumbwheels to define the position of the target rectangle on the video output, or enter coordinate values that define it.

   As you change target rectangle coordinates, the current positions display in real time in the upper right of the tab. You can always click the Reset button to return to the default target rectangle value, which is full screen.

   For information on using the thumbwheels, see "Using Thumbwheel Controls" on page 88.

4. (Option) Select and drag the X and Y Position thumbwheel controls to move the center of the rectangle to the right and left on the X-axis, or up and down on the Y-axis.

5. (Option) Select and drag the Width and Height thumbwheels to resize the target rectangle.

You cannot change the Width and Height of a target rectangle whose Autoscale option is set to None, which means that the target rectangle is to always maintain its original size.

6. To maintain a desired aspect ratio between width and height, select the Locked option.

7. Set the Autoscale parameters that tell the application how to place the object in relation to the target rectangle:

- None: Maintains the object's original size while being aligned horizontally and vertically in respect to the target rectangle. If you select None, you must also select the horizontal and vertical alignment for the target rectangle.

- Fit: Stretches the object to fill the entire rectangle. (The object's aspect ratio is lost.)

- Preserve: Maintains the object's aspect ratio in respect to its the target rectangle: inside (minimum), outside (maximum), horizontally, or vertically.

See the diagrams for these three parameters in the next topic.

Scaling an Object in Relation to Its Target Rectangle

The following diagrams show the placement of objects in relation to target rectangles when you select None, Fit, or Preserve as the Autoscale option.

None

The None Autoscale option maintains the original size of an object and lets you choose how to align it in its target rectangle:

- Select Left, Right, or Center as its Align Horizontal option.
- Select Top, Bottom, or Center as its Align Vertical option.

Autoscale: None

Object

Target Rectangle of Any Size

Horizontal Alignment: Left
Vertical Alignment: Top

Object maintains size and is aligned in left, top of target.

Horizontal Alignment: Right
Vertical Alignment: Center

Object maintains size and is aligned at right, center of target.

Horizontal Alignment: Center
Vertical Alignment: Center

Object maintains size and is aligned at center in the center of the target.

Fit

The Fit Autoscale option maps the object entirely onto the target rectangle without preserving the aspect ratio of the object. The object is stretched to fully fill the target rectangle, regardless of the size of the object.

Autoscale: FIt

Target Rectangle of Any Size

Object

Object stretched to fully
cover Target Rectangle
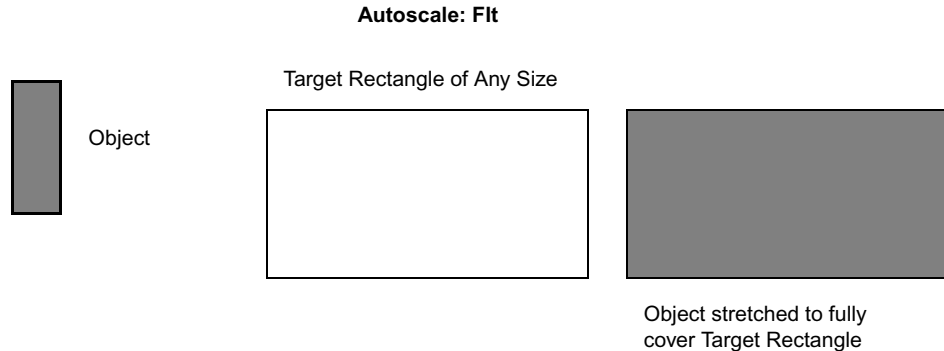
Preserve

The Preserve Autoscale option resizes the object without changing its aspect ratio. When you select Preserve, specify where the object is to be placed in relation to the target rectangle by selecting one of four Autoscale options:

- Minimum: Maps the object onto a destination that is completely contained by the target rectangle.

- Maximum: Maps the object onto a destination that completely covers the target rectangle.

- Horizontal: Maps the object's left and right edges onto the target rectangle's left and right edges, scaling the object vertically to preserve the aspect ratio.

- Vertical: Maps the object's top and bottom edges onto the target rectangle's top and bottom edges, scaling the object horizontally to preserve the aspect ratio.
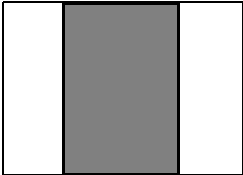
After you select a Preserve Autoscale option, you can align the object vertically and horizontally in relation to the target rectangle, if appropriate.

Autoscale Preserve: Minimum and Maximum Options

Object
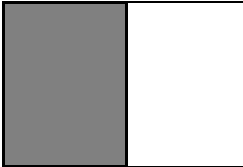
Target Rectangle of Any Size

Preserve Minimum:
Horizontal Alignment: Center
Vertical Alignment:
Not Applicable (N/A)
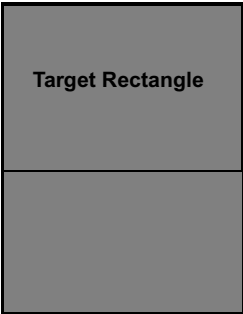
Object scaled to fit inside of target. Aspect ratio maintained. Centered.

Preserve Minimum:
Horizontal Alignment: Left
Vertical Alignment: N/A
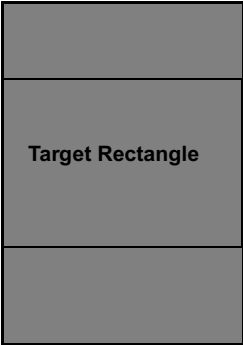
Object scaled to fit inside of target. Aspect ratio maintained. Left alignment.

Preserve Maximum:
Horizontal Alignment: N/A
Vertical Alignment: Top

Target Rectangle

Object scaled to cover target. Aspect ratio maintained. Top alignment.

Preserve Maximum:
Horizontal Alignment: N/A
Vertical Alignment: Center

Target Rectangle

Object scaled to cover target. Aspect ratio maintained. Center alignment.

Using The Position Tab

Using the Position tab, you can change an object's position to any area of the video output, scale it relative to its normal size, and crop it. Setting cropping parameters enables you to control the visible region on which the application draws the object to video output.

📄 *When you change an object's position using the Position tab (as opposed to using the Target tab), the scene that contains the object might not appear the same at different video resolutions. See "Arranging Objects for Video Output" on page 86.*
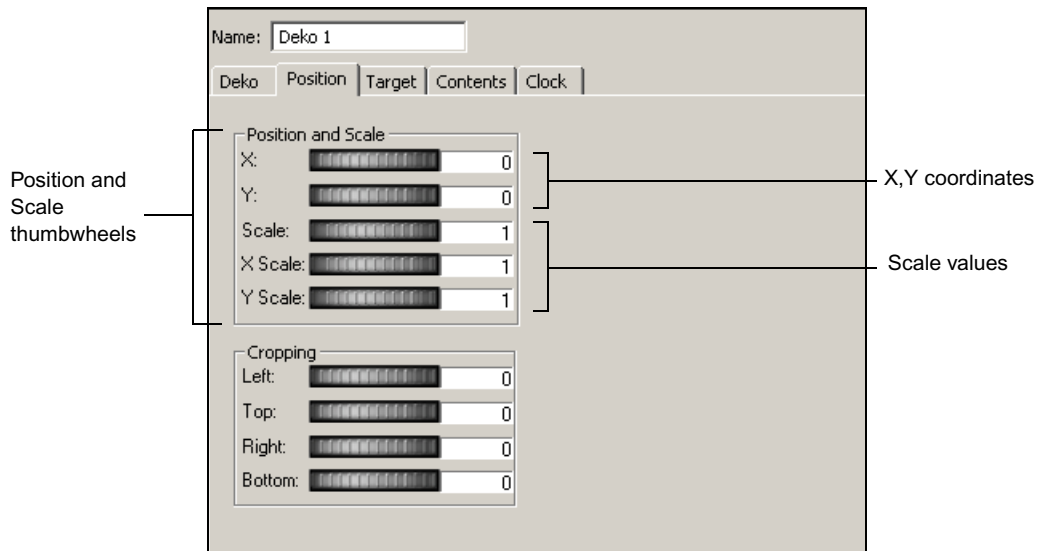
Position and Scale thumbwheels

X,Y coordinates

Scale values

The application applies parameters set by the Position tab to an object *after* it applies any parameters set by the Target tab. After defining a target rectangle for an object, you can use the Position tab to fine-tune the scale and position of the entire target rectangle, and crop it.

Changing an Object's Position and Scale

To change the position of the object:

▶ In the object editor, select and drag the X or Y thumbwheel to the right or left until the desired new position is displayed in the text box to the right of the thumbwheel. This position is relative to the left and right X coordinates and to the top and bottom Y coordinates.

To change the scale of the object:

▶ Select and drag one of the following thumbwheels to scale the object:

- Scale

- X Scale

- Y Scale

Drag the thumbwheel to the right or left to attain the desired scale; the value is relative to a scale of 1, which represents the object's normal size.

A positive number greater than 1 enlarges the object and a positive number less than 1 reduces its size.

For more information about using thumbwheels, see "Using Screen Coordinates" on page 87.

Cropping an Object

When you scale a video frame to less than 100 percent, you might see extraneous video or black around the edges of that frame. The Cropping thumbwheels allow you to eliminate edges by trimming the top, bottom, and sides of the frame.

To set cropping parameters:

▶ In the object editor, click and drag the Left, Right, Top, and Bottom thumbwheels until the desired cropping of the object is obtained.

The controls display a positive number (greater than 0) as you trim towards the center of the object.

If working with a Deko object that uses the Entire Graphic or is a Background, crop it so that only the desired area is rendered.

Designing Your Layout

Before creating your scene, plan what you want your scene to accomplish and how you want it to look. Your goal is to design the layout that viewers see on their television screens, which translates in the application to how objects display on video output. As part of your design process:

• Consider the object tools that you have to develop a scene. Only *visible objects*, that is, objects that the application draws to output, such as Deko, Clip Playback, Cel Animation, and Video In objects, have object editors with the Position and Target tabs. The Target tab controls parameters that define the target rectangle.

Objects that the application does not draw to video output, such as the Frame Grab, have no need to be positioned or placed in target rectangles on the output frame. If an object does not have Position and Target tabs in its object editor, it is not a visible object.

- How do you want to subdivide the screen into rectangles? For example, you might place video-in feed in the center, a logo in the upper-right corner, and crawl text scrolling in the lower third. Each of these divisions is associated with a visible object.

- How do you want to place the object in relation to the rectangle? For example, an object can be aligned in the exact center of a rectangle while maintaining its aspect ratio, or stretched to fill the rectangle without keeping its aspect ratio.

- Will the rectangle change dynamically? If you plan to apply an action to create a squeeze-back, what are the object's beginning and ending positions? Actions you create using target rectangles are also independent of resolution and video standard.

Guidelines for Using Target Rectangles

When working with target rectangles, consider the following guidelines:

- When you add a visible object to the Scene Tree, the application displays it in a default position on the video output. You can do one of the following:

  - Leave the object in its default position.

  - Reposition it using the Position tab (not recommended if you want the same scene to play out at different video resolutions).

  - Set up a target rectangle to control where and how the object appears on video output using the Target tab.

- A target rectangle is associated with a visible object. It does not exist as a rectangle independent of its object.

- If you link a Deko object to one or more layers in a graphic, and you want to control their positions with target rectangles, you must select Layer as the Layout option in the Deko object editor. See "Adding a Deko Object to a Scene" on page 109.

- Group objects can also have target rectangles that apply to the group.

- Only visible objects can have target rectangles. Only object editors for visible objects have a Target tab.

- The default target rectangle is full screen.

- Each of the four sides (left, top, right, bottom) of the target rectangle is a parameter of the object.

- If you select Disable in the Target tab, the object has no target rectangle. You can reposition the object using its Position tab.

- An object is positioned with respect to its target rectangle according to which option (None, Fit, or Preserve) you select from the Target tab's Autoscale menu.

    - **None**. The object can maintain its original size (no change = None) while being aligned horizontally and vertically in respect to the target rectangle. If you select None, you must also select the horizontal and vertical alignment of the object to the target rectangle.

    - **Fit**. The object can be stretched to fit the entire rectangle. (The object's aspect ratio is lost.)

To better view an object target rectangle's region on video output, add a background color to the Video Out object, then apply the Fit Autoscale option.

    - **Preserve**. The object can be made to preserve its aspect ratio in respect to its target rectangle. There are four possible Preserve Autoscale options: Min, Max, Horizontal, and Vertical.

        Select whether the application is to contain the object within the target rectangle (the Minimum option) while maintaining the object's aspect ratio, or scale the object so that it covers the target rectangle (the Maximum option while maintaining the object's aspect ratio). The object can be placed within the rectangle horizontally or vertically. After you assign the Autoscale placement, you can align the object horizontally (top, bottom, center) and vertically (top, bottom, and center) as appropriate.

See "Scaling an Object in Relation to Its Target Rectangle" on page 91 for diagrams of each Autoscale option.

- A target rectangle has no visible borders. To "see" an object's target rectangle, set its Autoscale option to Fit, which causes the object to dynamically fill the rectangle as you adjust the thumbwheel controls. Observe how the object stretches to fill the target rectangle and does not maintain its aspect ratio.

- When you define a target rectangle for a group, all of the child objects are encompassed by it.

Suggestions for Preparing Your Layout

For a simple layout, such as placing a Cel Animation object in the lower-right corner, designing "on the fly" using the Target tab is sufficient. For a more complex layout that requires rectangles of a set size, you might use Deko layers to block out rectangles as you want them to appear on the video output frame. Keep in mind that each rectangle is associated with a specific object. A target rectangle has no border lines—its size changes as you adjust the object's thumbwheel controls. If you design your layout using a drawing program, you can open it within the application and use it as a template for "tracing" rectangles. To make it easier to transfer your layout, assign a different color to each rectangle.

📄 *If you do not use a template file, add a Video Out background color to gauge the rectangle's boundaries (see "Editing Video Out Objects" on page 81). You can also set the Autoscale option to Fit to have the object completely fill the rectangle as you adjust it using the thumbwheel controls.*

Sample of a Video Output Frame Segmented Into Target Rectangles for Objects
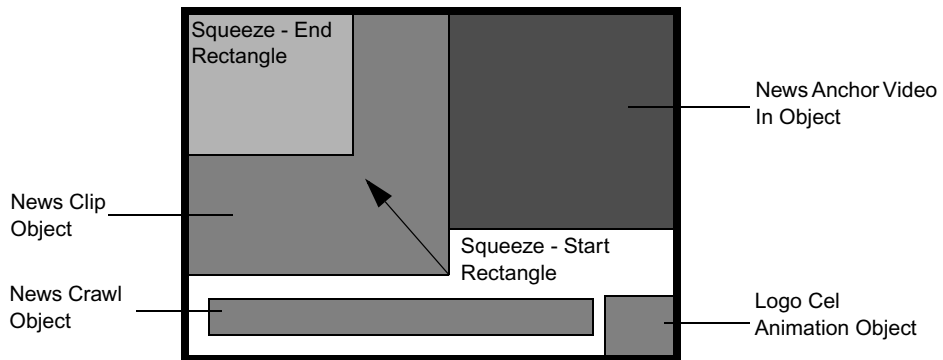
You might find it helpful to create a template file in a drawing program other than PostDeko Lite. In this case, the rectangles must have the same dimensions as you want them to have in the video output frame. In the drawing program, save the file as a BMP file and link to it as a Cel Animation object. Be aware that this is not a real Cel Animation object, but a workaround to use a file created in another drawing program as a template. You have to delete this Cel Animation object (or clear its file name) before saving the scene. For more information, see "Defining the Source File for a Cel Animation" on page 175.

Transferring a Layout to a Scene

If you use a graphics tool to design a layout to use as a template, you need to transfer it to a scene.

To transfer a layout to a scene:

1. Create a new scene.

2. If you created a layout template as a file in PostDeko Lite, add a Deko object and link it to the file.

If you created a layout in a different graphics program, import it into PostDeko Lite, export it as a .dko file, and link it to a Deko object. You can also import the file directly as a Cel Animation object (see "Suggestions for Preparing Your Layout" on page 99).

The template file's rectangular divisions display on the video output. This object's only purpose is for layout design. Delete this object after you have finished using it as a template.

3. Add a visible object to the Scene Tree, such as a Clip Playback, Deko object, or Cel Animation object.

4. Select the Target tab in the object's editor, which opens to the right of the Scene Tree.

If you select Disable in the Target tab, a target rectangle cannot be defined.

5. (Option) As a means to "see" the target rectangle as you adjust the thumbwheel controls, set the Autoscale option to Fit.

The Fit option stretches the object to the borders of the rectangle, making it easier to see the area you are defining. Unless you want the object to fill the rectangle in your actual scene, however, you need to select one of the other Autoscale options after you have specified the left, top, right, and bottom coordinates of the target rectangle.

6. Define the target rectangle for the object using its Target tab. See "Example: Defining a Target Rectangle for Video In" on page 100. Also see, "Using the Target Tab" on page 89.

7. Add additional visible objects and define their target rectangles.

8. After deleting any object used only for tracing purposes, save the scene.

Example: Defining a Target Rectangle for Video In

In this example, you will define a target rectangle for a Video In feed. You want the target rectangle to fill the right half of the screen. You want the Video In object to keep its aspect ratio while filling the width of the target rectangle and aligning with the top of the target rectangle.

Video In object aligned at top of the target rectangle

Target Rectangle extends to bottom of video output
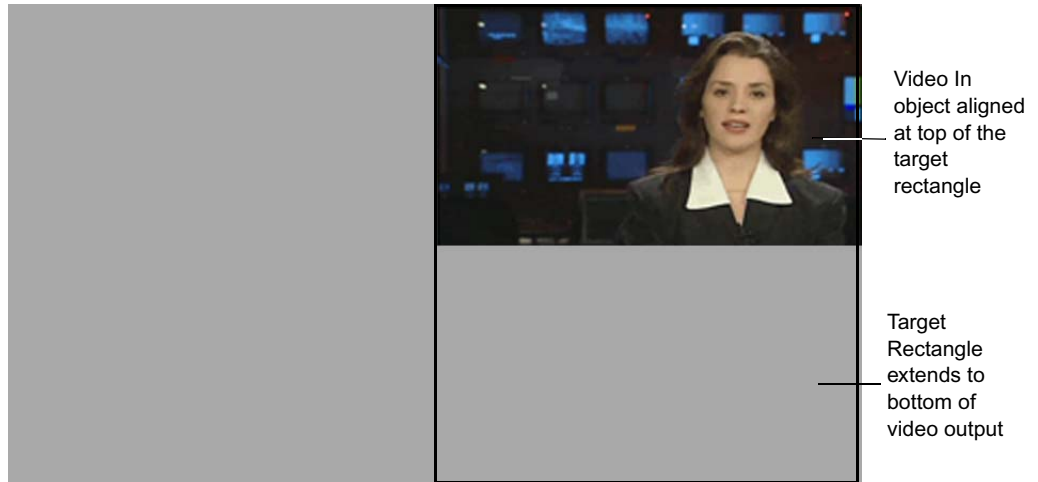
📖 *Target rectangles are designed to allow you to reuse an SD 16 x 9 layout as an HD layout without needing to adjust the layout. This example uses a 16 x 9 layout.*

This example gives you an opportunity to experiment with how an image fits in a target rectangle. Even if you do not have a live feed, you can use the black shape of the Video In object to become familiar with how target rectangles work.

To define the target rectangle for a Video In object:

1. Create a new scene.

2. (Option) Select the Video Out object and add a background color. See "Setting Background Color and Opacity" on page 81.

   Using a colored background is useful if you do not have a live feed for the Video In object.

3. Add a Video In object to the scene.

   The Video In object fills the screen and covers the Video Out background.

4. Click the Target tab in the Video In object's editor.

5. To make sure the target rectangle values are set at their default values, click Reset.

   The default target rectangle is the full screen, so the Video In object completely fills the target rectangle.

6. Select Autoscale >Preserve.

   The Preserve option maintains an object's aspect ratio, so it is the most appropriate selection for positioning the Video In object.

7. For the Preserve option, select Minimum (Min) to place the Video In within the target rectangle.

8. For the Vertical alignment, select Top.

    This selection aligns the Video In with the top of the target rectangle. The Horizontal option does not apply because in this case the Video In will fill the target from left to right.

9. Select and drag the Left thumbwheel to the right. Stop dragging the thumbwheel when the Video In is positioned to the desired size.

    By dragging the Left thumbwheel to the right, you are resizing the target rectangle from the default full-screen size. The Video In object's size reduces in a succession of smaller and smaller rectangles, while its aspect ratio does not change.

10. To see the exact size of the target rectangle you just defined, select Autoscale > Fit.

    The Autoscale Fit option is not appropriate because it does not maintain the aspect ratio, but for this example it helps you see the size of the target rectangle. The target rectangle has the same left boundary as the Video In, but extends to the bottom of the video output.

11. Select Autoscale > None.

    Because Video In is normally full screen, None is not an option. Because the Video In object does not change in size, only the left part of the video displays in the target rectangle.

12. Select Autoscale > Preserve, Min, Align Vertical Top.

    The Video In object should be correctly positioned. Try the other Vertical options (Bottom and Center) to see how the position of the Video In changes.

13. (Option) Select Autoscale > Fit and use the thumbwheels on the Target tab to experiment with sizing and positioning the target rectangle.

14. Save the scene.

Using the Levels and Mixer Tabs

Object editors with an audio component include a Levels tab and a Mixer tab.

Using the Levels Tab

The Levels tab includes controls for any audio component present for the selected object.

To set a master level for all audio channels associated with a selected object, do one of the following:

▸ Select and drag the Port Level dB slider to the desired level.

▸ Type a value in the Port Level dB text box.

The default setting is 0 dB.

To control levels for each audio channel associated with a selected object, do one of the following.

▶ Select and drag a Channel Level dB slider to the desired level.

▶ Type a value in one or more text boxes and press Enter.

Pressing the Tab key selects the value in the next channel level's text box for editing.

The default setting of each channel is 0 dB.

Port Level db Slider

Channel Level db Sliders
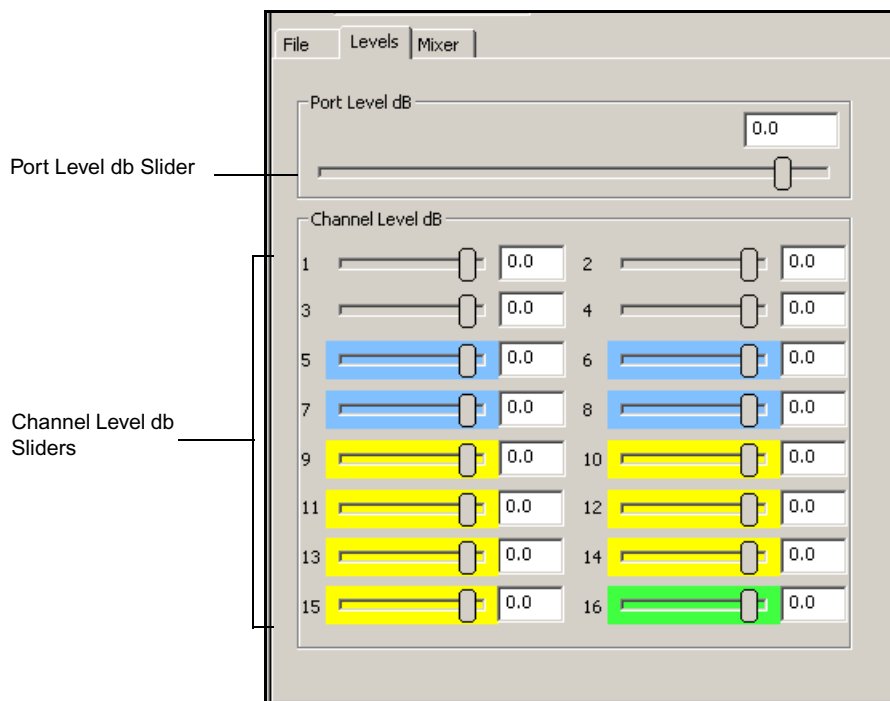
📖 *Colors in the Levels and Mixer tabs represent features supported by different systems. See "Understanding Color Coding in the Levels and Mixing Tabs" on page 106.*

Using the Mixer Tab

The Mixer tab allows you to route audio channels associated with a selected object. The Mixer tab has a 16 x 16 mixer routing grid that allows you to set a custom audio-channel configuration. Click any box to select or deselect a routing choice.
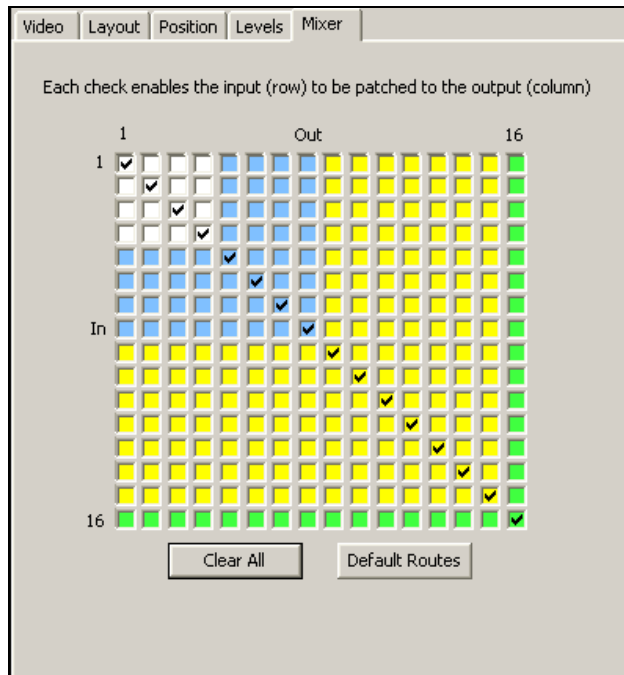
To clear all of the routing configurations:

▶ Click Clear All.

To restore the default mixer routes:

▶ Click Default Routes.

Each input channel is routed to its matching output channel.

Colors in the Levels and Mixer tabs represent features supported by different DekoCast systems. See "Understanding Color Coding in the Levels and Mixing Tabs" on page 106.

Understanding Color Coding in the Levels and Mixing Tabs

A DekoCast system's video-board configuration determines which features are supported. Where appropriate, the DekoCast user interface uses colors to indicate features supported by different configurations. Knowing the capabilities of each DekoCast configuration enables you to author scenes for playout on a system with different capabilities. For example, you can use a DekoCast SD system to develop scenes for play out on a DekoCast HD system.

There are three levels of coloring used for certain features in the user interface. Each higher level supports lower-level features.

- White (or no color) means that these features are specific to a lower-end DekoCast SD system.

- Blue indicates that these features are specific to a higher-end DekoCast SD system. Features coded white (or no color) and blue are functional.

- Yellow indicates that these features are specific to a DekoCast HD system. DekoCast HD supports all DekoCast features.

- Green indicates the maximum capability of the specific DekoCast system that you are using to author scenes.

The following illustrations shows how the display in the Mixer tab uses these colors. The higher-end DekoCast SD system has a maximum of 8 channels compared to a maximum of 16 on DekoCast HD. The green color-coding shows the limits of both systems.

DekoCast with a Maximum of 8 Channels

White = Lower-end
DekoCast SD system

Blue = Higher-end
DekoCast SD system

Green = Maximum
System Capability

Yellow = DekoCast HD
system

DekoCast HD with a Maximum of 16 Channels

Green = Maximum
System Capability

Working with Deko Objects

Deko object button

You can use the Deko object to do the following:

- Display a DKO graphic file created in Deko or PostDeko Lite. You can use a single layer of the graphic, all of its layers, or the entire graphic flattened to a single layer. A Deko graphic can consist of multiple graphic elements, such as a solid rectangle, a circle, and one or more text layers. Only text layers can have transition effects, such as dissolves and cuts.

- Display any string of text that adopts the positioning, formatting, and styles defined by a text layer in a DKO file. When you edit or add text to the layer, it also assumes these characteristics.

- Display a cycle of several lines of text that changes automatically at a specific interval. This continuous stream of text is called a *crawl* for horizontal text, or a *roll* for vertical text.

You can also create crawls and rolls using the Crawl object, which simplifies the procedure and allows you to intersperse non-text objects, such as Video In, Cel Animation, Clip Playback, and Audio Playback objects. See "Creating Crawls" on page 192.

- Display a digital clock or date, either time-of-day or count-up/down, and control its format and behavior. You can also display the temperature.

A temperature probe must be purchased and installed in order to display temperature. See "Using the Temperature Probe Interface Utility" on page 386.

The following illustration shows some typical Deko objects composited over a video feed.

DKO graphic

Clock (Text layer)

Text layer

The following topics describe how to work with Deko objects:

- "Adding a Deko Object to a Scene" on page 109
- "Editing and Updating Deko Objects" on page 114
- "Naming Layers in PostDeko Lite" on page 114
- "Adjusting Opacity" on page 116
- "Working with Text" on page 116
- "Displaying Clocks" on page 131
- "Displaying Temperature" on page 136

Adding a Deko Object to a Scene

There are two ways to add a Deko object to a scene. The method you choose determines the characteristics of the Deko object.

- Click the Deko object tool button to create a single Deko object from a source file. If the file consists of layers, the layers are flattened into a single layer. You can then link the Deko object to the entire graphic or to any one of its layers.

- Select Insert > Deko Graphic to create a single Deko object from a source file or to create a Deko object for each layer in the graphic. Each Deko object is automatically named with the file name (for a single object) or a combination of the file name and layer name (for multiple objects).

To add a single Deko object:

1. Click the Deko object tool button.

2. Click the Browse button to navigate to the object's source DKO, AUT, or ATX file, or type its complete path.

3. From the Selected Layer list, select Entire Graphic or a desired layer.

A layer might be the background or any numbered layer with a name other than *unused*.
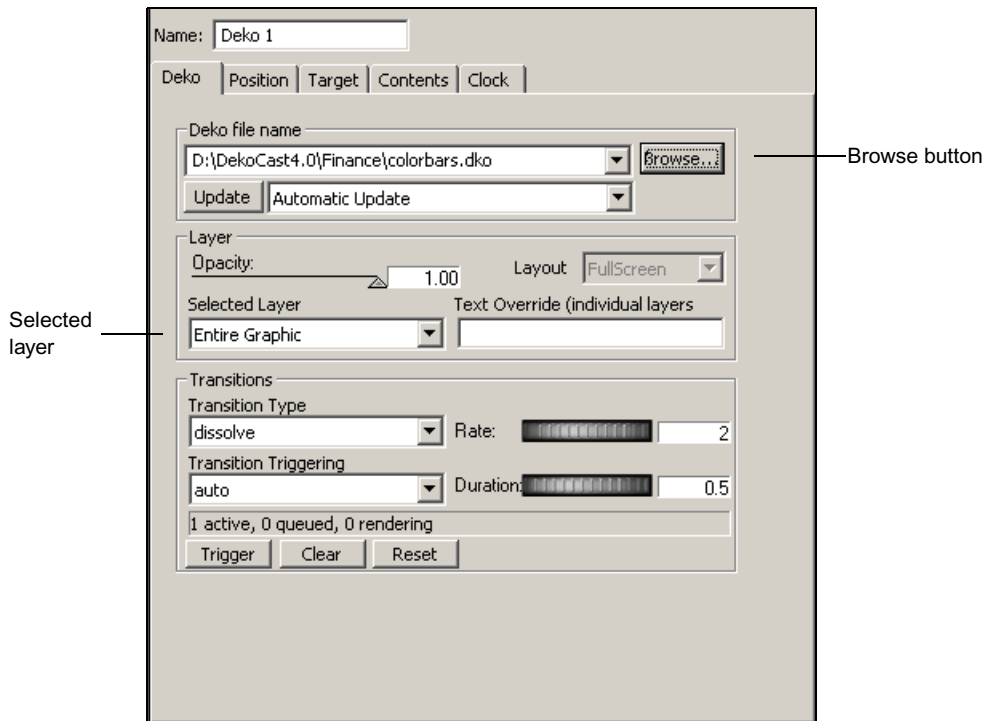
To add a single Deko object or to create a Deko object for each layer:

1. Select Insert > Deko Graphic.

The Select Deko File dialog box opens

2. Select the file and click Open.

The Create Deko Objects from Deko File dialog box opens.
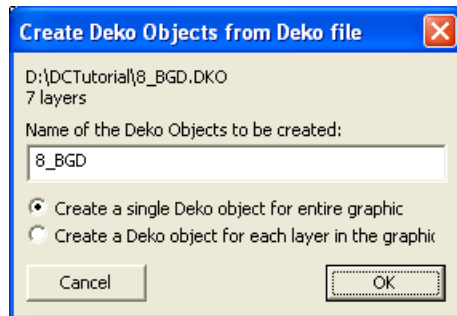
3. (Option) Edit the file name or type a new name.

4. Do one of the following:

   ▶ To add a single Deko object to the Scene Tree, select "Create a single Deko object for entire graphic" and click OK.

      A Deko object with the filename or the name you entered is added to the bottom of the Scene Tree. You still have the option of selecting individual layers from the Selected Layer menu.

   ▶ To add each layer of the Deko graphic as a separate Deko object, select "Create a Deko object for each layer in the graphic" and click OK.

      The objects are added to the bottom of the Scene Tree with the filename or the name you entered (in descending layer-number order) followed by the layer name. For example, a Deko object you named Three Layers would be added to Scene Tree as *Three Layers Background*, *Three Layers 3*, *Three Layers 2*, and *Three Layers 1*.

When you create a Deko object for each layer, each layer is added to the Scene Tree as an object, including the background layer. Every layer, even an unused layer or a blank background, uses a full screen of pixels, so to conserve processing resources, delete any unnecessary background layers.

To remove an unnecessary background object:

▶ Right-click the Deko background object in the Scene Tree, and select Delete from the menu.

Example: Deko Object with Ten Text Layers

The following illustrations show sample video output for a Deko object with ten text layers. These ten layers are named:

- TONIGHT
- SHOW TITLE, SHOW TIME
- SHOW TITLE, SHOW TIME
- SHOW TITLE, SHOW TIME
- NEXT:, SHOW TITLE
- RECTANGLE

The following illustration shows text updated for two of these layers: the first pair of SHOW TITLE and SHOW TIME. The Rectangle layer is a graphic design.

SHOW TITLE and SHOW TIME text layers updated

Rectangle layer
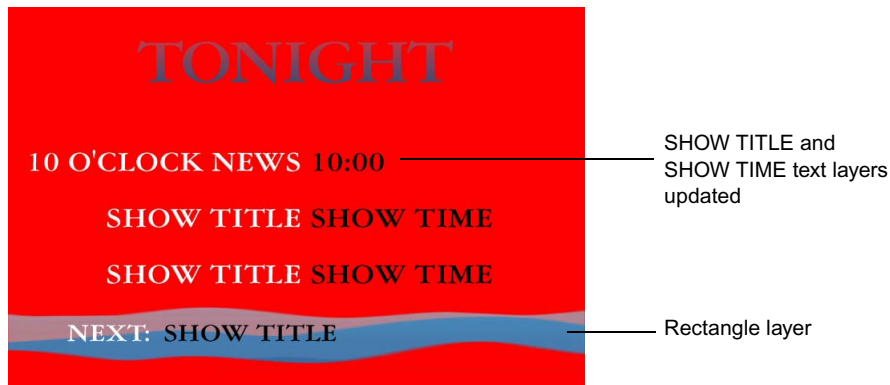
Each layer of the Deko graphic file was added as a separate Deko object so that the text of each text layer can be replaced. The following illustration shows the SHOW TITLE layer with text overwritten.

Text layer

Text overrides text in the layer
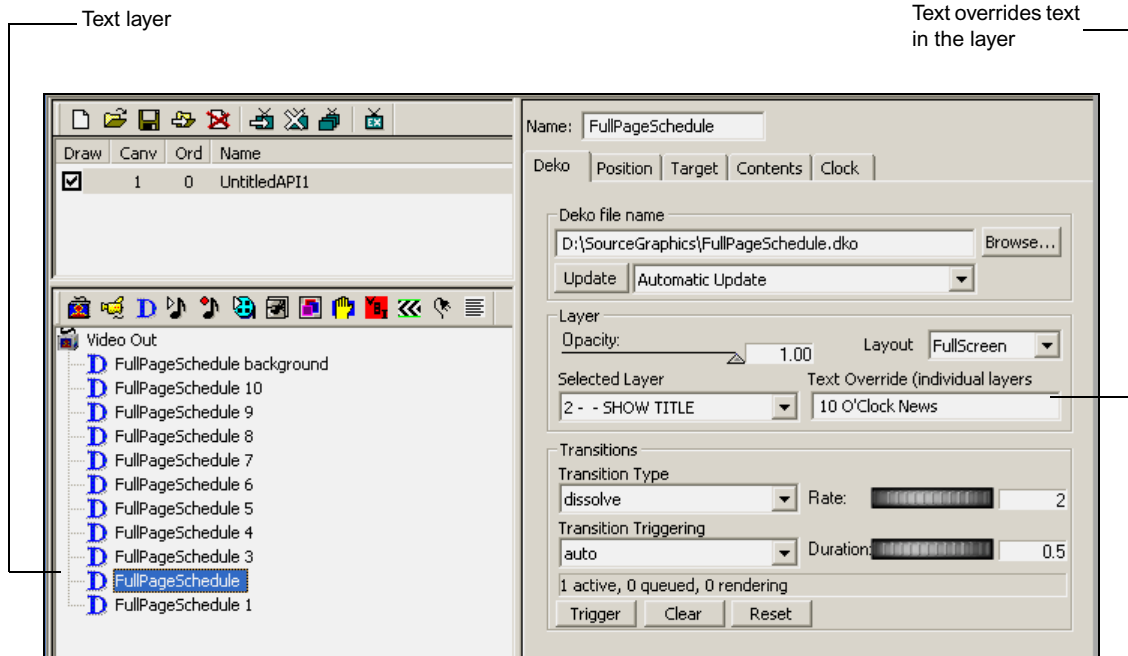
For more information about replacing text, see "Working with Text" on page 116.

Guidelines for Adding Deko Objects

When adding a Deko graphic to your scene, note the following guidelines:

- In PostDeko Lite, always name Deko layers and refer to them by name (see "Naming Layers in PostDeko Lite" on page 114).

- Scale, crop, and position the graphic associated with the Deko object so that only the portions of the graphic you want to use are visible at the right size. This prevents rendering power from being used to process unnecessary areas, such as blank areas not used in the graphic. Use only the layers that you need. For more information, see "DekoCast Tips" on page 435.

- You can reposition and resize layers after adding them to a scene using either the Position or Target tab (see "Positioning and Sizing a Deko Object" on page 115).

- Do not use an entire graphic with a transparent background. If you create a graphic with a transparent background in Deko for use with DekoCast, and you do not need to control the individual layers, flatten the layers of the graphic into the background so that Deko renders one full screen area rather than the background area and each layer.

📑 *In PostDeko Lite, to flatten the layers into the Deko background, highlight the Graphic window, and select Layer > Layers to Background. After the layers have merged into the background, open the Layer Browser (View > Layer Browser) and delete each of the layers.*

Editing and Updating Deko Objects

Deko objects can be created in PostDeko Lite or in Deko. You can edit a Deko object within a scene by opening its file in PostDeko Lite or in Deko and saving it with the same file name. You can then update the graphic automatically or manually to view those changes on your video output.

To select how to update Deko objects, do one of the following:

▶ From the Update list in the Deko object editor, select Automatic Update (the default). This setting causes the application to update the Deko object whenever the file name, layer number, or text override values change.

📑 *Automatic Update does not automatically update the scene when the same Deko graphic has been edited and resaved. Modifying and resaving the graphic requires you to click the Update button to view the changes in the output.*

▶ From the Update list in the Deko object editor, select Manual Update. When you want to update the graphic, you must either click the Update button or trigger the Update Deko file parameter in the Parameters list (see "Using the Parameters Tab" on page 336).

⚠ **Once a Deko graphic is included in a scene, changing the original graphic might produce unexpected results.**

Naming Layers in PostDeko Lite

Layer names in a PostDeko Lite graphic can be automatically linked to the name of the Deko object in the Scene Tree.

To name layers in PostDeko Lite:

1. Do one of the following:

   ▶ From the PostDeko Lite menu bar, select View > Layer Browser. Right-click the thumbnail image of the layer and select Edit layer name. Type the name of the layer.

   ▶ Within the Graphic window, press the Page Up key to select the boundary for the layer you want to name. From the menu bar, select View > Style. In the Text dialog box, click the Layer tab. Click the More tab at the bottom of the tab. In the Name text box, type the layer's name.

2. Save the file.

To import a PostDeko Lite graphic with layer names:

1. Select Insert > Deko Graphic.

   The Create Deko Objects from Deko File dialog box opens.

2. Select "Create a Deko object for each layer in the graphic" and click OK.

   When you add each layer of the Deko graphic as a separate Deko object (not as an entire graphic), each layer is added to the Scene Tree as a Deko object with the name of its layer (see "Adding a Deko Object to a Scene" on page 109). Using this method allows DekoCast to recognize changes to the level priority in a Deko graphic. To update a graphic, see "Editing and Updating Deko Objects" on page 114.

3. (Option) Select each Deko object and rename it based on its function through the object editor's Name text field.

   Renaming the Deko object layers might break the link for updating.

Positioning and Sizing a Deko Object

You can size and place a Deko object using either the Target or the Position tab. See "Using the Target and Position Tabs" on page 86.

If you link an object to a layer rather than an entire graphic, the Layout option in the Deko tab of the Deko object editor becomes available. You can select one of the following settings:

• Full Screen: This setting outputs the layer in the home position as it was created in the Deko graphic.

• Layer: This setting discards the layer's position in the Deko graphic and the layer appears at the top left of the output monitor. If this setting is selected, the Target settings determine the position of the layer. For more information, see "Arranging Objects for Video Output" on page 86.

   The Layer setting is required if you are including a Deko object as part of a Crawl Object or if you want to use the Target dimensions, autoscale, and justification settings to determine the position of the Deko layer.

Both settings are resolution independent. Neither setting has a resource advantage, because the application uses only the layer size in processing the scene. You can save resources by scaling or cropping the layer.

To position, scale, and crop a Deko object using the Position tab:

1. Select the Deko object in the Scene Tree to display its Deko object editor.

2. Click the Position tab.

3. Click and drag the thumbwheels to position and scale the Deko object.

   Deko objects are scaled about the center of the selected layer, or about the center of the screen if the entire graphic is selected. Position is relative to the layer's position in the original graphic. For example, if the layer was positioned in the upper-left corner of the original graphic, that is where it appears in the scene with X and Y position controls in the home (0,0) position.

4. Use the cropping settings to set the distance in pixels either inward or outward from the edges of the layer boundary, or if the entire graphic is selected, from the edges of the screen.

   Deko objects with Cut or Dissolve transition styles are not cropped at all if the Cropping value on an edge is 0: all the non-clear pixels are displayed, whether they are inside or outside of the layer boundary. Deko objects with Scroll transition types are always cropped to the edge of the layer boundary modified by the Cropping values.

Negative cropping on a Horizontal Scroll sets a gap between the text lines displayed. See "Displaying Crawls and Rolls" on page 123.

For more information, see "Using The Position Tab" on page 95.

Adjusting Opacity

To adjust opacity of a Deko object:

▶ In the Deko tab of the Deko object editor, click the opacity slider and drag it to your desired setting.

Working with Text

A typical workflow when you are working with text is to build a scene that is kept dynamic by sending new data streams of text to one or more text layers of a Deko object. You can change the text in a Deko object layer at any time, independent of the other elements in the scene. The source text can be text created in the Deko graphic, text you type directly to override the current text, or text contained in a text file.

During scene development or when the system is otherwise off air, you can override text by typing directly into text boxes. For example, you might change headlines that remain static throughout the entire scene. While a system is on air, you can replace text by editing the contents of the Deko object's text source file. Open the text file from any computer that can access the file, type new text, and save the file. The text you just typed replaces the previous text. You can configure text changes to occur with automatic transitions such as dissolves, horizontal and vertical scrolls, rolls, and crawls.

⊜ *A text source file must be either in the TXT format, such as you create using Notepad (All Programs > Accessories > Notepad), or for control by automation systems, in the AUT or ATX format.*

The following topics describe the techniques and options you can use when working with text:

- "Using the Text Override Option" on page 117
- "Using the Contents Tab" on page 119
- "Using Text Files" on page 121
- "Displaying Crawls and Rolls" on page 123
- "Transition Options for Deko Object Text" on page 125
- "Looping Options for Deko Object Text" on page 127
- "Managing Text Display" on page 128
- "Using Embedded Tags with Deko Object Text" on page 128

Using the Text Override Option

One way to add new text to video output is to use a text layer of a Deko graphic with the Text Override option. In this technique you type a line of text in the Text Override box and press Enter.

Use the following conventions:

- When you want a layer to appear blank, press the space bar to place a space in the Text Override text box. If you only press Enter (sometimes referred to as inserting a carriage return or New Line Feed), the application displays the text in the selected layer (the placeholder text).

- If Automatic Update is selected, and you type a value into the Text Override text box and press Enter, the application transitions to the new value, whether or not the text has actually changed.

- A line break can be included in a line by inserting a <br/> tag. For example:

  ```
  first line<br/>second line
  ```

  For other tags, see "Using Embedded Tags with Deko Object Text" on page 128.

To override text:

1. Add a Deko object to the Scene Tree and link to a Deko source file that includes a text layer (see "Adding a Deko Object to a Scene" on page 109).

2. If necessary, adjust position, scale, and opacity (see "Positioning and Sizing a Deko Object" on page 115 and "Adjusting Opacity" on page 116).

3. In the Deko object editor, click the Deko tab.

4. Select Automatic Update from the Update list (see "Editing and Updating Deko Objects" on page 114).

5. Select the text layer from the Selected Layer list.

6. Select how you want transitions to be displayed when the Deko object is updated.

    -   Select the kind of transition from the Transition Type list.

    -   Select when you want the transition to begin from the Transition Triggering list.

    For information about Transition options, see "Transition Options for Deko Object Text" on page 125. For information about creating rolls and scrolls, see "Displaying Crawls and Rolls" on page 123.

7. Using the Deko tab, type text in the Text Override text box and press Enter.

    The new text appears on the video output.

Using the Contents Tab

You can use the Contents tab of the Deko object editor with a text layer of a Deko graphic to display one or more lines of text. In this technique, you type text into the Value text box and click the Accept button. The application copies each line sequentially into the Text Override text box at the interval specified by the Interval text box. The application uses the transition options you specify on the Deko tab (see "Transition Options for Deko Object Text" on page 125).

To display text using the Contents tab:

1. Add a Deko object to the Scene Tree and link to a Deko source file that includes a text layer (see "Adding a Deko Object to a Scene" on page 109).

2. If necessary, adjust position, scale, and opacity (see "Positioning and Sizing a Deko Object" on page 115 and "Adjusting Opacity" on page 116).

3. In the Deko object editor, click the Deko tab.

4. Select Automatic Update from the Update list (see "Editing and Updating Deko Objects" on page 114).

5. Select the text layer from the Selected Layer list.

6. Select how you want transitions to be displayed when the Deko object is updated.

   - Select the kind of transition from the Transition Type list.

   - Select when you want the transition to begin from the Transition Triggering list.

   For information about Transition options, see "Transition Options for Deko Object Text" on page 125. For information about creating rolls and scrolls, see "Displaying Crawls and Rolls" on page 123.

7. Click the Contents tab.

Value text box

Accept button

Stop button

8. Type one or more lines of text into the Value text box. Separate each row by pressing Enter.

   - To display a blank line, press the space bar and press Enter. If you want a blank line, make sure to press the space bar. As in the Text Override text box, an empty line displays the original text contents of the layer (placeholder text).

     To avoid a problem with unintentionally revealing placeholder text, keep the cursor at the end of the last entry in a series and do not press Enter.

   - You can include a line break in a line by inserting a <br/> tag. For other tags, see "Using Embedded Tags with Deko Object Text" on page 128.

The Cancel and Accept buttons are activated when you make any changes within the Value text box.

9. Click Cancel to undo the changes made to the Value text box.

10. Click Accept to start using the new lines of text, starting with the first line.

11. Select the looping options (see "Looping Options for Deko Object Text" on page 127).

12. To determine when to display changes to the contents of the Value text box, select an option from the *Reflect changes in contents file* menu.

   ▶ Select "Immediately" to display changes as soon as they are typed. This is a good choice for continuously updated lists such as stock prices.

   ▶ Select "At next interval" to display changes at the end of a line of text. This is a good choice for a series of blurbs or headlines.

   ▶ Select "At end of list" to display changes after a complete cycle displaying text existing prior to the changes. This is a good choice for displaying information in paragraph form or changing to completely unrelated text.

13. To determine where in the Value text box to begin to display once changes are in effect, select an option from the On contents file/list change menu:

   ▶ Select "Rewind line index" to start display from the beginning of the Value text box, effectively skipping items from the point where changes take place to the end of the text box. Avoid this choice for lists that update continuously, such as stock prices, otherwise items at the end of the list might not ever display.

   ▶ Select "Leave line index unchanged" to continue displaying contents from the current line in the Value text box.

14. Click Stop to stop the display.

Using Text Files

You can use a text file to automatically update text that is displayed on your video output. Text files are useful for continuously updated information such as school closings. The power of using text files is that you can update a file across the network quickly and have an immediate effect on the video output.

The application can accept data from a simple ASCII text file (*.txt) such as a file created in Windows Notepad. If you use another word processing program, be sure to save the file without special formatting and save it with a .txt extension. Follow these guidelines:

•   Separate each line of text with Enter or a carriage return.

•   Use the space bar for blank lines.

•   Do not use a carriage return or press Enter at the end of the last line of text.

If you modify the text file using a text editor such as Notepad and save the changes, the application automatically detects a change and does the following:

•   Re-reads the files.

•   Displays the new contents in the Value text box.

•   Begins cycling through the new text, beginning at the first line.

To display contents of a text file:

1. Add a Deko object to the Scene Tree and link to a Deko source file that includes a text layer (see "Adding a Deko Object to a Scene" on page 109).

2. If necessary, adjust position, scale, and opacity (see "Positioning and Sizing a Deko Object" on page 115 and "Adjusting Opacity" on page 116.

3. In the Deko object editor, click the Deko tab.

4. Select Automatic Update from the Update list (see "Editing and Updating Deko Objects" on page 114).

5. Select the text layer from the Selected Layer list.

6. Select how you want transitions to be displayed when the Deko object is updated:

   ▶ Select the kind of transition from the Transition Type list.

   ▶ Select when you want the transition to begin from the Transition Triggering list.

   For information about Transition options, see "Transition Options for Deko Object Text" on page 125. For information about creating rolls and scrolls, see "Displaying Crawls and Rolls" on page 123.

7. Click the Contents tab.

Text File Selection

Value text box

Interval: Set to 0 if Value text box is not to be updated from text file

Line

8. Do one of the following to select a text file:

   ▸ In the Text File text box, type the complete path of a text file you want the application to read and display automatically.

   ▸ Click Browse and navigate to the file. Click OK.

   The text contained in the file is displayed in the Value text box, and the text begins to cycle. Click Stop if you want to stop the cycling.

9. Select the looping options (see "Looping Options for Deko Object Text" on page 127).

10. Select an Interval value to select the frequency in seconds that the application checks the text file for updates and the delay between displaying lines of text.

📖 *Set the Interval value to 0 if the Value text box does not need to update from the text file.*

11. To determine when to display changes to the contents of the Value text box, select an option from the "Reflect changes in contents file" list.

    ▸ Select "Immediately" to display changes as soon as they are typed. This is a good choice for continuously updated lists such as stock prices.

    ▸ Select "At next interval" to display changes at the end of a line of text. This is a good choice for a series of blurbs or headlines.

    ▸ Select "At end of list" to display changes after a complete cycle displaying text existing prior to the changes. This is a good choice for displaying information in paragraph form or changing to completely unrelated text.

12. To determine where in the Value text box to begin to display once changes are in effect, select an option from the On contents file/list change menu:

    ▸ Select "Rewind line index" to start display from the beginning of the Value text box, effectively skipping items from the point where changes take place to the end of the text box. Avoid this choice for lists that update continuously, such as stock prices, otherwise items at the end of the list might not ever display.

    ▸ Select "Leave line index unchanged" to continue displaying contents from the current line in the Value text box.

13. Click Stop to stop the display.

Displaying Crawls and Rolls

You can use controls in the Deko object editor to add a crawl or a roll to a scene. A crawl scrolls text horizontally across the screen; a roll scrolls the text vertically.

📖 *Crawls and rolls can also be created using the Crawl object, which simplifies the procedure and allows you to intersperse non-text objects, such as Video In, Cel Animation, Clip Playback, and Audio Playback objects. See "Creating Crawls" on page 192.*

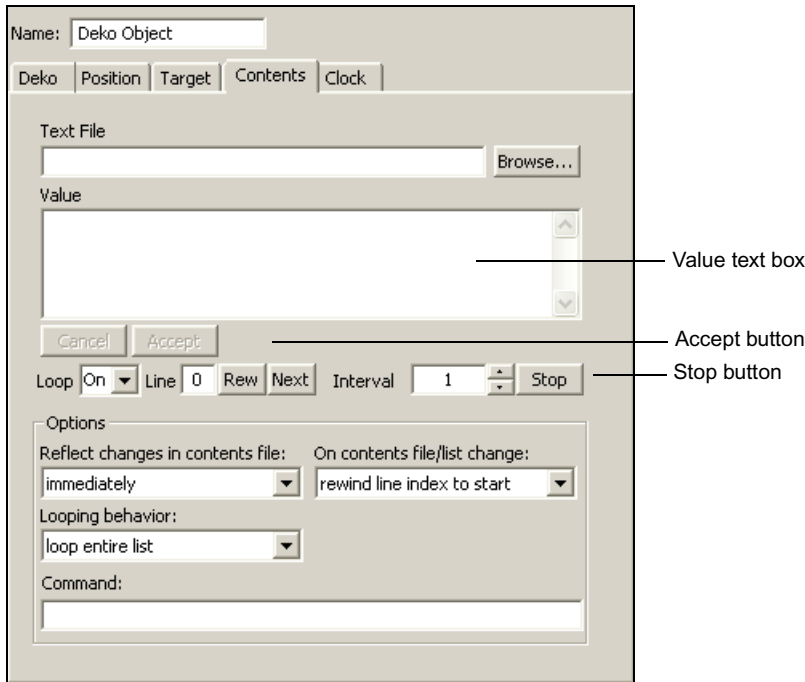**To display a roll or a crawl:**

1. Add a Deko object to the Scene Tree and link to a Deko source file that includes a text layer (see "Adding a Deko Object to a Scene" on page 109).

2. If necessary, adjust position, scale, and opacity (see "Positioning and Sizing a Deko Object" on page 115 and "Adjusting Opacity" on page 116).

3. In the Deko object editor, click the Deko tab.

4. Select Automatic Update from the Update list (see "Editing and Updating Deko Objects" on page 114).

5. Select the text layer.

6. Select a scroll type from the Transition Type list.

   For a description of the scroll options and transition triggering options, see "Transition Options for Deko Object Text" on page 125.

7. Do one of the following:

   ▸ In the Contents tab, type text in the Value text box. Press Enter after each line except for the last line. See "Using the Contents Tab" on page 119.

   ▸ Link the text layer of the Deko object to a text file. See "Using Text Files" on page 121.

8. Click Accept.

   Select when these changes are to take effect from the Reflect changes in contents file menu: immediately, at next interval, or at the end of the list.

9. Select the looping options (see "Looping Options for Deko Object Text" on page 127).

10. Set the update interval between lines by typing a time in seconds into the Interval text box. For example, typing the number 3 changes the text every three seconds.

    Use the up/down arrows to make small adjustments (in quarter seconds) to the interval. Click the Stop button to set the value back to 0 and stop the updates. Type a non-zero interval and press Enter to resume the scroll.

11. (Option) To change the text, edit the Value text box and click Accept.

    The new text starts cycling, beginning with the first line. The displayed text does not change until you click Accept. Click Cancel to cancel your changes.

12. In the Deko tab, click and drag the Rate thumbwheel to control the speed of the Scroll transitions in scan lines or pixels per field.

    Positive values scroll the text right-to-left or bottom-to-top. Negative values scroll the text left-to-right or top-to-bottom. A setting of 1 produces a slow scroll through; a setting of 5 produces a faster scroll through.

13. Click and drag the Duration thumbwheel to change the amount of time between the scroll in and out. Duration does not apply to Crawl or Roll options.

To change the size of the text:

▶   In the Position tab, click and drag the Scale thumbwheel. All of the Position and Scale parameters can be adjusted.

To crop the text layer:

▶   In the Position tab, use the Cropping thumbwheels to crop the text's layer boundary.

You can also use crop adjustments to change the spacing between elements in a Crawl or Roll.

Adjusting the layer boundary also moves the boundary in which scrolling occurs.

Text extending past the right of the layer boundary is all rendered in a Scroll transition and is visible at some point in the transitions. To use text wider or higher than the screen, the Deko graphic must be created with the horizontal or vertical scroll property (or both). To set the scroll property, select Text > Horizontal Scrolling or Vertical Scrolling in Deko or PostDeko Lite before saving the document.

Transition Options for Deko Object Text

The following tables provide information about options in the Transitions section of the Deko tab in the Deko object editor.

Transition Type Options

Option	Description
Cut	Switches from the old text to the new text instantly.
Dissolve	Fades out the old text while fading in the new text. Specify the duration of the fade in seconds using the Duration thumbwheel or type it.
Scrolls: Vertical (vscroll) and Horizontal (hscroll)	Scrolls the old text out of the layer boundary while the new text is scrolled in. The text is clipped to this layer's boundary defined within the Deko graphic and modified by any cropping settings under the Position tab. The duration of the scroll in/out is set by the Duration thumbwheel control. If the Rate thumbwheel control value is positive, the text scrolls right-to-left or bottom-to-top. If the Rate is negative, the text scrolls left-to-right or top-to-bottom.

Transition Type Options (Continued)

Option	Description
Scroll Pad variations • vscrollpad • hscrollpad • crawlpad • rollpad	Usually, the text moves just enough to get the visible pixels in or out of the layer boundary so a small amount of text moves a shorter distance than a large amount of text. This might look awkward in some applications, so the Pad variations always scroll the text by the dimensions of the layer boundary, keeping the scroll distances consistent.
Crawl Roll	Scrolls the new Deko text through the layer boundary at a constant rate. The text displayed is clipped to this layer's boundary defined within the Deko graphic, modified by any cropping settings under the Position tab, though the total size of the text might be larger than the layer boundary. The scroll rate is set with the Rate thumbwheel control, measured in scan lines per field for the Crawl, and pixels per field for the Roll. If the Rate value is positive, the text scrolls right-to-left or bottom-to-top. If the Rate is negative, the text scrolls left-to-right or top-to-bottom. *When using Deko layers for a Crawl, deselect the word wrap feature in the Deko Layer in PostDeko Lite. You can add a gap between elements in a Crawl by setting a negative left cropping value.* If the current text is still scrolling into the layer boundary, the new text is positioned to abut the edge of the old text. New text values are made visible as they enter the layer boundary.

Transition Triggering Options

Option	Description
Auto	Begins the transition automatically when Deko finishes rendering the new text, or when the current transition completes, if rendered text is queued waiting for display. Typically, this transition occurs as soon as you type in text and press Enter.
Manual	Allows transition to begin only when the Trigger button is clicked.

Rate thumbwheel: Controls the speed of the Scroll transitions in scan lines or pixels per field. Positive values scroll the text right-to-left or bottom-to-top. Negative values scroll the text left-to-right or top-to-bottom. A setting of 1 produces a slow scroll through; a setting of 5 produces a faster scroll through.

Duration thumbwheel: Sets the transition duration in seconds. Duration affects only the Dissolve and Scroll transitions. Duration has no effect on Cut or Scroll transitions.

Looping Options for Deko Object Text

The following table provides information about Looping options in the Contents tab in the Deko object editor.

Deko Contents Tab: Looping Options

Option	Description
Loop	Set On for indefinite looping, type or select a number to specify the number of loops, or select 0 to stop the display. Use the Looping Behavior list to specify whether DekoCast is to loop the entire contents of the Value text box, or only one line. *To loop one line, specify the line number in the Line text box.* If you select a limited number of loops, after the crawl begins to play, the Loop text box shows the number of loops remaining.
Line	Displays the line that is ready to be played. To display one line from the Value text box rather than the entire contents, type the number of the line and press Enter. Type 0 to display the first line, type 1 to display the second, and so on. Select "loop current line" from the Looping Behavior list. If you are displaying the entire list, the Line text box displays -1 after the last line is displayed (indicating no lines left to play).
Rew	Click to return to the beginning of the list in the Value text box (line 0).
Next	If you are manually controlling the display, click to display the next line in the Value text box. To manually control the display, set the Interval to 0 and in the Deko tab, set Transition Triggering to Manual.
Interval	To set the interval in seconds (frequency) at which a new line of text is displayed, type a number and press Enter.
Stop	Click to set Interval to 0 and stop the display.

Managing Text Display

Several controls on the Deko tab let you manage the text as it is displayed on the video output.

To view the display status of text values:

▸ View the Active-Queued-Rendering counts as shown in the Display status (above the Trigger, Clear, and Reset buttons on the Deko tab).

These status values indicate the number of text values (bit maps) currently Active (visible on video output), Queued (rendered by the application but waiting to be displayed), or Rendering (in the process of being rendered).

To clear queued and rendering text awaiting display:

▸ Click the Clear button.

Clicking this button erases all queued text and text in the process of being rendered from the queue that is awaiting display. It does not clear currently displaying text. With Transition triggering set to Auto, a transition generally occurs too quickly to use Clear.

To clear all active, queued, and rendered text:

▸ Click the Reset button.

To reload cleared/reset text:

▸ Move the pointer to the end of the text and press Enter.

Using Embedded Tags with Deko Object Text

DekoCast provides tags that you can embed in text, either in the Deko object editor or in a text file. An *embedded tag* is a code that has a special format that is recognized and used by DekoCast to perform a specific function. One simple tag is `<br/>`, which is used to create a line break. For example:

```
Today's weather:<br/>Cloudy with a chance of showers
```

results in

```
Today's weather:
Cloudy with a chance of showers
```

You can include tags in text to control its formatting. Typically, you use these tags in a text file to change the text properties of text in a crawl. Most tags refer to files that you create with Deko or PostDeko Lite.

Embedded tags are particularly useful for including more than one text format in a single text layer. The following file, which is used for a news crawl, includes tags that refer to a Deko preset file and to two different Deko presets:

- The tag `<preset file="D:\DekoCast_trn_adv\crawl.pst"/>` refers to a preset file created in Deko PostDeko Lite. This tag selects and loads the preset file.

- The tags `<preset id="1">` and `<preset id="2">` refer to two preset text styles: black type for the headline and white type for the news text. Each tag loads the style for the text that follows the tag.

Preset file tag

Preset ID tags

```
Preset_tags.txt - Notepad

File  Edit  Format  View  Help

<preset file="D:\DekoCast_trn_adv\crawl.pst"/>
<preset id="1"/>NEWS: <preset id="2"/>Security problems at
Smithfield airport...
<preset id="1"/>ENTERTAINMENT: <preset id="2"/>Singer
Branilow needs hip surgery...
<preset id="1"/>HEALTH: <preset id="2"/>Drug treats
depression in hours...|
```
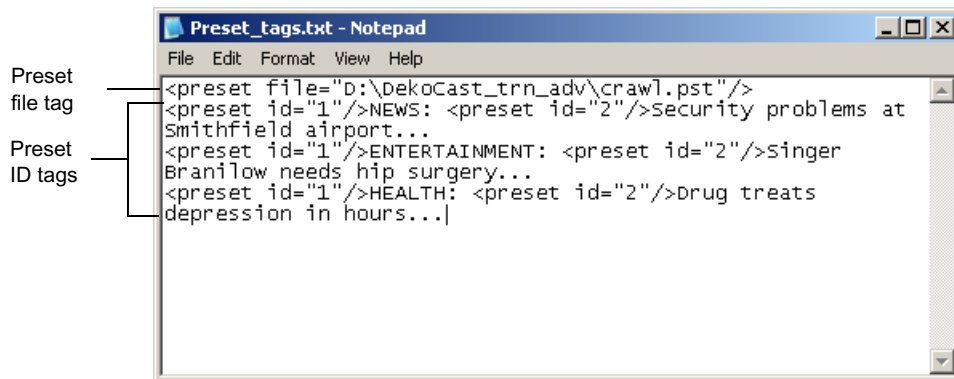
For information on creating text layers and presets in PostDeko Lite, see the PostDeko Lite Help. For information on creating text files, see . For information on using embedded tags with custom typefaces, see .

The following table lists and describes embedded tags.

Embedded Tags for Deko Objects

Tag	Description
` `	Inserts a new line into a text string.
`<preset file="D:\`*directory_name*`\`*x*`.pst"/>`	Selects and loads a new preset file (where *x* is the file name). The ID and file attributes can be combined in the same tag.
`<preset id="`*n*`"/>`	Selects a style preset from the current set (where *n* is 1 to 8). For example, specify a preset for a custom typeface.
`<layer id="`*n*`"/>`	Switches to a different layer in the current graphic (where *n* is the layer id number). The Layer option in the Deko object editor determines which layer is visible, or if all layers are visible. Generally use this tag with "All layers" selected to change the text in multiple layers within a single text file.
`<style file="`*x*`.sty"/>`	Sets the current style from a style file (where *x* is the file name).
`<graphic file="`*x*`.dko"/>`	Opens a specific Deko file (where *x* is the file name). The default is the file name specified in the Deko object file name parameter field. If this field is empty, the Deko object is ignored, so generally set the field to Preview when using this tag.
`<graphic/>`	Opens a new blank graphic (contains a single empty text layer with the current style).
`<macro>`*macro*`<macro/>`	Executes a Deko macro (where *macro* is the macro text).
`<macro file="`*x*`.mcr"/>`	Executes the specified Deko macro file (where *x* is the file name).
`<auto file="`*x*`.aut"/>` `<auto file="`*x*`.atx"/>`	Opens the named automation file (where *x* is the file name).

Displaying Clocks

You can use a Deko source graphic with at least one text layer and the Clock tab of the Deko object editor to display a digital clock or timer on video output. The application provides many formats you can use. The Deko object clock uses the Windows system time-of-day clock.

The following topics provide more information on displaying clocks:

- Displaying a Time-of-Day Clock
- Displaying a Count-Up or Count-Down Timer
- Deko Object Clock Formats

Displaying a Time-of-Day Clock

To display a time-of-day clock:

1. Add a Deko object to your Scene Tree.

2. Select a source DKO file that has a text layer.

3. From the Selected Layer menu, select a text layer. Do not specify a clock created in Deko.

4. Click the Clock tab of the Deko object editor.
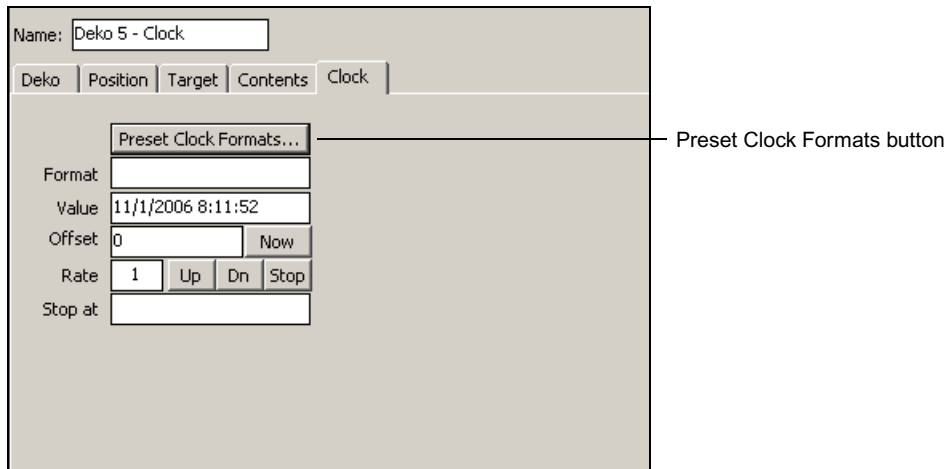
Preset Clock Formats button

5. Click the Preset Clock Formats button.

   The Clock Presets dialog box opens.
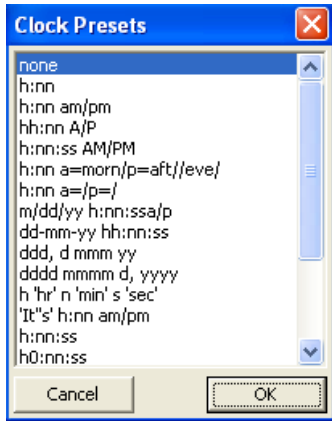
The clock uses picture format strings similar to those used in Excel and Visual Basic.

6. Select your choice and click OK.

   For a 12-hour clock format, select h:nn:ss. For a 24-hour clock format, select hh:nn:ss. Other formats are described in "Deko Object Clock Formats" on page 133. You can modify these preset formats to customize the clock display.

7. To make slight corrections in the clock, or to display a different time zone, type an offset in the clock Offset text box, either in seconds, such as 3600, or in minutes:seconds, or hour:minutes:seconds; for example, 1:00 for 1 minute or 1:00:00 for 1 hour.

8. Click the Now button to start the clock running and reset the offset to 0.

   The resulting text is inserted into the Text Override field of the Deko object, but only if there is currently no text queued waiting to transition. If you specify a clock that changes every second, but use a transition that takes 2 seconds, you see only every other second displayed.

Clicking the clock's Stop button freezes the clock.

9. Type an explicit clock setting in the Value text box to set the clock to a specific date and time using a month/date/year hour:minutes:seconds format; for example, 10/13/01 4:47:00.

10. Click the clock Up button to start the clock running from the new value. Click the Now button to start the clock running and set its value back to the system clock.

11. Click the Deko tab to show the Transitions controls. Use the Transition Type chooser to select different effects to use when the clock changes. The rules for updating vary between the different effects. See "Transition Options for Deko Object Text" on page 125.

12. Use the Position tab or Target tab to adjust the position, opacity and scale. See "Using the Target and Position Tabs" on page 86.

Displaying a Count-Up or Count-Down Timer

To display a count-up or count-down timer:

1. Set up a clock as you did in the previous topic, but type or select a format that uses only the text boxes appropriate to your up/down counter; for example, n:ss for a minutes/seconds counter. See "Deko Object Clock Formats" on page 133.

2. Type a time value in the Stop at text box, in the same format you used in the Value text box, to have the clock automatically stop at that time.

3. Type the starting time in the clock Value text box, using an hours:minutes:seconds, minutes:seconds, or seconds format.

4. Click the clock's Up button to start counting up, the Dn button to count down, or the Stop button to freeze the counter.

Deko Object Clock Formats

The format for the Deko object clock is represented by a line of text with a code sequence replaced by the corresponding time or date value. For example, h:nn:ss might be translated as 11:17:33, where h, nn, and ss are codes that represent hour, minute, and second, respectively; the colons are text literals that are copied into the resulting clock text.

The codes used in creating these formats are described in the following table.

Clock Formats

Format Code	Description
h	Hour in 0-23 format. To use a 12-hour clock in 1-12 format, include one of the am/pm indicators somewhere in the format.
hh	Hour in 00-23 format, or 01-12 if an am/pm code appears somewhere in the format.
h0	Hour in blank-23 format, which is like 0-23 format, but displays nothing when the value is 0. Used in hour:minute count up/down clocks where the hour digit should not be displayed when zero.
n	Minutes in 1-59 format.

Clock Formats (Continued)

Format Code	Description
nn	Minutes in 01-59 format.
n0	Minutes in blank-59 format.
nnn	Minutes in 0-86400 format – total minutes in the count, up to one day, not calculated modulo-60. Useful for min:sec clocks that must count up/down past 60 minutes.
nnn0	Minutes in blank-86400 format. Like "nnn" but displaying nothing instead of 0.
s	Seconds in 0-59 format.
ss	Seconds in 00-59 format.
sss	Seconds in 0-5184000 format – total seconds, not modulo-60, up to one day.
am/pm	Displays "am" for values before noon and "pm" for values after noon. Like all am/pm codes, causes the "h" codes to use a 12-hour clock instead of a 24-hour clock.
a/p	Displays "a" before noon, "p" after.
AM/PM	Displays "AM" before noon, "PM" after.
A/P	Displays "A" before noon, "P" after.
a=<string>/	Displays the text in <string> before noon.
p=<string>/	Displays the text in <string> if it is after noon. There is no need to single-quote the characters within <string>. To include a / within the string, use //:
	"h:nn a=morn/p=aft//eve/" would show something like "9:45 morn" before noon, and "1:15 aft/eve" after noon.
	Using "a=/" in a format is a simple way to get "h" to use a 12-hour clock without having to show a visible "am/pm" indicator.
m	Month in 1-12 format.
mm	Month in 01-12 format.
mmm	Short month name: "Jan", "Feb", …
mmmm	Long month name: "January", "February", …
d	Date in month in 1-31 format.

Clock Formats (Continued)

Format Code	Description
dd	Date in month in 01-31 format.
ddd	Short day name: "Sun", "Mon", …
dddd	Long day name: "Sunday", "Monday", …
yy	Year in 2-digit form: 1999 is "99", 2006 is "06."
yyyy	Year in 4-digit form.

You can customize a clock by editing the code displayed in the Format box of the Deko Clock tab. You can use single quotes to insert literal text, for example:

```
'Today is 'dddd
```

results in

```
Today is Monday
```

You can use the tag `<br/>` to create line breaks in the format string. For example,

```
dddd<br/>m/d/yy
```

results in:

```
Saturday
```

```
10/13/07
```

Be careful when using codes embedded in the middle of words. The format string `n minutes` might appear as `17 10i17ute33`, because `n` is the code for minutes, `m` is the code for month, and `s` is the code for seconds. To avoid such undesired code substitution, surround the literal text by single quote characters, for example, `n 'minutes'`. To display a single quote in the clock output, use two single quotes within a single-quoted string. For example:

```
'It''s 'h:nn
```

results in

```
It's 11:17
```

📧 *The exact appearance of the text depends on the justification, word wrap, and shrink-to-fit settings established for the selected layer in the Deko graphic file.*

Displaying Temperature

You can display the temperature using the DekoCast Central Temperature Probe utility.

To display temperature:

1. Set up the temperature probe as described in "Using the Temperature Probe Interface Utility" on page 386.

2. Add a Deko object with a text layer to the scene.

3. Rename the Deko object *Temperature*.

4. Link to a DKO file to define the display style.

   When the Temperature Probe saves the temperature to a text file, it also queries all open scenes in DekoCast. If it finds a Deko object whose name is *Temperature*, it sets the text override parameter value to the new temperature value.

If you do not name the Deko object Temperature*, you have to link the Deko object to the text file in which the Temperature Probe utility saves the data.*

Playing Back Audio

Audio
Playback
button

DekoCast recognizes WAV and AVI files with embedded audio as source files for Audio Playback objects. After you select an audio file, it plays back from the system's hard drive. Playback controls allow you to queue, play, and stop the audio file, either manually or through actions that you define in the Timeline editor.

For information about setting up the Levels and Mixer tabs, see "Using the Levels and Mixer Tabs" on page 103.

To include audio playback in a scene:

1. Add an Audio Playback object to the scene tree.

   The Audio Playback object editor opens.

Audio File Status

Audio Object Status

Open   Play

Cue   Stop
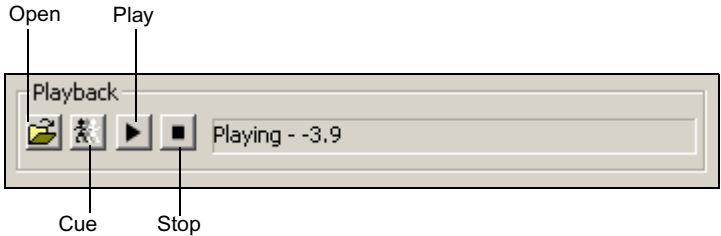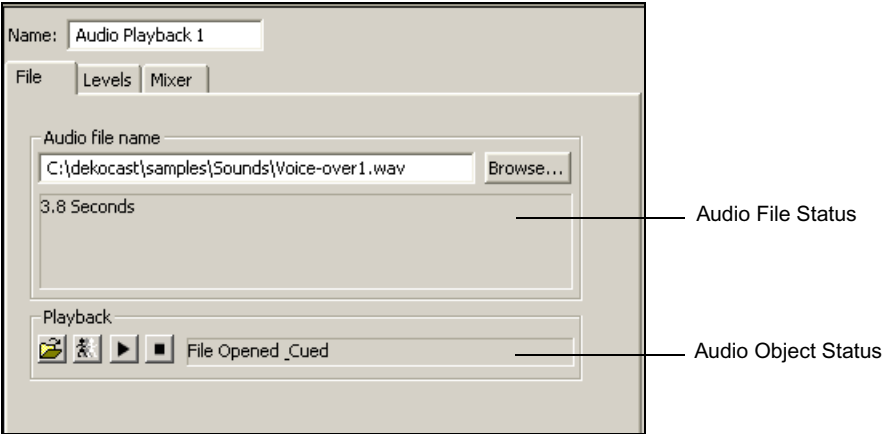
2. In the Audio file name text box, type the complete path for an audio file or click the Browse button and select a source file.

Save all audio files to drive E.

3. Control the playback as described in the following table:

Option	Description
Open	Opens the source audio file. If you attempt to open a file not recognized by the application, an error message displays in the Audio File Status section. The Audio Object Status reads File Opened.

Option	Description
Cue	Allocates audio playback hardware and loads audio samples for immediate Play. The Audio Object Status reads File Opened_Cued. If the file is not already open, the application attempts to open the file.
Play	Plays the audio file. The Audio Object Status reads Playing (including elapsed runtime of Audio object file). If the file has not been cued already, the application cues the file.
Stop	Stops the currently playing audio file. The Audio Object Status states that the file is stopped. This Stop is not a pause function. You cannot click Play and expect the file to resume where you stopped it. Clicking this button stops playback, uncues, and closes the audio file.

Capturing Audio

Audio
Capture
button
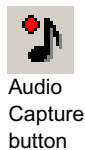
The Audio Capture object records audio and saves it to files in the WAV format.

- For Corsica-based systems, DekoCast records audio through a video input port, such as Video In A. You set this input in both the Video In object and the Audio Capture object.

- For TARGA-based systems, DekoCast also records audio through a video input port, so set this input in the Video In object. However, you need to set a Video output port in the Audio Capture object. If a scene has video input with audio and also audio playback, the Audio Capture object captures both.

To determine the video board used in a DekoCast system:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

   The name of the video board is listed at the top of the tab.

To capture audio to a WAV file:

1. Add an Audio Capture object to the scene tree.

   The Audio Capture object editor opens.
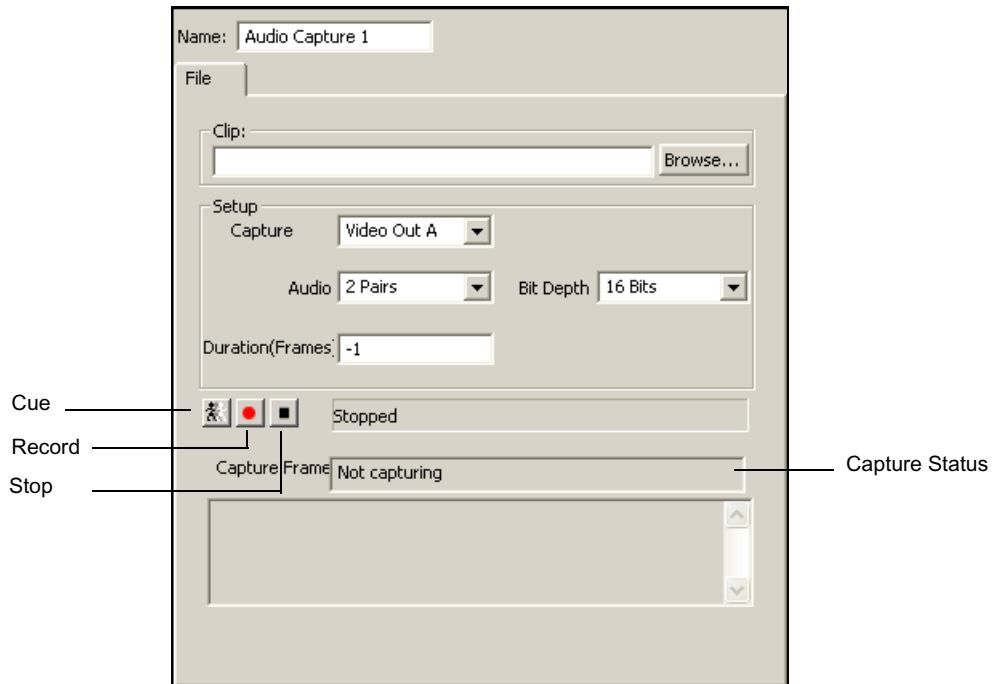
2. In the Clip text box, type the complete path for the WAV file to which you want to save the audio, or click the Browse button and select a source file.

3. In the Setup pane, select the source for the audio capture. The options depend on your video-board configuration:

   - For Corsica-based systems, select Video In A or B.

   - For TARGA-based systems, select Video Out A or B.

4. For the Audio options, your selection depends on your video-board configuration: 1 Pair (one left and right stereo), 2 Pairs (two left and two right stereo), 3 Pairs, and 4 Pairs.

5. Select the audio resolution (bit depth), depending on your video-board configuration: 16-bit or 20-bit for Standard Definition or 24-bit for High Definition.

6. Set the duration of the capture by doing one of the following:

▶ If you want manual control over the length of the capture, set the Duration (Frames) option to -1. The capture does not stop until you click the Stop button.

▶ If you want to capture a specific duration, type the number of video frames for which there is audio to capture in the Duration (Frames) text box.

Initially, the Capture Frame text box reads Not Capturing.

To cue the capture:

▶ Click the Cue button.

The status changes from Stopped to Cued.

If you cue the capture before pressing the Record button, there is a 1-second delay before the system starts recording. If you do not cue the capture before pressing the Record button, there is a 3-second delay

To start recording:

▶ Click the Record (red dot) button.

The status changes to Record, and the Capture Frame text changes to Capturing.

To stop recording:

▶ Click the Stop (black square) button.

The status is now Stopped.

Any error messages are displayed in the text box at the bottom of the dialog box.

Playing Back Clips

Clip
Playback
button

The Clip Playback object lets you play back clips in various video formats. Depending on your system's hardware and the type of clip, you can play out up to four clips (four video streams). Clip playback is available as part of the Clip Player option.

The Clip Playback button and Insert > Clip Playback menu option appear available even if the Clip Player option has not been activated. If you attempt to cue or play a clip using the Clip Playback object without having this option enabled, the clip neither cues nor plays. To determine if your system has the Clip Player option enabled, select Help > About DekoCast.

Understanding Clip Playback

When you use one or more Clip Playback objects in a scene, you need to be aware of how many clips the scene requires and how many clips your system can play out. This playout is determined by the number of *streams* available from your system's video board.

DekoCast systems use either a TARGA video board or a Corsica video board, depending on your system and model. Standard-definition playout can be through a TARGA video board or a Corsica video board. High-definition playout is through a Corsica video board only.

To determine the video board used in a DekoCast system:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

   The name of the video board is listed at the top of the tab.

📖 *For more information about your system's video board, see the* Avid On-Air Graphics Setup and Configuration Guide.

The two boards process streams in different ways:

- **TARGA video board:** DekoCast SD systems prior to version 4.1 were shipped with a TARGA video board. This video board incorporates two hardware codecs into its architecture.

  Each *codec* (a term derived from "*co*mpressor/*dec*ompressor") is capable of decoding clips through two video streams, for a total of four streams. The video board can simultaneously play back a maximum of two clips. These two clips can each include a key, which requires use of all four streams.

  The following illustration shows the maximum number of streams and clips the TARGA board can play out.

TARGA video board
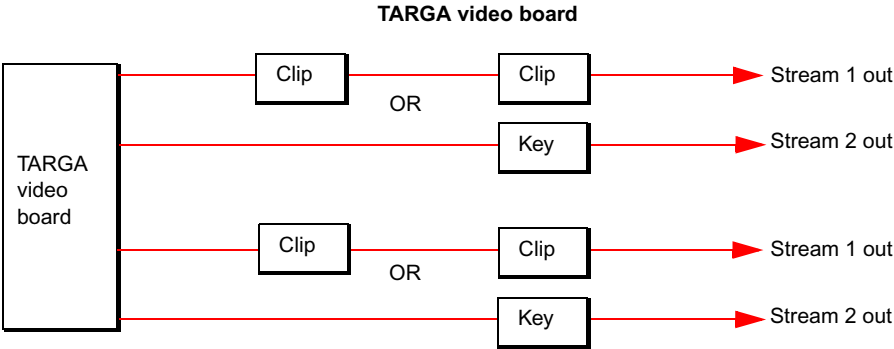
Although you can place more than two clips in a scene, the video board cannot play more than two clips simultaneously. You can, however, append one clip to another, which allows you to play several clips without the loss of frames. Appended clips can play as cuts only; they cannot have transitions or effects between them. For more information, see "Adding and Defining a Clip Playback Object" on page 144. See also "Managing Clip Playback" on page 143.

•   **Corsica video board:** All DekoCast systems shipped with version 4.1 and later ship with a single Corsica video board. This video board incorporates one hardware codec into its architecture.

    This codec is capable of decoding clips through four video streams. The video board can simultaneously play back a maximum total of four clips or two clips with key, either of which require use of all four streams.

    The following illustration shows the maximum number of streams and clips the Corsica video board can play out.

Corsica video board
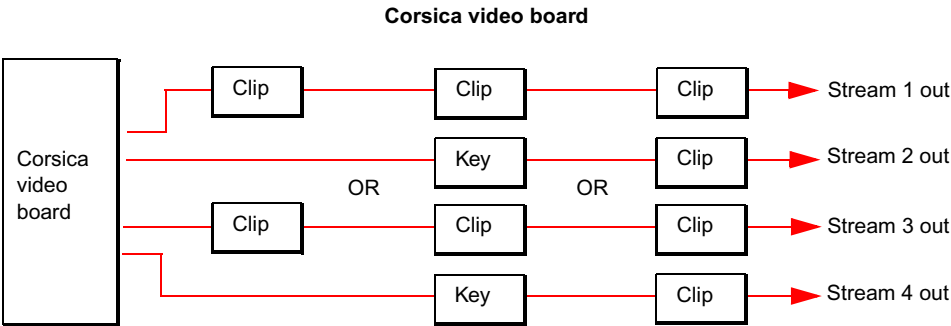
Corsica-based systems, like TARGA-based systems, allow you to append clips for playout of several clips without the loss of frames.

You need to configure a Corsica-based system to use these codecs as decoders or encoders or a combination of the two. See "Encode/Decode Option" on page 418.

Managing Clip Playback

It's important to keep track of how many streams are required by your output, because your system can play out only a limited number of streams. Keeping track is especially important when you have cued clips or transitions.

•   Clip playback objects consume codec resources whenever clips are playing or are cued. A single clip playback can consume twice as many codecs if it is playing one clip and has another cued.

•   Any transition between two clips, other than a cut, requires that you count the clips transitioning off as well as transitioning on. This includes key clips.

To determine how many streams are currently available:

1. Click the Parameters tab in the upper-right corner of the main DekoCast window.

2. Search for the value of the "Canvas-*number* codecs free" parameter.

    For example, a value of 2 means there are two free streams (here referred to as codecs) for this video board (canvas).

Clip Playback File and Compression Formats

DekoCast supports the following file and compression formats for video clips, depending on whether the system uses a TARGA video board or a Corsica video board.

Supported File Formats: TARGA Video Board (SD)

Supported File Formats	Supported Compression Formats	Comments
DV, DIF, and AVI	DV 25	Up to 2 streams with audio
MXF	DV 25, MPEG-2 4:2:0, MPEG-2 4:2:2 I-Frame or IBP	Up to 2 streams with audio

Supported File Formats: Corsica Video Board (SD and HD)

Supported File Formats	Supported Compression Formats	Comments
MXF	MPEG-2 4:2:0, MPEG-2 4:2:2 I-Frame Only	Up to 4 streams with audio

Note the following:

- Both video files and key files are supported in these formats.

- Clips created in Deko and Thunder MX are correctly formatted for any DekoCast system.

- All clips should be stored and played back from drive E.

- For Corsica-based systems, you can use the Transcode feature to convert various file types to the supported MPEG-2 formats. See "Transcoding SD Clips to MPEG-2 MXF I-Frame" on page 149.

For more information, see "Understanding Files and File Types" on page 37.

Adding and Defining a Clip Playback Object

The following procedure describes the basic steps for adding and defining a Clip Playback object. Instructions for playing clips, looping a segment of a clip, and setting the key file to start before or after the clip file are provided in"Playing and Looping Clips" on page 148.

To define a Clip Playback object:

1. Select Options > Preferences and from the Encode/Decode list select either "4 decoders" or "1 encoder 2 decoders." For more information, see "Encode/Decode Option" on page 418.

2. Add a Clip Playback object to a scene tree.

3. Edit the name in the object editor's Name text box.

4. In the File tab, select the source clip file by doing one of the following:

   - Click the Browse button, navigate to a clip file, and click Open.

   - Type the clip file's complete file path.

Browse button

Clip file path

Key file path

Key Offset

Clip file status

Open/Close file

User messages

Clear button

Clip file information
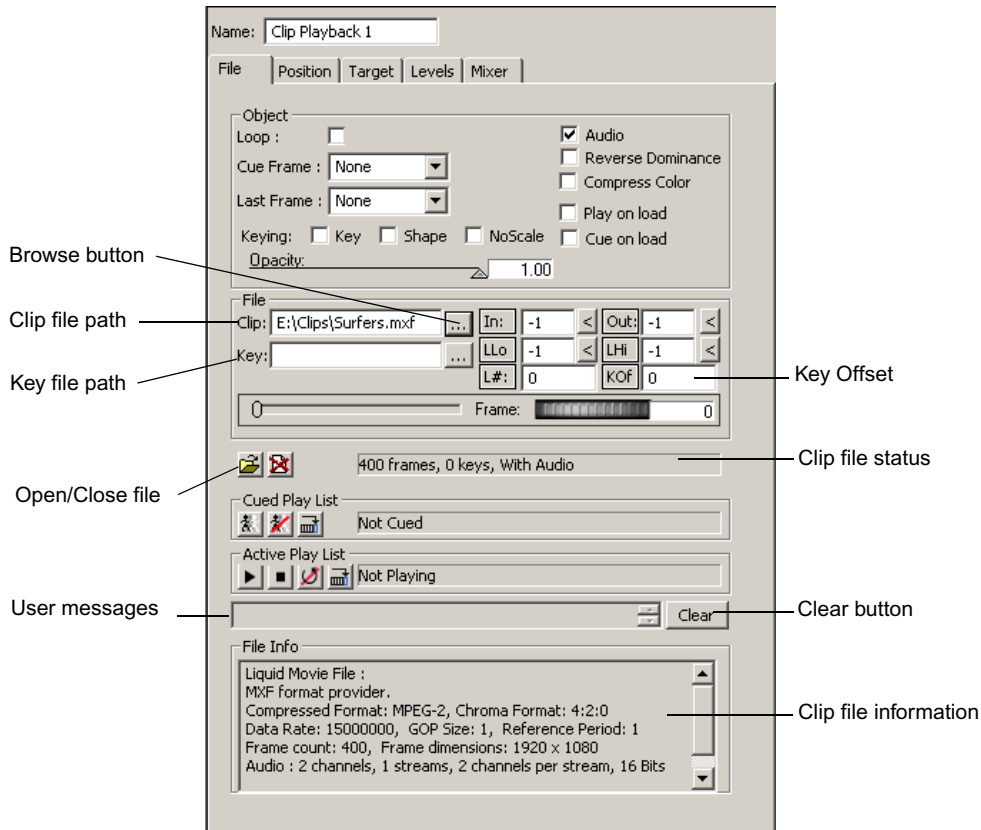
When a clip file is open, the Clip File Info pane shows the video format, the number of frames in the file, and other file information.

If you are working on a Corsica-based system, clips must use the MPEG-2 MXF I-Frame format. Clips in other formats need to be transcoded. See "Transcoding SD Clips to MPEG-2 MXF I-Frame" on page 149.

5. (Option) Select a key file using the Key text box or Browse button.

The same formats are supported for video files and key files.

Avid recommends that you name your key file *filename*_key. For example, a file and its corresponding key might be named Background.mxf and Background_key.mxf.

6. Specify the Object options as described in the following table.

7. Click the Cue button to add the clip (and key) file to the playlist.

The Cue button allocates a video codec stream and readies it for play. Clicking Cue automatically opens the file if it is not open.

Cue

Uncue list

Cue Append
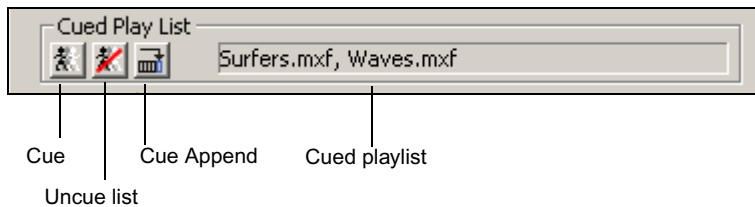
Cued playlist

8. (Option) Add another source (and key) file to this object's playlist:

a. Open a file by typing its name or using the Browse button.

b. Click the Cue Append button, which adds the clip file to the Cued Play List.

9. (Option) Append additional clips as described above.

To remove all files from the cue list:

▶ Click the Uncue List button in the Cued Play List set of button.

To revert to the Not Cued and Not Playing states:

▶ Click the Clear button.

To position and size a clip or define a target rectangle for it, see "Using the Target and Position Tabs" on page 86. To adjust associated audio, see "Using the Levels and Mixer Tabs" on page 103.

Clip Playback Object Options

The following table describes options you can select in the Clip Playback object editor.

Clip Playback Object Options

Option	Description
Loop	Loops the clip file or files until you explicitly stop it.
Cue Frame	Sets an option for which frame to show when cuing a clip: None (black), Full Frame, or First Field. Select First Field to avoid stuttering if there is motion between fields (interlaced formats only). Select Full Frame for better resolution.
Last Frame	Sets an option for which frame to show when ending a clip: None (black), Full Frame, or Second Field. Select Second Field to avoid stuttering if there is motion between fields (interlaced formats only). Select Full Frame for better resolution.
Keying	Key: Activates the associated key file. Deselect it if you do not want the key file to play back with the clip file.
	Shape: Sets whether the clip is shaped or unshaped. If the edges appear blurry or jagged, select Shape to sharpen the edges.
	NoScale: Relates to the key levels of the clip. Key levels can be on a scale of 0-255 or 16-235. When NoScale is selected, the application interprets the clip's key as already 0-255 and does not stretch or scale it from a 16-235 level.
	KOf (Key Offset): This text box (in the File section of the object editor) is set to 0 (no offset) by default. To have the key file start playback a specified number of frames after the clip file, type the number of frames that the key file is to be offset (played after the start) from the clip file.
	The key offset can be either positive or negative; the key can be frame matched against a specified number of frames ahead or behind in the clip.
Audio	Allows audio to play. By default, audio is set to on.
Reverse Dominance	Reverses the interlaced scan decoding from odd/even or even/odd, depending on the setting.
Compress Color	Similar to key levels, colors can be on a scale of 0-255 or 16-235. When this option is selected, colors are compressed to 16-235.
Play on Load	Starts the clip playing as soon as the file is read into memory, without being opened or cued.
Cue on Load	Cues the clip as soon as the file is read into memory.
Opacity	Sets the transparency level of the clip. Fully transparent is 0; Fully opaque is 1.

Playing and Looping Clips

You have several options for playing back and looping clips.

Play Append

Play   Stop   End Loop
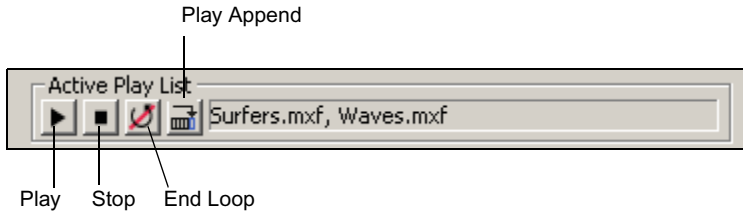
To play the clips manually in the order shown in the Cue Play List:

▶   Click the Play button.

To stop playout:

▶   Click the Stop button.

To manually control the playback of the clip, do one of the following:

▶   Select and drag the scrubber (to the left of the Frame thumbwheel).

▶   Select and drag the Frame thumbwheel.

▶   Type a frame number in the text box next to the Frame thumbwheel.

To append a clip to an already playing playlist:

▶   Open the clip file and click the Play Append button in the Active Play List set of buttons.

By default, a clip plays from the first to the last frame. In the File pane, the value for In is –1 (start play at the first frame), and the value for Out is –1 (continue to play to the last frame). You can select a different in or out frame to play a partial clip.
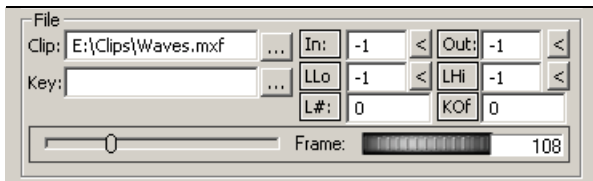
To play a partial clip:

1. Type the frame numbers that represents the In (first) frame and Out (last) frame of the clip that the application is to play.

   Use the scrubber or thumbwheel to determine the frame number.

2. Play the clip.

   For example, if you want to start playing at frame 20, select First and type 20 in the In text box. To stop the clip at a specific frame, select Last and type the frame number in the Out text box.

To loop an entire clip, including appended clips:

▶ Select the Loop setup option in the Object pane of the File tab and play the clip.

You can also loop a selected part of a clip by setting the Loop Low (LLo) and Loop High (LHi) frame numbers. By default, these values are –1, which means that no internal looping is to occur.

To loop part of a clip a set number of times.

1. In the File pane, type the frame number at which the loop is to start in the LLo text box.

2. Type the frame number at which the loop is to stop in the LHi text box.

3. Type the number of times that you want this internal loop to occur in the Loop Number (L#) text box.

   Frames that follow the LHi frame play after the Loop Number (L#) of iterations of the internal loop.

To stop a loop:

▶ Click the End Loop button in the Active Play List set of buttons.

Transcoding SD Clips to MPEG-2 MXF I-Frame

DekoCast systems that have a Corsica video board use MPEG-2 MXF I-Frame as a native file format for clip playback. If you need to work with scenes and clips created on a TARGA-based DekoCast SD system, you might need to transcode clips so that they play natively on a Corsica-based system. DekoCast includes tools to help you manage clips and scenes that are shared among DekoCast systems with different hardware.

To determine if a Corsica video board is used in your DekoCast system, select Options > Preferences and click the Video Hardware Options tab. The name of the video board is listed at the top of the tab.

The most efficient workflow in an environment that includes TARGA-based and Corsica-based DekoCast systems is to create clips in the MPEG-2 MXF I-Frame format. MPEG-2 MXF I-Frame clips are compatible with all DekoCast systems.

However, if you need to work with DV 25 clips or clips in other formats, you can use the Transcode application or a DekoCast watch folder to convert the files to MPEG-2 MXF I-Frame. You might find this necessary if you are transferring projects that were created on a TARGA-based SD system, which supports DV 25 for playback (see "Clip Playback File and Compression Formats" on page 143). Other file formats you can transcode are .m2v, .mov, .mxf, .avi, .dif, .tmf, and .vbs.

The Transcode application provides several different ways to transcode clips. In all cases, the application adds _IF (for I-Frame) to the filename of the transcoded clips. If the filename ends with _V (for video) or _K (for key), DekoCast adds IF_V or IF_K to the filename.

⚠ **Transcoding uses CPU resources and could interfere with playout to air. Avid recommends that you perform transcoding on a DekoCast Authoring Station or when a DekoCast system is not on-air.**

There are two basic methods for transcoding clips:

- Transcode in standalone mode by opening the Transcode application and creating jobs or by dragging files to the Transcode application icon.
- Transcode automatically by using watch folders or scene options. In this method DekoCast starts the Transcode application.

The following topics describe these different methods:

- "Suggested Workflow for Transcoding" on page 151
- "Transcoding Clips Through the Transcode Application" on page 152
- "Transcoding By Dragging Clips to the Transcode Icon" on page 158
- "Transcoding Clips By Using a Watch Folder" on page 159
- "Transcoding Through a Default Watch Folder" on page 160
- "Transcoding Through a Custom Watch Folder" on page 161
- "Transcoding Clips When a Scene Opens" on page 163

Suggested Workflow for Transcoding

The following is a suggested workflow for efficient transcoding and management of clips in an environment that includes TARGA-based systems and new Corsica-based DekoCast systems. This workflow uses a default watch folder, which lets you transcode clips without having to open the Transcode application manually. For details on using a watch folder, see "Transcoding Through a Default Watch Folder" on page 160.

To copy and transcode clips:

1. Set up a watch folder on a new Corsica-based DekoCast system.

   For example, you can set E:\Clips as a default watch folder and include all subfolders in the path.

2. Copy clips from a TARGA-based system to the watch folder.

   Any clips that are not compatible with Corsica hardware are transcoded to MPEG-2 MXF I-Frame clips.

   Transcoding through a watch folder works only if you copy clips to the watch folder, so make sure to set up the watch folder before you copy the clips.

3. Copy scenes to the Corsica-based system.

   After you complete this workflow, your scenes can play on any machine and you should not need to do any further transcoding on your Corsica-based system. When you create new clips, create them in the MPEG-2 MXF I-Frame format, which is compatible with all DekoCast systems.

To verify that a scene and the newly transcoded clips work correctly:

1. In a Windows folder, select all original clips (such as .dv clips). You can sort by file type to more easily select the original clips.

2. Cut the selected clips and paste them into a new folder.

3. Play your scene. Make sure all clips are playing.

4. After you're confident that all your scenes work correctly, you can delete the original clips to save storage space.

If you edit a scene on Corsica-based system and then copy it to a TARGA-based system, make sure to copy any clips also.

Transcoding Clips Through the Transcode Application

Using the Transcode application provides you with the most control over the Transcoding process. When you open the Transcode application (or drag clips to the Transcode icon), you are running Transcode in *standalone mode*. Use this method as an alternative to using a watch folder for transferring scenes and clips from a TARGA-based system to a new Corsica-based system.

For example, you can use the following workflow to transcode clips from a TARGA-based system:

1. Copy the contents of your D: drive and E: drive from a TARGA-based system to a Corsica-based system, preferably to a DekoCast Authoring Station or to an off-air DekoCast system. (As a rule, you should store clips in folders on the E: drive).

2. On the Corsica-based system, use the Transcode application to transcode the clips that are not supported on the Corsica-based system.

You can also open and run Transcode on the TARGA-based system and specify that Transcode should write the transcoded files over a network to a folder on the Corsica-based system.

If your clips are contained in several different folders and you want to preserve the same folder structure, you need to create different jobs in the Transcode application. The Transcode application lets you process multiple jobs simultaneously.

⚠ **Transcoding uses CPU resources and could interfere with playout to air. Avid recommends that you perform transcoding on a DekoCast Authoring Station or when a DekoCast system is not on-air.**

Although you can run Transcode without the DekoCast application open, you need to specify default settings in the Transcode and Scene Options tab of the DekoCast Options dialog box (see "Transcode and Scene Options" on page 430). You can override these settings in the Transcode application, but changes you make in the Transcode application are not saved as defaults.

The Transcode application is installed by default as C:\DekoCast\bin\Transcode.exe. The installation program adds an icon for the application to the desktop.

To transcode clips through the Transcode application:

1. Select Options > Preferences.

2. Click the Transcode and Scene Options tab.
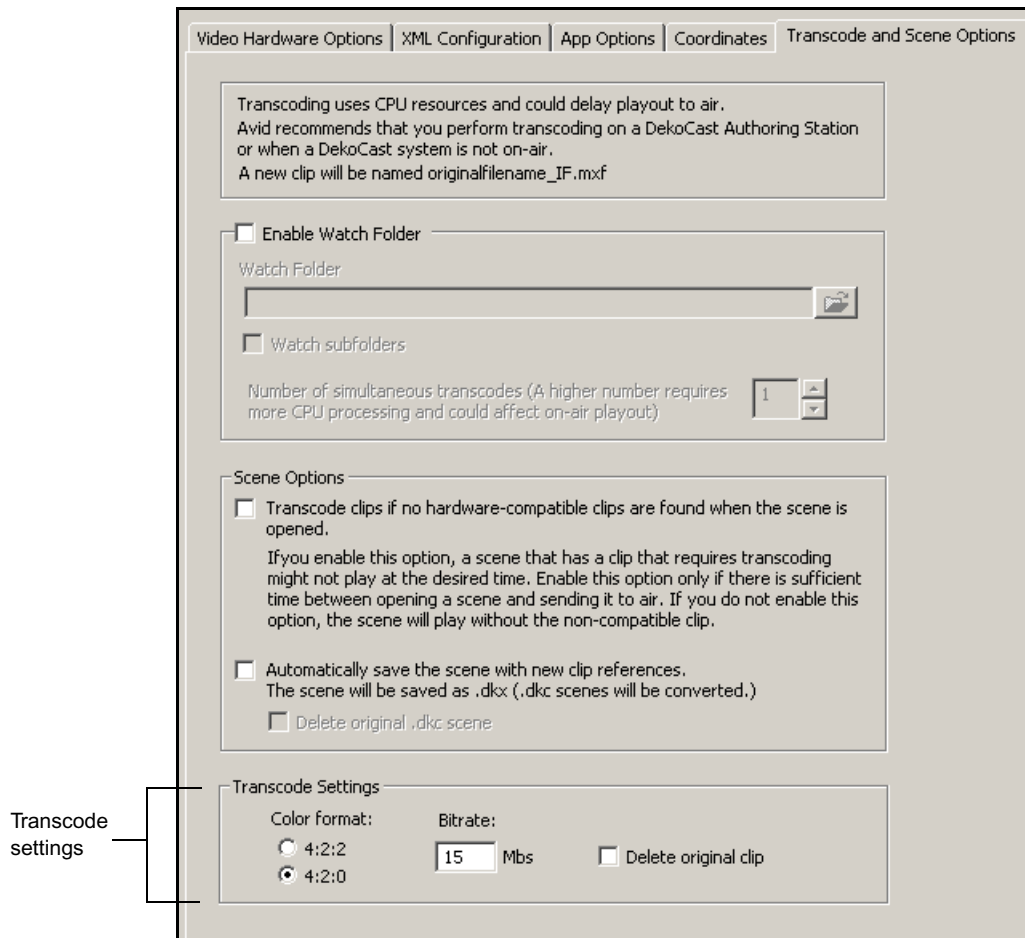
3. Select the desired Transcode Settings (Color format and Bitrate).

   For more information on these options, see "Transcode and Scene Options" on page 430.

📖 *The "Delete original clip" option does not apply when you transcode clips by opening the Transcode application or by dragging clips to the Transcode icon. This option applies only when you transcode through a default watch folder or automatically when a scene opens.*

4. Click OK.

   Your settings are saved as the defaults for the Transcode application.

5. Double-click the Transcode icon.

   The Transcode window opens, with the default settings you selected. A numbered job is displayed in the Job list with the Queued status.

Job list   Destination folder option
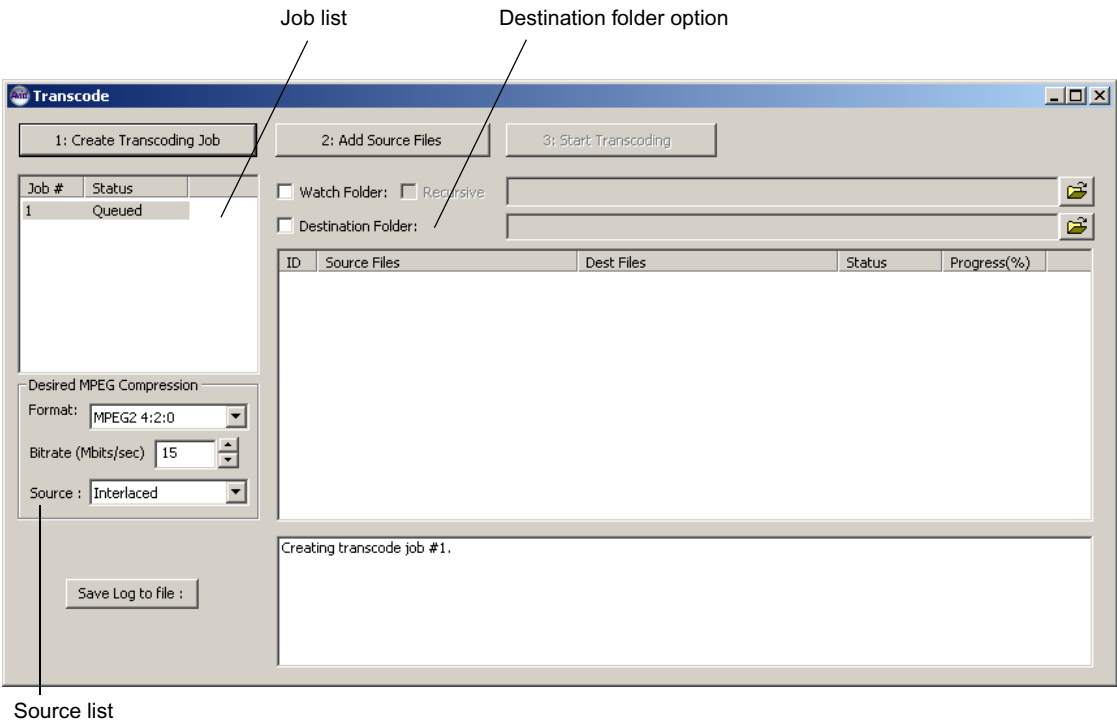
Source list

6. (Option) Select different Desired MPEG Compression settings that override the default settings.

   Settings you select in the Transcode application do not change the default settings.

7. In the Source list, select Progressive or Interlaced, depending on the format of the source file.

8. (Option) Select the destination folder.

    The default location is the folder that holds the original clip. If you want to change the destination folder, do the following:

    a. Select the Destination Folder option.

    b. Click the Browse button, navigate to a folder, and click OK.

Destination folder option and path   Add Source Files button   Clip list
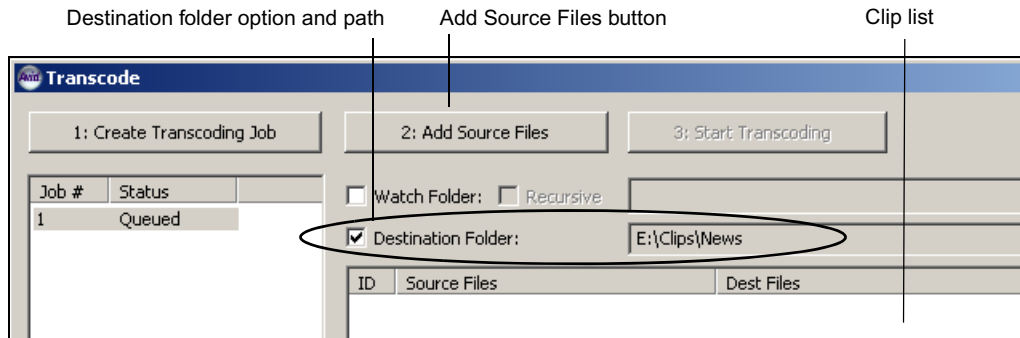
9. Add files to a job by doing one of the following:

    ▸ Drag one or more files from a Windows folder to the clip list.

    ▸ Click the Add Source Files button or right-click in the clip list and select "Add Source files."

      The Open dialog box opens. Navigate to the files you want to transcode, select the files you want to transcode, and click Open. You can use the "Files of type" list to specify which type of files you want displayed.

    You can add files of different formats to a single job, but all files will be transcoded with the same MPEG compression options. The files appear in the clip list, with the destination filename, the status, and the current progress.

You cannot add a folder to the clip list; you need to add the contents of the folder.

Job list   Clip list   Start Transcoding button

Log window
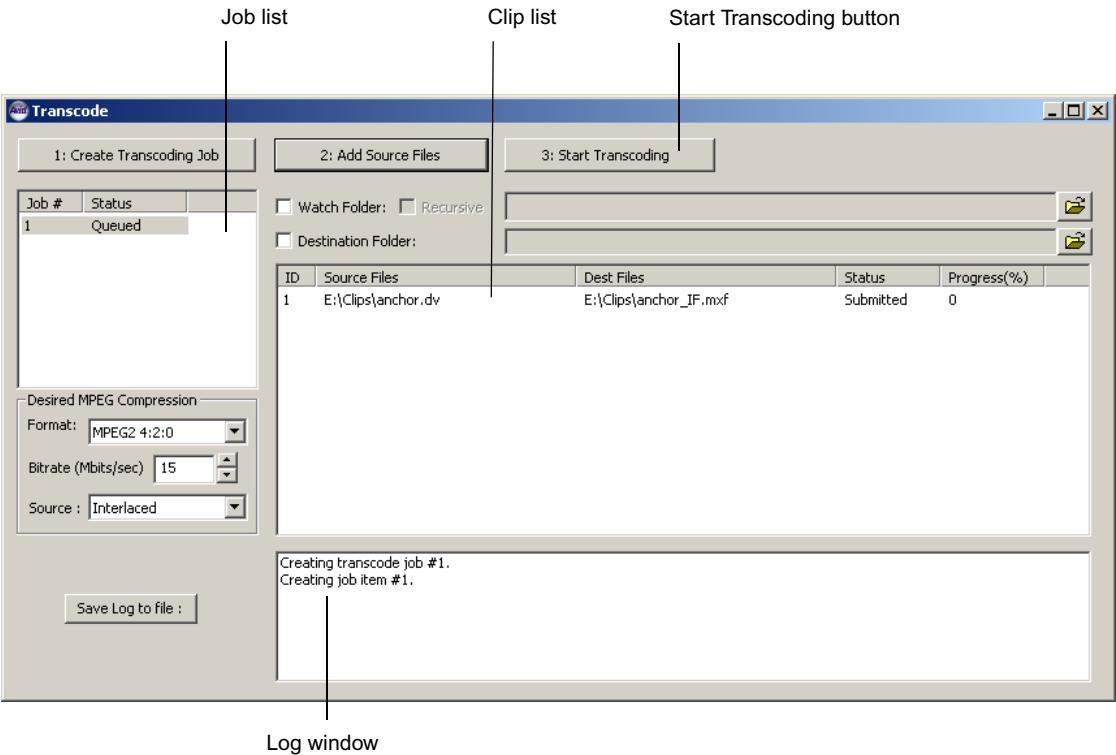
10. (Option) If you want to create an additional job, click Create Transcoding Job and follow the preceding steps, beginning with step 6.

DekoCast processes multiple jobs in First In/First Out (FIFO) order, except if you are transcoding a clip from within DekoCast. Transcoding a clip from within DekoCast is an immediate job, which takes precedence over other jobs (background jobs).

11. Click Start Transcoding.

The application begins the transcoding process. The clip list displays the status and the percent of each file in the job and the log window displays messages about the job. As each file is transcoded, it is written to the folder that you specified.
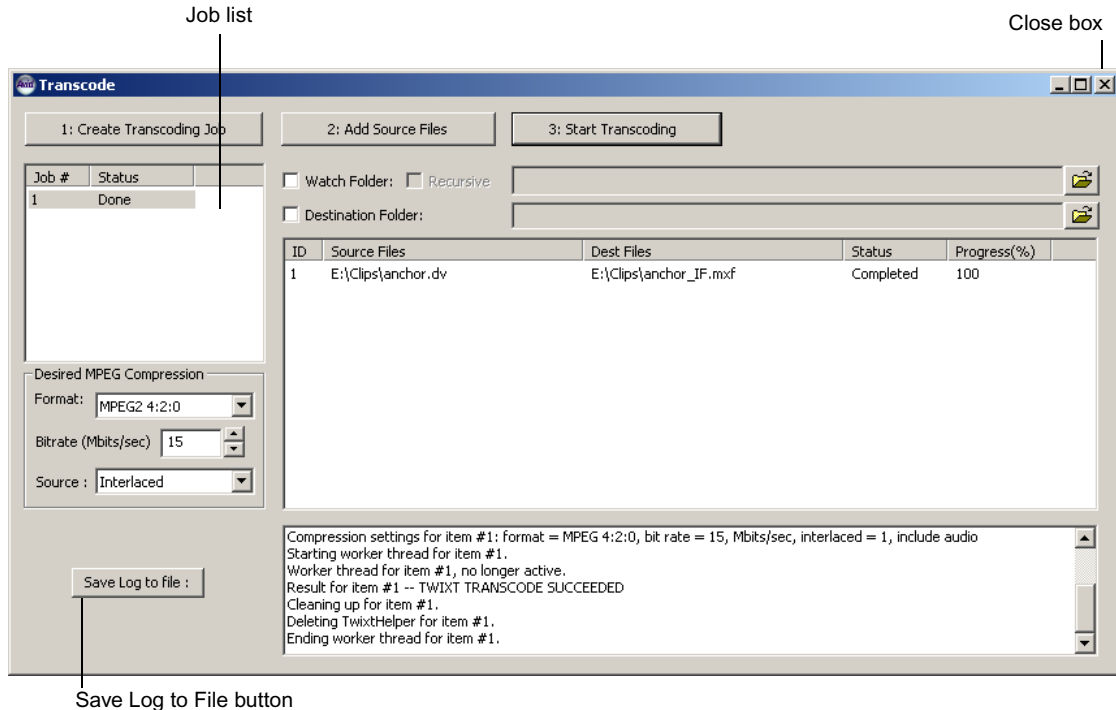
The following illustration shows a completed job. In this example, the transcoded clip is saved in the same folder as the original clip.

Job list   Close box

Save Log to File button

📖 *You can add files to a job while it is processing. You can also minimize the application window during the transcode process.*

To save the log to a file:

▶ Click "Save Log to file," navigate to a folder, type a name for the file, and click Save.

To stop or delete a job:

▶ Right-click the job in the Job list and select "Remove selected job."

To close the Transcode window:

▶ Click the close box.

Transcoding By Dragging Clips to the Transcode Icon

You can transcode clips without opening the Transcode application by dragging clips to the Transcode icon. Transcoding through this method uses the default settings you selected in the Transcode and Scene Options tab. Transcoded clips are stored in the same folder as the original clips.

If you want to use different settings, create a transcoding job. For more information, see "Transcoding Clips Through the Transcode Application" on page 152.

When you drag clips to the Transcode icon (or open the Transcode application), you are running Transcode in standalone mode.

⚠ **Transcoding uses CPU resources and could interfere with playout to air. Avid recommends that you perform transcoding on a DekoCast Authoring Station or when a DekoCast system is not on-air.**

To transcode clips by dragging clips to the Transcode icon:

1. Select Options > Preferences.
2. Click the Transcode and Scene Options tab.
3. Select the desired Transcode Settings (Color format, Bitrate).

   For more information on these options, see "Transcode and Scene Options" on page 430.

📖 *The "Delete original clip" option does not apply when you transcode clips by opening the Transcode application or by dragging clips to the Transcode icon. This option applies only when you transcode through a default watch folder or automatically when a scene opens.*

4. Click OK.
5. Drag one or more files from a Windows Explorer folder to the Transcode icon.

   The Transcode window opens as a minimized window in the Windows Task Bar. The transcoding process takes place using the default settings and the transcoded file is saved in the same folder as the original file. You can open the Transcode window to check the progress of the job.

Transcoding Clips By Using a Watch Folder

Watch folders provide you with a convenient way to transcode clips before you open a scene. A *watch folder* is a Windows folder that lets you transcode clips without opening the Transcode application. If you copy one or more clips to the watch folder, the Transcode application determines if a clip needs to be transcoded and transcodes the clip according to the settings you selected in the Transcode and Scene Preference tab.

You can select subfolders so that the Transcode application searches the watch folder recursively. For example, you can select the folder E:\Clips as a watch folder and select the "Watch subfolders" option. Then any clips that you copy to E:\Clips or its subfolders are transcoded, if required.

Using a watch folder is the suggested method for transcoding all clips on a new Corsica-based DekoCast system. See "Suggested Workflow for Transcoding" on page 151.

You set a default watch folder in the Transcode and Scene Options tab. You can also set a custom watch folder in the Transcode application, but it does not persist as the default watch folder. These methods are described in the following topics:

- "Transcoding Through a Default Watch Folder" on page 160
- "Transcoding Through a Custom Watch Folder" on page 161

DekoCast does not transcode clips that are already in the watch folder when you start a new transcoding job. This prevents the existing clips from being transcoded again. If you delete a clip from the watch folder, and later want to transcode it again, delete it from the clip list, or create a new job and add the clip to the clip list.

Transcoding Through a Default Watch Folder

You can set a watch folder in the Transcode and Scene Preference tab that DekoCast uses as the default.

To transcode through a default watch folder:

1. Select Options > Preferences.

2. Click the Transcode and Scene Options tab.
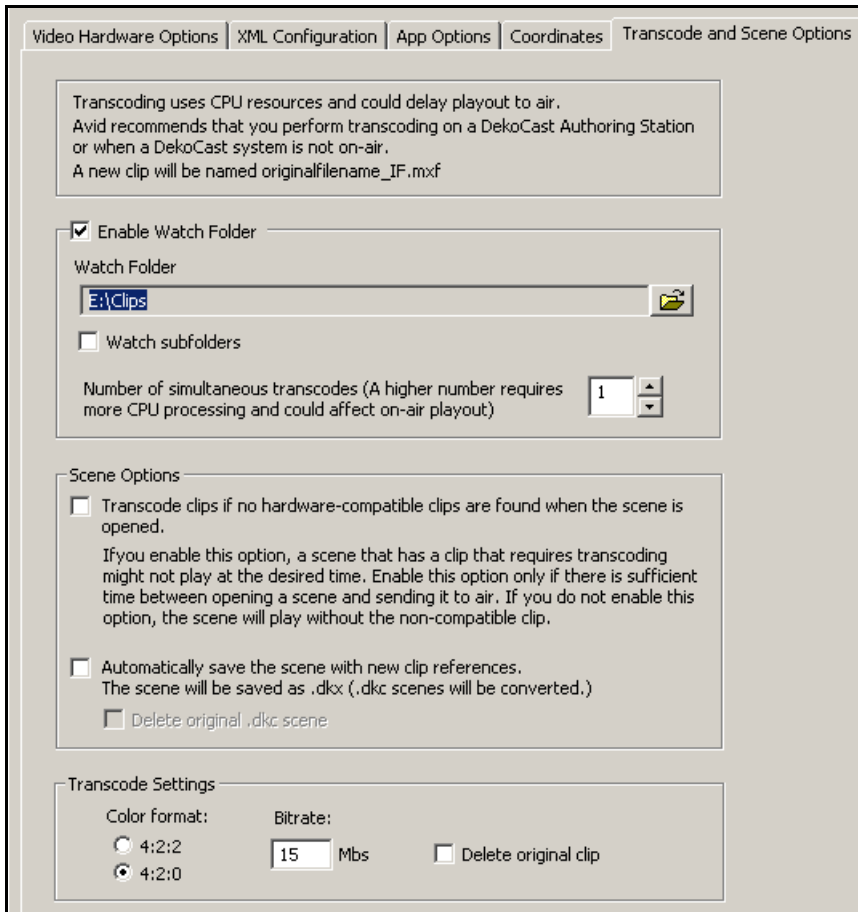
3. Select "Enable Watch Folder."

Selecting this option causes the Transcode application to start whenever you start DekoCast. If you select this option and click OK, Transcode starts immediately, if it is not currently running.

📄 *The Transcode application must be running for the watch folder to work. You can minimize the Transcode application, but make sure not to close it.*

4. Click the Browse button, navigate to the desired folder, and click OK.

5. (Option) Select "Watch subfolders" if you want Transcode to recursively search any folders contained in the watch folder.

6. Select the number of simultaneous transcodes.

⚠ **Because multiple transcode jobs require more CPU processing, specify a number higher than 1 only if you plan to transcode clips when the system is off-air.**

7. Select the desired Transcode Settings (Color format, Bitrate, Delete original clip).

   Select "Delete original clip" only if you have tested your workflow and are confident that transcoding works successfully.

   For more information on these options, see .

8. Click OK.

   The Transcode application starts. Any clips that you then copy to the watch folder (or its subfolders) are transcoded automatically with the settings you selected and are saved in the same folder. You can add files to a job while it is processing by adding files to the watch folder.

   The default watch folder remains active if it is selected in the Transcode and Scene Options tab, if DekoCast is running, and if the Transcode application is running,

Transcoding Through a Custom Watch Folder

You can set a custom watch folder in the Transcode application that overrides the default watch folder. If there is no default watch folder, you can specify one here, but it does not persist as the default.

One advantage of using a watch folder with the Transcode application is that you can create multiple jobs to transcode the clips into different formats or to different locations. Then, when you copy clips to the watch folder, the Transcode application runs the multiple jobs and stores the transcoded clips according to how you set up each job.

When you transcode through a custom watch folder, you are running Transcode in standalone mode.

To transcode through a custom watch folder:

1. Double-click the Transcode icon.

   The Transcode window opens, with the default settings you selected, included the default watch folder, if you selected one. A numbered job is displayed in the Job list with the Queued status.

2. Select the Watch Folder option. Select the Recursive option if you want the application to watch folders nested inside the folder you specify.

Watch Folder options and path
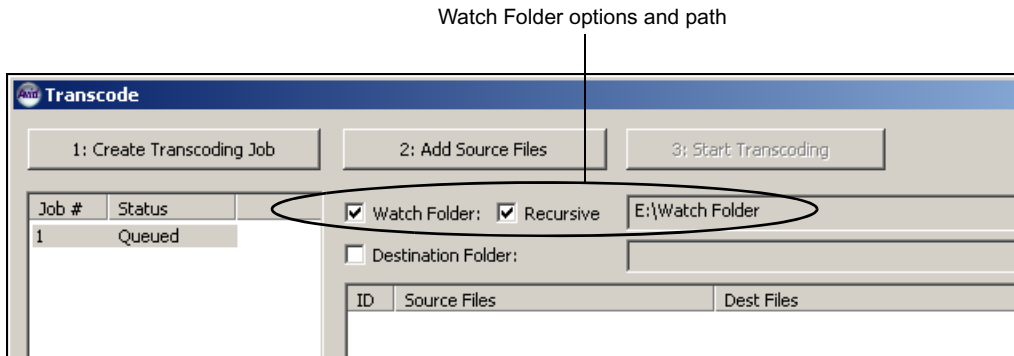
3. Click the Browse button, navigate to the desired folder, and click OK.

   The Transcode application is ready to monitor the folder you specified and transcode any clips added to this folder or its subfolders. Clips that are already stored in the folder are not transcoded.

4. (Option) Select the destination folder.

   The default location is the folder that holds the original clip, in this case the watch folder. If you want to change the destination folder, do the following:

   a. Select the Destination Folder option.

   b. Click the Browse button, navigate to a folder, and click OK.

5. (Option) Create another job with different settings and specify the same watch folder.

   By specifying the same watch folder, you can transcode the same clips to different formats or to different locations automatically.

⚠ **Because multiple transcode jobs require more CPU processing, process multiple jobs only if you plan to transcode clips when the system is off-air.**

6. (Option) Minimize the Transcode application.

▤ *The Transcode application must remain open so that a watch folder remains active.*

7. Copy the clips you want to transcode to the watch folder.

DekoCast adds the clips to the clip list and begins the transcoding process. The clip list displays the status and the percent of each file in the job. As each file is transcoded, it is written to the same folder or to a folder that you specified. You can add files to a job while it is processing by adding files to the watch folder.

The custom watch folder remains active if it is selected in the Transcode application and the Transcode application is open.

Transcoding Clips When a Scene Opens

If you follow the suggested practices for transcoding (see "Suggested Workflow for Transcoding" on page 151), any scene that is opened on any DekoCast system should lay without problems. However, you can configure your system so that when a scene opens, any required transcoding is performed.

For example, you might open a scene that includes clips in the DV 25 format. When you open the scene, DekoCast looks for hardware-compatible MXF versions of the clips in the scene. If it cannot find hardware-compatible clips, it identifies the clips that need to be transcoded and starts the Transcode application, which automatically transcodes them according to your preferences. If you do not select this option, the scene plays but does not play the clips that require transcoding.

Selecting this option also automatically transcodes clips that you link to through the Clip Playback object editor.

⚠ **Use this option carefully. If you configure your system to automatically transcode clips, a scene might not play at the desired time. Enable this option only if there is sufficient time between opening a scene and sending it to air.**

You can also select an option so that any time DekoCast plays a hardware-compatible clip that was not referenced in the open scene, DekoCast saves the scene with the new clip reference.

To transcode clips when a scene opens:

1. Select Options > Preferences.

2. Click the Transcode and Scene Options tab.
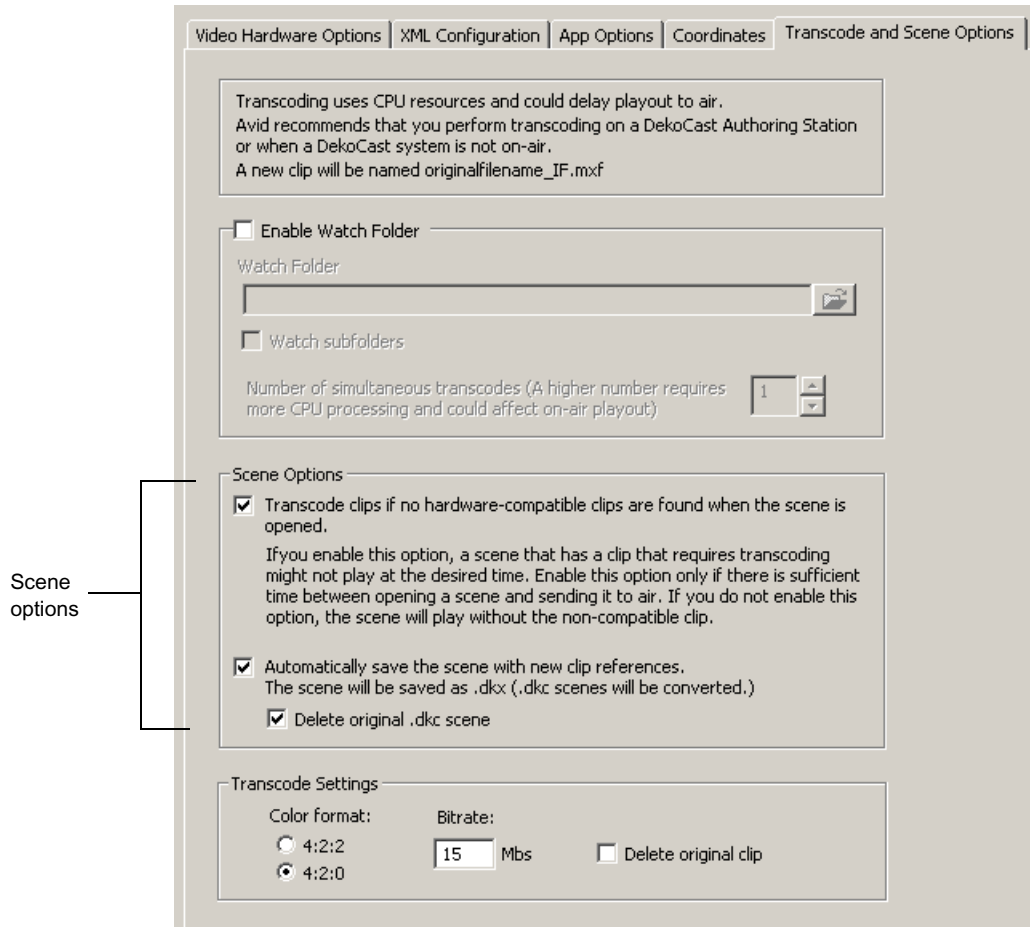
3. In the Scene options section, select "Transcode clips if no hardware-compatible clips are found when the scene is opened."

   The Transcode application automatically runs and transcodes clips using the settings you select in this tab.

4. (Option) Select "Automatically save the scene with new clip references."

   For example, if the scene references "OTSleft.dv" and DekoCast finds and plays "OTSleft_IF.MXF," the scene is saved with a reference to "OTSleft_IF.MXF." Saving a scene with this option keeps references to the actual clips that played, and minimizes confusion if you copy the scene to different machines.

   DekoCast saves the scene with the .dkx extension. If the original scene used the .dkx extension, DekoCast overwrites the file. If the original scene used the .dkc extension (an older format), DekoCast converts the scene to .dkx and saves it.

   If you do not select this option, the scene is not changed, and DekoCast searches for the compatible clip every time the scene is opened.

5. (Option) Select "Delete original .dkc scene."

   If you select "Automatically save the scene with new clip references" and the original file used the .dkc extension, both versions of the scene are saved. As a result, you might open or modify the wrong scene. If you select "Delete original .dkc scene," DekoCast automatically deletes the original .dkc scene, which can help reduce confusion.

   Select this option only if you are sure you do not need the old file.

6. Select the desired Transcode Settings (Color format, Bitrate, Delete original clip).

   Select "Delete original clip" only if you have tested your workflow and are confident that transcoding works successfully.

   For more information on these options, see "Transcode and Scene Options" on page 430.

7. Click OK.

   Now whenever you open a scene that includes clips not supported on a Corsica-based system, Transcode starts and automatically transcodes the clips using the default settings.

Capturing Clips

Clip Capture button

The Clip Capture object allows you to record video or audio (or both) through the inputs of your DekoCast system. The recorded clips are saved to a file, which you can open and play back using the Clip Playback object or other applications that support MXF files (such as Avid Deko or Avid Thunder).

- For Corsica-based systems, DekoCast records the signal that is coming in through a video input port, such as Video In A. Set this input in both the Video In object and the Clip Capture Object.

- For TARGA-based systems, DekoCast records the signal that is going out through the Video Out port, which means that you will be recording any objects that are included in the output. If you want to record only the signal that is coming in through a video input

port, include only the following objects in the scene tree: Video Out, Clip Capture, and Video In. Set the desired video input in both the Video In object and the Clip Capture object.

You capture the clips by using the Cue, Record, and Stop buttons in the Clip Capture object editor. Alternatively, you can capture by specifying actions and setting keyframes to cue, start, and stop recording. For more information, see "Adding Actions to a Scene" in the DekoCast Help. Also, you can capture video and key simultaneously, but you need to create an action that will cue the recordings and start them simultaneously.

The following topics describe how to capture clips using the Clip Capture object:

- "Setting Up Clip Capture (Corsica Systems)" on page 166
- "Setting Up Clip Capture (TARGA Systems)" on page 168
- "Capturing a Clip" on page 172

Setting Up Clip Capture (Corsica Systems)

The following procedure describes the settings you need to select to capture a clip on a Corsica-based system.

To set up clip capture:

1. Connect a video source (such as a live feed) to one of the Video In connections on your Corsica-based DekoCast system.

2. Select Options > Preferences and from the Encode/Decode list select either "2 encoders" or "1 encoder 2 decoders." For more information, see "Encode/Decode Option" on page 418.

3. Create a new scene or open an existing scene.

4. Add a Video In object to the scene tree and select the source for the video capture from the Video Input Port list, for example, Video In A.

5. Add the Clip Capture object to a Scene Tree by doing one of the following:

   ▶ Select Insert > Clip Capture from the Scene menu bar.

   ▶ Click the Clip Capture button in the Object toolbar.
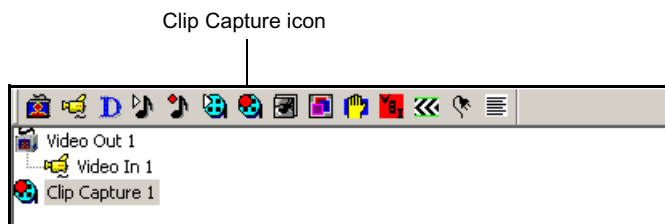
Clip Capture icon

📝 *The Clip Capture object, like other objects that record input, are root objects and cannot have parent objects.*

The Clip Capture editor opens.

File name for recorded clip

Setup pane
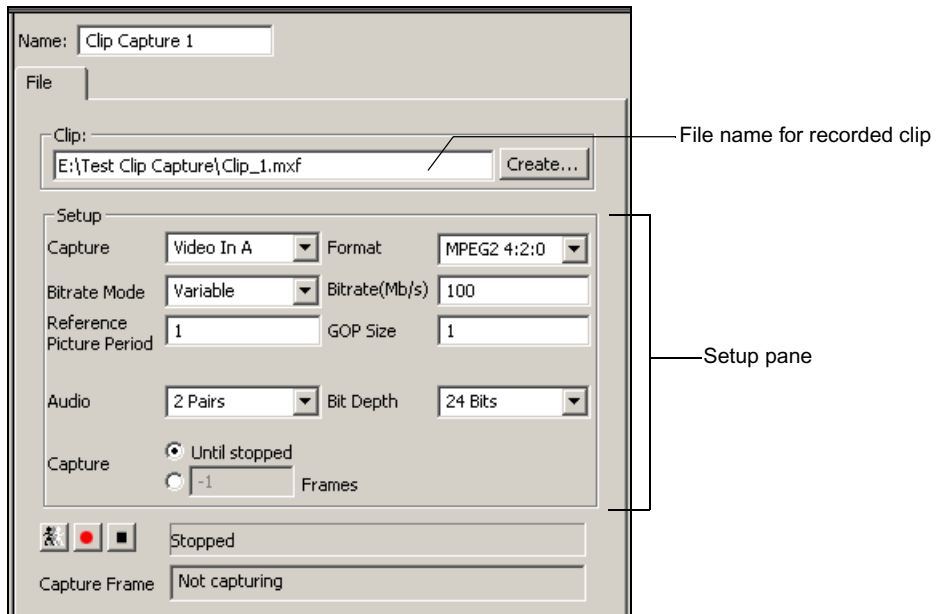
6. Name the clip by doing one of the following:

   ▸ In the Clip text box, type the complete path for the file to which the recorded clip is to be saved, including the extension .mxf.

   ▸ Click the Create button, which opens the Select Clip File dialog box. Navigate to the folder where you want to store the clip, type the file name, including the extension .mxf, and click Open.

7. From the Capture list in the Setup pane, select the Video Input port that matches the one you set for the Video In object.

8. The Format list displays the format MPEG2 4:2:0, which is the only format used by a Corsica-based DekoCast system to capture a clip. Clips are created as I-Frame MXF files. Set the values for MPEG-2 compression as described in the following table.

MPEG-2 Compression Format Options (Corsica-Based Systems)

Option	Description
Bitrate Mode	Variable (only choice): Uses a higher bitrate for more complex video segments and a lower bitrate for less complex segments. Provides the best quality-to-storage ratio.
Bitrate in Megabits per second for video compression	A larger bitrate number results in a superior image, but uses more disk storage and network bandwidth. The default value is 100. Select a value from 2 Mb/s to 100 Mb/s. For SD, the suggested bitrate is between 15 Mb/s and 25 Mb/s.
Reference Picture Period	The system sets a value of 1, the only legal value.
GOP Size	The system sets a value of 1, the only legal value.
Audio	Select 1 Pair (one left channel and one right channel), 2 Pairs (two left channels and two right channels), 3 Pairs, or 4 Pairs.
Bit Depth	The system uses 20-bit audio for SD and 24-bit audio for HD.
Capture (Duration)	Select one of the following: • Select "Until stopped" if you want the system to keep recording until you click the Stop button. • Specify the number of frames you want the system to record (duration in frames). When the number of frames is set to -1, recording does not stop until you click the Stop button.

9. Capture the clip as described in .

Setting Up Clip Capture (TARGA Systems)

The following procedure describes the settings you need to select to capture a clip on a TARGA-based system. On a TARGA-based system, DekoCast capture the output of the Video Out object.

To set up clip capture:

1. Connect a video source (such as a live feed) to one of the Video In connections on your TARGA-based DekoCast system.

📄 *You cannot capture audio from Video In B, even if it is enabled in the Video Hardware Options tab of the Preferences dialog box.*

2. Create a new scene, which by default includes a Video Out object.

3. In the Video Out editor, select an output from the Video Output Port list, for example, Video Output A.

4. Add a Video In object to a Scene Tree and select the source for the video capture from the Video Input Port list, for example, Video In A.

5. Add the Clip Capture object to a Scene Tree by doing one of the following:

   ‣ Select Insert > Clip Capture from the Scene menu bar.

   ‣ Click the Clip Capture icon in the Object toolbar.
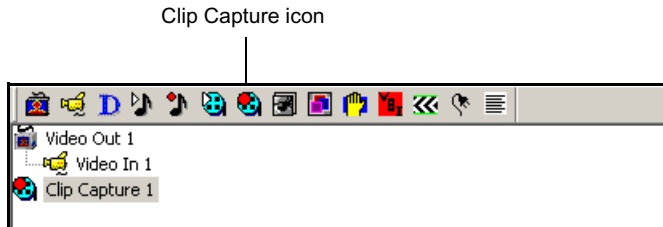
Clip Capture icon

When capturing clips on TARGA-based systems, include only the following objects in the scene tree: Video Out, Video In, and Clip Capture.

The Clip Capture object, like other objects that record input, are root objects and cannot have parent objects.

The Clip Capture editor opens.

File name for recorded clip

Setup pane
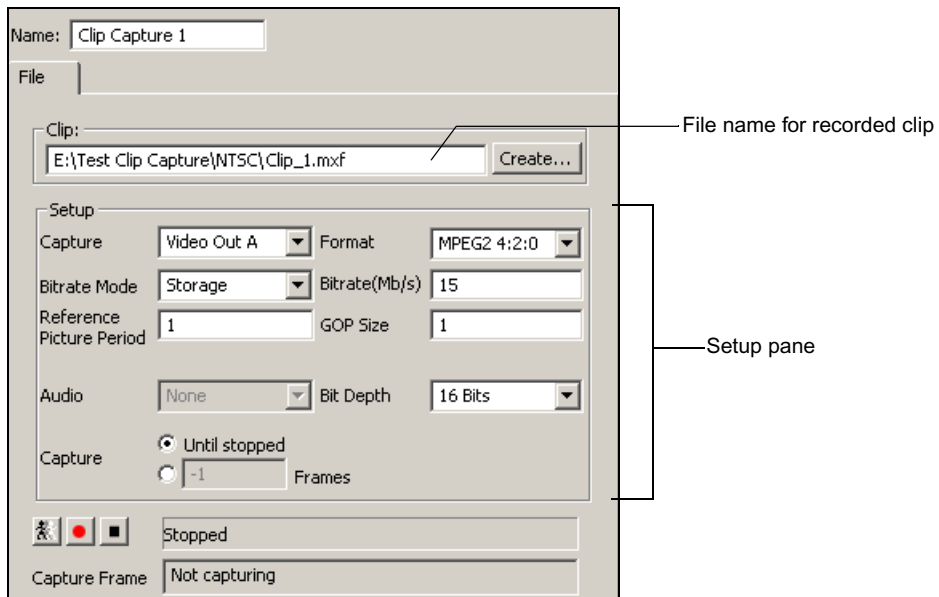
6. Name the clip by doing one of the following:

    ▶   In the Clip text box, type the complete path for the file to which the recorded clip is to be saved. Include the appropriate extension: .dv for DV 25 files, and .mxf for MPEG-2 files.

    ▶   Click the Create button, which opens the Select Clip File dialog box. Navigate to the folder where you want to store the clip, type the file name, including the extension .dv or .mxf, and click Open.

7. From the Capture list in the Setup pane, select the Video Output port that matches the one you set for the Video Out object.

8. From the Format list, select the video compression format:

    -   MPEG2 4:2:0 (long-GOP or I-Frame)

    -   MPEG2 4:2:2 (long-GOP or I-Frame)

    -   DV25

If you are working in an environment that has both TARGA-based and Corsica-based systems, capture as MPEG-2 MXF I-Frame so that both systems can share the clips.

MPEG-2 can be of any GOP format, although typically it is either long-GOP (Group of Picture), or I-frame. Long GOP is defined by the MPEG convention of using 12 pictures in a GOP for those frame rates near 24/25/50, and 15 pictures in a GOP for frame rates near 30/60. I-frame is a GOP size of one picture.

9. If you selected an MPEG-2 format, select options as described in the following table. (These settings are ignored if you selected DV 25 as the format.)

MPEG-2 Compression Format Options (TARGA-Based Systems)

Option	Description
Bitrate Mode	The following options are available for TARGA-SD systems: • Variable: Uses a higher bitrate for more complex video segments and a lower bitrate for less complex segments. Variable is recommended for most applications, because it provides the best quality-to-storage ratio. • Constant: Provides a relatively constant bitrate. Useful for streaming from a server. • Statistical: A version of the Variable bitrate suitable only when set to 4:2:0 LongGOP (GOP = 15, Picture Ref = 3). Useful for long recordings (15 minutes or longer).

MPEG-2 Compression Format Options (TARGA-Based Systems) (Continued)

Option	Description
Bitrate in Megabits per second for video compression	A larger bitrate number results in a superior image, but uses more disk storage and network bandwidth. The default value is 15. • Chroma 4:2:2: Select a value from 2 Megabits per second (Mbs) to 50 Mbs. • Chroma 4:2:0: Select a value from 2 Mbs to 15 Mbs.
Reference Picture Period	The value determines the method for IBP compression. The Picture Reference represents one more than the number of B frames between each P frame. The legal values depend on the chroma: for chroma 4:2:2 select either 1 or 2; for chroma 4:2:0 select 1, 2, or 3.
GOP Size	The GOP size number determines the number of pictures to encode into each GOP (Group of Pictures). If the GOP size is set equal to 1, then the recording is I-Frame only. The GOP Size must be an integer multiple of the Picture Reference Period value. If you are using video plus key for playback, the recommended GOP size is 1.

10. If you selected an MPEG-2 or DV 25 format, select options as described in the following table.

MPEG-2 and DV 25 Compression Options (TARGA-based Systems)

Option	Description
Audio	Select 1 Pair (one left and right stereo) or 2 Pairs (two left and two right stereos).
Bit Depth	The system uses 16-bit audio.
Capture (Duration)	Select one of the following: • Select "Until stopped" if you want the system to keep recording until you click the Stop button. • Specify the number of frames you want the system to record (duration in frames). When the number of frames is set to –1, recording does not stop until you click the Stop button.

11. Capture the clip as described in .

Capturing a Clip

This section applies to both Corsica-based systems and TARGA-based systems.

To capture a clip:

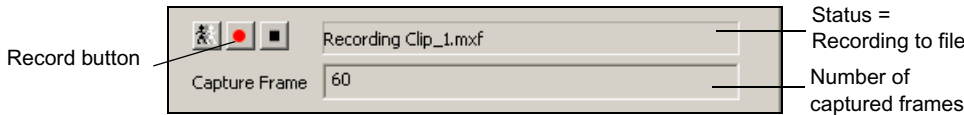1. After selecting your settings, click the Cue button.

   The status changes from Stopped to Cued. Because the recording has not yet started, the Capture Frame count equals 0.

Cue button — [buttons] Cued — Status = Cued

Capture Frame 0 — Capture Frame = 0

📄 *If you cue the capture before pressing the Record button, there is a 1-second delay before the system starts recording. If you do not cue the capture before pressing the Record button, there is a 3-second delay.*

2. Click the Record button.

   The status shows the clip that is being recorded, and the Capture Frame count updates to show the number of frames captured.

Record button — [buttons] Recording Clip_1.mxf — Status = Recording to file

Capture Frame 60 — Number of captured frames

To stop recording:

▶ Click the Stop button.

The status changes to Stopped, and Capture Frame count shows Not Capturing.

Any error messages are displayed in the text box at the bottom of the dialog box.

[buttons] Stopped — Status = Stopped

Capture Frame Not capturing — Not capturing

Stop button

To play back a recorded clip file:

1. Add a Clip Playback object to the Scene Tree and select it as the clip file in the Clip Playback object editor.

📄 *The Clip Playback object must be a child of the Video Out object to play back on your video output.*

2. Click the Play button (right arrow) in the Active Play List.

For more information, see .

Creating Cel Animations

A Cel Animation object consists of a series of images of the same design, each with a slightly different orientation. When played back in rapid succession, these images create the illusion of motion, similar to flipping pages in a flipbook. A spinning logo, or bug, is an example of a cel animation.

Cel Animation button

📄 *Cel Animation Player is an option. The Cel Animation button and Insert > Cel Animation menu item appear available, even if this option has not been activated. If you attempt to import an object that has not been enabled, it does not display. Select Help > About DekoCast to view options that are enabled for your system.*

Each image in a cel animation is a separate file in a series of files, usually in the TGA or TIF format. DekoCast also supports the use of AVI, BMP, DIB, G, GIF, JPG, PCD, PSD, PCT, and SGI files for cel animations.

📄 *The playback rate for cel animations is two cels per frame. Therefore, for NTSC the playback rate is 60 cels per second, and for PAL the rate is 50 cels per second.*

📄 *If your system includes sample media, you can experiment with using the Cel Animations contained in the folder E:\DekoCast_Media\CAPS.*

Rules for Creating Cel Animations

Share these rules with your art department so that the artists create cel animations more efficiently:

• Create a cel animation that occupies no more than one-quarter of the video output.

For HD, in creating cel animations, follow a resource guideline of 600 pixels (width) x 600 pixels (height) x 300 (frames). For SD, follow a guideline of 200 pixels (width) x 200 pixels (height) x 200 (frames). Using these guidelines, a typical scene can contain

two to four cel animations. depending on what other resources are included in the scene. These are guidelines only. You can increase the number of frames by decreasing the size of the image, or increase the size of the image and decrease the number of frames.

• The number of files and size of each file cannot exceed active memory capacity. The larger the frame size, the fewer files that can comprise the animation. Smaller cel animations are preferable to larger ones.

For information about using resources efficiently, see "DekoCast Tips" on page 435.

• Use an aspect ratio that defines precisely how much area the cel animation needs.

You can set the aspect ratio of the image to the width and height of a 4:3 ratio or a 16:9 ratio, instead of a square ratio as described in the previous guideline.

• Each frame is represented in an individual file. The application reads the cel animation as progressive frames, insuring that the cel animation's playback is resolution independent. To play a cel animation, the play command is automatically inserted in the command field to read play frame 0. To play every other file of a cel animation to slow the speed, edit the command to read play update 2 frame 0. This command reads every other frame. See "Controlling Playback Behavior Within the Scene" on page 177.

• The files in the series should be numbered consecutively. A break in the numbering signals that the end of the file series has been reached. Name each file with a number at the end; for example, *filename*001.tga, *filename*002.tag, and so forth.
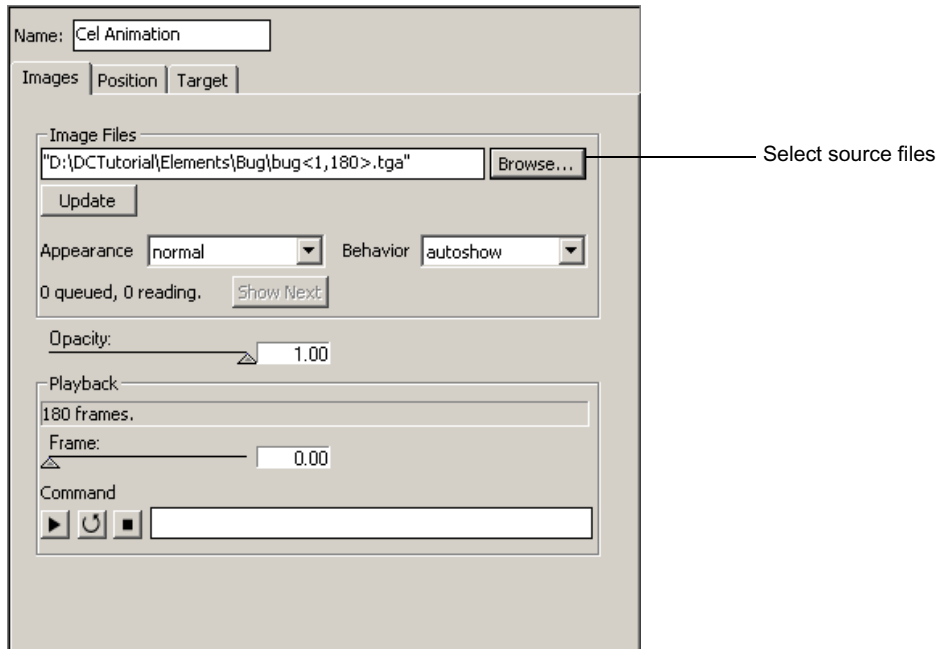
For instructions on positioning and sizing a Cel Animation object on video output, see "Using the Target and Position Tabs" on page 86.

Defining the Source File for a Cel Animation

To define the source file for a cel animation:

1. Add a Cel Animation object to a scene tree.

Select source files

2. In the Cel Animation editor, click the Browse button to navigate to the directory that contains the first file in the series.

If your system includes sample media, you can experiment with using the Cel Animations contained in the folder E:\DekoCast_Media\CAPS.

3. Select the first file.

   The Select Multiple Files dialog box opens.

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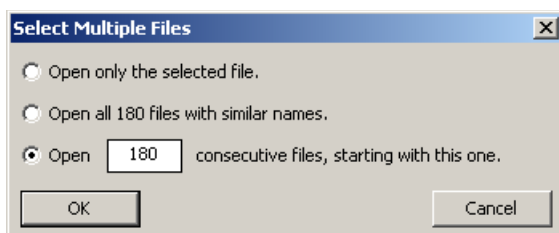
4. Select "Open *x* consecutive files, starting with this one."

📖 *There are three choices for importing Cel Animation objects. Do not select* Open only the selected file *if you want the cel animation to loop and play. This option selects a single static image.*

5. Click OK.

   If the cel animation is not obstructed by another object in the Scene Tree, it displays on the video output. The image is static until you click the Play or Loop buttons.

You can also define the source files by typing one or more source file names separated by spaces into the Image Files text box (if the file name contains spaces, surround the name with double quotes).

• Select a set or sequence of files by including the file number within brackets (< >). For example, typing *filename*<17>.tga tells the application to read *filename*17.tga, or *filename* 017.tga, or *filename*0017.tga, and so forth. The application also automatically reads all files following the referenced file in sequence. For this example, that would mean *filename*18.tga, *filename*19.tga, and so on.

• To specify how many consecutive files you want the application to read, identify the first file, type a comma, then the total number of files. For example, typing file <17,5>.tga tells the application to read files 17, 18, 19, 20, and 21.

Controlling Appearance

To control the appearance of the Cel Animation object:

1. In the Cel Animation editor, select Normal, Shaped, or Use 8-Bits Only from the Appearance menu.

   - Color images that have been shaped by the key replace transparent areas with the color black. If the image you are viewing appears crisp, with defined edges, select Normal.

   - If the edges appear blurry or jagged, select Shaped to sharpen the edges. Unshaped images appear too bright in transparent areas or around the edges in the image if displayed using the Normal setting.

   - Select Use 8-Bits Only when you want to use the Cel Animation object as a mask or a wipe pattern in a group object. This mode keeps only the key or alpha portion of an image, saving video memory. If the image file does not contain an alpha component, the luminance component, or overall brightness, is used to make an alpha or key image. Select this appearance for objects that are not intended to be viewed in a scene directly but only indirectly as a mask or wipe pattern. For details on masks and wipes, see "Using Group Objects" on page 181.

2. Set the opacity for the images by clicking and dragging the Opacity slider.

Full transparency is 0 and full opacity is 1.

📑 *Cel objects are imported with the Normal appearance setting as a default. If you need a shaped key or an 8-bit key, make your selection before importing the cel images. If you imported a cel image as Normal and you want to change it, you need to delete the object, switch the Appearance option, and then select the first image of the Cel animation series.*

Controlling Playback Behavior Within the Scene

You can control how a Cel Animation object plays back during the scene.

Frame slider

Command text box

Play, Loop, Stop buttons
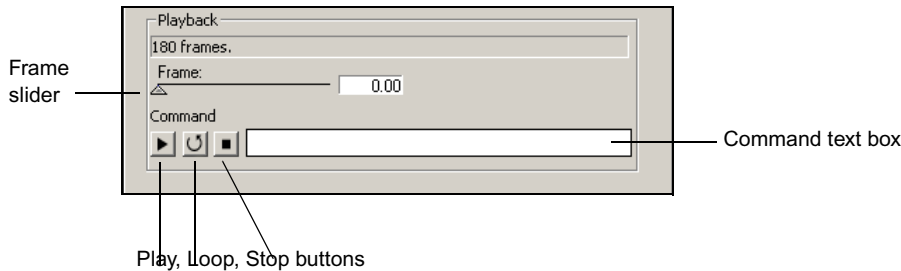
To play, loop, or stop an animation:

▶ Click the Play, Loop, or Stop button.

- Play executes playback from the first frame to the last.

- Loop begins playback at the first frame, plays to the end, and then repeats continuously from beginning to end.

- Stop ends playback.

You can also control playback through commands, as described in the next topic.

To select a specific frame from the current set of images:

▶ Drag the Frame slider to the desired frame.

Controlling Cel Animation Playback Through Commands

You can control playback of Cel Animation objects through commands.

The Cel Animation command field (Images > Command) is automatically filled in when you click the Play, Loop, or Stop button. You can insert additional commands into the command field and then execute them. All commands are accessible through a keyframe in an action that animates the controls.

To execute a command:

▶   Type one or more commands in the Command text box and press Enter.

There are two types of commands: immediate commands and queued commands.

- Immediate commands execute immediately, even when they are part of a series of other commands.

- Queued commands are queued behind any currently active commands. Most commands are Queued commands.

The following tables describes both types of commands:

Immediate Command Options

Option	Description
abort	Clears all commands previously queued and stops immediately on the current frame.
break	Immediately stops execution of the current command and begins executing the next command in the queue.
endloop	Plays out the current loop through the last frame, then starts executing the next command. This can be a smooth termination of an endless loop.

Queued Command Options

Option	Command
play	Starts playback from the current frame to the end of the series and stops on the final frame.
play loop	Plays from the current frame to the end of the sequence, then plays from the first frame to the last repeatedly.
play loop #	Plays from the current frame to the end of the sequence, then plays from the first frame to the last the specified number of times. For example, "play loop 3" starts play from the current frame to the end, then plays from the first frame to the last three more times.
play frame #	Plays from the selected frame to the end of the series, then stops. For example, "play frame 17" plays from frame 17 to the end, then stops.

Queued Command Options (Continued)

Option	Command
play loop lo# hi #	Plays from the current frame through the high numbered frame, then from the low numbered frame to the high numbered frame repeatedly. For example, "play loop lo 13 high 29" plays from the current frame through frame twenty-nine, then plays from frame thirteen through twenty-nine repeatedly. If lo or hi is omitted, the first and last frames respectively are the defaults.
play update #	For example, "play update 4." plays from the current frame to the end, changing to the next frame every four fields.
play rate #	For example, "play rate 3" plays from the current frame to the end, incrementing the frame number by three every field.
play frame # rate #	An example would be play frame "9999 rate –1." This would start playback at frame 9999, or default to the end if there is no frame 9999 and decrement the frame every field, stopping at the first frame. In other words, you can play the clip backwards with this command.

You can combine commands. For example, `play rate 3 update 4` plays by incrementing the frame by three every four fields.

You can queue several commands separated by semicolons. For example:
`play; play rate –1; play hi 7 loop 3; play rate –1`

This series of commands would start play from the current frame to the last frame, then play from the last frame to the first frame, then from the first frame through frame 7 a total of four times (once, followed by three loops), then play from frame 7 down to frame 0 and stop.

⚠ **Setting the frame number parameters clears the command queue.**

Controlling Cel Animation Updates

When you change the name of an image file or click the Update button, the Cel Animation object submits a request to the application to read the new set of files. After it is read, the set goes into a queue of sets waiting to be displayed.

You can view the playback status in the Image format section:

• *"x* Queued" is the number of sets finished reading, waiting to be displayed.

• *"x* Reading" is the number of sets waiting to be read for this Cel Animation object.

Update button ——

Playback status ——

| Name: Cel Animation |
| Images | Position | Target |

Image Files
"D:\DCTutorial\Elements\Bug\bug<1,180>.tga" [Browse...]
[Update]

Appearance [normal ▼]   Behavior [autoshow ▼] —— Behavior option

0 queued, 0 reading. [Show Next]
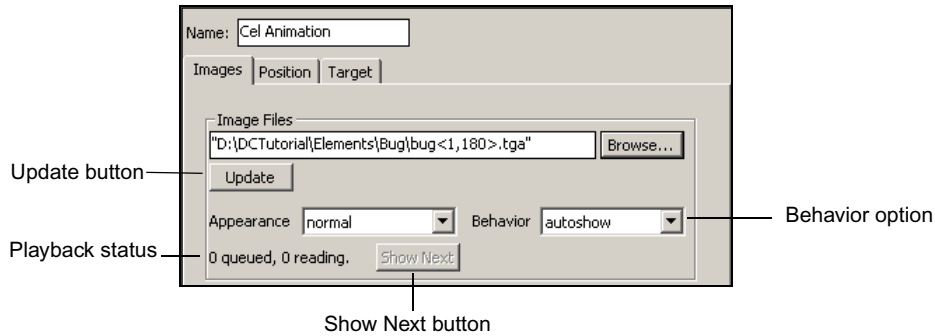
Show Next button

To display a new set of cel animations immediately:

▶ Set the Behavior option to Autoshow.

To play files only when you click the Show Next button:

▶ Set the Behavior option to Manual.

The files are queued until you click Show Next.

Displaying Individual Frames

You can view frames from image formats other than Deko (.dko) by using the Cel Animation object.

To display a frame on the video output:

1. In the Scene Tree, add a Cel Animation object.

2. In the Cel Animation object editor, do one of the following:

   ▶ Type the complete path for the TGA file.

   ▶ Click the Browse button and select the TGA file from the Select the First Image File dialog box. Click Open.

3. In the Select Multiple Files dialog box, select "Open only the selected file" and click OK.

   The captured frame displays on the video output.

You can also open the image in PostDeko Lite and save it as a Deko graphic file. Then create a Deko object and link to the file to view the image. See "Working with Deko Objects" on page 108.

Using Group Objects

Group button

When working with several objects related to the same visual element, you can add a Group object and make the related objects children of this group. You can then manipulate these objects as a group or individually. Groups can also be nested within other groups.

As a rule, you should group objects for organization, or if you plan to apply any effect on them as a unit. The Group object editor allows you to adjust parameters that affect the entire group, such as opacity, composite styles, transition and softness, as well as position and cropping parameters. The Composite Style menu provides a variety of transition options, such as crossfade (dissolve), mask, and wipe.
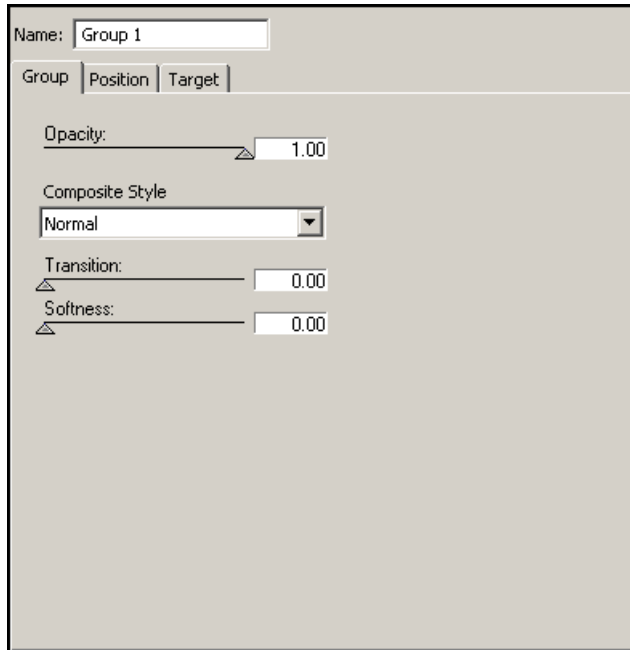
The following examples describe several ways of using the Group object:

- If there are five objects that you want to dissolve in or out of a scene together, you can group them and dissolve the group in a single step. Otherwise, you have to dissolve each object independently, which takes five steps.

- If you want to display a banner with logo and text, you create three Deko objects: one for the banner layer, one for the text layer, and one for the logo graphic. Then next these three Deko objects under one Group object. You can then use the Group object editor to specify a position, opacity, and actions that would affect all three Deko objects.

- If you want to transition from one object to another, create a group of two or more objects and select a Composite Style. For example, you might want to create a dissolve or a wipe between two Deko graphics.

The following illustration shows a simple group.

Group object (parent)

First (bottom) child in Group

Last (top) child in Group (in a Wipe this
object obscures child objects beneath).
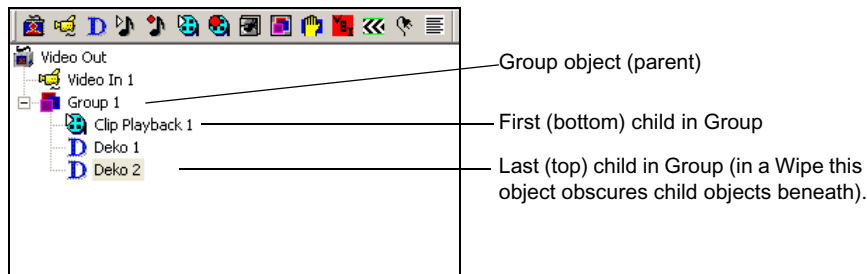
You can set Group objects to fade, wipe, and mask, between the Group's children. See
"Example 3: Crossfade (Dissolve)" on page 332.

Adding a Group Object

To add a Group object to a Scene Tree, do one of the following:

▶ Select Insert > Group from the Scene menu bar.

▶ Click the Group button in the Object toolbar.

To add children to a Group object:

▶ Select the Group object and click the appropriate button.

Setting the Opacity and Softness for a Group

To set the opacity for a group of objects:

▶ Drag the Opacity slider to vary the objects in the group from full transparency (0.00) to
full opacity (1.00).

Opacity levels for child objects are determined by their parent's opacity level. For
example, if a child object has 50 percent opacity and its parent has 50 percent opacity,
then the child object's opacity is 25 percent (half that of its parent).

To control the softness of the edge of the wipe for the group:

▶ Drag the Softness slider between 0 (the edge is sharp) and 1 (the edge is soft).

Setting the Compositing Style for a Group

To specify how objects in a group transition among themselves:

▶   Select an appropriate compositing style from the Composite Style menu. For a description of these options, see "Composite Style Options" on page 184.

The position of the object in the Group determines how compositing works.

Group object (parent)

First (bottom) child in Group

Last (top) child in Group (in a Wipe this object obscures child objects beneath).

The application composites Group objects from the bottom to the top of the Group
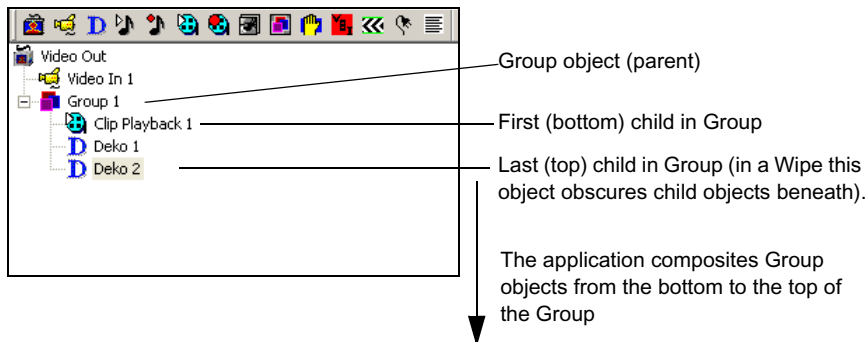
Composite Style Options

Option	Description
Normal	This is the default style. Each object is layered on top of the one listed below it, just as in the rest of the Scene Tree. The first child in the Group tree appears to be beneath all of the others. The last child in the tree appears to be on top of all the others. The transition slider is not used with this compositing style.
Crossfade	This compositing style is used in conjunction with the transition slider. As the transition slider moves from zero to one, the last child (at the bottom of the tree) fades out and the second child fades in. This is a dipless crossfade, one with no visible change in brightness. Any visible object—Video In, Cel Animation, Deko object, or Clip Playback—can be used for a crossfade.
	Using a crossfade in groups with more than two children might have unpredictable results.

Composite Style Options (Continued)

Option	Description
Mask	The last (top) child in the Group object's tree is treated as a mask, limiting how much of the children above it in the tree are visible. With mask compositing, you do not use the transition slider. Any visible object—Video In, Cel Animation, Deko object, or Clip Playback—can be used as a mask.
	Typically, for a mask, you create an object that is a black and white gradient, such as a Deko graphic with a full screen rectangle with a black and white ramp as the face shader. This object is the first object in the group.
	Where the Mask child is opaque white, the other children are visible. Where it is transparent black, the other children are not visible. Also, each color component of the mask affects the corresponding component of the child being masked. If the mask is opaque blue, only the blue components of the other children are visible.
	TARGA-based systems are limited to compositing on a single level only. You cannot mask one element with another, and then use the result as a mask for something else.
Mask Using Key Only	The alpha component of the mask child is used as a mask for all the masked children's components, RGB, and A. The color of the mask element does not matter.
Mask Using Color Only	Only colors behind the mask that are the same color as the mask are visible.
	The green component (an approximation of the luminance of the mask) is used for all components of the masked children. This allows a mask element with no key information to mask the visibility of another element.
Wipe	The last (top) child in the Group object's tree acts as a wipe image and wipes over the other children beneath it in the tree. The transition and softness sliders control the wipe. As the transition slider moves from zero to one, the remaining children are wiped over, one at a time. The softness slider controls the sharpness of the transition.
Wipe Between	This compositing style is similar to the Wipe, except that it is performed between the next-to-the-last child in the Group tree and the rest of the children. As the transition slider moves from zero to one, the next-to-the last image wipes off, and the rest of the children wipe on.
Sum	This style adds rather than blends the child objects. It can be used for push transitions, where one child slides on and one slides off screen. It can also be used for reveal transitions, where one child is cropped off as one child is cropped on. Using the Sum style ensures that there is not a seam in which the background is visible between the two children. Performing this transition requires an action that animates the position or crop settings of the child objects.
Crossfade - Skip First Child	The first child object is skipped and the transition begins with the second child.

> *TARGA-based and Corsica-based systems exhibit different behavior for a wipe. Because a Corsica-based system does not use luminance as an alpha source for wipes, any source to be used as a wipe pattern should either have the wipe pattern contained in the alpha component, or the Cel Animation object that loads the wipe pattern should be set to 8-bit mode, which converts luminance to alpha.*

Capturing Video Images (Frame Grab)

Frame Grab button

You can use the Frame Grab object to capture one or more images from a video source and save each image, or frame, as a TARGA (TGA) file. Each frame that is grabbed is saved as a single file. For example, if you select 30 frames to be captured, the application creates 30 TGA files.

After you capture the images, use the Cel Animation object to display an image in a scene. See "Displaying Individual Frames" on page 181.

To capture video images as frames:

1. (Option) Create a new folder if you are capturing multiple frames.

2. Add a Frame Grab object by doing one of the following:

   ▶ Select Insert > Frame Grab from the Scene menu bar.

   ▶ Click the Frame Grab button in the Object toolbar.
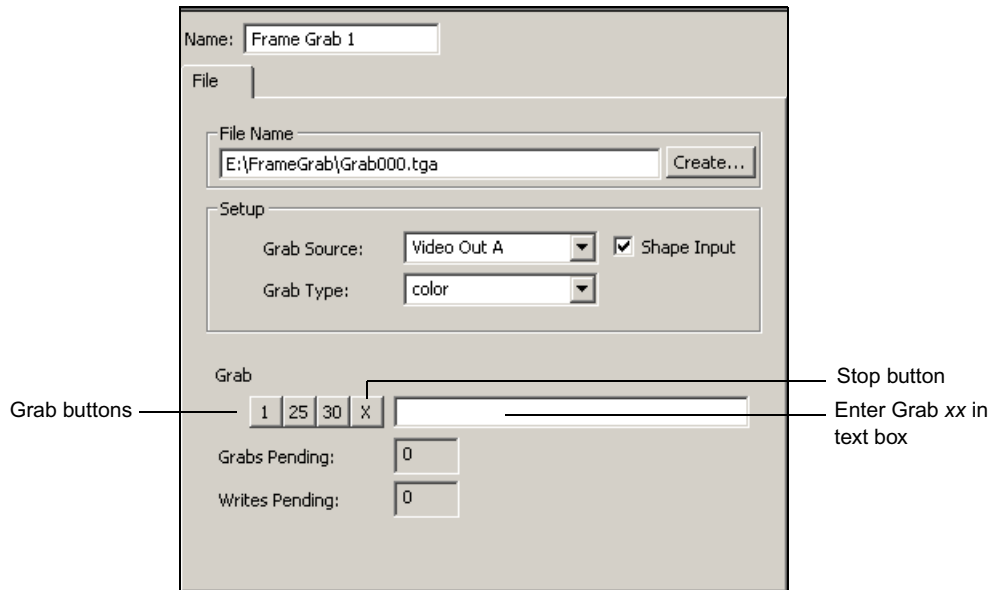
3. Do one of the following:

   - In the File Name text box, type the complete path for the first file that you want to create in the grab, such as E:\FrameGrab\Grab000.tga.

   - Click the Browse button to display the Select Grab File dialog box. Navigate to the directory you want and type the file name for the first file you want to create in the grab, such as Grab000.tga.

Make sure to type the extension .tga.

For DekoCast to recognize files for a frame grab, the file name before the TGA extension must always end in numbers. After the grab completes, the last file name in the series is shown in the File Name text box.

4. In the Setup pane, select the source for the frame grab from the Grab Source menu: Video In A or B, or one of the Video Out ports.

   By default, the video output is shaped. Deselect Shape Input to clear this option. For more information, see "Audio Source Configuration" on page 424.

5. Select whether you want to capture color and key (opacity) information, key information only, or color information only with each frame.

6. To capture frames, do one of the following:

   ▸ Click the Grab button for the number of frames you want to capture: 1, 25, or 30.

   ▸ Select a different number of frames by typing "Grab" followed by the number into the Frame Grab text box; for example, to capture 72 frames, type Grab 72.

The limit on the number of grabs is based on DekoCast's system memory. To calculate the amount of memory used for a single frame, multiply the pixel width times pixel height times 4 bytes. In an HD format, grabbing more than 30 frames might result in stuttering video and an aborted capture.

The number of Grabs Pending and Writes Pending displays as DekoCast processes the grabs. If you click a Grab Number button multiple times, or if you click more than one button at a time, additional frames are captured. For example, clicking the 25 button followed by the 30 button causes DekoCast to capture 55 frames. The frame grab stops after the requested number has been captured.

Name: Frame Grab

File

File Name

E:\FrameGrab\Grab030.tga   Browse...

— Last file name in series

Setup

Grab Source: Video In A   ☑ Shape Input

Grab Type: color

Grab

1 25 30 X   Grab 30   — 30 frames captured

Grabs Pending: 0

Writes Pending: 0
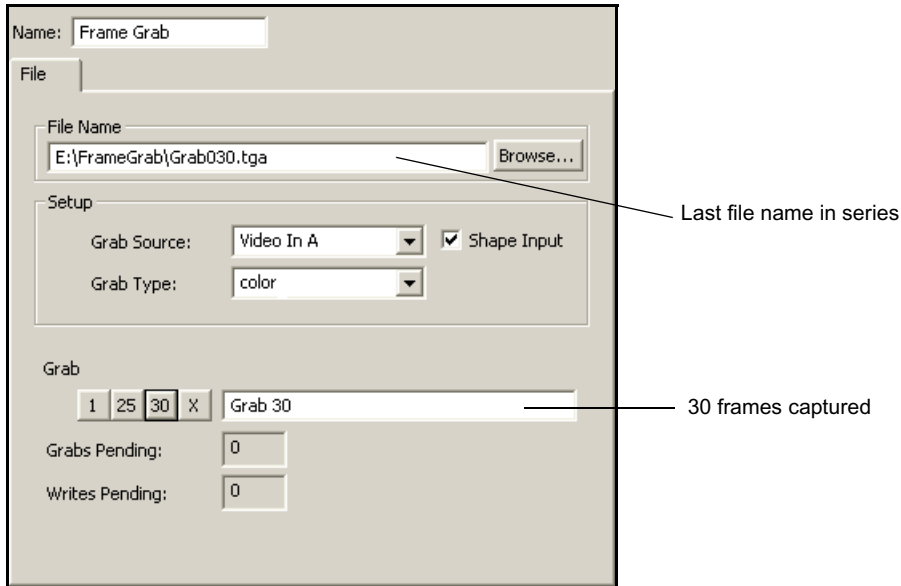
To interrupt an ongoing frame grab:

▶   Click the Stop button.

Working with VBI Objects

VBI
button

The Vertical Blanking Interval (VBI) is the part of a television transmission signal that has
no viewable content and is used for broadcasting closed captions and other information. The
DekoCast VBI object decodes VBI data and presents it as interpretable text. You can include
a VBI object in your scene only if your installation has a special program that can use this
data. For example, a program might monitor decoded closed-capture text for the name of
corporations. When the program detects a name, it triggers the display of the corporation's
stock price in the crawl text.

The VBI object captures Vertical Interval Time Code (VITC) and Closed Caption (CC) data
from a video input port, decodes this data, and displays it as text in the Data text box of the
VBI object editor. A program can be developed to read the decoded data and respond as
directed.

VBI objects are used to set up triggers with applications that communicate with the
application through the application API or XML. For more information, see the Rocket
Engine API documentation or the Rocket Engine BCI documentation, which are available
on the Avid Customer Service Knowledge Base (www.avid.com/onlinesupport).

To set up the VBI object editor:

1. Configure your system for VBI preservation. See "VBI Source and Extra Lines" on page 422.

2. Add the VBI object to the scene.

3. With the VBI object selected in the Scene Tree, select the Video In source using the VBI object editor.

4. Select one of the data types for decoding as described in "Data Types" on page 190.

5. View the decoded data in the Data text box of the dialog box.
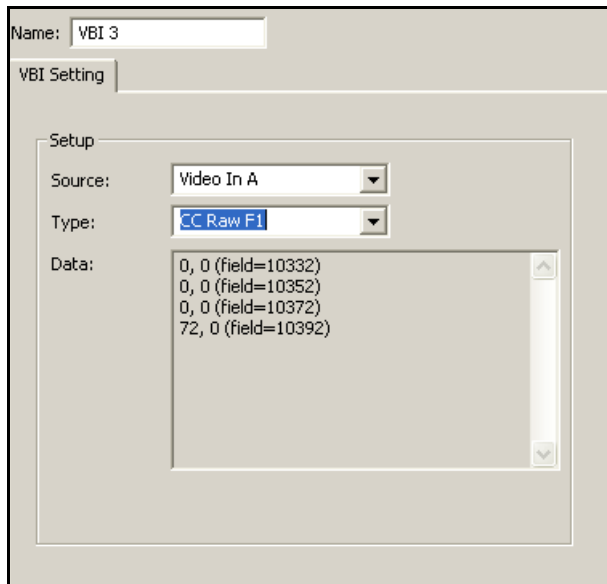
How VBI Objects Work

The following rules apply to VBI objects:

- Video is searched for VITC on lines 14, 16, and 18 in both F1 and F2 (NTSC and PAL). The first line of VITC detected sets the data parameter for the VBI object; subsequent lines are ignored.

- Closed Caption (CC) data is decoded from line 21 in both F1 and F2 (NTSC and PAL).

- The VBI object cannot collect raw VBI lines from the video input, only CC and VITC.

Data Types

The data-type options are as follows:

• VITC Time

When selected, the VBI object decodes the incoming VITC on the video. The data parameter is set to the timecode string. When a semicolon, as opposed to a colon, separates seconds from frames, the timecode is Drop Frame. The number of the field from which the data was decoded is included in the data string.

The decoded data resembles the following:

```
[hh]:[mm]:[ss]:[ff] (field=[field])
04:17:03:29 (field=17268)
04:17:03;29 (field=17268)
```

Field Identifiers are described in "Field Identifier Strings" on page 191.

• VITC Time and User

When selected, the VBI object operates the same as VITC Time mode, but also includes the values of the VITC user bits. Each nibble, or aggregation of four bits, of the user-bit string indicates the value of a VITC User Group. User Group 1 is the left-most nibble in the string; User Group 8 is the right-most nibble in the string.

```
[hh]:[mm]:[ss]:[ff]
(user=[ug1][ug2][ug3][ug4][ug5][ug6][ug7][ug8])(field=[field])
04:17:03:29 (user=8f4a6002) (field=17268)
04:17:03;29 (user=8f4a6002) (field=17268)
```

• CC Text options

When data type CC Text is selected, the VBI object decodes the incoming CC data according to the standard CC protocol, accumulating ASCII text into a string. When a line is complete, the VBI object's data parameter is set to the most recently accumulated data string, and the accumulator is emptied and starts to accumulate text again.

The decoded data resembles the following:

```
[string]
THIS DATA WAS DECODED FROM CC
```

- The F1 (field 1) version decodes CC from F1 line 21.

- The F2 (field 2) version decodes CC from F2.

- The Chan 1 version decodes data channel 1 as defined in the CC protocol.

- The Chan 2 version decodes data channel 2. When Both is selected, then data from both fields is decoded. Other protocols, such as XDS, are not implemented.

Normally, the field identifier string is not appended to the text string when decoding in text mode. To cause a field identifier to be appended, the VBI object parameter `cc text field` must be set to a non-zero value.

- CC Raw Options

When data type CC Raw is selected, the VBI object decodes the incoming CC data to its two 7-bit character codes and sets the data parameter to a string that identifies these codes. The number of the field from which the data was decoded is included in the data string.

The decoded data resembles the following:

```
([byte1], [byte2]) (field=[field])
```

```
32, 17 (field=17268)
```

- The F1 version decodes CC from F1 line 21.

- The F2 version decodes CC from F2.

- The Both version decodes both lines of CC and returns them in the following format:

```
[byte1], [byte2], [byte3], [byte4] (field=[field])
```

```
32, 17, 66, 99 (field=17268)
```

Field Identifier Strings

The field identifier string for VBI data provides the field number at which the video input frame will appear in the video output. For example, assume you have selected VITC and have received a string such as `12:03:04:15 (field=100)` using the NTSC non-drop timecode. To schedule an event to occur on the frame that contains the VITC timecode 12:03:05:00, in 15 frames, you need to schedule the command to execute at field `130` `(100+15*2)`, where 100 = previous field, 15 = number of frames, and 2 = number of fields.

Creating Crawls

Crawl objects move a continuous stream of text from one side of the output frame to the other. You can also use a crawl object to create a roll, which moves text from the bottom to the top of the output frame. The Crawl object uses a special rectangle called the *crawl rectangle*. The crawl rectangle is a specified region of the video output frame and functions like a target rectangle. You can add multiple Crawl objects at different positions on the video output.

Crawl
button
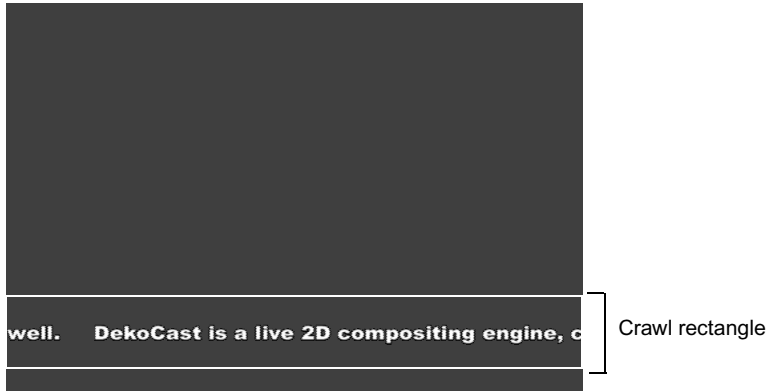
Crawl rectangle

You can insert non-text objects between lines of text and have them crawl across the video output in relation to the boundaries of the crawl rectangle. You can insert a Video In, Cel Animation, Clip Playback, Group, or Audio Playback object.

You cannot use the crawl rectangle exclusively to adjust the positioning for a Cel animation if you are moving a project from one format to another. For example, a Cel Animation added to an SD scene needs some additional adjustments in the HD version of the scene because the Position pixels for SD do not match the pixel positions for HD.

The Crawl object is associated with two objects that are automatically added to the Scene Tree when you add a Crawl object: a Text Data object and a Deko object.

• The Text Data object, which is a child of the Crawl object, controls the contents of the crawl text and its looping behavior. The Text Data object also allows you to set rules for how DekoCast inserts non-text objects between lines of crawl text and to set values for scene parameters in relation to the non-text object's on and off-screen position.

• The Deko object, which is a child of the Text Data Object, defines the text style for the crawl.

  The default Deko object of a Crawl object is created with macro code in the filename field. This macro creates white, Arial Black, 23 point style. To change this default style, create a Deko graphic with a text layer and link the Deko object to the text layer in the Deko object editor. See "Changing the Appearance of Crawl Text" on page 201.

The following topics describe how to use the Crawl object:

• "Creating Crawl Text Using the Crawl Object" on page 193
• "Creating a Roll" on page 195
• "Controlling the Crawl Display" on page 196
• "Changing Crawl Text" on page 197
• "Using a Text File for a Crawl" on page 199
• "Controlling the Crawl Text Display" on page 200
• "Changing the Appearance of Crawl Text" on page 201
• "Setting the Crawl Object Rectangle and Position" on page 204
• "Adding Non-Text Objects to Crawl Text" on page 205

Creating Crawl Text Using the Crawl Object

To create a crawl text using the Crawl object:

1. Create a scene.

2. Add a Crawl object to the Scene Tree.

   When you add the Crawl object, DekoCast adds the Text Data object as a child of the Crawl object. It also adds a Deko object as a child of the Text Data object.
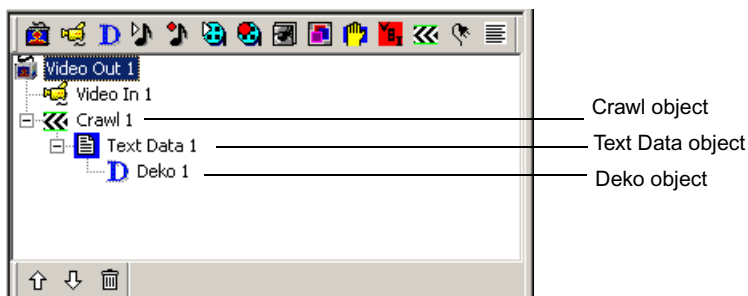
Default text starts crawling across the video output within the crawl rectangle.

To view the text that is displayed in the crawl:

1. Select the Text Data object in the Scene Tree.

2. In the Text Data object editor, click the Data tab.

   The default text appears in the Value text box and continues to stream as long as Loop is set to On (the default). The default text consists of three lines.

If the crawl text stops after the lines in the Value text box are displayed, make sure the Loop option is set to On.
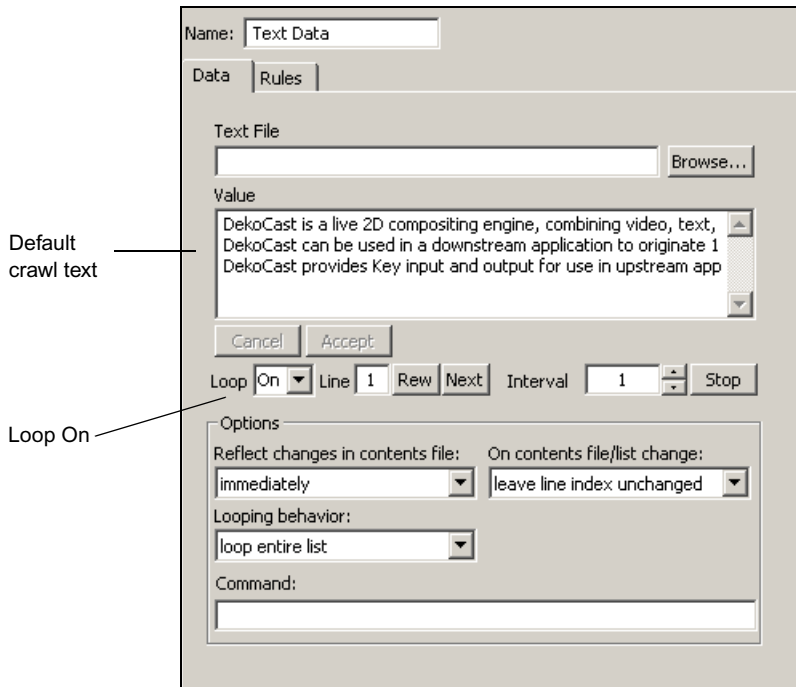
Default crawl text

Loop On

As an option, you can view copies of the Deko object called *clones*. Clones are added to the Scene Tree as children of the Crawl object as each line of the crawl is buffered for output. You might want to view clone activity when you are creating a Crawl object, and then turn it off afterwards. See "Application Options" on page 428.

A Crawl object works best with a single Text Data object. Create a new Crawl object instead of adding more than one Text Data object to a Crawl object.

Creating a Roll

The Crawl object editor's Command tab provides controls for changing the orientation of the crawl. Most of the information in this section that applies to crawls also applies to rolls.

To create a roll:

1. Create a scene.

2. Add a Crawl object to the Scene Tree.

   When you add the Crawl object, DekoCast adds the Text Data object as a child of the Crawl object. It also adds a Deko object as a child of the Text Data object.

   Default text starts crawling across the video output within the crawl rectangle. You can edit the text in the Value box or use text from a file. See "Changing Crawl Text" on page 197 and "Using a Text File for a Crawl" on page 199.

3. Select the Crawl object.

4. In the Crawl object editor, click the Command tab.
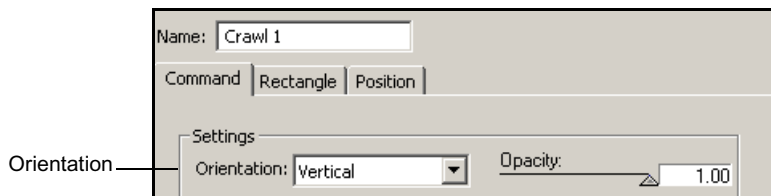
5. From the Orientation list, select Vertical.

   The text rolls from bottom to top of the target rectangle.

6. Adjust the size of the crawl rectangle. See "Setting the Crawl Object Rectangle and Position" on page 204.

Controlling the Crawl Display

The Crawl object editor's Command tab provides options to control how the crawl is displayed.
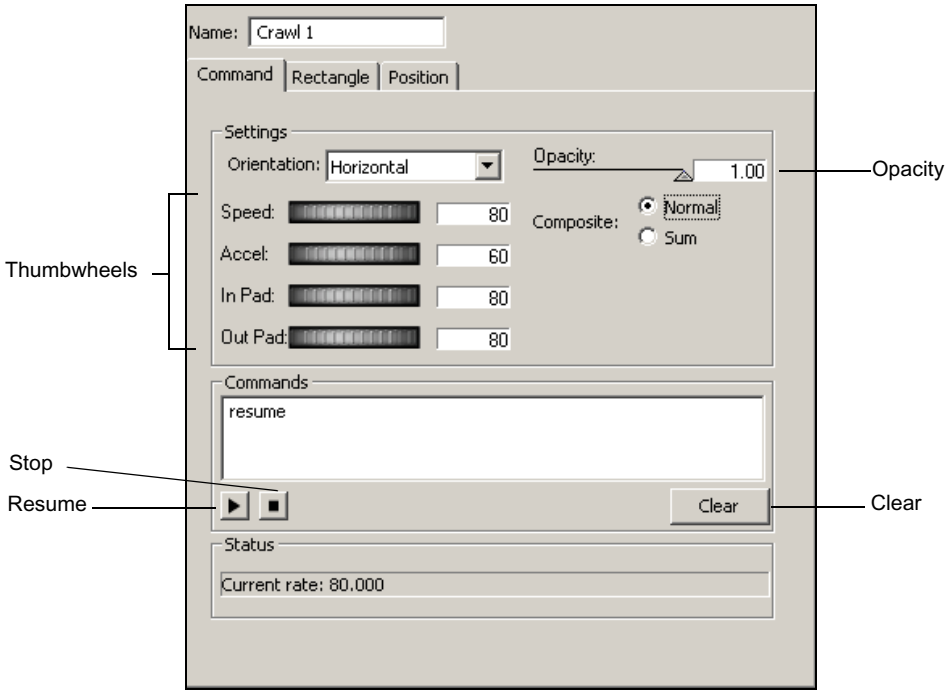
To adjust the speed and acceleration of the crawl and the space between lines:

▸ Click and drag the thumbwheels to adjust the following parameters:

Parameter	Description
Speed	Speed of the crawl expressed in pixels per second.
Acceleration	The rate at which the crawl obtains its speed, expressed in pixels per second per frame. and the rate at which it halts its forward progress when you stop the crawl.
In Pad	The amount of space in pixels before each text line or object in the crawl.
Out Pad	The amount of space in pixels after each text line or object in the crawl.

📖 *When creating a crawl, you can view the results more quickly by increasing the speed of the crawl or by reducing the amount of text in a line.*

To change the opacity of the crawl and its child objects:

▶ Drag the Opacity slider to vary the object from full opacity (1.00) to full transparency (0.00).

The Command tab's Stop, Resume, and Clear buttons enable manual control of the crawl. You can incorporate these commands into actions (see "Adding Actions to a Scene" on page 297).

To stop the crawl:

▶ Click the Stop button in the Crawl object editor's Command tab.

To resume the crawl:

▶ Click the Resume button in the Crawl object editor's Command tab.

   If there is buffered text, or looping is on, the crawl automatically resumes.

To immediately clear the queue and current display on the video output:

▶ Click the Clear button.

The Crawl composite options affect how overlapping text and objects are rendered. These act in the same way as the Composite options for the Group object of the same name.

To adjust how crawls are composited:

▶ Select one of the following options:

  - Normal: (Default) Each object is layered on top of the one listed before it. The first object in the list appears to be beneath all of the others. The last object in the list appears to be on top of all the others.

  - Sum: This style adds rather than blends the child objects. Using the Sum style ensures that there is not a seam in which the background is visible between the two children.

Changing Crawl Text

The Text Data object controls the Crawl text. It can drive crawls based on text you type, or extract text from source TXT, AUT, and ATX files. A typical DekoCast workflow is to build a scene that is kept dynamic by sending new data streams of text to it. While the DekoCast system is off air, you can type text into the Value text box as you create and modify scenes. Whatever text displays in the Value text box displays as the crawl text.

📄 *In addition to text, you can use tags to insert non-text objects between crawl text in your text source file. See "Inserting Objects by Using Crawl Object Tags" on page 215.*

To change the crawl text:

1. Select the Text Data child object of the Crawl in the Scene Tree.

Value text box

Accept button

2. In the Text Data's object editor, edit the text that displays in the Value text box.

3. Click Accept.

The text in the Value text box crawls across the video output.

📄 *Set the Loop options to On to display the text continuously; otherwise, the text entered in the Value text box displays once, or a number of set loops, and then stops.*

Using a Text File for a Crawl

In addition to directly entering text in the Value text box of the Text Data object editor, you can link to a text (.txt) file and update the crawl text by editing the text file.

When you link the Text Data object to a source text file, the text contained in the file displays as the crawl text. You can open a TXT file from any computer that you can access and type new text. After you save the file, the Crawl text is updated. Updating TXT files is a means to update crawl text while a DekoCast system in on air. AUT and ATX source text files for crawls can be controlled by automation systems.

To obtain crawl text from a text file:

1. Create a text (.txt) file in Notepad or another text editor and save the file.

2. In the Data tab of the Text Data object editor, click the Browse button and navigate to the text file.

3. Click Open.

   The contents of the file are copied into the Value text box.

DekoCast automatically detects changes made to the source text file and reads it based on the option selected in the "Reflect changes in contents file setting" list. Select an option from this menu in the Options pane:

- Select "Immediately" to display changes as soon as they are typed and saved. This is good choice for continuously updated lists such as stock prices.

- Select "At next interval" to display changes at the end of a line of text. This is a good choice for a series of blurbs or headlines.

- Select "At end of list" to display changes after a complete cycle displays the text prior to your changes. This is a good choice for displaying information in paragraph form or for changing to completely unrelated text.

Controlling the Crawl Text Display

The Data tab of the Text Data object controls how the text itself is displayed, such as whether the text is looped.

Text display options →

Looping behavior list →
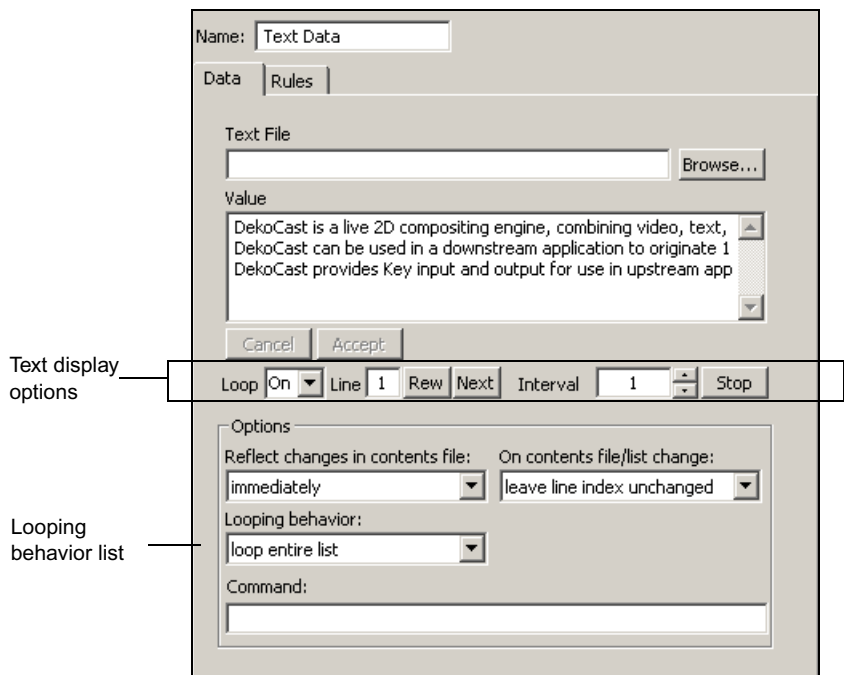
The following table describes options on the Data tab for controlling the text display.

Data Tab Options: Text Display

Option	Description
Loop	Set On for indefinite looping, type or select a number to specify the number of loops, or select 0 to stop the display. Use the Looping Behavior list to specify whether DekoCast is to loop the entire contents of the Value text box, or only one line.
	To loop one line, specify the line number in the Line text box.
	If you select a limited number of loops, after the crawl begins to play, the Loop text box shows the number of loops remaining.

Data Tab Options: Text Display (Continued)

Option	Description
Line	Displays the line that is ready to be played.
	To display one line from the Value text box rather than the entire contents, type the number of the line and press Enter. Type 0 to display the first line, type 1 to display the second, and so on. Select "loop current line" from the Looping Behavior list.
	If you are displaying the entire list, the Line text box displays –1 after the last line is displayed (indicating no lines left to play).
Rew	Click to return to the beginning of the list in the Value text box (line 0).
Next	If you are manually controlling the display, click to display the next line in the Value text box. To manually control the display, set the Interval to 0 and in the Deko object editor, set Transition Triggering to Manual.
Interval	To set the interval in seconds (frequency) at which a new line of text is displayed, type a number and press Enter.
Stop	Click to set Interval to 0 and stop the display.

Changing the Appearance of Crawl Text

The Deko object controls the appearance of the crawl text. You can define a font style in PostDeko Lite and have the Deko object apply it to the crawl text.

The default Deko layer is created with a special macro in the Deko filename field in the Deko tab. This macro is used for an easy built-in display and is not the typical way to link a Deko layer style to a crawl. To change the appearance of the default text in the crawl, create a custom graphic as described in the following procedure and link that graphic's layer to the Deko object.

To define a font style in PostDeko Lite:

1. Open PostDeko Lite.

2. Select one of the preset styles and enter some placeholder text.

3. Press Ctrl+Shift+A to highlight the text.

4. Select an appropriate font size.

5. In the Layer tab, for Justification, select off for Horizontal and bottom for Vertical, so that the text is positioned on the Deko graphic to appear at the bottom of the screen.

6. Deselect Word wrap.

7. Save the DKO file with a name that defines the style.
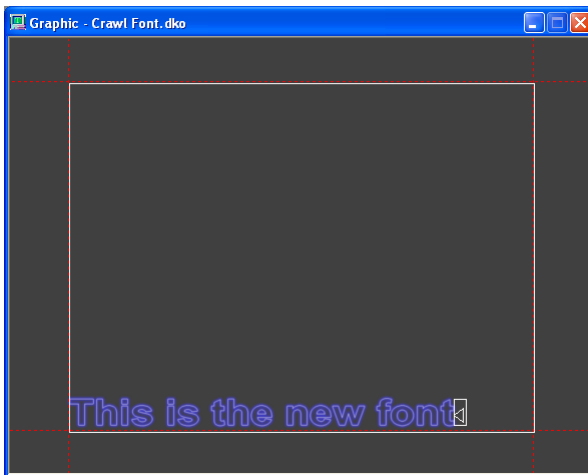
8. Exit PostDeko Lite (Alt + F4).

To link the font style to the crawl text:

1. In DekoCast, select the Deko object that is a child of the Crawl object's Text Data object in the Scene Tree.

2. Select the Deko tab in the Deko object editor.
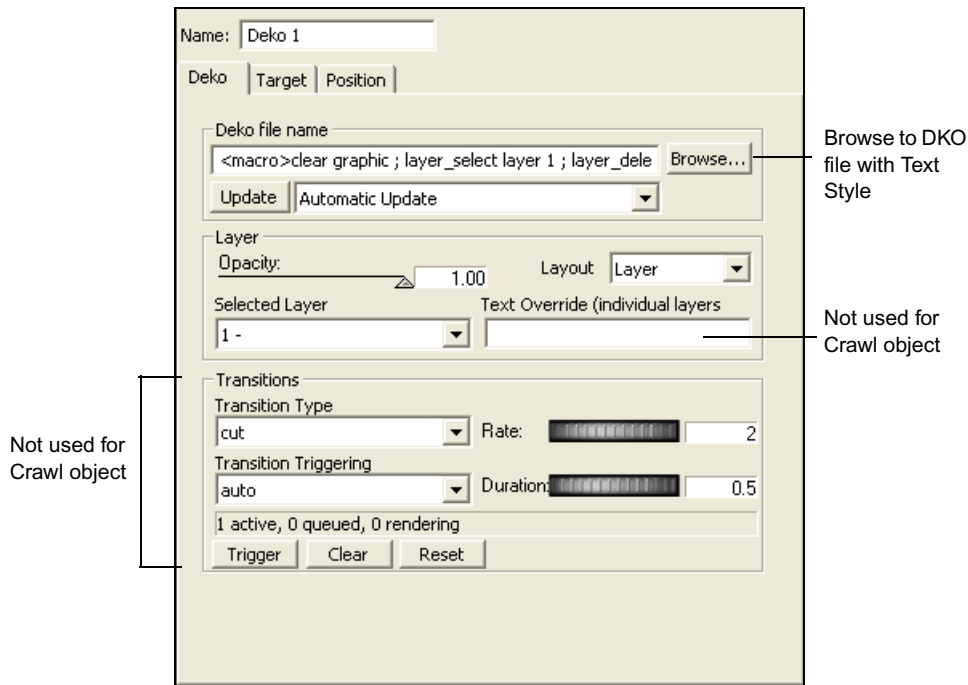
3. Click the Browse button and select the DKO file that you just created.

4. Set the Selected Layer field to the text layer in the Deko graphic just created.

   The default for the Layout option is Layer. The Layer setting allows the crawl rectangle to control positioning of the layer information.

5. Click the Update button to apply the new style.

   If Automatic Update is selected, you do not have to click the Update button. If the crawl text is still looping, crawl text that has not already been buffered reflects the new style.

📖 *For the crawl text to loop, the Loop option in the Text Data object editor's Data tab must be set to On. See "Controlling the Crawl Text Display" on page 200.*

Setting the Crawl Object Rectangle and Position

The crawl rectangle is the height in which the text, or combined text and non-text objects, crawl across the entire output frame. Use the Crawl object's Rectangle tab to define the boundaries of the crawl rectangle. Afterwards, you can use the controls on the Crawl object's Position tab to crop, change the scale, and position the entire crawl rectangle.

You cannot use the crawl rectangle exclusively to adjust the positioning for a Cel animation if you are moving a project from one format to another. For example, a Cel Animation added to an SD scene needs some additional adjustments in the HD version of the scene because the Position pixels for SD do not match the pixel positions for HD.

To change the position of the crawl rectangle:

1. Select the Crawl object in the Scene Tree.

2. In the Crawl object editor, select the Rectangle tab.

3. Do one of the following:

   ▶ Click the Top thumbwheel and drag it until you move the crawl rectangle to the desired position. If necessary, adjust using the Bottom thumbwheel as well.

   ▶ Calculate the desired number of pixels from the top of the video output to the top of the crawl rectangle. Type that value in the Top text box, and press Enter. Calculate the desired number of pixels from the top of the video output to the bottom of the crawl rectangle. Type that value in the Bottom text box, and press Enter.

The default crawl rectangle is sized and positioned for text to crawl across the full screen. To crop the left, right, top, or bottom of the rectangle, you need to click the Position tab and add a small value (1 or 2) in the Crop field. This value triggers the Target rectangle to crop the crawl information.

The following illustration shows a crawl rectangle positioned for NTSC display.
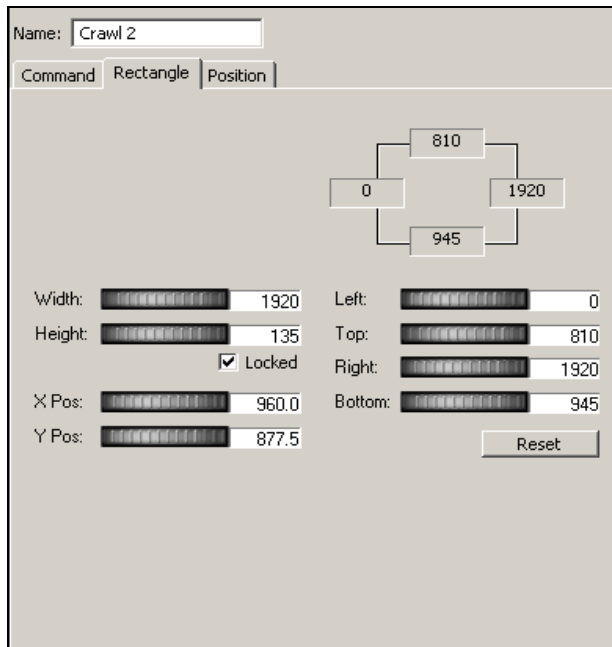
Adding Non-Text Objects to Crawl Text

You can place one or more Video In, Cel Animation, Clip Playback, Group, and Audio Playback objects between lines of text in a crawl.

You create *rules* to control when a non-text object is inserted into the crawl in relation to a line.

There are three ways you can add non-text objects:

- Add an object that is linked to a file (such as a graphic) or video input. You can use the Cel Animation object to display a single image or a series of images. See "Adding Non-Text Objects as Linked Files" on page 206.

- Link the object in the Crawl object and use the <object> command in the text file (see "Inserting Objects by Using Crawl Object Tags" on page 215).

- Create the graphic as a custom typeface and use an embedded tag to place it in a text file as a preset style id (see "Adding Non-Text Objects as Custom Typefaces" on page 216).

The following topics provide more information about adding non-text objects to a crawl:

- "Adding Non-Text Objects as Linked Files" on page 206
- "Controlling the Position of Non-Text Objects in a Crawl" on page 208
- "Deleting and Replacing Rules" on page 209
- "Example: Inserting Objects into a Crawl" on page 210
- "Example: Applying a Parameter Value to an Inserted Object" on page 212
- "Using an Inserted Object to Trigger an Action" on page 214
- "Inserting Objects by Using Crawl Object Tags" on page 215
- "Adding Non-Text Objects as Custom Typefaces" on page 216

Adding Non-Text Objects as Linked Files

The following procedure describes the basic steps for adding non-text objects. For additional information, see "Example: Inserting Objects into a Crawl" on page 210.

If you are adding a Clip Playback object, you should create only one rule to control the playback of the clip. Creating a second rule creates a second Clip Playback object for the same clip, which can prevent the desired effect. For example, if you want an inserted clip to start playing, and then stop playing, you should create a single rule with two parameters: one to start the playback, and one to stop playback.

To add a non-text object to crawl text and specify a rules

1. Create a new scene.

2. Add a Crawl object to the Scene Tree.

   A Text Data object is added as a child of the Crawl object and a Deko object is added as a child of the Text Data object. The text begins to crawl across the video output within the crawl rectangle because by default, Loop is set to On in the Text Data's Data tab. See "Creating Crawl Text Using the Crawl Object" on page 193.

3. (Option) While creating a crawl, select the Crawl object's Command tab. Drag the Speed thumbwheel to the right to increase the speed of the crawl so that you can see the results of adding non-text objects to lines of text more quickly.

4. If you are adding an object other than, or in addition to, the Deko object, select the Text Data object and add the new object.

   For example, you could add a Cel Animation object.

Non-text objects to be inserted in a crawl must be children of the Text Data object.

5. In the object editor, link the object you added with the appropriate file or video input.

   For Cel Animation, select either "Open only the selected file" or "open *x* consecutive files," depending on what you want to display.

   The object does not appear in the crawl until you define a rule for it.

6. In the scene tree, select the inserted object, click its Target tab, and set its Autoscale option (Preserve, Fit, or None). See "Controlling the Position of Non-Text Objects in a Crawl" on page 208.

7. With the Text Data object selected, click the Rules tab in the object editor.

📄 *You can apply rules to a non-text object only if it is a child of the Text Data object. The Text Data object editor is the only editor with the Rules tab.*

8. Assign a name for the rule, such as "Insert Station Logo."

9. Select the object from the Insert Object list.

   The Insert Object list displays the names of all objects in the scene. In this example, the Cel Animation is named "Station Logo."

10. Select when you want the rule to be activated, either before or after a line of text.

11. Indicate the line before which or after which you want the object to be added. The application numbers each line of a text file. The default value is 1 (first line).

12. Accept or adjust the values for Pad (spacing in pixels) before (leading) and after (trailing) the inserted object to separate it from the beginning and end of text.

13. For Clip Playback and Cel Animation Objects, click Activate. See "Example: Inserting Objects into a Crawl" on page 210

14. Click Add Rule to save the rule.

    The rule is displayed in the Rules text box. The object is inserted into the crawl text after the text is buffered and processed.

15. Make other adjustments as described in "Controlling the Crawl Display" on page 196.

Controlling the Position of Non-Text Objects in a Crawl

When you insert non-text objects between lines of text, you might need to scale these objects in relation to the crawl rectangle.

To control the position of non-text objects in a crawl:

1. Select the non-text object and click the editor's Target tab.

2. Select an Autoscale option.

Preserve/Minimum is usually the most appropriate choice. When you select Preserve, the object is placed within the crawl rectangle while maintaining its aspect ratio. Preserve is especially appropriate for video-in feeds in which a miniature video output is to display between lines of text.

Example: Preserve option

The Fit option fits the object within the boundaries of the crawl rectangle, but selecting this option could change the aspect ratio or shape of the object.

The None option places the object at its original size within the crawl rectangle. You can align it vertically: top, bottom, or center. You can select this option if the object is created in the correct size.

For more information, see "Scaling an Object in Relation to Its Target Rectangle" on page 91.

You cannot use the crawl rectangle exclusively to adjust the positioning for a Cel animation if you are moving a project from one format to another. For example, a Cel Animation added to an SD scene needs some additional adjustments in the HD version of the scene because the Position pixels for SD do not match the pixel positions for HD.

Deleting and Replacing Rules

All of the rules defined for non-text objects in a crawl are active for the Crawl object until you delete or replace them.

To edit a rule:

1. Select the rule in the list.
2. Edit any of its values in the Rules tab.
3. Click Replace.

To delete a rule:

▸ Select the rule in the list, and click the Delete button.

To delete all rules for this Crawl object:

▸ Click Clear All.

Example: Inserting Objects into a Crawl

This example creates a crawl that includes a Clip Playback object and a Cel Animation object alternately playing between each line of text (text 1, object 1, text 2, object 2, text 3, object 1...). This example assumes that the text consists of an even number of lines, so that the inserted objects alternate without repeating.

📄 *If you are inserting a clip into a crawl, make sure that you have a stream available to play it. See "Managing Clip Playback" on page 143.*

To add non-text objects to crawl text:

1. Create a new scene.

2. Add a Crawl object to the Scene Tree.

    A Text Data object is added as a child of the Crawl object, and a Deko object is added as a child of the Text Data object. The default text begins to crawl across the video output within the crawl rectangle.

3. (Option) Select the Crawl object's Command tab. Drag the Speed thumbwheel to the right to increase the speed of the crawl so that you can see the results of adding non-text objects to lines of text more quickly.

4. Select the Text Data object and add a Clip Playback object. The Clip Playback object is added as a child of the Text Data object. Do not cue or play the clip.

5. Select the Clip Playback object's Target tab and set its Autoscale option to Preserve/Minimum. For more information, see "Controlling the Position of Non-Text Objects in a Crawl" on page 208.

    The Clip Playback object will be placed within the crawl rectangle with its aspect ratio maintained after you define and add a rule.

6. Add a Cel Animation object that is to be animated. When you link it to its source file, select "Open *x* all consecutive files, starting with this one."

📄 *If your system includes sample media, you can experiment by using the Cel Animations in E:\DekoCast_Media\CAPS.*

Like the Clip Playback object, this object becomes a child of the Text Data object, but do not appear in the crawl until you define and add a rule. Do not play the Cel Animation object.

7. Using the Cel Animation object's Target tab, set its Autoscale option to Preserve/Minimum.

To specify rules for the inserted objects:

1. With the Text Data object selected, click the Rules tab in its object editor.

   Set up one rule at a time.

📖 *You can apply rules to a non-text object only if it is a child of the Text Data object. The Text Data object editor is the only editor with the Rules tab.*

2. Type a name for the first rule, such as "Insert Clip."

3. Select the Clip Playback object (such as Animated Clip) from the Insert Object list.

4. Select when you want the rule to be activated, either before or after a line of text. Select After.

5. Indicate the line after which you want the object to be added. Accept the default value 1 to insert the object after the first line.

6. Set the repeat after every line value to 2 because you are going to add a second non-text object every other line.

7. Accept the default values for the padding (spacing in pixels) before (leading) and after (trailing) the inserted object that separate it from the beginning and end of text. Adjust these later, if desired.

8. Click Activate.

   The `play` parameter is added to the rule in the Advanced pane.

9. Click Add Rule to save the rule.

   The rule displays in the Rules text box. The Clip Playback object is inserted in the crawl text after it is buffered and processed. Wait for it to appear after the first line of text.

📖 *If you do not click Activate before adding the rule, the inserted object will not play. If you forget to Activate an object, you need to edit and replace the rule.*

10. For the animated logo, create a new rule by typing a name in the Rule Name text box, such as "Insert Cel Animation."

11. Select the Cel Animation object (such as Animated Logo) from the Insert Object menu.

12. The logo is to be inserted after the second line of text. Set the start-after line to 2 and set the repeat line to 2.

13. Click Activate.

    A dialog box asks if you want to replace the first parameter settings. Click OK.

    The `command` parameter `play frame 0 loop` is added to the rule in the Advanced pane.

14. Click Add Rule to add the rule to the Rules text box.

    The Cel Animation appears in the crawl.

15. Select the Crawl object in the Scene Tree and click its Command tab. Use these controls to adjust the speed of the crawl, the spacing between objects or text lines, and the opacity of the entire crawl object. See "Controlling the Crawl Display" on page 196.

📖 *You cannot use a rule to loop a Clip Playback object. To loop a Clip Playback object in a crawl, select the Loop option in the File tab of the Clip Playback editor.*

Example: Applying a Parameter Value to an Inserted Object

The Advanced pane of the Text Data Rules tab allows you to specify a value for any of the scene's parameters and have it take effect in relation to the position of the non-text object as it crawls across the video output.

The Advanced pane allows you to specify up to two parameter values (two activations) that are applied in relation to the inserted object. You can use an API program or data using an XML string to add additional activations.

The following example reduces the opacity of a Cel Animation as it travels across the crawl.

To reduce the opacity of a Cel Animation object inserted in crawl text:

1. Add a Cel Animation object to a crawl and define a rule for it (see "Example: Inserting Objects into a Crawl" on page 210).

   The Advanced pane in the Data tab should include a parameter to animate the cel.

2. To set a second parameter, click the second Select button in the Advanced pane.

Select button
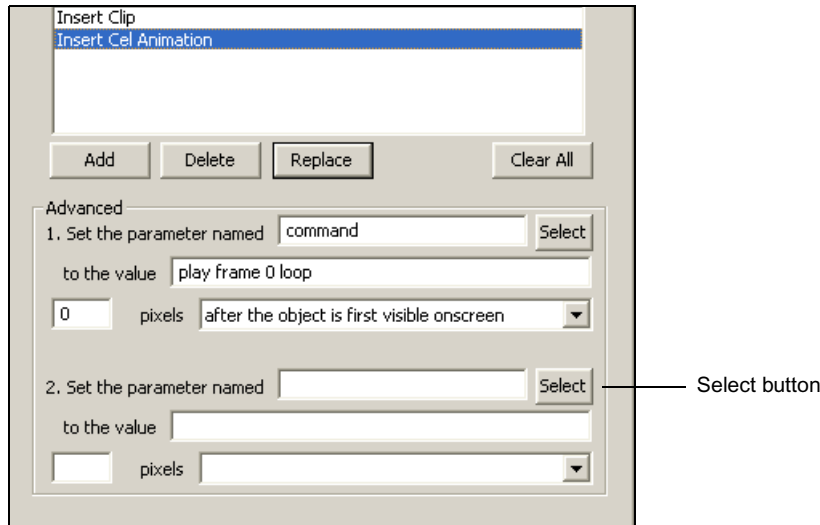
3. In the Select Parameters list, select Single Object, which refers to the object that is inserted into the crawl by this rule.

Any scene parameter is a potential option when you use this Advanced feature.
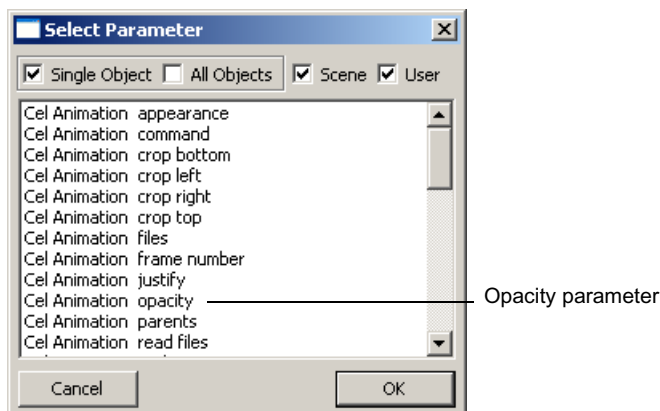
Opacity parameter

4. Select the opacity parameter for the object and click OK.

5. Type the value for the opacity parameter in the value text box.

   For example, .5 results in an object that is half transparent.
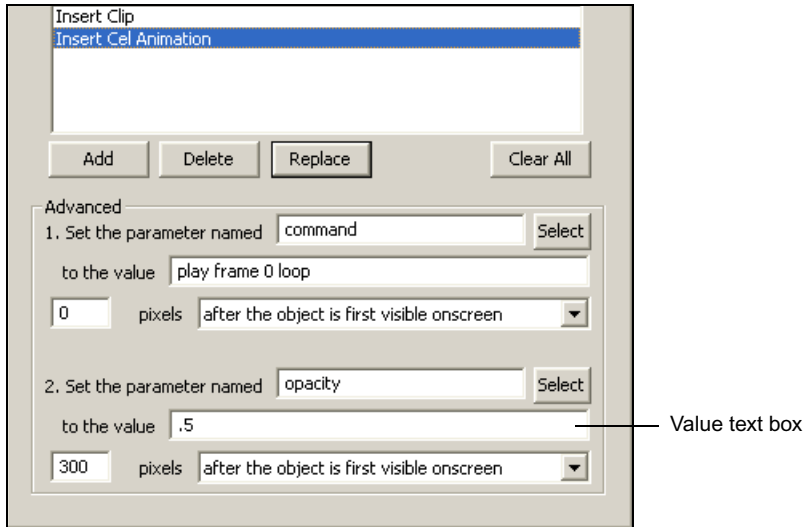
6. Specify where you want the opacity to change. Type the number of pixels before or after the object has reached the position within the crawl that you select from the menu. For example, "300 pixels after the object is first visible onscreen."

7. Click Replace to update the rule for the Crawl object.

   The updated crawl is displayed.

Using an Inserted Object to Trigger an Action

You can also use a parameter value for a non-text object in a crawl to trigger an action. For example, you could have the Video In object squeeze back when the non-text object in the crawl reaches the mid-point of the video output frame.

To use a non-text object to trigger an action:

1. Create an action in the Timeline editor.

   Some examples of actions are squeezing back a Video In feed, displaying a clip, or fading the inserted object. See "Adding Actions to a Scene" on page 297.

2. Create a crawl and insert a non-text object (see "Adding Non-Text Objects to Crawl Text" on page 205 and "Example: Inserting Objects into a Crawl" on page 210).

3. Add another parameter to the rule you created by clicking the Rules tab, selecting the rule, and clicking the second Select button in the Advanced pane.

4. For the option in the Select Parameters list, select Scene.

5. Select the action you created from the list (such as Squeezeback command) and click OK.

   The action is added as a parameter name in the Advanced pane.

6. In the value field, type `play`.

   Enter a pixel value and an action to define when and how you want the action played. For example, "360 pixels after the object is first visible onscreen" (360 pixels is mid-frame in NTSC).

7. Click Replace to apply the edited rule to the Crawl object.

   The updated crawl is displayed.

Inserting Objects by Using Crawl Object Tags

You can insert non-text objects into a crawl by embedding the objects as content in the Text Data object's Value text box, either by inserting the Crawl object embedded tags or by importing a text file that includes these tags. This topic provides several examples.

For example, typing `<object>Sun</object>` into the Value text box after a particular line of text inserts the graphic object named "sun" into the crawl after that text.

```
Los Angeles 76°
<object>sun</object>
New York 20°
```

You can also use an object ID number with the `<object>` tag, for example:

```
<object>-1272</object>.
```

To insert a clip object with the name Clip To Crawl into a crawl and trigger it to play 20 pixels before it being displayed on the screen, use the <object> tag with these attributes and parameters:

```
<object>Clip To Crawl<onActivating paramName="play"
offsetPos="-20">1</onActivating></object>
```

To insert a cel animation with the object ID-2212 into a crawl and trigger it to play in a loop 50 pixels after it is first drawn on video output, and then trigger it to stop 50 pixels before it starts to leave the video output, use the following tags:

```
<object>-2212<onActivating paramName="command" offsetPos="50">play
frame 0 loop</onActivating><onInactivating paramName="command"
offsetPos="50">abort</onInactivating></object>
```

Adding Non-Text Objects as Custom Typefaces

You can use embedded tags to insert a static image that is defined as a Deko custom typeface into a crawl. This technique is particularly useful if you use a single file of custom typefaces or want to insert more than two non-text objects into a crawl. For more information on using embedded tags, see "Using Embedded Tags with Deko Object Text" on page 128.

📄 *These tags are different from the Crawl object tags described in "Inserting Objects by Using Crawl Object Tags" on page 215.*

To add a non-text object as a custom typeface:

1. In PostDeko Lite, create a custom typeface from a graphic and associate it with a letter or number. Adjust the size so that it fits into the crawl and assign it a preset number. For information on creating a custom typeface and saving a preset, see the *Deko Products User's Guide* or the Deko Products Help.

   Make sure to define the paths for DekoCast and PostDeko Lite correctly. See "Setting Up Directories" on page 37.

2. In a text file, use the <preset file> and <preset_ID> tags to identify and insert the static image.

   For example, the following file produces a different custom typeface (static image) at the end of each news item. Style information is included in the file crawl.pst as id 3. The first custom typeface is associated with the letter A, the second with the letter B, and the third with the letter C.

Preset file tag ──┐
Preset ID tags ──┐
```
Preset_tags_Crawl.txt - Notepad                              _ □ ×
File  Edit  Format  View  Help
<preset file="D:\DekoCast_trn_adv\crawl.pst"/>
NEWS:Security problems at Smithfield airport...<preset id="3"/>A
ENTERTAINMENT: Singer Branilow needs hip surgery...<preset id="3"/>B
HEALTH: Drug treats depression in hours...<preset id="3"/>C
```
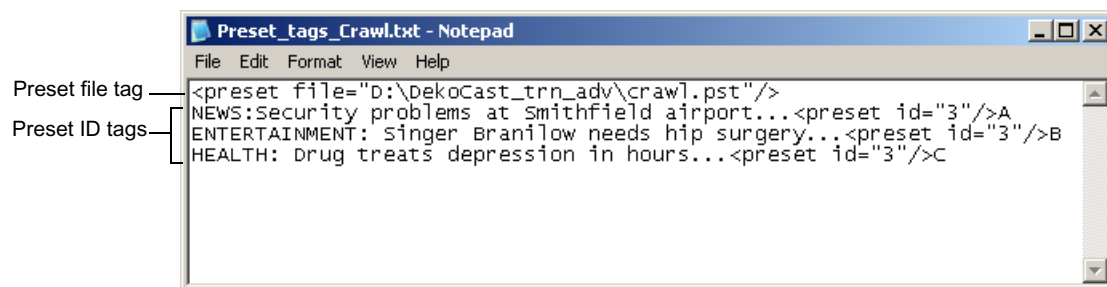
3. Save the text file.

   Depending on your settings, the crawl is immediately updated. See "Using a Text File for a Crawl" on page 199.

Adding Plug-in Objects

Plug-in button

The Plug-in object lets you add special to scenes to provide additional functionality. See the Avid Knowledge Base (www.avid.com/onlinesupport) for information about using DekoCast plug-ins.

To add a plug-in object to a scene:

1. Select the plug-in tool from the Object toolbar.

2. Select the plug-in from the Select Object Plug-in list.

3. Click OK.

3 **Editing Objects in the Scene**

4 Working with Charts and Graphs

DekoCast enables you to create your own charts and graphs using the Chart Designer dialog box. The Chart Designer dialog box enables you to add a series, and assign data to your chart.

The following topics describe how to access the Chart Designer and to create charts and graphs:

- "Accessing the Chart Designer" on page 220
- "Basic Procedure for Creating Charts" on page 222
- "Working with Advanced Controls" on page 229

Accessing the Chart Designer

In DekoCast, a chart is treated similar to a rendered single cell animation. This topic shows you how to access the Chart Designer in DekoCast.

To access the Chart Designer in DekoCast:

1. Add an object to a scene by clicking the object from the Object toolbar.

    The right side of the screen changes to reflect the Chart object.
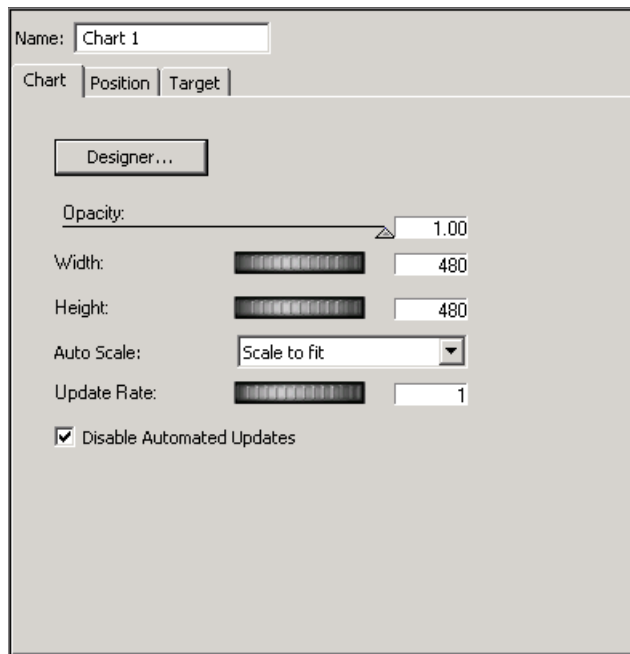
2. In the Chart tab, you can perform the following optional steps:

    a. If desired, use the Opacity slider to change the opacity of the chart.

    b. Use the Width thumbwheel to change the width of the chart, given the aspect ratio selected. For more information on setting the aspect ratio, see "Setting the View Size" on page 292.

    c. Use the Height thumbwheel to change the height of the chart, given the aspect ratio selected. For more information on setting the aspect ratio, see "Setting the View Size" on page 292.

    d. In the Auto Scale drop list, select the method you want to use to scale your object, given the aspect ratio selected. For more information on setting the aspect ratio, see "Setting the View Size" on page 292.

e. Use the Update Rate thumbwheel to set how often you want to request an update to the Chart.

This is only useful when the Chart is dynamically linked to a database. It defines how often in seconds to get the Chart to query the Database and generate the chart given with any changed values in the bound database.

f. Select the Disable Automated Updates check box if you want to disable automated updates to the chart.

📖 *The Width and Height can be animated using an Action, but it will not be real time, and it will not be a smooth transition from start to end value. It will be jerky. The Engine will optimize the calls to make best use it can of the Chart Rendering Engine. If you want to make a smooth transition, you should use the Scaling values of the Position tab.*

3. Select the Designer button to set up the type of chart you want to create.

The Chart Designer dialog box opens.

4. Next you can use the Chart Designer dialog box to add a series, and assign data to your chart.

For more information on using the Chart Designer in both Deko and DekoCast, see "Basic Procedure for Creating Charts" on page 222.

Basic Procedure for Creating Charts

The Chart Designer enables you to create custom charts from information that is populated in your database. The database must be linked to your Deko or DekoCast system. When creating a chart, there are three required tasks you must perform:

- Create (or add) a Series. A Series is the type of chart you want to create. Examples include Bar series, Pie series, Line series, and so on. For more information, see "Creating a Series" on page 222.

- Assign data to your chart. For more information, see "Assigning Data to a Series" on page 227.

Creating a Series

When working in the Chart Designer, the first task you must perform is to create a Series, which is the type of chart you want to create. There are a number of different charts and variations that you can choose from. Examples are Bar chart, Pie chart, Line chart, and so on.

To create a series:

1. Access the Chart Designer dialog box. For more information, see "Accessing the Chart Designer" on page 220.

   The Chart Designer dialog box opens.

2. If not already selected, select Series in the left column.

The Appearance tab should be preselected by default.

The Series > Appearance page appears. The Series Selection area displays the current series. As shown in the preceding example, this is Series 1.

3. In the Series Type field, select the Series type from the drop down list.

   This is the type of chart that you want to make. Options are: Area, Bar, Line, Pie, and so on.

4. Select whether you want your chart to be two dimensional or three dimensional by clicking on the appropriate option. Choices are 2D or 3D.

5. Select the presets for the type of series you selected by clicking on one of the presets to view what your series will look like with these presets applied.

   The Series Presets area contains various presets for the series you selected. In the previous example, a Bar chart was selected, therefore, the presets listed all apply to a Bar Chart.

You can try different presets until you find the right one for your series.

6. (Optional) If you want to add another series, do the following:

   a. Select Series List in the second column from the left.

   b. Type a name for the new series in the bottom row of the Series List table.

   c. Press the Add button.

7. Select attributes for your chart by clicking the Attributes tab. You can then change certain attributes for your series.

   The attribute information that you can change is different based on the type of chart you selected.

8. Click Save and Exit to save your changes and close the Chart Designer.

9. Next, you can use the Chart Designer dialog box to configure chart settings. For more information, see "Configuring Chart Settings" on page 224.

Configuring Chart Settings

The second required task when creating a chart in the Chart Designer is to assign visual effects to your series (chart). The Jitter is especially important to set. Jittering is a special visual effect that enables you to anti-alias the whole scene. The idea behind it is very simple: the control renders several samples of the image, each with a small offset in the X and Y directions. These samples are then added together to produce the final image.

Note that jittering slows down the rendering speed.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To assign visual effects:

1. Select Configuration in the left column.

   The Configuration > Chart Settings page displays enabling you to assign visual effects to the selected series.
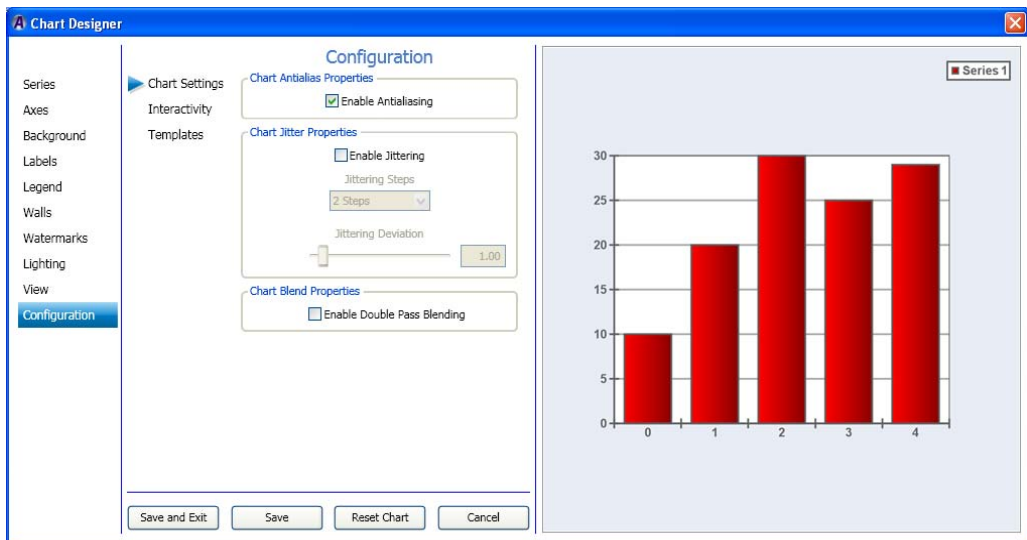
2. In the Chart Antialias Properties area, the Enable Antialiasing check box by default is selected. If you do not want to enable anti-aliasing, deselect it.

3. In the Chart Jitter Properties area, do the following:

    a. If you want to turn jittering on, select the Enable Jittering check box to turn jittering on. The Jittering Steps field becomes active.

    b. In the Jittering Steps area, click the arrow, and from the list, select the number of sample (steps) of jittering you want to apply to your chart.

    c. Use the Jittering Deviation slide bar to control the maximum offset along the X and Y directions of the generated samples relative to the original image.

4. In the Chart Blend Properties area, select the Enable Double Pass Blending check box if you want to enable double pass blending.

5. Click Save and Exit to save your changes and close the Chart Designer. Your next step is to determine interactivity for a series. For more information, see "(Optional) Assigning Interactivity for the Mouse" on page 225.

(Optional) Assigning Interactivity for the Mouse

An optional task you can perform now when creating a chart in the Chart Designer is to determine what the mouse controls when it is moved over the Preview window.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To determine interactivity for the mouse:

1. Select the Interactivity submenu from the Configuration tab.

    The Configuration > Interactivity page displays enabling you to determine the what the mouse controls when it is moved over the Preview window.
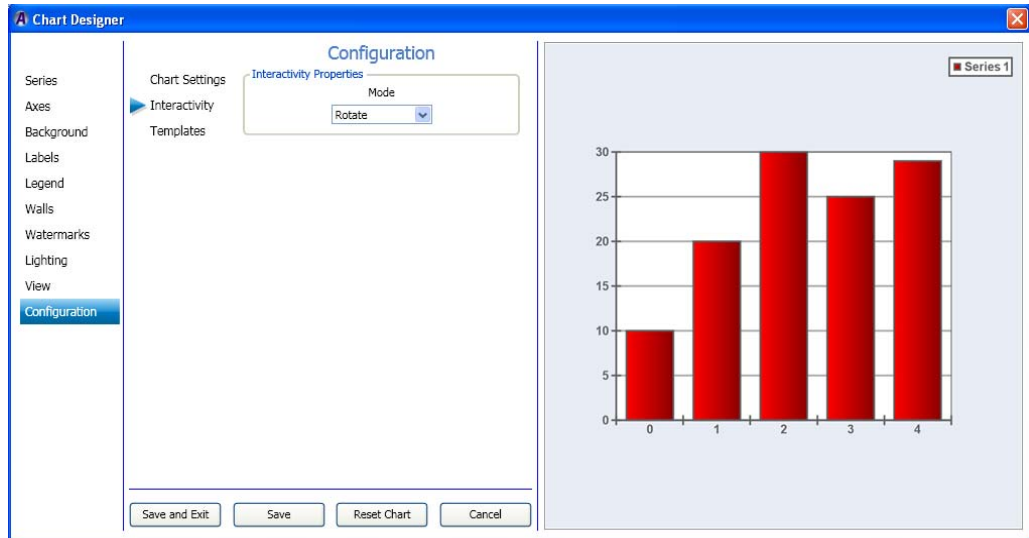
2. In the Interactivity Properties area, select the mode that reflects what you want the mouse to control when it is moved over the Preview window. Options include the following:

    ▶ Disabled - Mouse movements over the Preview window will have no effect on the chart.

    ▶ Rotate - Mouse movements over the Preview window will modify the View/Projection Rotation and Elevation values of the chart. This option only works for 3D charts.

    ▶ Zoom - Mouse movements over the Preview window will modify the View/Projection zoom value of the chart. This option only works for 3D charts.

    ▶ Offset - Mouse movements over the Preview window will modify the View/Margin values of the chart.

> *The left mouse button must be held down during mouse movements over the Preview window for any parameter modifications to take place.*

3. Click Save and Exit to save your changes and close the Chart Designer. Your next step is to assign data to a series. For more information, see "Assigning Data to a Series" on page 227.

Assigning Data to a Series

The third required task when creating a chart in the Chart Designer is to assign data to your series (chart). The data you assign comes from an existing ODBC database that you must select. This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To assign data to a series:

1. Select Series, then select the Import submenu.

   The Series > Import page enables you to select your database, connect to a database, and import data.

2. In the Series Selection area, select the series for which you want to assign data to.

3. In the Database Selection area, do the following:

   a. Select the database you want to connect to for this series from the Database drop list. When you click the drop down arrow, a list of currently defined ODBC databases appears.

   b. In the UserID field, type the username to access the selected database.

   c. In the Password field, type the password for the user.

4. In the Database Connection area, select the check box that indicates how you want to load the data. Options are:

   a. Static Binding - Select Static Binding if you want to load the data now, without updates.

   b. Dynamic Binding - Select Dynamic Binding if you want to continually load the data, and update the chart when the data changes.

You will not see the chart update when looking in the Chart Designer window. In Dynamic Binding mode, the chart will update in the Deko or DekoCast application windows when the data changes.

5. Select the Data Import button. The dialog box changes to enable you to select the Database Table, and Data Series Assignments. Do the following:

Make sure you click on the database that contains the data you want to use.

   a. In the Current Database Table drop down list, select the database table that you want to use.

   b. In the Data Series Assignments drop down list, do the following in the Database Column for each Data Series:

      ▶ Select the values you want to use in your series. These values are graphically represented as points on the chart.

      ▶ Select the labels you want to use in your series. These are typically represented as names (such as Company names, and so on).

      ▶ Select the Fill effects you want to use in your series.

      ▶ (Optional) Select the line properties you want to use in your series.

6. Select the View Database button to view the information in the database.

7. Select the Import button to import the information from the database into the selected Data Series.

8. Repeat Steps 1-5 for each Series you create.

9. Click Exit Data Import to close the Data Import screen, then click Save and Exit to save your changes and close the Chart Designer.

Working with Advanced Controls

This section contains information regarding Advanced Controls that are available for use in the Chart Designer. Advanced Controls are the remaining controls in the Chart Designer that you can use to tweak your charts to a more precise degree than you can using the "Basic Procedure for Creating Charts" on page 222 presented previously in this chapter.

In this section, we organized the Advanced Controls by their Menu order. Therefore, see the following sections for more information on the Advanced Controls that you are interested in changing for your series (chart):

• Using Series Controls

• Using Axes Controls

• Using Background Controls

• Using Labels Controls

• Using Legend Controls

• Using Walls Controls

• Using Watermarks Controls

• "Using Lighting Controls" on page 282

• "Using View Controls" on page 289

• "Template Configuration Controls" on page 294

Using Series Controls

This section contains information on using the Series Controls to further adjust the look of your series.

Procedures for Series Appearance, and Series Import are described in the section "Basic Procedure for Creating Charts" on page 222.

For more information on setting specific axes controls, see one of the following topics:

• "Setting the Series Attributes" on page 230

• "Setting the Series Data Labels" on page 233

• "Setting the Series Data Points" on page 236

• "Setting the Series Legend" on page 237

• "Setting the Series Markers" on page 238

• "Modifying the Series List" on page 239

Setting the Series Attributes

This procedure contains information on how to set the series attributes (attributes, style and text) for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the series attributes:

1. Select Series in the left column, and then select the Attributes submenu.

   The Series > Attributes page displays enabling you to set the series attributes, style, Properties and Dimensions for the selected series.

2. In the Series Style area, click the arrow in the Fill Mode field, and from the list, select the Fill mode (Series, Data Points or Pre defined) you want to apply to your series.

3. Click the Fill Effect button.

   The Fill Effect Editor dialog box opens, allowing you to change the fill effect for your chart.

4. Click the arrow in the Border Mode field, and from the list, select the Border mode (Series, Data Points or Pre defined) you want to apply to your chart.

5. Click the Border button.

   The Line Properties Editor dialog box opens, allowing you to change the line properties for your chart.

6. Click the Shadow button.

The Shadow Editor dialog box opens, allowing you to change the shadow properties for your chart.

7. Use the slider to get to the next page.

The Series Properties area displays, allowing you to change the series properties for your chart.
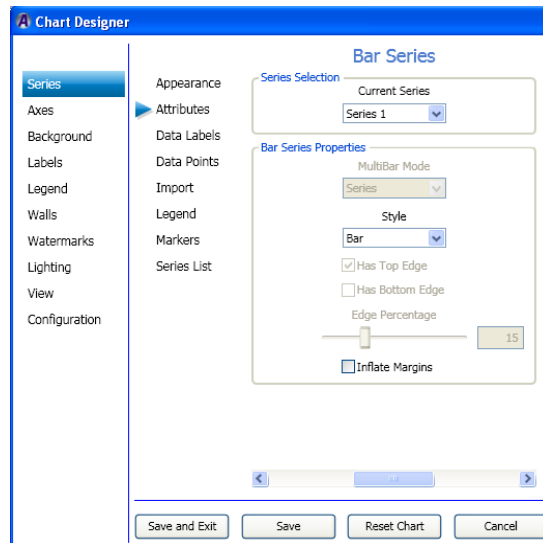
Do the following to change your series properties:

- In the Multi Bar Mode drop list, if you have created more than one series, select the series you want to modify attributes for.

This list box is always disabled on the first series. If you have only created one series, it will always be disabled. If you have created more than one series, and all of the series are the same type (e.g. all are Bar series or all are Area series), it will be enabled.

- In the Style drop list, select the type of series.

- Select the Has Top Edge check box if you want the series to have a top edge.

- Select the Has Bottom Edge check box if you want the series to have a bottom edge.

- Use the Edge Percentage slider to determine the percentage of the edge of the series.

- Select the Inflate Margins check box to make the margins larger.

8. Use the slider to get to the next screen.

The Series Dimensions area displays, allowing you to change the series dimensions for your chart.
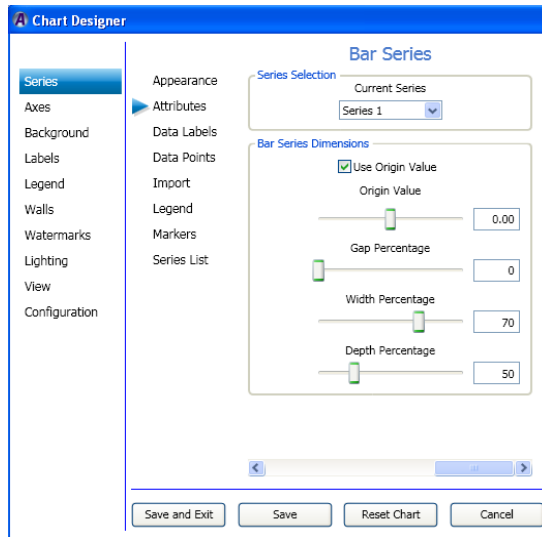
Do the following to change your series dimensions:

- (Optional) If the Use Origin Value check box is selected, it indicates that the "Origin Value" slider below it should be used to control the origin value, instead of defaulting to begin at the minimum series value.

- Use the Origin Value slider to control the origin value of the series.

- Use the Gap Percentage slider to control the gap percentage of the series.

- Use the Width Percentage slider to control the width percentage of the series.

- Use the Depth Percentage slider to control the depth percentage of the series.

9. Use the slider to return to the initial Series Attributes page.

10. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Series Data Labels

If you want, you can then set the series data label properties for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the series data label properties:

1. Select Series in the left column, then select the Data Labels submenu.

   The Series > Labels page displays enabling you to set the series data labels for the selected series.

2. In the Series Selection area, select the series you want to change from the list.

3. In the Data Label Properties area, click the arrow in the Mode list box, and select the mode that you wan to use. When you select the Every option, the Draw Every field becomes enabled. If you select the Subset option, the Subset List becomes enabled.

4. If you selected Every, do the following:

   a. In the Draw Every field, type the number that represents how often/quickly you want the Chaert Designer to control how often the labels are re-drawn.

   If the "Every" field is set to N, then the labels are drawn on every Nth data point.

   b. If you want to change the arrow properties for your chart, click the Arrow Properties button. The Line Properties Editor dialog box opens. Make your changes and click OK to save and close the dialog box.

c.   If you want to change the text properties for your chart, click the Text Properties button. The Text Properties Editor dialog box opens. Make your changes and click OK to save and close the dialog box.

5. Use the slider to get to the next page. The Data Label Format area displays.
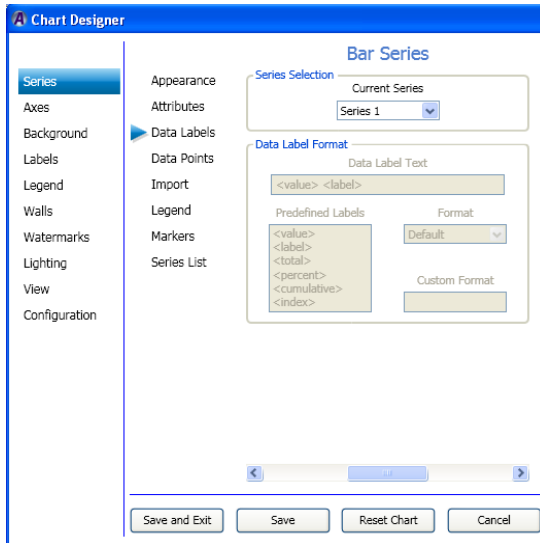
  Do the following to format your data label:

a.   In the Data Label Text field, select the parameters (e.g., <value>, <label>, etc.) for your data labels.

b.   Use the Format drop list to select a predefined format for the data labels.

c.   (Optional) In the Custom format text box, select a custom format for the data labels. If the Format drop-down box is set to "Custom Number" or "Custom Date/Time", then the "Custom Format" textbox is enabled.

  For more information regarding the format specifier that you can use in the Custom format text box, refer to the "Formatting Types" section of the *.NET Programming Guide.*

6. Use the slider button to get to the next page.

   The Data Label Position area displays.
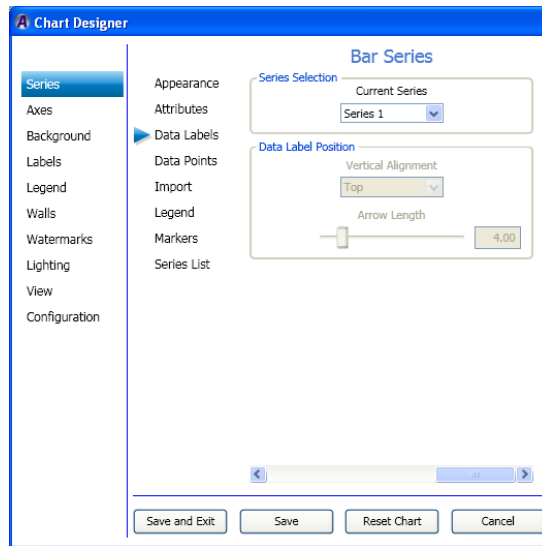
   Do the following to position your data label:

   a. In the Vertical Alignment drop list, select the vertical alignment (Top, Center, or Bottom) for your data label.

   b. Use the Arrow length slider to control the arrow length you want to use for the data labels.

7. Use the slider to return to the initial Series Data Labels page.

8. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Series Data Points

If you want, you can then set the series data point properties for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the series data point properties:

1. Select Series in the left column, then select the Data Points submenu.

   The Series > Data Points page displays enabling you to set the series data point properties for the selected series.

2. In the Series Selection area, select the series you want to change from the list.

3. In the Data Table area, the following fields appear in the table. Edit any of these fields by either typing in a new value or label, or clicking on a fill effect, or line property to bring up the associated dialog box.

4. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Series Legend

If you want, you can then set the series legend properties for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the series legend properties:

1. Select Series in the left column, then select the Legend submenu.

   The Series > Legend page displays enabling you to set the series legend for the selected series.
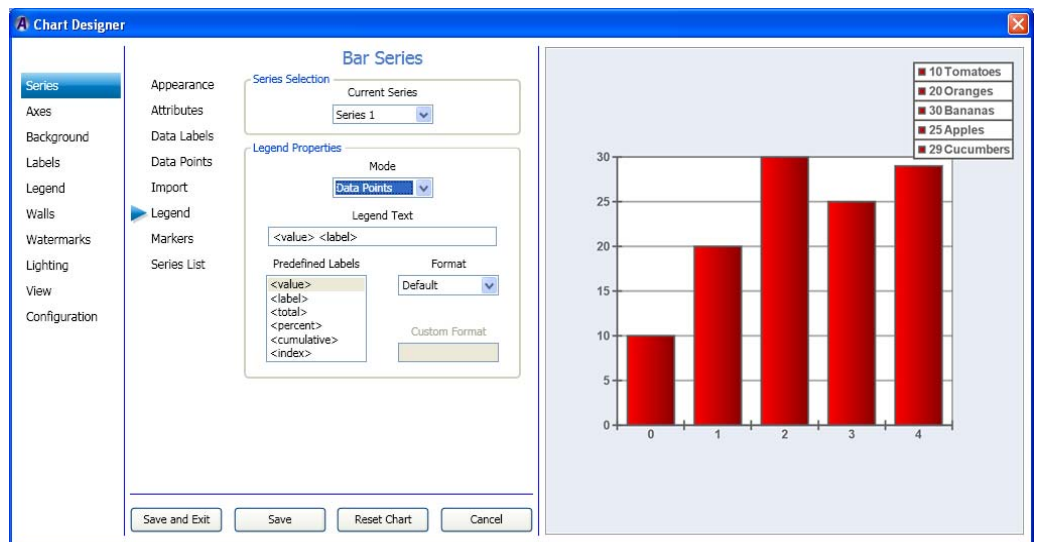
2. In the Series Selection area, select the series you want to change from the list.

3. In the Legend Properties area, click the arrow in the Mode list box, and select the mode that you wan to use. When you select the Data Points option, the rest of the screen becomes active.

4. In the Data Label Text field, do the following:

   a. Select the parameters (e.g., <value>, <label>, etc.) for your Legend.

   b. Use the Format drop list to select a predefined format for the Legend.

   c. (Optional) In the Custom format field, to select a custom format for the Legend.

5. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Series Markers

This procedure contains information on how to set the series markers (attributes, style and text) for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the series markers:

1. Select Series in the left column, and then select the Markers submenu.

   The Series > Markers page displays enabling you to set the marker Style, and Dimensions for the selected series.

2. In the Series Selection area, select the series you want to change from the list in the Current Series list box.

3. In the Marker Style area, click the arrow in the Shape field, and from the list, select the shape of the marker you want to apply to your chart.

4. Click the Fill Effect button.

   The Fill Effect Editor dialog box opens, allowing you to change the fill effect for your marker.

5. Click the arrow in the Vertical Alignment field, and from the list, select the type of vertical alignment (Top, Center, Bottom) you want to apply to your marker.

6. Click the Border button.

The Line Properties Editor dialog box opens, allowing you to change the line properties for your chart.

7. In the Marker Dimensions area, do the following: select the series you want to change from the list in the Current Series list box.

    a.   Use the Width slider to change the width of the marker.

    b.   Use the Height slider to change the height of the marker.

    c.   Use the Depth slider to change the depth of the marker. (for 3D charts only).

    d.   Select the Auto Depth check box if you want to depth to set automatically (for 3D charts only).

8. Click Save and Exit to save your changes and close the Chart Designer.

Modifying the Series List

This procedure contains information on how to modify the series list.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To modify the series list:

1. Select Series in the left column, and then select the Series List submenu.

The Series > Series List page displays enabling you to modify the series list.

2. In the Series List area, select the series you want to modify, and do one of the following:

   ▶ To add another series to the list, click the Add button. This copies the existing series.

   ▶ To modify a series, click the Modify button. This modifies the title of the series. For example, if the series is called "Series 1" and you want to change it to be "Bar Series", you select "Series 1" in the Series List, then type "Bar Series" in the edit box (just above the Modify button), then press the Modify button.

   ▶ To delete a series from the list, click the Delete button.

3. Click Save and Exit to save your changes and close the Chart Designer.

Using Axes Controls

This section contains information on using the Axes Controls to further adjust the look of your series.

For more information on setting specific axes controls, see one of the following topics:

Setting the Axes Appearance

This procedure contains information on how to set the axis appearance (attributes, style and text) for your series.

This procedure assumes that you have already added a series as described in .

To set the axes appearance:

1. Select Axes in the left column.

   The Axes > Appearance page displays enabling you to set the axis attributes, style and text for the selected series.

2. In the Axis Attributes area, select the Axis that you want to change from the list. Available options are described below:

   - Vertical Axes - The Vertical axes are named PrimaryY and SecondaryY and are positioned on the left and right side of the chart. The PrimaryY axis is displayed on the front, and the SecondaryY axis is displayed on the back.

   The vertical axes are used to scale the series in the Y dimension. By default, all series are scaled on the PrimaryY axis. The SecondaryY axis is, by default, not visible.

   - Horizontal Axes - The Horizontal axes are named PrimaryX and SecondaryX and are positioned on the top and bottom sides of the chart. The PrimaryX axis is displayed on the front while the SecondaryX axis is displayed on the back.

> *The horizontal axes are used to scale the series in the X dimension. By default, all series are scaled on the PrimaryX axis. The SecondaryX axis is, by default, not visible.*

- Depth Axis - The Depth axis (there is only one) is by default displayed on the bottom right-hand chart edge. It is used to scale the series along the chart depth dimension. All chart series are scaled on the depth axis.

- Special Axes - Two special axes are available. These (called Radar and Polar) can be used by the Radar and Polar Series.

3. Select or deselect the Visible check box depending on whether you want the number on the selected axis to be visible.

4. In the Axis Style area, click the arrow in the Shape field, and from the list, select the shape (Line, Bar or Tube) you want to apply to your chart.

5. In the Axis Text area, click the Text Properties button, and change the text properties for your chart.

6. Use the Jittering Deviation slide bar to control the maximum offset along the X and Y directions of the generated samples relative to the original image.

Setting the Axes ConstLines

ConstLines stands for Constant Lines and are lines that are drawn at constant axis values (X, Y or Depth axis) of a chart. These lines are used to ponit out particular axis values. Besides being able to specify the axis value for the constline, one can also specify properties of the line including thickness and color.

If you want, you can then set the axes Constlines (attributes, Line List, Line Style, and Line values) for your chart.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the axes Constlines:

1. Select Axes in the left column, and then select the ConstLines submenu.

   The Axes > ConstLines page displays enabling you to set the Axis attributes, Line List, Line style, and Line values for the selected series.

2. In the Axis Attributes area, select the axis you want to change from the list.

3. Select or deselect the Visible check box depending on whether you want the number on the selected axis to be visible.

4. In the Line List area, click the Add button to add the amount of Line numbers you want to display in your chart. The rest of the dialog box becomes enabled.

5. In the Line Style area, click the arrow in the Shape field, and from the list, select the shape (Line or Plane) you want to apply to your chart.

   ▶ If you selected Line from the Shapelist, click the Line Properties button, if you want to change the Line properties for your chart.

   ▶ If you selected Plane from the Line Style area, in the Axis Text area, you can click the Fill Effect button if you want to change the Fill effect for your chart.

6. Use the Constant Value slide bar to control the location of the line along the X and Y directions.

7. If you want to change the Begin value or End value for a Line, select the Enable Begin/End check box, and then use the appropriate slide bar to change the location.

   These only work when the "Current Axis" is set to "PrimaryY". They do not work for the "PrimaryX" axis.

Setting the Axes Gridlines

If you want, you can then set the axis Gridlines (attributes, major and minor gridlines) for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the axes Gridlines:

1. Select Axes in the left column, and then select the Gridlines submenu.

   The Axes > Gridlines page displays enabling you to set the axis attributes, and major and minor gridlines for the selected series.

2. In the Axis Attributes area, select the axis you want to change from the list.

3. In the Major Gridlines area, do the following:

   a. Select or deselect the check box to reflect which major gridlines you want to be visible.

   b. If you want to change the line properties for the selected major gridlines, click the Line Properties button, and make your changes in the Line Properties Editor dialog box.

4. In the Minor Gridlines area, do the following:

   a. Select or deselect the check box to reflect which minor gridlines you want to be visible.

   b. If you want to change the line properties for the selected minor gridlines, click the Line Properties button, and make your changes in the Line Properties Editor dialog box.

5. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Axes Labels

If you want, you can then set the axes labels (attributes, list, text, and position) for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the axes labels:

1. Select Axes in the left column, then select the Labels submenu.

   The Axes > Labels page displays enabling you to set the axis attributes, label list, label text, and label position for the selected series.

2. In the Axis Attributes area, select the axis you want to change from the list.

3. Select or deselect the Visible check box depending on whether you want the number on the selected axis to be visible.

4. In the Label List area, click the Add button to add the amount of Line numbers you want to display in your chart. The rest of the dialog box becomes active.

5. In the Label Text area, do the following:

   a. Type the label text you want to appear for the selected label list.

   b. If you want to change the text properties for your chart, click the Text Properties button. The Text Properties Editor dialog box opens. Make your changes and click OK to save and close the dialog box.

   c. If you want to change the line properties for your chart, click the Line Properties button. The Line Properties Editor dialog box opens. Make your changes and click OK to save and close the dialog box.

6. In the Label Position area, do the following to position your label:

   a. Use the Position Value slide bar to control the location of the selected label along the X or Y axes.

   b. Use the Offset Value slide bar to control the location of the selected label. The Offset value will move according to how the angle is set, whereas, the position value will not. If you have the angle value set to 0, the Offset and Position values will appear to do the same thing.

   c. Use the Angle Value slide bar to control the angle location of the selected label.The Angle Value slider allows you to control the direction of the offset specified by the Offset value.

7. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Axes Paging

If you want, you can then set the axis paging (attributes, Page mode, and Current page) for your series.

Axis rulers can be configured to work in paging mode. When operating in Paging mode, the axis shows only a fraction of the total axis scale or, one of the several axis pages. By default rulers do not use paging.

Before you enable paging in your chart, you must first determine how you want to specify the ruler page size. You can do this in two ways:

• Specify the total number of pages that the ruler will possess regardless of the axis scale.

• Specify a fixed scale size for the axis page and let the page count vary depending on the total axis scale.

This procedure assumes that you have already added a series as described in

To set the axes paging:

1. Select Axes in the left column, then select the Paging submenu.

   The Axes > Paging page displays enabling you to set the axis attributes, style and text for the selected series.
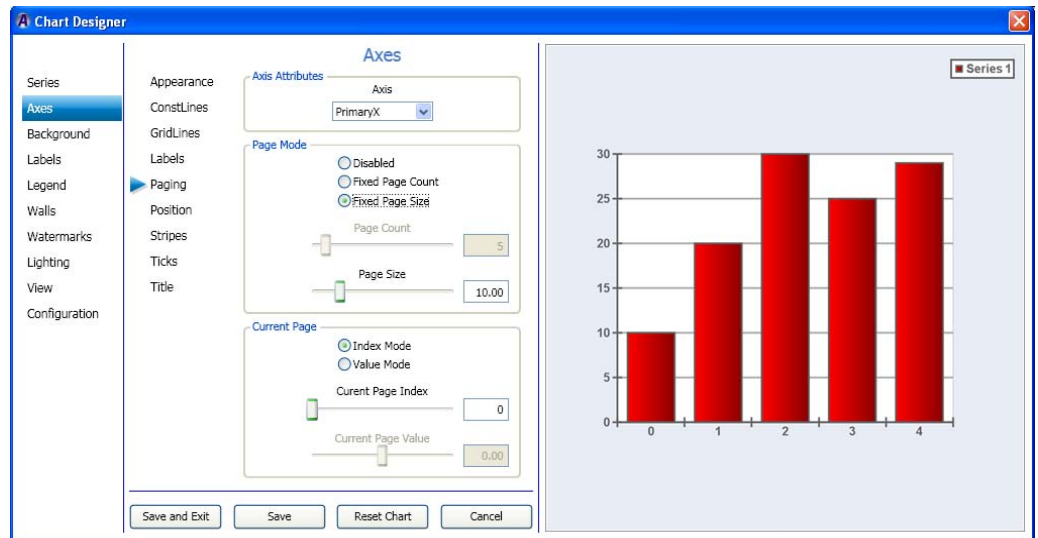
2. In the Axis Attributes area, select the axis you want to change from the list.

3. In the Page Mode area, do the following:

   a. Select the option on how you want to display the page (Disabled, Fixed Page Count, Fixed Page size). If you select anything other than disable, the remainder of the dialog box becomes active, and you can change parameters for the page count or page size.

   b. Use the Page Count slider to specify how many pages the axis should have. The page size is automatically calculated.

   c. Use the Page Size slider to specify the size of the pages. The actual page count is determined automatically.

4. In the Current Page area, select the option on how you want to display the page (Index mode or Value Mode):

   If you select anything other than disable, the remainder of the dialog box becomes active, and you can change parameters for the page count or page size. Once you have chosen the paging mode, you must specify the currently shown page of the axis. This can be achieved in two ways: either specify the exact index of an axis page, or simply specify a beginning value.

   a.   Index Mode: In this mode, you specify the page index of the currently visible page with the "Current page index" scroller.

   b.   Value Mode: In this mode, you specify the value at which the currently displayed axis should begin using the "Current page value" scroller.

   c.   Use the Current Page Index or Current Page Value slide bar to control the currently displayed axis page.

5. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Axes Position

If you want, you can then set the axes position (attributes, and position) for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the axes position:

1. Select Axes in the left column, then select the Position submenu.

The Axes > Position page displays enabling you to set the axis attributes, and position for the selected series.
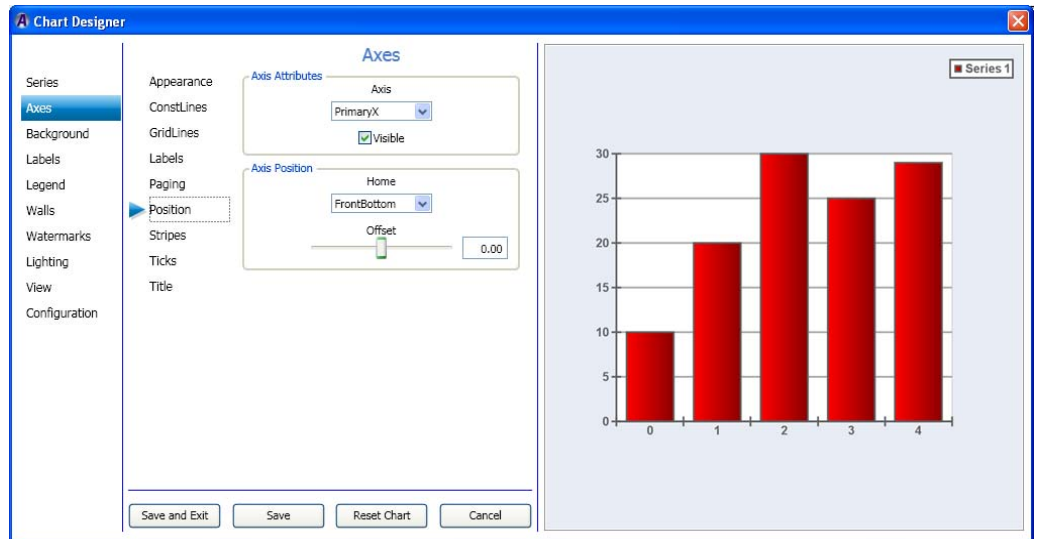
2. In the Axis Attributes area, select the axis you want to change from the list.

3. Select or deselect the Visible check box depending on whether you want the number on the selected axis to be visible.

4. In the Axis Position area, click the arrow in the Home field, and from the list, select the home position (FrontBottom, FrontTop, or BackTop) you want to apply to your chart.

5. Use the Offset slide bar to control the offset along the X or Y directions of the generated axis relative to the original image.

6. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Axes Stripes

If you want, you can then set the axis stripes (attributes, style and text) for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the axes stripes:

1. Select Axes in the left column, then select the Stripes submenu.

    The Axes > Stripes page displays enabling you to set the axis attributes, stripe list, stripe style, and stripe values for the selected series.

2. In the Axis Attributes area, select the axis you want to change from the list.

3. In the Stripe List area, click the Add button to add a stripe number to the chart.

4. In the Stripe Style area, do the following:

    a. Select the check box that best denotes where you want the stripe to be visible.

    b. If you want to change the color of the stripe, click the Fill Effect button. The Fill Effect Editor dialog box opens. Make your changes and click OK to save and close the dialog box.

    c. If you want to change the line properties for your chart, click the Line Properties button. The Line Properties Editor dialog box opens. Make your changes and click OK to save and close the dialog box.

5. In the Stripe Values area, use the Begin Value and End Value slide bars to control the location of where the stripe begins and ends.

6. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Axes Ticks

If you want, you can then set the axis ticks (attributes, major ticks (outer and inner), and minor ticks) for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the axes ticks:

1. Select Axes in the left column, then select the Ticks submenu.

   The Axes > Ticks page displays enabling you to set the axis attributes, major tick (inner and outer), and minor ticks for the selected series.

2. In the Axis Attributes area, select the axis you want to change from the list.

3. Select or deselect the Visible check box depending on whether you want the ticks on the selected axis to be visible.

4. In the Major Ticks (Outer) area, do the following:

   a. Click the Line Properties button. The Line Properties Editor dialog box opens. Make changes to the line properties of the Major outer ticks, and click OK to save your changes and close the dialog box.

   b. If you want to change the length of the ticks, use the Length slide bar to change the length of the ticks as they appear in the selected axis.

5. In the Major Ticks (Inner) area, do the following:

    a. Click the Line Properties button. The Line Properties Editor dialog box opens. Make changes to the line properties of the Major inner ticks. and click OK to save your changes and close the dialog box.

    b. If you want to change the length of the ticks, use the Length slide bar to change the length of the ticks as they appear in the selected axis.

6. In the Minor Ticks area, do the following:

    a. Click the Line Properties button. The Line Properties Editor dialog box opens. Make changes to the line properties of the Minor ticks. and click OK to save your changes and close the dialog box.

    b. If you want to change the length of the ticks, use the Length slide bar to change the length of the ticks as they appear in the selected axis.

7. Click Save and Exit to save your changes and close the Chart Designer.

Setting the Axes Title

If you want, you can then set the axis title for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the axes title:

1. Select Axes in the left column, then select the Title submenu.

The Axes > Title page displays enabling you to set the axis titles for the selected series.
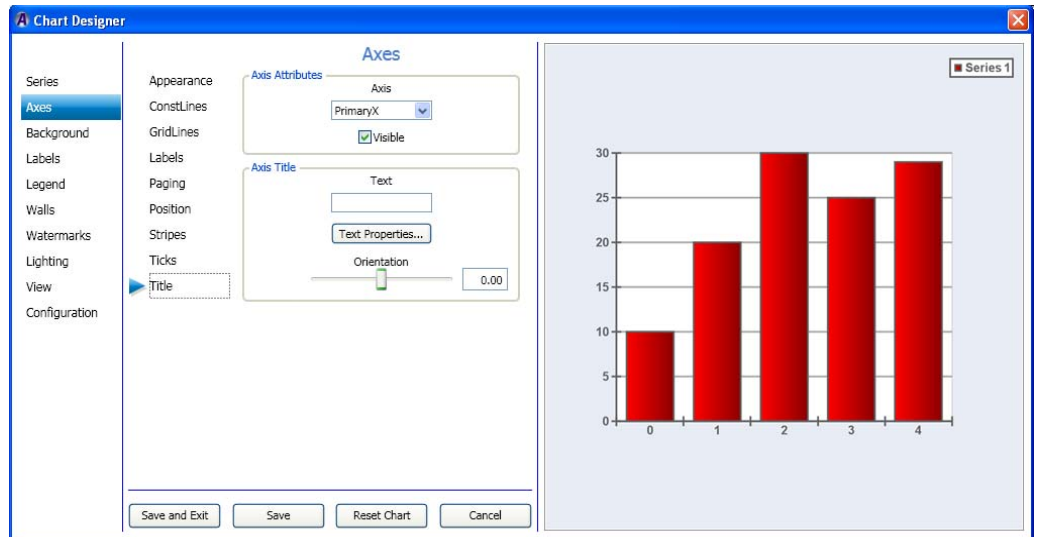
2. In the Axis Attributes area, select the axis you want to change from the list.

3. Select or deselect the Visible check box depending on whether you want the selected axis to be visible.

4. In the Axis Title area, do the following:

   a. In the Text field, type the text for the title you are adding to the selected axis of the chart.

   b. Click the Text Properties button. The Text Properties Editor dialog box opens. Make changes to the text properties title, and click OK to save your changes and close the dialog box.

   c. If you want to change the length of the ticks, use the Length slide bar to change the length of the ticks as they appear in the selected axis.

5. Click Save and Exit to save your changes and close the Chart Designer.

Using Background Controls

This section contains information on using the Background Controls to further adjust the background of your series.

For more information on setting specific background controls, see one of the following topics:

Setting the Background Appearance

If you want, you can then set the background appearance for your series.

This procedure assumes that you have already added a series as described in

To set the background appearance:

1. Select Background in the left column.

    The Background > Appearance page displays enabling you to set the background style for the selected series.
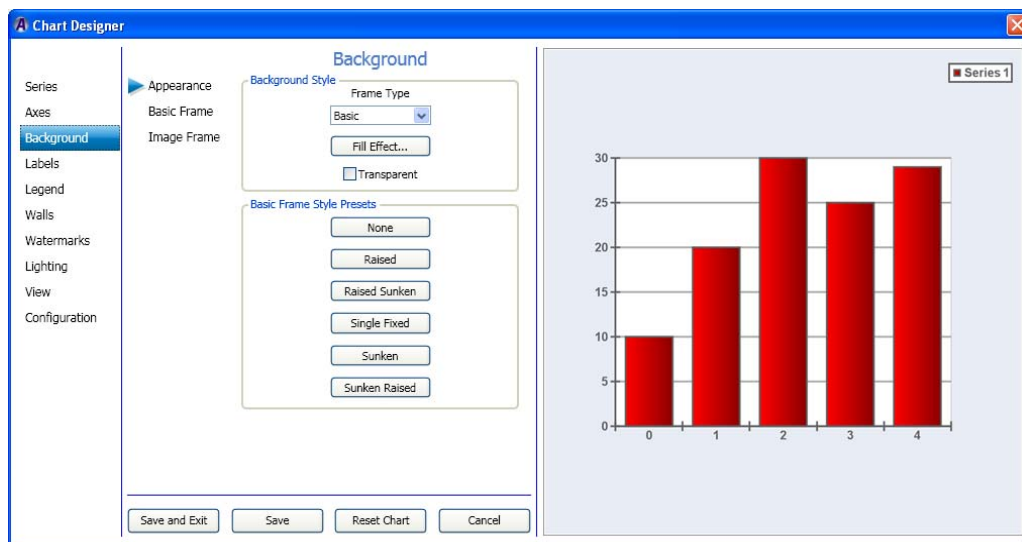
2. In the Background Style area, select the frame type you want for this series. Options are:

   ▶ None - If selected, you cannot make any changes, other than Fill Effect, to the background of this series.

   ▶ Basic - If selected, you can access the Basic Frame submenu to further modify the Basic frame style border, color, bevel properties, and size.

   ▶ Image - If selected, you can access the Image Frame submenu to further modify the image frame style, corner widths, tube sizes, edge rounding, and light properties.

3. (Option) In the Background Style area, select the Transparent checkbox if you want the background of the chart to be transparent.

4. Click the Fill Effect button.

   The Fill Effect Editor dialog box opens.

5. Make changes in the Fill Effect Editor dialog box to select the desired fill effect for the background of your chart.

6. If you selected:

   ▶ **Basic** in the Frame Type drop list, the dialog box shows the Basic Frame Style Presets. Select the preset frame style that you want to use for the background of your chart. Once you save your changes, you can click on the Basic Frame submenu and follow the instructions in the topic "Setting the Basic Frame Background" on page 256.

   ▶ **Image** in the Frame Type drop list, the dialog box shows the Image Frame Style Presets. Select the preset frame style that you want to use for the background of your chart. Once you save your changes, you can click on the Image Frame submenu and follow the instructions in the topic "Setting the Image Frame Background" on page 257.

7. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Basic Frame Background

If you want, you can then set the appearance for a Basic Frame background for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the Basic Frame background:

1. Select Background in the left column, then select the Basic Frame submenu.

   The Background > Basic Frame page displays enabling you to set the basic frame background style for the selected series.
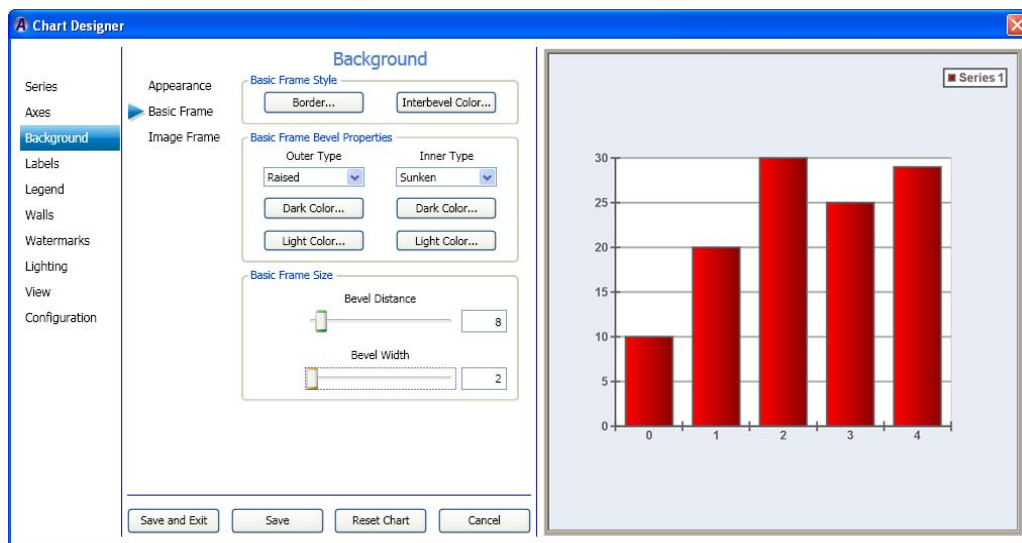
2. In the Basic Frame Style area, do the following:

   a. If you want to change the line properties for your frame border, click the Border button. The Line Properties dialog box opens. Set the line properties for the frame border, and click OK.

   b. If you want to change the color of the area between the outer and inner bevels, click the Interbevel Color button. The Color dialog box opens. Make your color selections, and click OK.

3. In the Basic Frame Bevel Properties area, do the following:

   a. In the Outer Type field, select the type of Outer bevel you want for your frame. Options are (None, Raised, or Sunken).

   b. To change the dark color of the Outer bevel, click the Dark Color button below the Outer Type field, and select the color.

   c. To change the light color of the Outer bevel, click the Light Color button below the Outer Type field, and select the color.

   d. In the Inner Type field, select the type of Inner bevel you want for your frame. Options are (None, Raised, or Sunken).

   e. To change the dark color of the Inner bevel, click the Dark Color button below the Inner Type field, and select the color.

   f. To change the light color of the Inner bevel, click the Light Color button below the Inner Type field, and select the color.

4. In the Basic Frame Size area, do the following:

   a. Use the Bevel Distance slider to change the bevel distance.

   b. Use the Beval Width slider to change the bevel width.

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Image Frame Background

If you want, you can then set the appearance for a Image Frame background for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the Image Frame background:

1. Select Background in the left column, then select the Image Frame submenu.

   The Background > Image Frame page displays enabling you to set the Image frame background style for the selected series.
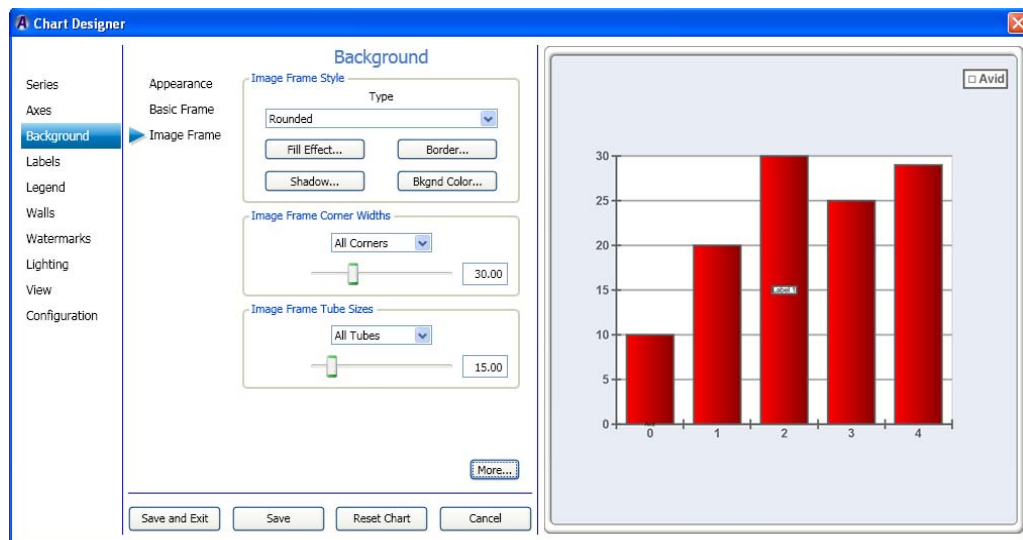
2. In the Image Frame Style area, do the following:

   a. In the Type drop list, select the type of frame.

   b. If you want to change the fill effect for your frame, click the Fill Effect button. The Fill Effect Editor dialog box opens. Set the fill effect for the frame border, and click OK.

   c. If you want to change the shadow of the frame bevel area, click the Shadow button. The Shadow Editor dialog box opens. Make your shadow selections, and click OK.

   d. If you want to change the border for your frame, click the Border button. The Line Properties dialog box opens. Set the line properties for the frame border, and click OK.

   e. If you want to change the background color of the frame, click the Bkgnd Color button. The Color dialog box opens. Make your background color selections, and click OK.

3. In the Image Frame Corner Widths area, do the following:

   a. In the drop list, select the image frame corner width you want to change. Options are (All Corners, Left Corner, Right Corner, Top Corner, and Bottom Corner).

   b. Use the slider beneath the drop list to adjust the corner(s) you selected.

4. In the Image Frame Tube Sizes area, do the following:

    a.   In the drop list, select the image frame tube you want to change.

    b.   Use the slider beneath the drop list to adjust the tube you selected.

5. Click the More button.

The Background > Image Frame page displays more information enabling you to set the Image frame edge rounding and light properties for the selected series.
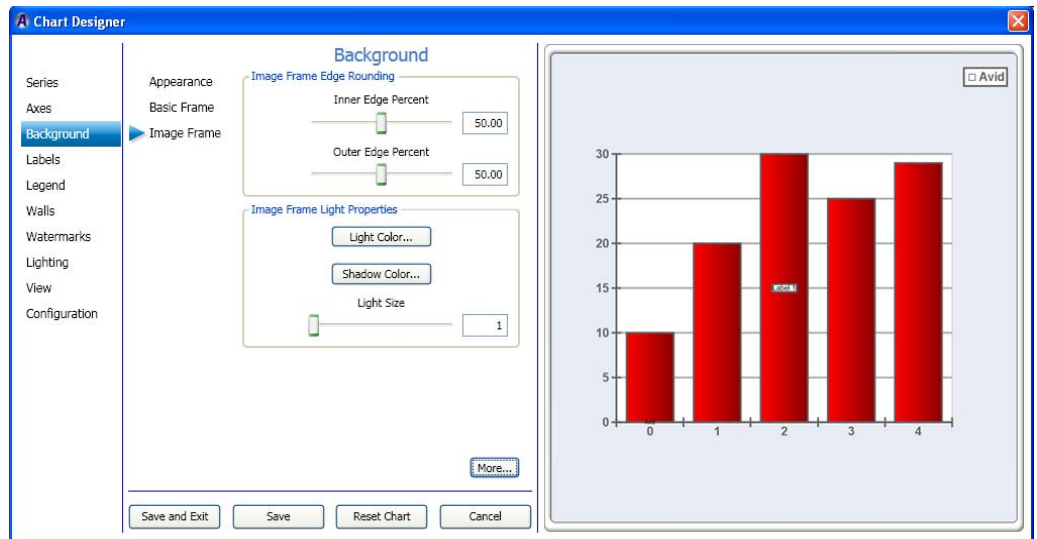
6. In the Image Frame Edge Rounding area, do the following:

    a.   Use the Inner Edge Percent slider to adjust the inner edge of the image frame.

    b.   Use the Outer Edge Percent slider to adjust the outer edge of the image frame.

7. In the Image Frame Light Properties area, do the following:

    a.   If you want to change the light color of the image frame area, click the Light Color button. The Color dialog box opens. Make your light color selections, and click OK.

    b.   If you want to change the shadow color for your image frame, click the Shadow Color button. The Color dialog box opens. Make your shadow color selections for for the image frame, and click OK.

    c.   Use the Light Size slider to adjust the light size of the image frame background border.

8. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Using Labels Controls

This section contains information on using the Labels controls to further adjust the look of your series.

For more information on setting specific labels controls, see one of the following topics:

- "Setting the Label Appearance" on page 260
- "Setting the Label Format" on page 262
- "Setting the Label Position" on page 263
- "Creating the Label List" on page 265

Setting the Label Appearance

If you want, you can then set how labels appear in your series.

Before you can set the appearnce of a label, you must add a label in the Labels > Label List page as described in the topic "Creating the Label List" on page 265.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the label appearance:

1. Select Label in the left column.

The Label > Appearance page displays enabling you to set the label attributes, and style for the selected series.
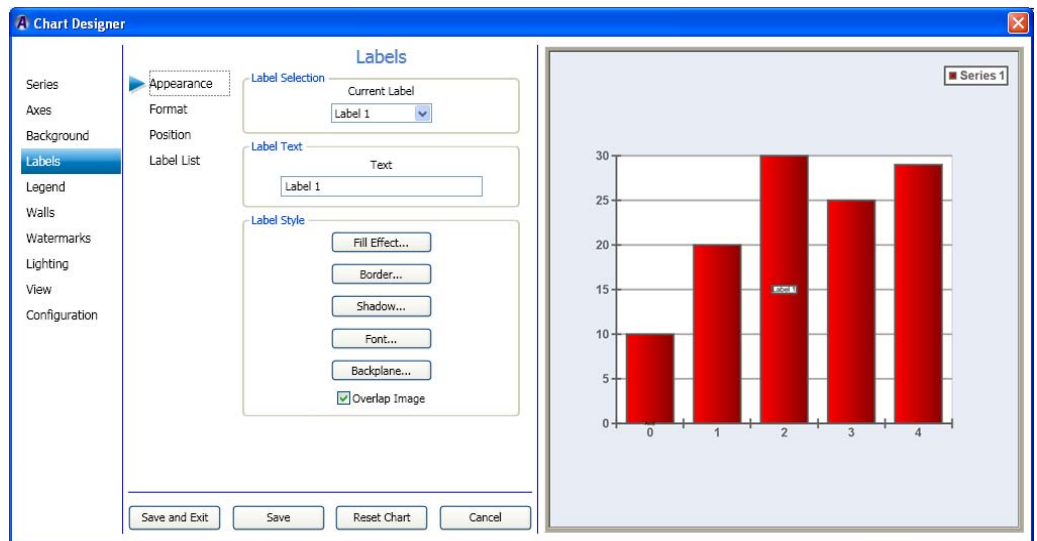
2. In the Label Selection area, select the label you want to modify or create from the Current Label list.

3. In the Label Text area, type the text you want to appear on the label.

4. In the Label Style area, do any of the following to modify the appearance of your label:

a. If you want to change the color of the area within the label, click the Fill Effect button. The Fill Effect Editor dialog box opens allowing you to select your color. Click OK to save your selections and close the dialog box.

b. If you want to change the border style of the label, click the Border button. The Line Properties dialog box opens. Set the line properties for the label border, and click OK.

c. If you want to change the shadow of the area within the Label, click the Shadow button. The Shadow Editor dialog box opens. Make your shadow selections, and click OK.

d. If you want to change the font of the area within the Label, click the Font button. The Font dialog box opens allowing you to select your color. Click OK to save your selections and close the dialog box.

e. If you want to change the backplane of the area within the Label, click the Backplane button. The Backplane Object Editor dialog box opens allowing you to change the backplane properties of the label. Click OK to save your selections and close the dialog box.

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Label Format

If you want, you can then set the format properties for the labels in your series.

Before you can set the label format, you must add a label in the Labels > Label List page as described in the topic "Creating the Label List" on page 265.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the label format:

1. Select Label in the left column, then select the Format submenu.

   The Label > Format page displays enabling you to set the format properties for your label.
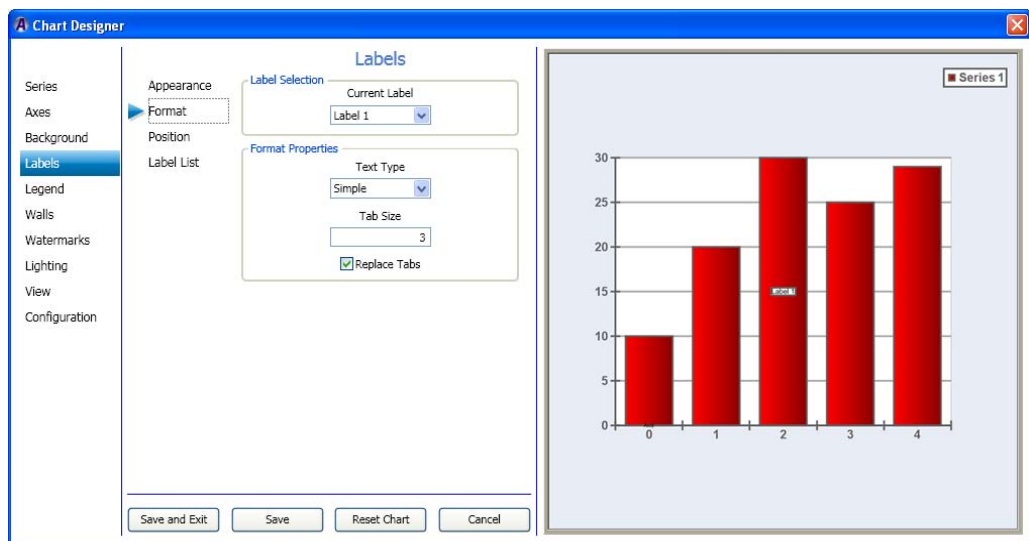
2. In the Label Selection area, select the label you want to modify from the Current Label list.

3. In the Label Text area, type the text you want to appear on the label.

4. In the Format Properties area, do any of the following to modify the appearance of your label:

   a. In the Text Type drop list, select one of the following text type options:

      ▸ Simple - Used for normal text that is displayed as the label.

      ▸ XML Formatted - XML formatted text that can set the font, fill effect, border and shadow of the text on a per-character basis is desired.

   b. In the Tab Size field, type a number indicating the size of the tab. This field specifies how many spaces actually replaces the tab if the Replace Tabs box is checked.

   c. If you want to replace tabs, select the Replace Tabs check Box. Otherwise, leave it blank.

      If a Tab is included in the text (such as, the Tab key on the keyboard was pressed, this setting specifies whether to replace the tab with spaces.

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Label Position

If you want, you can then set the position of the labels in your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the label position:

1. Select Label in the left column, and then select the Position submenu.

The Label > Position page displays, enabling you to set the position properties for the label.

2. In the Label Selection area, select the label you want to set position properties for from the Current Label list.

3. In the Position Properties area, do any of the following to modify the position properties of your label:

   a. If you want to change the horizontal alignment of the label, select the type of horizontal alignment you want to use from the Hoirizontal Alignemnt list. Options are Center, Left, and Right.

   b. If you want to change the vertical alignment of the label, select the type of horizontal alignment you want to use from the Vertical Alignment list. Options are Center, Top, and Bottom.

   c. Use the Horizontal Offset slider to change the horizontal offset of the label.

   d. Use the Vertical Offset slider to change the vertical offset of the label.

   e. Use the Orientation slider to change the orientation of the label.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Creating the Label List

This topic contains information on how to add labels to your series. Once you have added a label, you can change it's appearance, format, and position properties.

This procedure assumes that you have already added a series as described in .

To create the label list:

1. Select Label in the left column, and then select the Label List submenu.

   The Label > Label List page displays enabling you to add or delete labels for the selected series.

2. In the Label List area, do one of the following:

   ▶ To add a label, click the Add button.

   ▶ To delete a label, select a label, and click the Delete button.

3. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Using Legend Controls

This section contains information on using the Legend controls to further adjust the look of your series.

For more information on setting specific legend controls, see one of the following topics:

- "Setting the Legend Appearance" on page 266
- "Setting the Legend Layout" on page 267
- "Setting the Legend Marks" on page 269
- "Setting the Legend Position" on page 270
- "Setting the Legend Titles" on page 272

Setting the Legend Appearance

If you want, you can then set the Legend appearance for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the legend appearance:

1. Select Legend in the left column.

   The Legend > Appearance page displays enabling you to set the legend attributes, and style for the selected series.

2. In the Legend Attributes area, select the Legend Mode you want to use from the list. Options are: The legend can operate in three modes: Disabled, Automatic, and Manual.

   ▶ Disabled - In disabled mode the legend is not displayed.

   ▶ Automatic - When you set the mode to Automatic, the legend data is supplied by the series of the charts associated with the legend.

   ▶ Manual - In manual mode, you control the displayed legend data items through the MarkList under the Marks sub-tab.

3. In the Legend Style area, do the following:

   a. Click the Text Properties button, and change the text properties for your chart. The Text Properties Editor opens. Make your changes, and click OK.

   b. Click the Backplane Props button, and change the backplane properties for your chart. The Backplane Properties Editor opens. Make your changes, and click OK.

   c. Use the Text Offset slide bar to control the text offset for the Legend.

   d. Use the Mark Size slide bar to control the mark size for the Legend.

4. In the Legend Presets area, select the button to indicate where you want the preset to appear on your chart.

📖 *Automatic must be selected for the Legend Presets area to be available.*

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Legend Layout

If you want, you can then set the Legend layout and cell properties for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the legend layout:

1. Select Legend in the left column, and then select the Layout submenu.

The Legend > Layout page displays enabling you to set the legend layout and cell properties for the selected series.

2. In the Layout Properties area, do the following:

   a. In the Expand Mode drop list, select the Expand mode you want to use for the layout of this chart.

      - Selecting the Rows Fixed option enables the Row Count slider.

      - Selecting the Columns Fixed option enables the Column Count slider.

   b. Use the Row Count slider to adjust the number of rows in the layout.

   c. Use the Column Count slider to adjust the number of columns in the layout.

   d. Use the Inflate Cell Width slider to adjust the width of the cells in the layout

   e. Use the Inflate Cell Height slider to adjust the height of the cells in the layout

3. In the Cell Line Properties area, do the following:

   a. If you want to change the horizontal grid lines for your chart, click the Horiz Grid Lines button. The Line Properties Editor opens. Make your changes, and click OK.

   b.   If you want to change the vertical grid lines for your chart, click the Vert Grid Lines button. The Line Properties Editor opens. Make your changes, and click OK.

   c. If you want to change the horizontal outline for your chart, click the Horiz Outline button. The Line Properties Editor opens. Make your changes, and click OK.

   d. If you want to change the vertical outline for your chart, click the Vert Outline button. The Line Properties Editor opens. Make your changes, and click OK.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Legend Marks

If you want, you can then set the Legend marks for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the legend marks:

1. Select Legend in the left column, then select the Marks submenu.

📖 *Manual must be selected in the Legend > appearance page for the Marks submenu to be active.*

The Legend > Marks area displays enabling you to set the Mark list, and Mark style for the selected series.

2. In the Mark List area, do the following to add legend text to your chart:

   a. Type any text you want to appear in the legend in the box directly above the Add button.

   b. Click the Add button, to add the text to the legend of your chart.

📖 *If you want to modify or delete information already added to a legend, click the Modify or Delete buttons.*

3. In the Mark Style area, do the following:

    a. Select the mark shape (the shape that appears directly in front of the Legend text) you want to use from the list.

    b. If you want to change the color of the area within the Legend mark, click the Fill Effect button. The Fill Effect Editor dialog box opens allowing you to select your color. Click OK to save your selections and close the dialog box.

    c. If you want to change the line properties of the Legend mark, click the Line Properties button. The Line Properties Editor dialog box opens allowing you to select your color. Click OK to save your selections and close the dialog box.

    d. If you want to change the Line properties item data, click the Item Properties button. The Line Properties Editor dialog box opens allowing you to select your color. You have to increase the "Item Properties" width value in order to see anything. Click OK to save your selections and close the dialog box.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Legend Position

If you want, you can then set the Legend position for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the legend position:

1. Select Legend in the left column, and then select the Position submenu.

The Legend > Position area displays enabling you to set the legend position properties for the selected series.
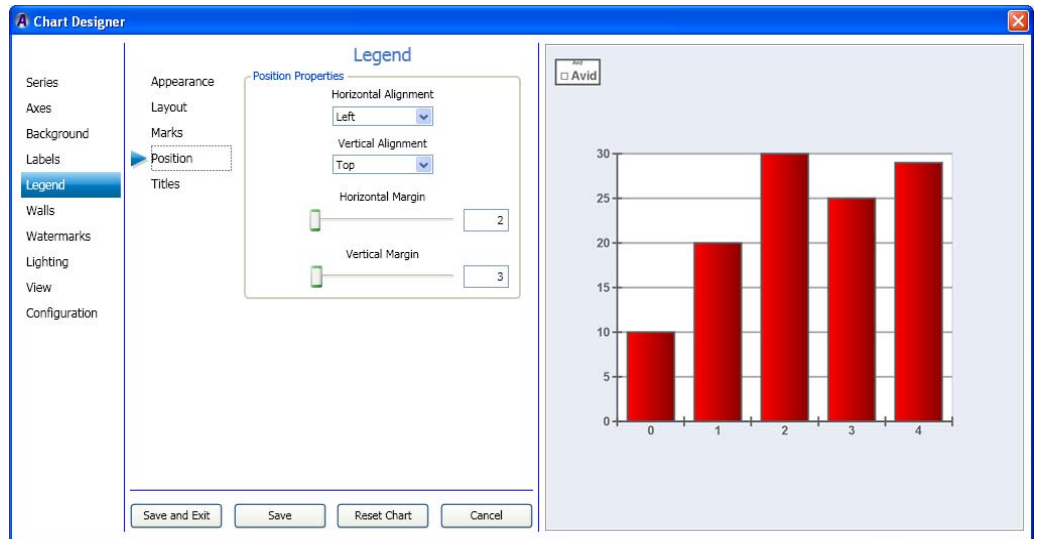
2. In the Position Properties area, do the following:

   a. In the Horizontal Alignment drop list, select the area where you want to align the Legend horizontally (Left, Center, or Right).

   b. In the Vertical Alignment drop list, select the area where you want to align the Legend vertically (Top, Bottom, or Center).

   c. In the Horizontal Margin slider to adjust the location of the legend horizontally along the chart.

   d. In the Vertical Margin slider to adjust the location of the legend vertically along the chart.

3. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Legend Titles

If you want, you can then set the Legend titles for your chart.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the legend titles:

1. Select Legend in the left column, and then select the Titles submenu.

   The Legend > Titles area displays enabling you to set the legend attributes, and Legend text, and Legend footer for the selected series.
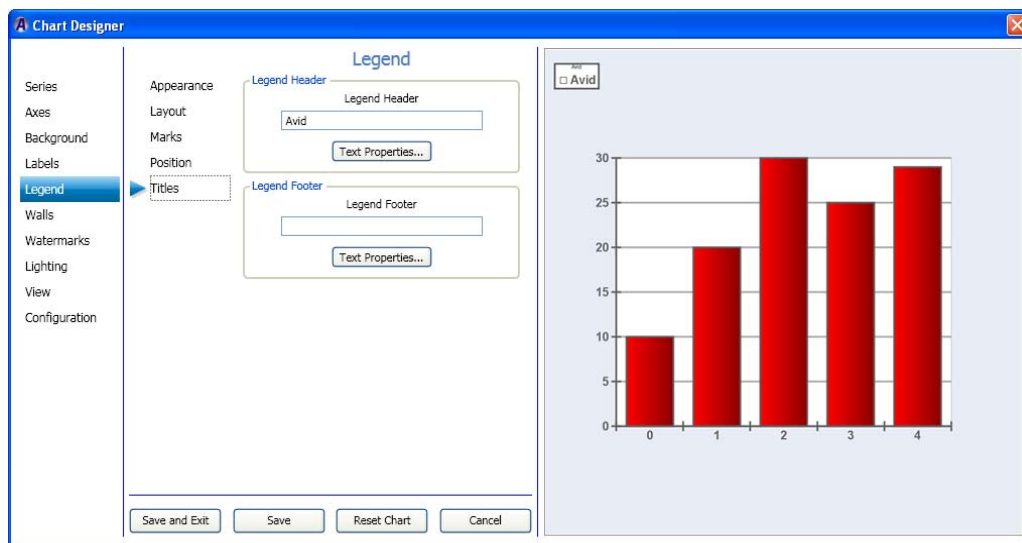
2. (Option) In the Legend Header area, do the following to add legend title header text (appears above the legend) to your chart:

   a. Type any text you want to appear as a title for the legend in the Text field directly above the Text Properties button.

   b.   Click the Text Properties button if you want to change the formatting and position of the text.

       The Text Properties dialog box opens allowing you to adjust your text formatting. Click OK to save your selections and close the dialog box.

3. (Option) In the Legend Footer area, do the following to add legend title footer text (appears beneath the Legend) to your chart.

    a.   Type any text you want to appear as a title to appear below the legend in the Text field directly above the Text Properties button.

    b.   Click the Text Properties button if you want to change the formatting and position of the text.

        The Text Properties dialog box opens allowing you to adjust your text formatting. Click OK to save your selections and close the dialog box.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Using Walls Controls

This section contains information on using the Walls controls to further adjust the look of your series.

For more information on setting a specific wall style for a series, see the following topic:

*   "Setting the Wall Appearance" on page 273
*   "Setting the Wall Size" on page 275

Setting the Wall Appearance

If you want, you can then set the appearance of the walls for your chart. If you are working on a 2D chart, you can only set the Wall style for the Back wall of the selected series. If you are working on a 3D chart (as selected in the Series > Appearance tab), you can set the wall style for the Back, Floor, Front, Left, Polar, Radar, and Right wall of the selected series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the Walls style:

1. Select Walls in the left column.

The Walls > Appearance area displays enabling you to set the Wall Style for the selected series.

2. In the Wall Selection area, do the following:

a. In the Current Wall drop list, select the submenu for the Wall style you want to change.

For 2D charts, the only submenu available is Back. For 3D charts, available submenus include Back, Floor, Front, Left, Polar, Radar, and Right.

b. Select the Visible check box for the wall style if you want the wall style to be visible. If not, deselect the Visible check box.

3. In the Wall Style area, do the following:

a. Click the Fill Effect button to change the color between the lines for the part of the chart you have selected. The Fill Effect Editor dialog box opens. Click OK once you have made your changes.

b. Click the Border button to change the line properties for the part of the chart you have selected. The Line Properties Editor dialog box opens. Click OK once you have made your changes.

c. Click the Shadow button to change the shadow properties for the part of the chart you have selected. The Shadow Editor dialog box opens. Click OK once you have made your changes.

4. (Optional) If working with a 3D chart, repeat Steps 2-3 for any other Wall Styles you want to change.

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Wall Size

If you want, you can then set the size of the walls for your chart. If you are working on a 2D chart, you can only set the Wall size for the Back wall of the selected series. If you are working on a 3D chart (as selected in the Series > Appearance tab), you can set the wall size for the Back, Floor, Front, Left, Polar, Radar, and Right wall of the selected series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the Walls size for a chart:

1. Select Walls in the left column, and then select the Size submenu.

   The Walls > Size area displays enabling you to set the Wall size and thickness for the selected series.
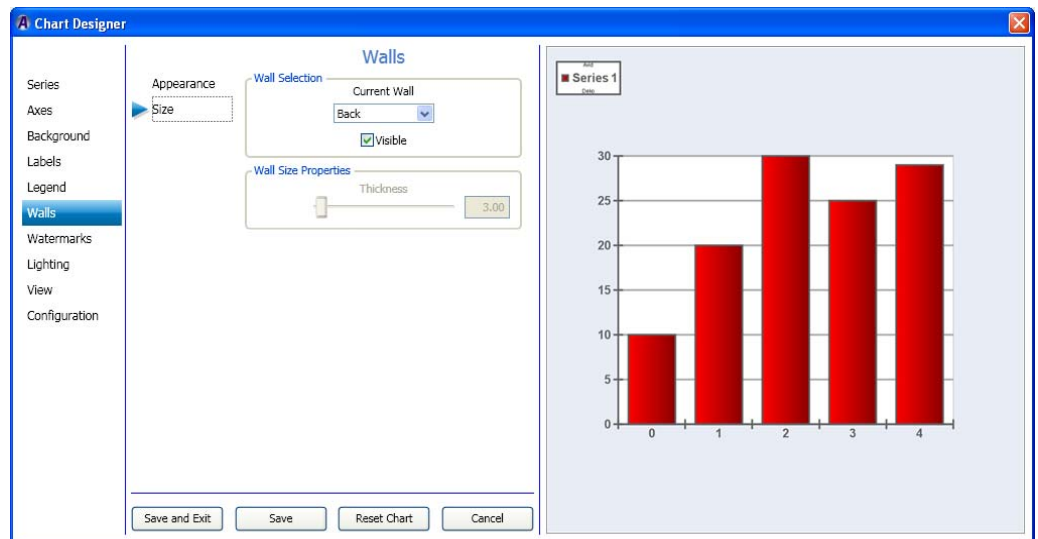
2. In the Wall Selection area, do the following:

   a. In the Current Wall drop list, select the submenu for the Wall style you want to change.

📄 *For 2D charts, the only submenu available is Back. For 3D charts, available submenus include Back, Floor, Front, Left, Polar, Radar, and Right.*

b. Select the Visible check box for the wall if you want the wall to be visible. If not, deselect the Visible check box.

3. In the Wall Size Properties area, use the Thickness slide bar to control the thickness of the selected wall.

4. If working with a 3D chart, repeat Steps 2-3 for any other Wall Styles you want to change.

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Using Watermarks Controls

This section contains information on creating and using the Watermarks controls to further adjust the look of your series.

For more information on setting a specific watermark style for a series, see the following topics:

- "Setting the Watermark Appearance" on page 276
- "Setting the Basic Frame Watermarks" on page 278
- "Setting the Watermark Position" on page 279
- "Creating the Watermark List" on page 281

### Setting the Watermark Appearance

If you want, you can then set the appearance of Watermarks in your chart.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222, and also added a Watermark to the list, as described in "Creating the Watermark List" on page 281.

To set the Watermark appearance for a chart:

1. Select Watermarks in the left column, the select the Appearance tab.

The Watermarks > Appearance page displays enabling you to set the Watermark appearance for the selected series.
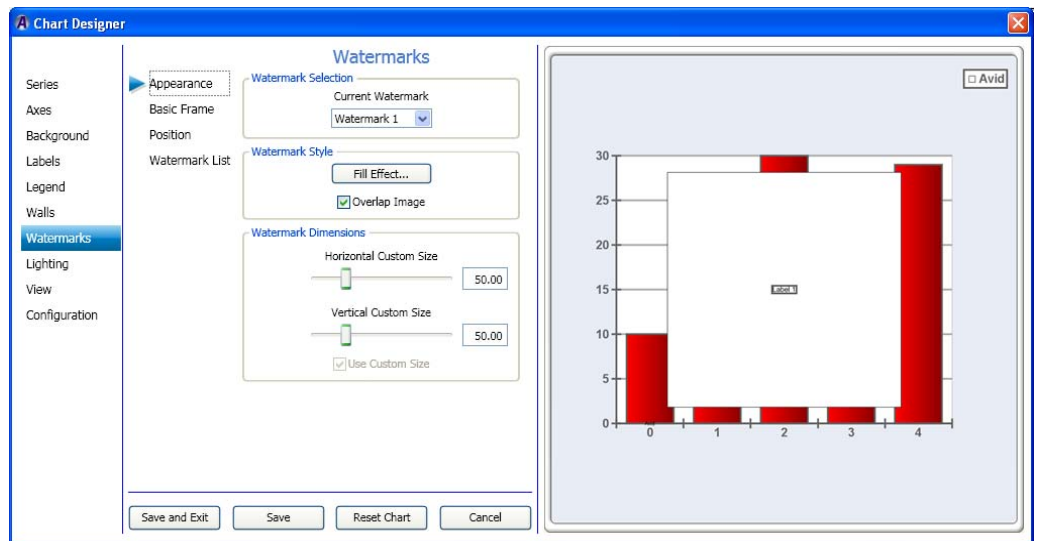
2. In the Wartermark Selection area, select the watermark you want to change the style and dimensions for from the Current Watermark drop list.

3. In the Watermark Style area, do the following:

   a. Click the Fill Effect button to change the color between the lines of the warteramrk. The Fill Effect Editor dialog box opens. Click OK once you have made your changes.

   b. Select the Overlap Image check box if you want the watermark to be visible on top of the chart. If not, deselect the Overlap Image check box.

4. In the Watermark Dimensions area, do the following:

   a. Use the Horizontal Custom Size slide bar to control the horizontal (width) of the watermark.

   b. Use the Vertical Custom Size slide bar to control the vertical (height) of the watermark.

   c. Select the Use Custom Size check box if you want to use the custom size the for the watermark. If not, deselect the Use Custom Size check box.

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Basic Frame Watermarks

If you want, you can then set the Basic Frame style and size for Watermarks.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222, and also added a Watermark to the list, as described in "Creating the Watermark List" on page 281.

To set the basic frame watermarks for a chart:

1. Select Watermarks in the left column, and then select the Basic Frame submenu.

   The Watermarks > Basic Frame page displays enabling you to set the basic frame style for selected watermarks.
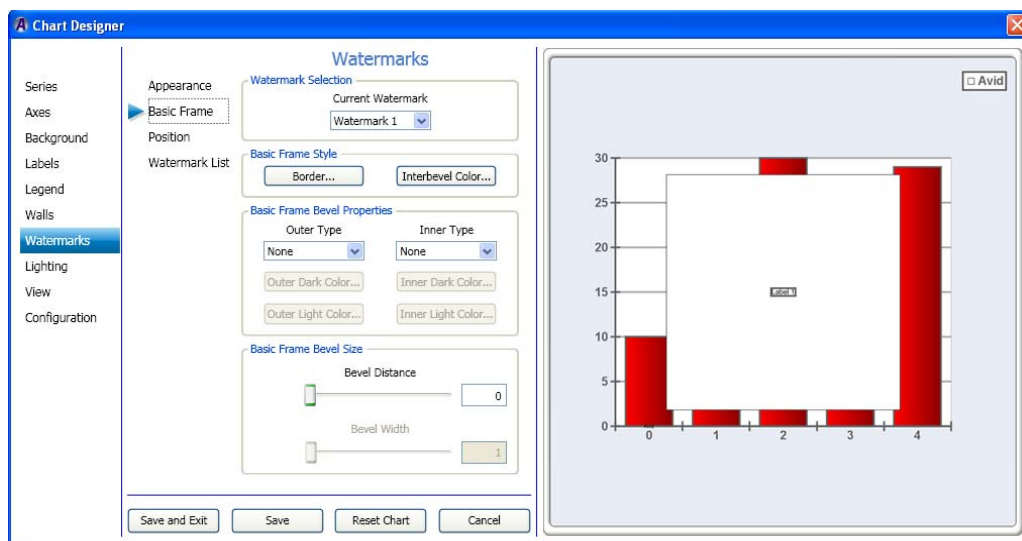
2. In the Watermark Selection area in the Current Watermark drop list, select the watermark for which you want to change the basic frame style and properties.

3. In the Basic Frame Style area, do the following:

   a. If you want to change the line properties for your watermark frame border, click the Border button. The Line Properties dialog box opens. Set the line properties for the watermark frame border, and click OK.

   b. If you want to change the color of the watermark frame bevel area, click the Interbevel Color button. The Color dialog box opens. Make your color selections, and click OK.

4. In the Basic Frame Bevel Properties area, do the following:

   a. In the Outer Type field, select the type of Outer bevel you want for your watermark frame. Options are (None, Raised, or Sunken).

   b. To change the dark color of the Outer bevel, click the Outer Dark Color button below the Outer Type field, and select the color.

   c. To change the light color of the Outer bevel, click the Outer Light Color button below the Outer Type field, and select the color.

   d. In the Inner Type field, select the type of Inner bevel you want for your frame. Options are (None, Raised, or Sunken).

   e. To change the dark color of the Inner bevel, click the Inner Dark Color button below the Inner Type field, and select the color.

   f. To change the light color of the Inner bevel, click the Inner Light Color button below the Inner Type field, and select the color.

5. In the Basic Frame Bevel Size area, do the following:

   a. Use the Bevel Distance slider to change the bevel distance.

   b. Use the Beval Width slider to change the bevel width.

6. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.
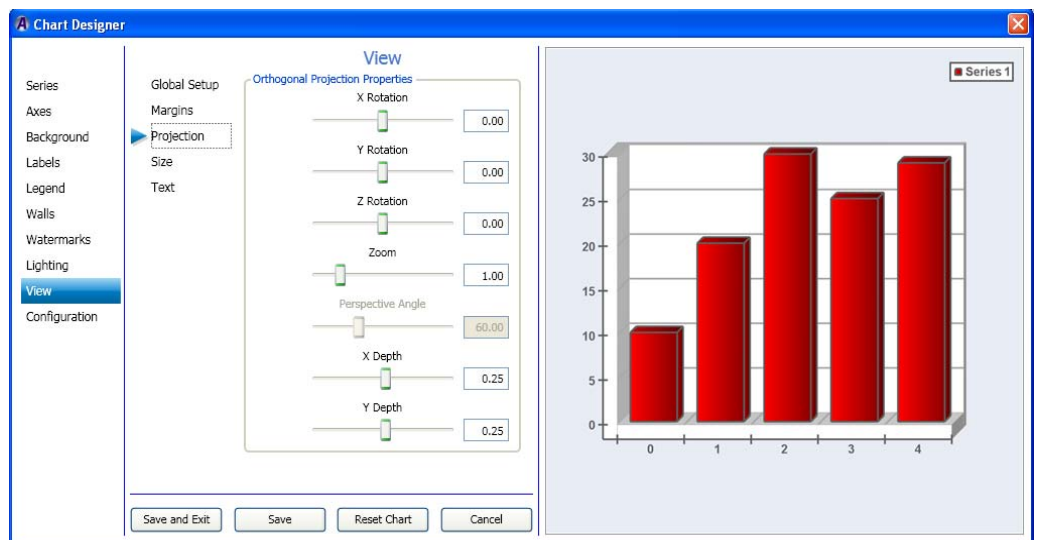
Setting the Watermark Position

If you want, you can then set the position of the watermark on your series.

This procedure assumes that you have already added a series as described in .

To set the watermark position:

1. Select Watermarks in the left column, and then select the Position submenu.

The Watermarks > Position page displays enabling you to set the position of the watermarks for the selected series.
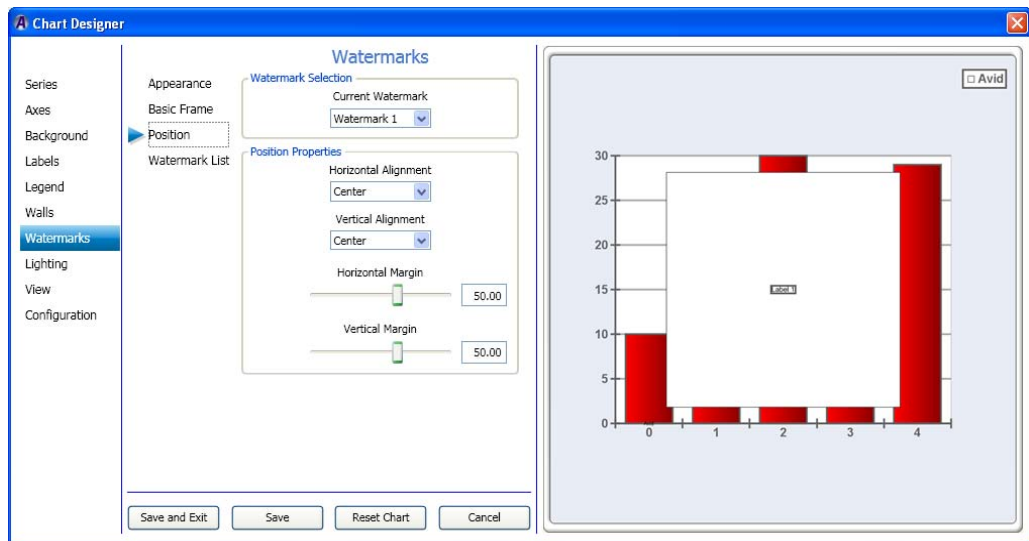
2. In the Watermark Selection area in the Current Watermark drop list, select the watermark for which you want to change the position properties.

3. In the Position Properties area, do the following:

   a. In the Horizontal Alignment drop list, select the area where you want to align the watermark horizontally (Left, Center, or Right).

   b. In the Vertical Alignment drop list, select the area where you want to align the watermark vertically (Top, Bottom, or Center).

   c. Use the Horizontal Margin slider to adjust the location of the watermark horizontally along the chart.

   d. Use the Vertical Margin slider to adjust the location of the watermark vertically along the chart.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Creating the Watermark List

This topic contains information on how to add watermarks to your chart. Once you have added a watermark, you can change it's appearance, format, and position properties.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To create the watermark list:

1. Select Watermark in the left column, and then select the Watermark List submenu.

   The Watermark > Watermark List page displays enabling you to add or delete watermarks for the selected series.
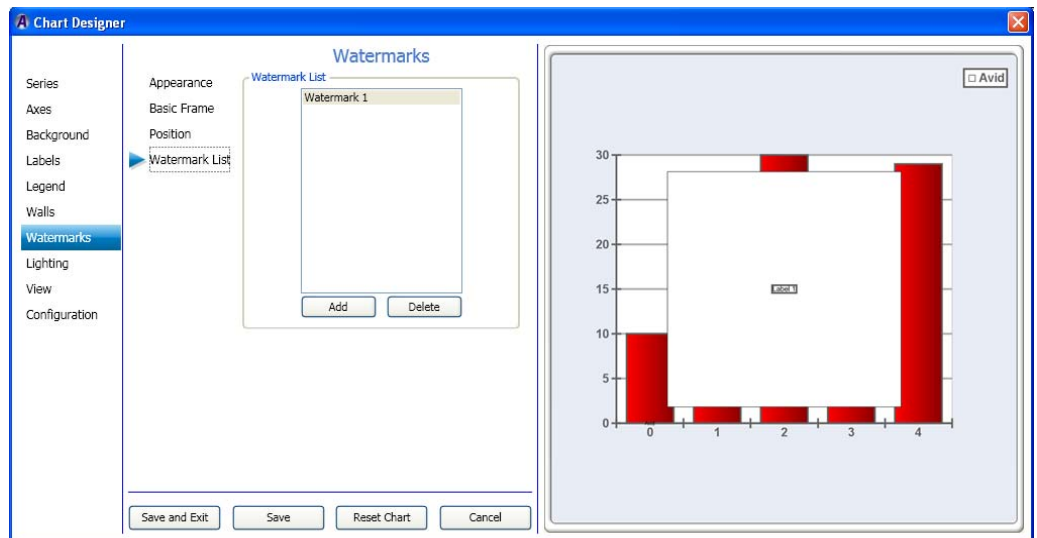
2. In the Watermark List area, do one of the following:

   ▶ To add a watermark, click the Add button.

   ▶ To delete a watermark, select it and click the Delete button.

3. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Using Lighting Controls

This section contains information on creating and using the Lighting controls to further adjust the look of your series.

For more information on setting a specific lighting style for a series, see the following topics:

- •   "Setting the Lighting Appearance" on page 282
- •   "Setting the Basic Frame Watermarks" on page 278
- •   "Setting the Watermark Position" on page 279
- •   "Creating the Watermark List" on page 281

Setting the Lighting Appearance

This topic contains information on how to set the appearance, including properties and presets for light sources in your chart.

This is only available for 3D charts.

You must have added at least one Light source to be able to use this submenu. For more information, see "Creating the Lighting Source List" on page 288.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the Lighting appearance for a chart:

1. Select Lighting in the left column.

   The Lighting > Appearance page displays enabling you to set the lighting appearance for the selected series.
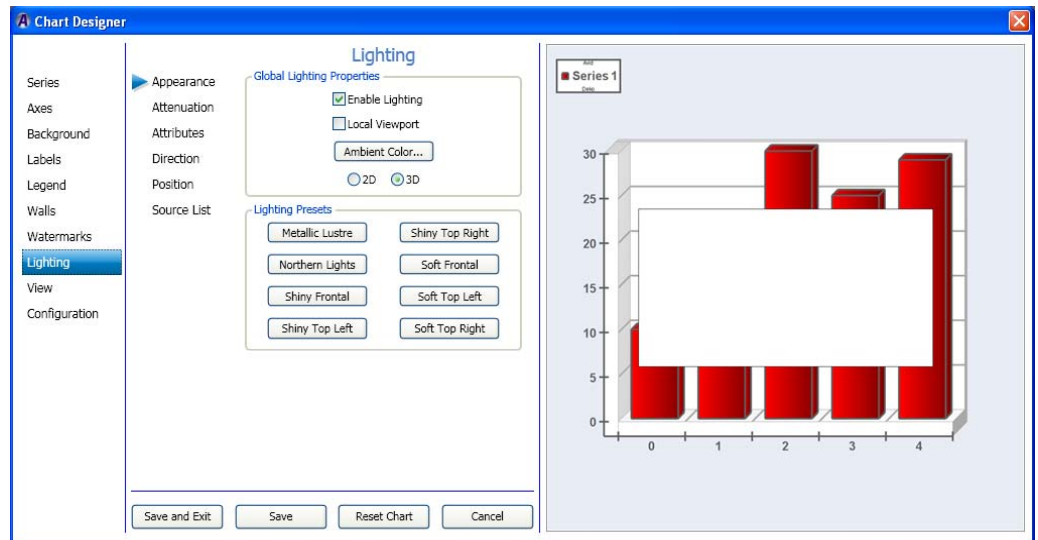
2. To enable the fields in the Appearance submenu, you must select the 3D option in the Global Lighting Properties area.

3. Select the Enable Lighting check box to enable the lighting properties to be visible. If not, deselect the Enable Lighting check box.

4. Select the Local Viewport check box if you want the local viewport to be visible. If not, deselect the Local Viewport check box.

5. Click the Ambient Color button to select the color between the lines. The Color dialog box opens. Click OK once you have made your changes.

6. In the Lighting Presets area, select the lighting preset(s) that you want to apply to your chart.

7. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Lighting Attenuation

If you want, you can then set the Lighting Attenuation for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the lighting attenuation for a chart:

1. Select Lighting in the left column, and then select the Attenuation submenu.

   The Lighting > Attenuation page displays enabling you to set the lighting attenuation for the selected series.
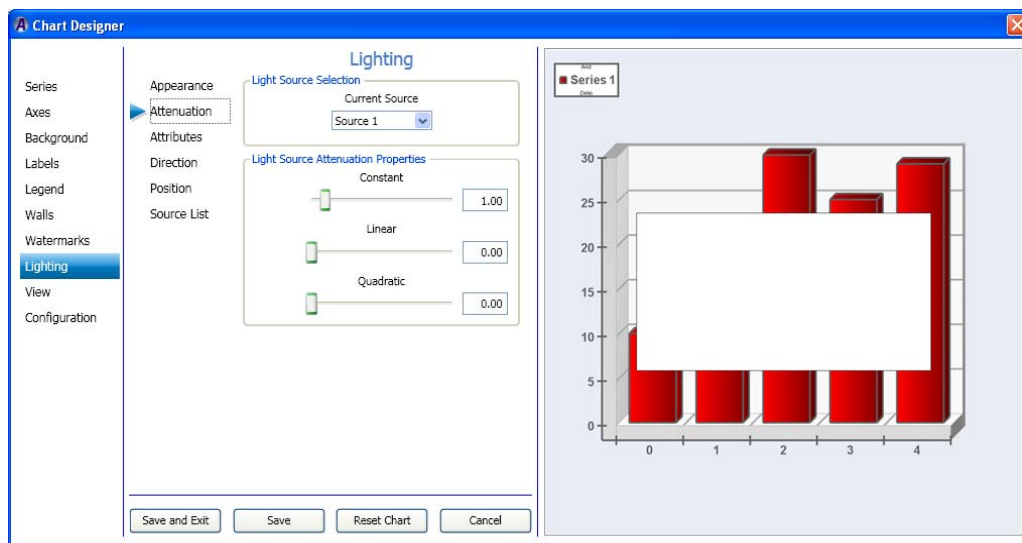
2. In the Light Source Selection area in the Current Source drop list, select the light source for which you want to change the attenuation properties.

3. In the Light Source Attenuation Properties area, do the following:

   a. Use the Constant slider to adjust the location of the constant attuenuation properties.

   b. Use the Linear slider to adjust the location of the linear attenuation properties.

   c. Use the Quadratic slider to adjust the location of the quadratic attenuation properties.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Lighting Attributes

If you want, you can then set the attributes of the lighting for your chart.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the lighting attributes:

1. Select Lighting in the left column, and then select the Attributes submenu.

   The Lighting > Attributes page displays enabling you to set the attributes of the light source style and properties for the selected series.
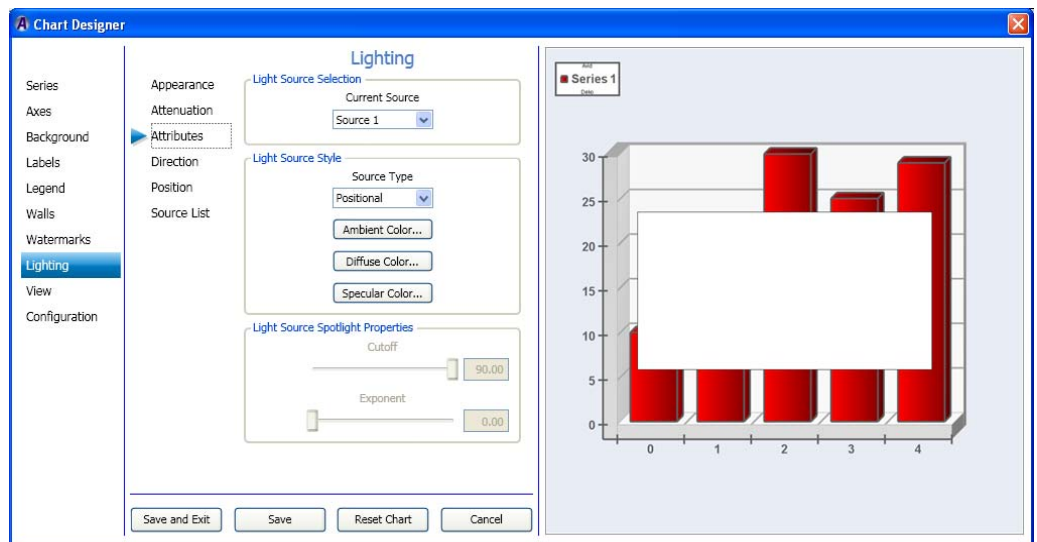
2. In the Light Source Selection area, select the light source you want to change from the Current Source list.

3. In the Light Source Style area, do the following:

   a. In the Source Type list, select the source type for the light source style.

   b. Click the Ambient Color button to change the ambient color of the light source.

   c. Click the Diffuse Color button to change the diffuse color of the light source.

   d. Click the Specular Color button the change the specular color of the light source.

4. In the Light Source Spotlight Properties area, do the following:

   a. Use the Cutoff slider to change the light source spotlight cutoff values.

   b. Use the Exponent slider to change the light source spotlight exponent values.

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Lighting Direction

If you want, you can then set the direction of the lighting on your chart.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the lighting direction:

1. Select Lighting in the left column, and then select the Direction submenu.

   The Lighting > Direction page displays enabling you to set the position of the watermarks for the selected series.
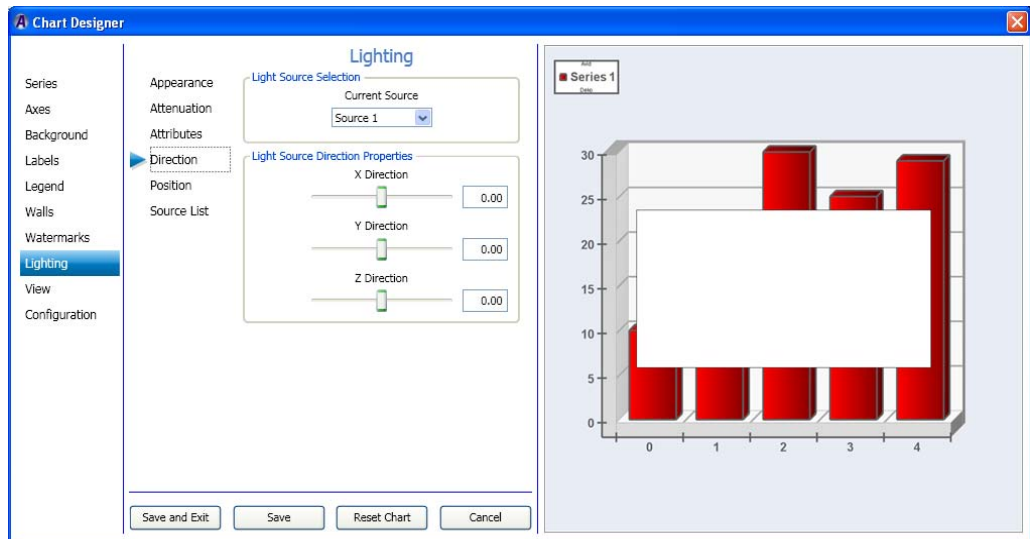
2. In the Light Source Selection area, select the light source you want to change from the Current Source list.

3. In the Light Source Direction Properties area, do the following:

   a. Use the X Direction slider to change the light source X direction values.

   b. Use the Y Direction slider to change the light source Y direction values.

   c. Use the Z Direction slider to change the light source Z direction values. For 3D charts only.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Lighting Position

If you want, you can then set the position of the lighting on your chart.

This procedure assumes that you have already added a series as described in .

To set the lighting position:

1. Select Lighting in the left column, and then select the Position submenu.

   The Lighting > Position page displays enabling you to set the position of the lighting for the selected series.
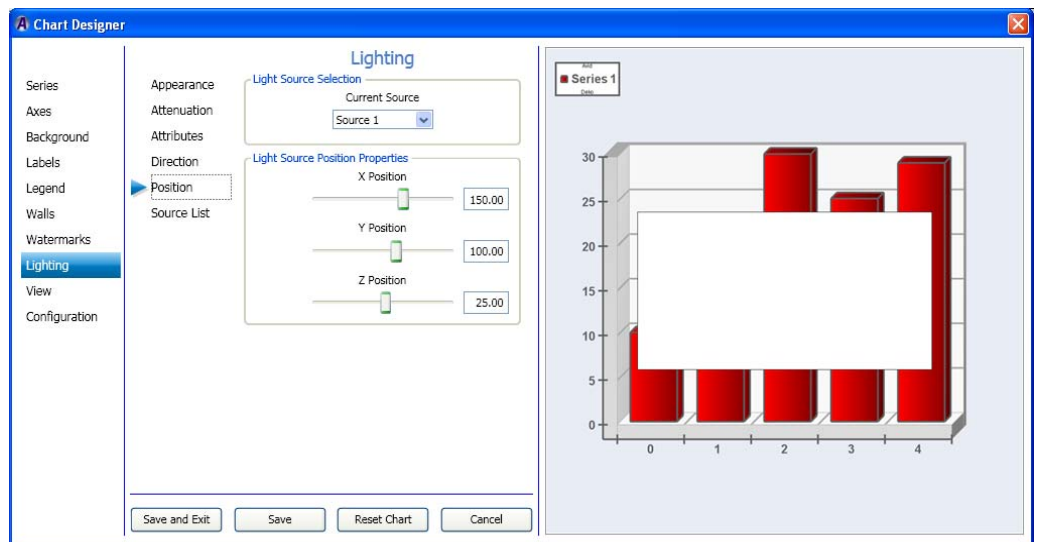
2. In the Light Source Selection area, select the light source you want to change from the Current Source list.

3. In the Light Source Position Properties area, do the following:

   a. Use the X Position slider to change the light source X position values.

   b. Use the Y Position slider to change the light source Y position values.

   c. Use the Z Position slider to change the light source Z position values. For 3D charts only.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Creating the Lighting Source List

This topic contains information on how to add a Lighting source to your chart. Once you have added a Lighting source, you can change it's appearance, attenuation, attributes, direction, format, and position properties.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To create the Lighting Source list:

1. Select Lighting in the left column, and then select the Source List submenu.

   The Lighting > Source List page displays enabling you to add or delete lighting sources for the selected series.
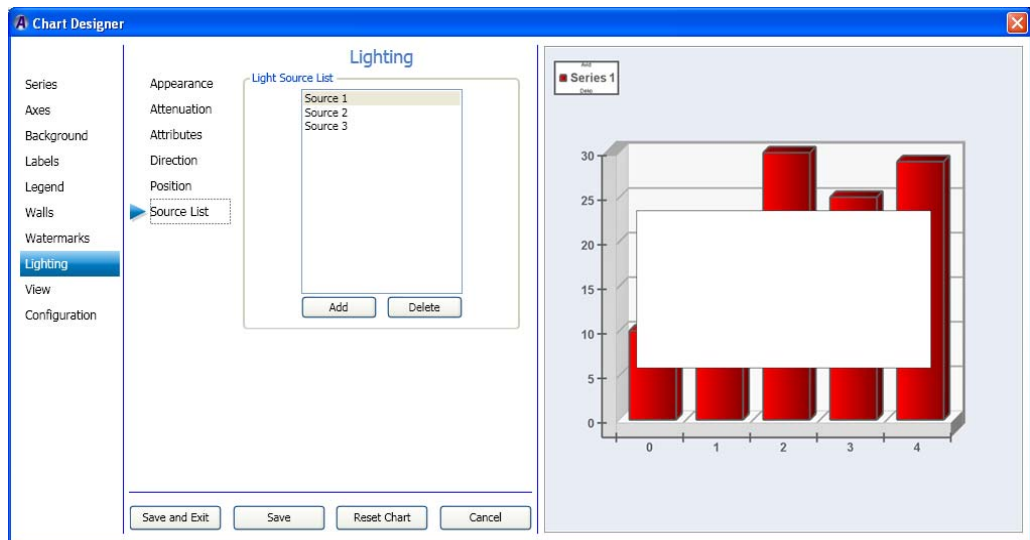
2. In the Light Source List area, do one of the following:

   ▶ To add a light source, click the Add button.

   ▶ To delete a light source, click the Delete button.

📖 *Light sources are deleted from the list in reverse order. For instance Light Source 3 is deleted before Light Source 2, and so on.*

3. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Using View Controls

This section contains information on creating and using the View controls to further adjust the margins, projection, size and text for your chart.

For more information on setting a specific lighting style for a series, see the following topics:

- "Setting the Global Setup View" on page 289
- "Setting the View Margins" on page 290
- "Setting the Watermark Position" on page 279
- "Creating the Watermark List" on page 281

Setting the Global Setup View

This topic contains information on how to set the appearance, including properties and presets for light sources in your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the Global setup view:

1. Select View in the left column.

   The View > Global Setup page displays enabling you to gloablly set the view for the selected series.
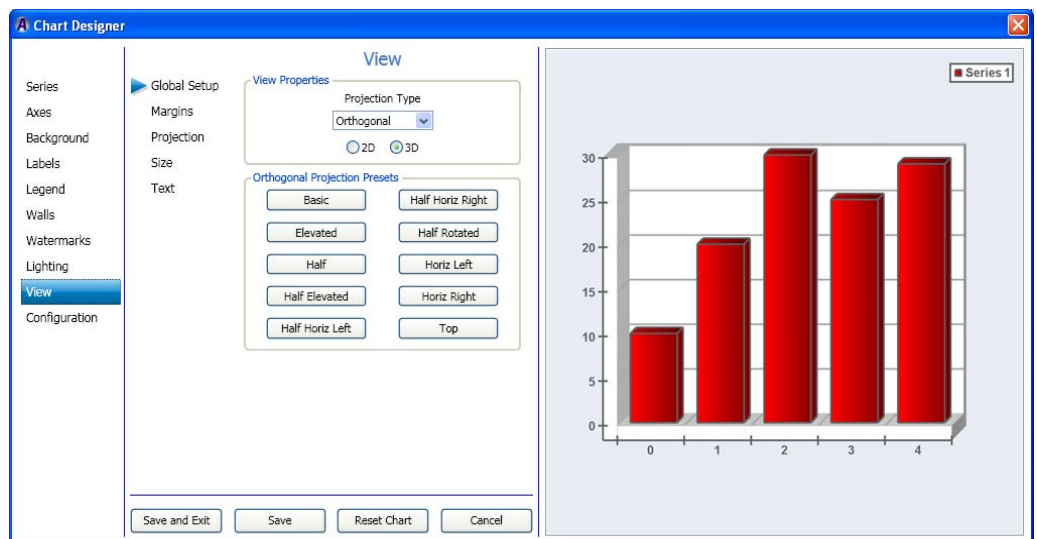
2. To enable the fields in the Projection Type submenu, you must select the 3D option in the View Properties area.

3. In the Projection Type field, select the projection type from the drop down list.

   This is the type of view that you want to change projection presets for.

4. Select the presets for the type of series you selected by clicking on one of the presets to view what your view will look like with these presets applied.

   The Projection Presets area contains various presets for the series you selected.

You can try different presets until you find the right one for your series view.

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the View Margins

If you want, you can then set the view margins for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the view margins:

1. Select View in the left column, and then select the Margins submenu.

   The View > Margins page displays enabling you to set the view margins for the selected series.
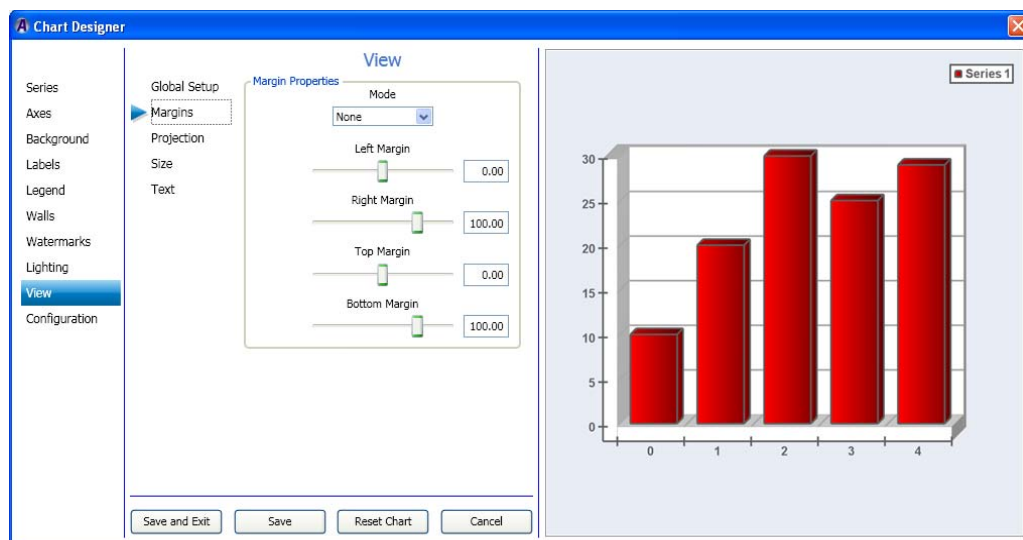
2. In the Margin Properties area in the Mode drop list, select the mode for which you want to change the margin properties.

3. In the Margin Properties area, do the following:

    a. Use the Left Margin slider to adjust the location of the left margin properties.

    b. Use the Right Margin slider to adjust the location of the right margin properties.

    c. Use the Top Margin slider to adjust the location of the top margin properties.

    d. Use the Bottom Margin slider to adjust the location of the bottom margin properties.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the View Projection

If you want, you can then set the view projection for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the view projection:

1. Select View in the left column, and then select the Projection submenu.

    The View > Projection page displays enabling you to set the orthogonal projection properties for the selected series.

2. In the Orthogonal Projection Properties area, do the following:

    a. Use the X Rotation slider to set the projection properties for the X rotation.

    b. Use the Y Rotation slider to set the projection properties for the Y rotation.

    c. Use the Z Rotation slider to set the projection properties for the Z rotation.

    d. Use the Zoom slider to set the zoom.

    e. Use the Perspective angle slider to set the perspective angle properties.

    f. Use the X Depth slider to set the projection properties for the X depth.

    g. Use the Y Depth slider to set the projection properties for the Y depth.

3. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the View Size

If you want, you can then set the view size for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the view size:

1. Select View in the left column, and then select the Size submenu.

    The View > Size page displays enabling you to set the size of the view for the selected series.

2. In the Chart Size area, do the following:

   a. Use the Chart Width slider to change the width of the chart.

   b. Use the Chart Height slider to change the height of the chart.

   c. Use the Chart Depth slider to change the depth of the chart. For 3D charts only.

3. In the Image Aspect Ratio area, do the following:

   a. Select the radio button that you want to set for the aspect ratio of the chart. Options are:

      ▶ 1x1

      ▶ 4x3

      ▶ 16x9

      ▶ Custom (If selected, the Custom Value slider is enabled.)

   b. (Optional) If you selected Custom for your aspect ratio, use the Custom Value slider to change the aspect ratio of the chart.

4. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Setting the Text Size

If you want, you can then set the size of the text for your series.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To set the text size:

1. Select View in the left column, and then select the Text submenu.

The View > Text page displays enabling you to set the text size for the selected series.
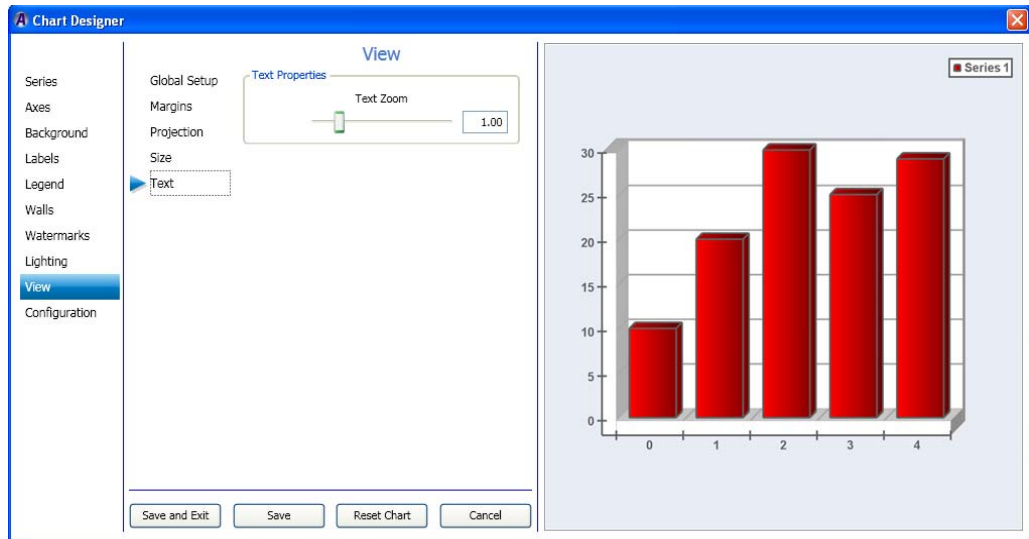
2. In the Text Properties area, use theText Zoom slider to change the text size for your chart.

3. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

Template Configuration Controls

This section contains information on controls used to configure your templates.

For more information on configuring tamplates, see the following topics:

- "Configuring Chart Settings" on page 224
- "(Optional) Assigning Interactivity for the Mouse" on page 225
- "Configuring Your Templates" on page 295

Configuring Your Templates

This topic contains information on how to load and save various Chart Designer templates.

This procedure assumes that you have already added a series as described in "Creating a Series" on page 222.

To configure your template:

1. Select Configuration in the left column, then select Templates.

   The Configuration > Templates page displays enabling you to load and save templates.
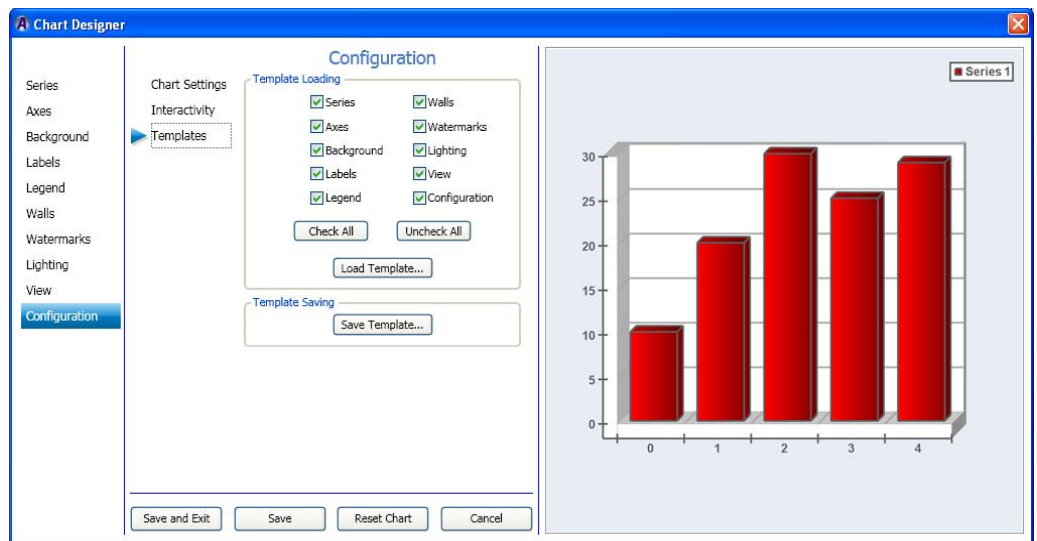
2. In the Template Loading area, select components that you want to load in your template.

   To select all components, click the Check All button.

   To deselect all components, click the Uncheck All button.

3. When you have selected the components you want to include, click the Load Template button.

   The Load Chart Designer Template dialog box opens. Navigate to the location where you want to load your Chart Designer template, and click the Open button.

4. In the Template Saving area, click the Save Template button.

   The Save Chart Designer Template dialog box opens. Navigate to the location where you want to save your Chart Designer template, and click the Save button.

5. Click Save to save your changes, or click Save and Exit to save your changes and exit the Chart Designer.

4 **Working with Charts and Graphs**

Chapter 5
Adding Actions to a Scene

After you add objects to a scene, you can animate these objects by recording and playing actions. An example of a simple action is moving a bug on screen and then moving it off.

The following topics describe animating objects through actions:

- Understanding Actions
- Using the Timeline Editor
- Creating Actions
- Playing Actions
- Editing Actions
- Creating Actions Check List
- Creating Sample Actions

Understanding Actions

Each scene can have one or more actions that animate its objects. An *action* consists of changes to one or more parameters of an object. An action can change the opacity, position, and size of an object, start and stop a video clip, change the transition between objects, or make other changes in your scene. Any value that you can change in an object's editor is a parameter that can be included in an action.

The following illustration shows a simple wipe action as it appears in the Timeline editor. This action uses two parameters for the Group object: transition and softness. Step-by-step instructions for creating this wipe are described in .
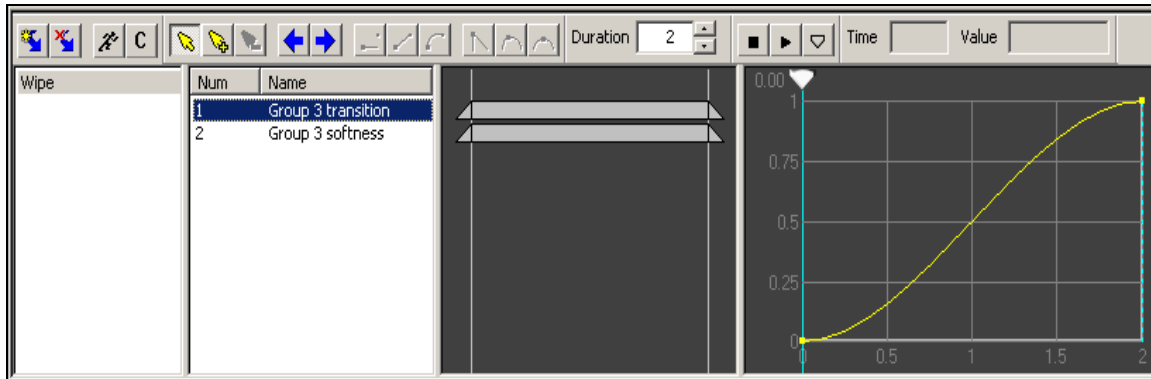
When planning your scene, consider the actions that you want to use during playback. Individual actions can be played out under the control of an automation system, or you can manually execute actions through DekoCast Central. The Sequence application allows for the playout of actions in an ordered sequence.

Actions can occur immediately or take place over time. An example of an action that is triggered immediately is a clock that you set to run in a particular position. When the Clock action is executed, the clock appears in the designated place on the video output and displays the time. To remove the clock, you need to create another action. An example of a time-related action is a Video In object (such as a live feed) that is squeezed back from full-screen to quarter-screen over several seconds.

Actions share these characteristics:

• Each action can control one, some, or all of the object parameters in a scene.

• Actions can start from a fixed location or start at an object's current location and then move the object to a fixed location.

• You can trigger multiple actions simultaneously.

• You can trigger specific actions while other actions are playing, even if they control the same parameters. In this case, the most recently triggered actions assume control of the affected parameters.

There are three kinds of actions:

- **Trigger actions:** These actions occur instantly, rather than over time, such as the clock described earlier in this topic. To define a trigger action, set the parameters only at the start of the action. For more information, see "Creating Trigger Actions" on page 309.

- **Timed actions with defined starting and ending parameters:** To create this kind of action, set parameters at the start and at the end of the action and set the amount of time (duration) that elapses between them. An example is an action that moves a static bug from the top left to the bottom left of the video output over two seconds and then turns on looping. For more information, see "Creating Actions with Defined Beginning and Ending Parameters" on page 312

- **Time Capture actions:** To create this kind of action, set only a duration and parameters at the end of an action. The application sets the parameters at the start of the action by *capturing* the current object properties and values when the action begins. There are no fixed parameters but rather an instruction to load the current position, scale, transition, and other parameters as the first keyframe whenever the action is initiated. The application captures parameters in their current state when the action starts and then, over time, changes them to the ending parameters you defined.

  A Time Capture action is appropriate when you are concerned only about where the action ends up, not its beginning or intermediate characteristics. An example is if you intend to move objects from various positions in a scene but want all of the objects to end in the same location. For more information, see "Creating Time Capture Actions" on page 314.

Using the Timeline Editor

You create and control actions using tools in the Timeline editor. The Timeline editor has its own toolbar and four panes: Action list, Action Parameter list, Timeline Bar editor, and Timeline graph. The Timeline graph includes a scrub bar.

Action list   Action Parameter list   Timeline Bar editor   Scrub bar   Timeline graph
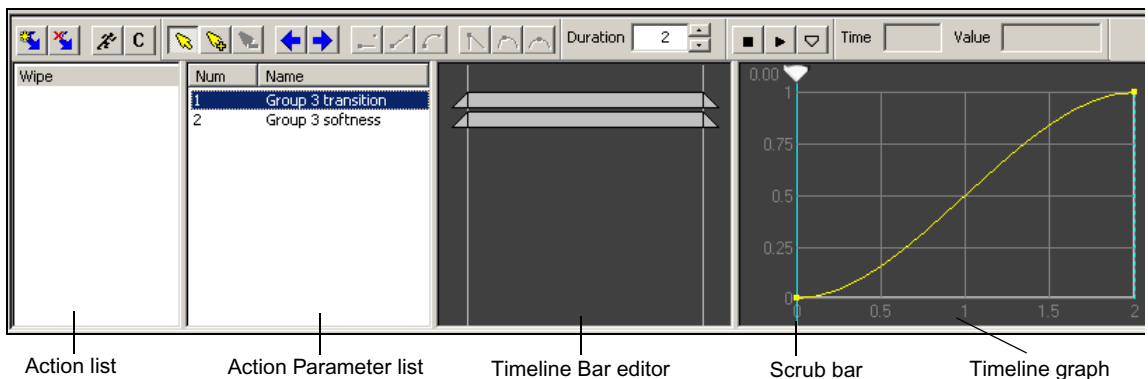
- **Action list:** Displays the actions that you create and name. Each scene can include multiple actions, and each action can control multiple object parameters at a given time or over a duration of time. Right-click inside the Action list pane to display a shortcut menu. See "Adding an Action to the Action List" on page 301.

- **Action Parameter list:** Displays all parameters associated with a selected action. Any value that you can change in an object's editor is a parameter that can be included in an action. Right-click inside the Action Parameter list pane to display a shortcut menu. See "Adding Action Parameters" on page 304.

The Action Parameter list displays parameters that you added to an action; the Parameters tab, which is located in the upper-right of the DekoCast main window, displays all actions in a scene. See "Working with Parameters" on page 335.

- **Timeline Bar editor:** Displays a Timeline bar for each parameter in an action. Shortening, lengthening, or moving the bar affects whether its parameter happens over a shorter or longer period of time or sooner or later in the action. See "Adjusting Timing in the Timeline Bar Editor" on page 308.

- **Timeline graph:** Displays a curve graph for each parameter. Each point on the graph represent a *keyframe*, which acts as a command to set a parameter's value at a specific point in time. You can drag the *scrub bar* backward and forward to view how the parameter changes during the action. See "Understanding Keyframes and the Timeline Graph" on page 307.

You can resize the Timeline editor window and panes within the window by selecting and dragging a boundary line to the left, right, top, or bottom.

Detailed instructions for using the Timeline editor are provided in the remaining topics in this chapter.

Creating Actions

The basic steps in creating an action are:

1. Add an action to the action list.

2. Enter Animate mode by selecting the Animate Mode button.

3. Place the scrub bar in the location in the Timeline graph where the keyframe is to be recorded.

4. Select the object from the Scene Tree.

5. Modify the object's parameters (for example, opacity or scale).

6. Exit Animate mode by deselecting the Animate Mode button.

7. Preview the action.

The following topics describe techniques that you use when defining any action:

- "Adding an Action to the Action List" on page 301
- "Working in Animate Mode" on page 303
- "Adding Action Parameters" on page 304
- "Adding Parameters from the Parameters Tab" on page 306
- "Understanding Keyframes and the Timeline Graph" on page 307
- "Adjusting Timing in the Timeline Bar Editor" on page 308

The following topics provide instructions for creating specific types of actions:

- "Creating Trigger Actions" on page 309
- "Creating Actions Over Time" on page 311
- "Creating Actions with Defined Beginning and Ending Parameters" on page 312
- "Creating Time Capture Actions" on page 314

The following topics provide special instructions for creating actions:

- "Preserving Passive Parameters for Scenes with Multiple Actions" on page 316
- "Reordering Parameters in the List" on page 317

For examples of creating actions, see "Quick Start: Fading a Graphic On and Off" on page 45 and "Creating Sample Actions" on page 330.

Adding an Action to the Action List

After you add an action to a scene, it appears in the Action list pane of the Timeline editor. All actions for a scene appear in the list. After you add an action to the list, you define it by changing parameters in the object editor. The following illustration shows actions listed in the Action list.
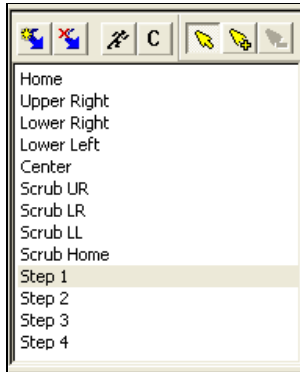
To add an action to the Action list:

▶ Click the Create Action button on the Timeline editor toolbar.
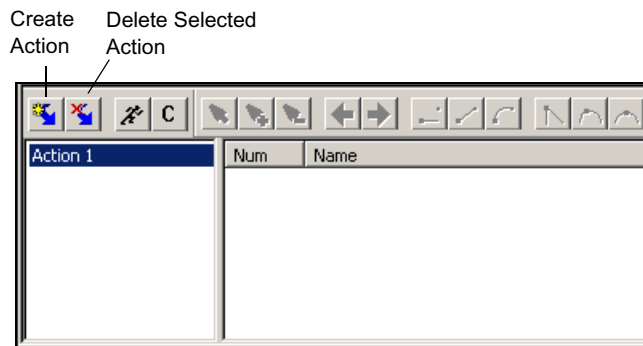
An action is added to the list. The application names actions in the list Action 1, Action 2, Action 3, and so on, but in most cases you need to rename them in a meaningful way. Choose names that describe the action, such as *Logo on*, *Squeeze-back*, or *Clock start*.

To rename an action do one of the following:

▶ Select the action, press F2, and type the new name.

▶ Right-click the action, select Rename, and type the new name.

To copy and paste an action:

1. Right-click the action and select Copy.

2. Right-click within the Action list pane, and select Paste.

   The action is added at the end of the list with the same name as the original action.

3. Rename this action.

To select multiple actions:

▶ Press the Shift key while selecting contiguous actions, or the Ctrl key while selecting non-contiguous actions.

To delete an action:

▶ Select the action and click the Delete Selected Action button.

To delete multiple actions:

▶ Select the actions and press the Delete key.

If several Deko objects change simultaneously, they are queued up to render sequentially, so although they change in the same frame, they will change sequentially during output. How noticeable this sequential change is depends on the complexity of your scene.

Working in Animate Mode

To create an action, you need to work in Animate mode. In Animate mode, any change you make to an object's parameter is recorded as a keyframe, so it's important to keep the Animate Mode button selected only when you want to record a change.

For the basics steps in creating an action, see .

To enter Animate mode:

▶ Click the Animate Mode button in the Timeline editor toolbar so that the button is selected (depressed).

The Animate Mode button looks like a running man.

Animate Mode button selected
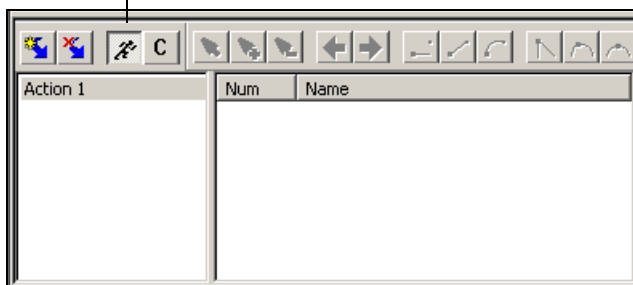
To exit Animate mode:

▶ Click the Animate Mode button so that the button is not selected.

You use Animate mode with the scrub bar to add parameters to an action, as described in the next section.

Adding Action Parameters

After you create an action and enter Animate mode, you add parameters to the action, and set values for the parameters. Any value that you can change in an object's editor is a parameter that can be included in an action.

The basic way to add a parameter is to click or adjust a parameter in the object editor. The value of that parameter is placed in a keyframe wherever the scrub bar is located on the Timeline graph. The parameter's name is added to the Action Parameter list.

The following illustration shows the Deko object editor and the various controls for adding a parameter.
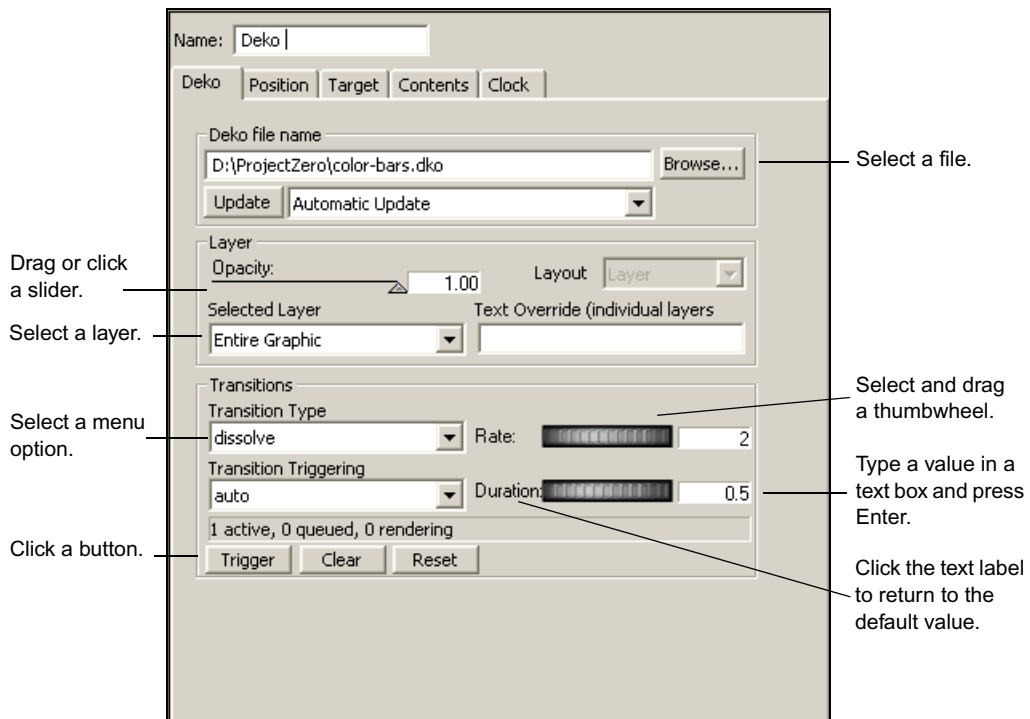
To add a parameter to an action:

1. Place the scrub bar at the point in the Timeline graph where you want to add the parameter.

2. In the Scene Tree, make sure the object whose parameters you want to change is selected, so that the object's parameters appear in the object editor pane.

3. Click the Animate Mode button (see "Working in Animate Mode" on page 303).

4. If you want your action to invoke the currently set parameter, click the appropriate control (such as a thumbwheel or slider) without changing it.

5. If you want to change a value, do one of the following:

   ▶ Select and drag a thumbwheel.

   ▶ Type a value and press Enter.

   ▶ Select a Deko layer from a menu.

   ▶ Overwrite a text field.

   ▶ Select a file by using the Browse button.

   ▶ Select an option, such as a transition type.

   ▶ Drag a slider.

   ▶ Click a button (such as Update, Trigger, or Clear).

   ▶ Double-click a parameter in the Parameters tab (see "Adding Parameters from the Parameters Tab" on page 306).

   The parameter is added as a keyframe on the Timeline graph and its name is added to the Action Parameter list.

Action list   Action Parameter list   Timeline Bar editor   Timeline graph   Keyframes
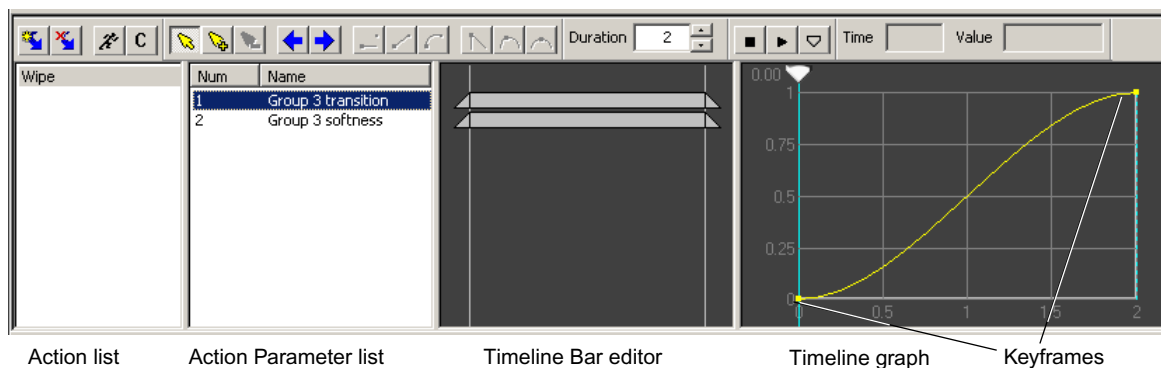
6. Edit the action as described in one of the following topics:

   - "Creating Trigger Actions" on page 309

   - "Creating Actions with Defined Beginning and Ending Parameters" on page 312

   - "Creating Time Capture Actions" on page 314

7. When you are finished, click the Animate Mode button to exit Animate mode.

📄 *When Text Override is animated in an action, the text transitions at every keyframe, whether the text changes at that keyframe or not.*

📄 *Because the application processes parameters from the top to the bottom of the list for each frame, pay attention to the order of items. See "Reordering Parameters in the List" on page 317.*

Adding Parameters from the Parameters Tab

All parameters for a scene are listed in the Parameters tab (see "Parameters Tab" on page 35). You can add a parameter from the Parameters tab to an action. These parameters can include user-created parameters (see "Creating User Parameters" on page 340).

You can also use the Parameters tab to create an action that triggers another action or to create a looping action. For more information, see "Creating an Action that Triggers Another Action" on page 340.

To add a parameter to an action:

1. Select the action in the Action list.

2. In the Timeline graph, position the scrub bar where you want to add a keyframe.

3. Click the Animate Mode button to enter Animate mode.

4. In the Parameters tab located in the upper right of the DekoCast main window, double-click the parameter.

   The Edit Value dialog box opens.

5. Do one of the following:

   ▸ Click OK to accept the current value.

   ▸ Edit the value and click OK.

   A keyframe is added automatically at the current position.

6. Click the Animate Mode button to exit Animate mode.

📄 *Another way to access the Edit Value dialog box is to select any keyframe and double-click it. When you open the Edit Value dialog box from a keyframe, you have the added option of creating a Capture keyframe. See "Editing the Value of a Keyframe" on page 326.*

⚠️ **After you are finished using the Parameters tab, click the Performance tab. Keeping the Parameters tab displayed might slow down updating of the user interface for a large scene.**

Understanding Keyframes and the Timeline Graph

Each parameter in the Action Parameter list has a curve graph associated with it. Points on the graph represent keyframes for that parameter in an action. Each keyframe has a value associated with it (for example, Scale = 1) and a time value of when the keyframe happens within the duration of the action.

A parameter can have only one keyframe at a given point in time. However, an action can contain many different keyframes for the same parameter as long as each keyframe has a unique point in time.

When the Timeline graph is a curve, it depicts a change in parameter values between keyframes. This curve depicts the change over time (the time value shown in the Duration text box) of the selected parameter for this action. The X-axis shows the time (in seconds) and the Y-axis represents the value of the parameter over time. The following illustration shows the change over time for a Transition parameter.

Keyframe:
Transition
value= 1

X-axis
Duration =
2 secs.

Keyframe:
Transition value= 0

Y-axis
Transition values= 0 - 1
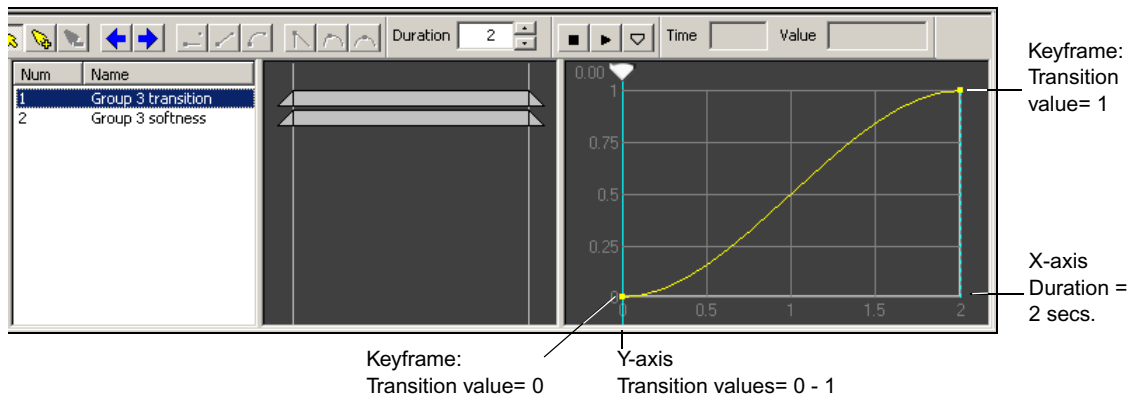
Compare the preceding Timeline graph with the following graph, for a parameter whose value does not change over time, in this case the Softness parameter. The graph line is flat.

Keyframe:
Softness
value= 1

Keyframe:
Softness value= 1
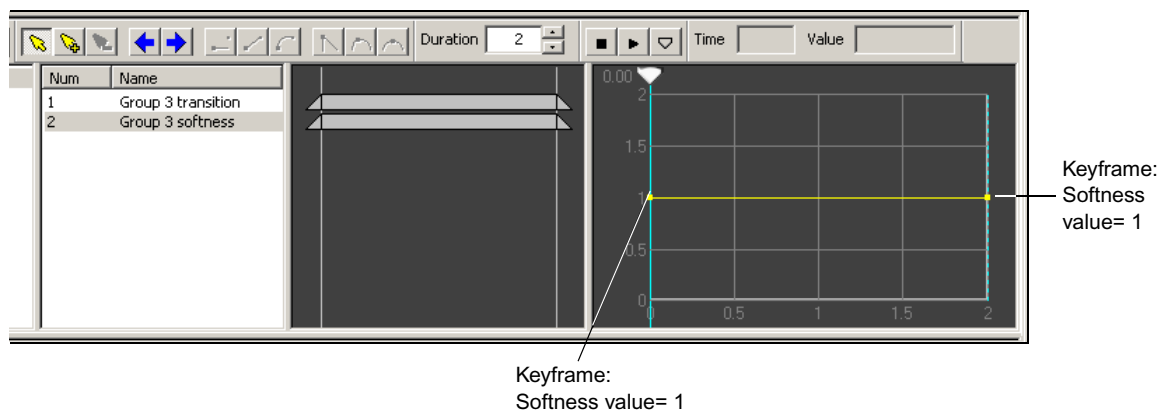
A keyframe that represents a numeric value is indicated by a small yellow mark. Keyframes that represent text, capture, or database values are indicated by a yellow box around the mark. Selected keyframes are red.

Numeric keyframe

Text, capture, or
database keyframe

For more information on the different types of values for a keyframe, see "Editing the Value of a Keyframe" on page 326.

Adjusting Timing in the Timeline Bar Editor

Each parameter in the Action Parameter list has an associated timing bar or *Timeline bar*. Use the Timeline Bar editor to view or modify the timing of parameter changes for the currently selected action. Each a parameter has a corresponding Timeline bar showing its start, end, and duration. Timeline bars can be moved, shortened, or lengthened to change the timing of the corresponding item in the Action Parameter list.

The following illustration shows the parameter value changing over the entire duration of the action. Drag the beginning or ending triangles of the Timeline bar to reduce the time of the parameter in relations to the action.
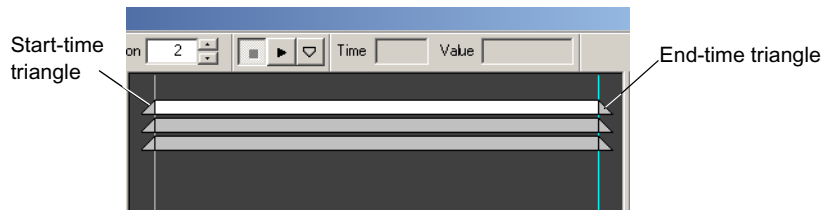
To adjust start and end times:

▶ Click the triangles at the start or end of the bar and drag them.

To select and move multiple bars together:

1. Press Shift or Ctrl and click a part of each bar you want to select.

2. Click one of the selected parts and drag it to move all of the selected parts.

To make an animation longer:

1. Increase the duration using the Duration text box in the Timeline editor toolbar.

2. Select the ends of the bars and drag them outward to make them longer.

Bars cannot be moved beyond the start or end time of the action. Increase the duration to extend the Timeline bar.

To make an animation shorter:

1. Drag the ends of the bars inward to make them shorter.

2. Adjust the duration of the action.

To slide a bar along the Timeline:

▶ Click the middle section of the bar and drag it.

Creating Trigger Actions

A trigger action occurs when you play it. In a trigger action, the parameters you set do not change over time.Decide how the parameters need to be set to accomplish the action, and then set the start parameters for one or more objects. A simple trigger action is using the opacity parameter to show a graphic on air, for example, showing a time display. Parameters can include position, scale, target rectangles, cropping, names of clips or graphic files, setting looping on or off, queueing, stopping, and playing audio or clip files, and so on.

Remember that the scrub bar must be in the start position (leftmost position), and the Animate Mode button selected before you can record parameters for a Trigger action. The scrub bar's position determines where a keyframe is inserted when a parameter is recorded.

To create a trigger action:

1. In a scene, select the object for which you want to create an action.

   The object editor is displayed.

2. Click the Add Action button to add a new action in the Action list.

3. Press F2 and rename the action.

4. In the Timeline graph, move the scrub bar to the leftmost (start) position.
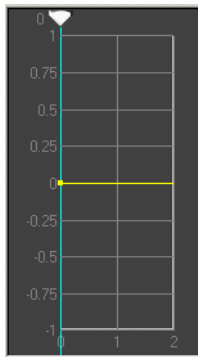
Scrub bar in leftmost position =
Start of action

5. Click the Animate Mode (record action) button to select it.

   The application enters Animate mode. Because the scrub bar is positioned at the left, the application applies the parameters that you select at the beginning of the action. When you play the action, the parameters occur immediately.

6. In the Scene Tree, make sure the object whose parameters you want to change is selected. Use the techniques described in "Adding Action Parameters" on page 304 to add parameters and values to the action.

   For example, set the Opacity value, or change the position or scale values. Notice as the parameter values change, a resulting parameter description appears in the Action Parameter list and a keyframe appears in the graph. To view the graph, select the parameter in the Action Parameter list.

The application processes actions from the top to the bottom of the Action Parameter list. See "Reordering Parameters in the List" on page 317.

Animate Mode button
selected (recording)
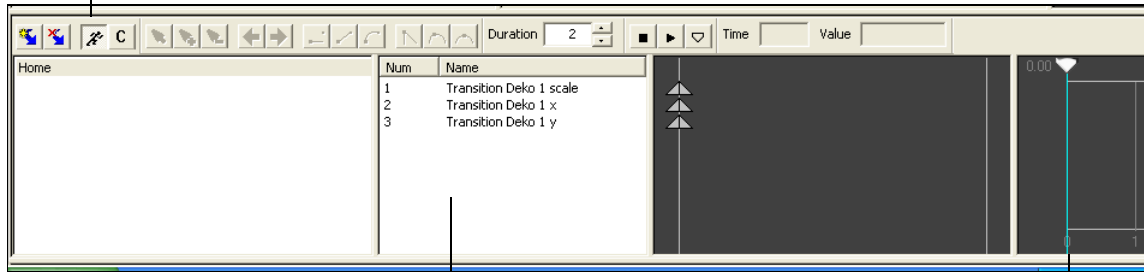
Action Parameter list   Scrub bar at left

7. Click the Animate Mode button to deselect it.

Remember that if you don't deselect the Animate Mode button, any keystrokes are created as parameters and keyframes for the selected action.

8. Preview the action by selecting the action and pressing the space bar or by using another technique, as described in "Playing Actions" on page 317.

9. Save the scene.

Be sure to select the Draw box next to the scene name to have the scene display on video output.

Creating Actions Over Time

A time-related action modifies an object's parameters over time. The duration of an action is determined by the value (in seconds) that you enter in the Duration text box. This value determines how many vertical lines are in the Timeline graph (one vertical line per second).

Keep in mind that parameters are not the same at the end of the action as they were at the beginning *unless the action specifically resets those parameters to their start values*. As you design and create actions, you should initialize parameters at the beginning of an action or reset the parameter values at the end of an action to ensure that the action always plays the same way.

You can add keyframes at any point on the Timeline graph. These keyframes record changes to parameters that you set between the start and end parameters (see "Editing Curves and Keyframes in the Timeline Graph" on page 321).

📄 *Remember that the scrub bar must be in the start position (leftmost position), and the Animate Mode (Record) button selected before you can record start parameters. Move the scrub bar to the end position (rightmost position) before recording the ending parameters. Keep the Animate Mode button selected until after you have set both the beginning and ending parameters.*

The following topics describe how to create actions over time:

- "Creating Actions with Defined Beginning and Ending Parameters" on page 312
- "Creating Time Capture Actions" on page 314
- "Adding a Capture Keyframe" on page 315

Creating Actions with Defined Beginning and Ending Parameters

The following procedure provides the basic steps you take to create an action with defined beginning and ending parameters. For more specific examples, see "Creating Sample Actions" on page 330.

To create an action over time with defined beginning and ending parameters:

1. In a scene, select the object for which you want to create an action.

   The object editor is displayed.

2. Click the Add Action button to add a new action in the Action list.

3. Press F2 and rename the action.

4. In the Timeline graph, move the scrub bar to the leftmost (start) position.
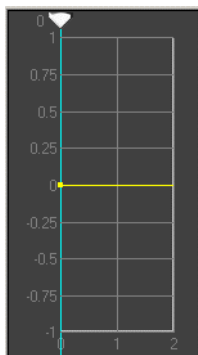
Scrub bar in leftmost position =
Start of action

5. On the Timeline editor toolbar, type the duration of action in the Duration text box.

   The duration is set in seconds. A typical setting is 2.

6. Click the Animate Mode (record action) button to select it.

    When selected, the Animate Mode button records parameters that you change (or preserve) in the object editor.

7. In the Scene Tree, make sure the object whose parameters you want to change is selected. Use the techniques described in "Adding Action Parameters" on page 304 to add parameters and values to the action.

    Parameters for the action selected in the Action list are displayed in the Action Parameter list.

8. If there are parameters that you do not want to change in this action, but that might change in other actions in the scene, click those parameters to preserve their value for this action. See "Creating Time Capture Actions" on page 314.

    Each parameter that you set appears in the Action Parameter list area of the Timeline editor.

9. Drag the scrub bar to the far right to its end position.
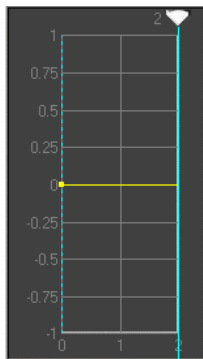
Scrub bar in rightmost position =
End of action

    With the scrub bar in this position, any parameters you change are assigned to the end of the action.

10. Change the ending parameters for any of those you modified.

11. Click the Animate Mode button to deselect it.

12. To view a graph for a parameter, click the parameter name in the Action Parameter list.

13. Preview the action by selecting the name of the action and pressing the space bar or by using another technique, as described in "Playing Actions" on page 317.

14. Save the scene.

Creating Time Capture Actions

With Time Capture actions, you define parameters for objects as you want them to be at the end of the action. Time Capture actions begin by adopting current object parameters and change over time to defined ending parameters. For example, you might create an action in which a bug (Cel Animation object) always ends up in the lower-right corner of the video output, regardless of where it is located at the beginning of the action.

Remember that a Time Capture action is initiated by selecting the Auto Capture button. You also need to select the Animate Mode button and move the Scrub bar to its rightmost (end) position on the Timeline graph.

To create a Time Capture action:

1. Decide how and where you want the object to appear on video output at the end of the action.

   Regardless of the object's parameters at the beginning of the action, it ends up as you set it using the Auto Capture button.

2. Add a new action and rename it; for example: BugLowerRight.

3. In the Timeline graph, select and drag the scrub bar to in its rightmost position on the Timeline graph so that the application applies the parameters you set to the end of the action.

4. Change the object parameters to those desired at the end of the action. For example, in the Position tab of the Cel Animation object, use the X and Y thumbwheels to position the bug.

5. Click the Auto Capture button.

Auto Capture button

Animate Mode button
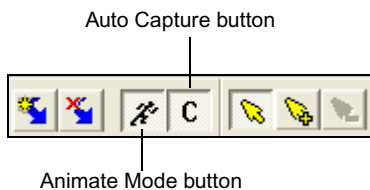
6. Click the Animate Mode button to record changes to parameters.

7. Select a parameter in the Action Parameter list.

   A Capture keyframe is placed at the beginning of the action. Whenever the action plays, the Capture keyframe assumes the current parameter values. The action begins with the object in its most recent position, size, opacity, and so on.

Auto Capture button
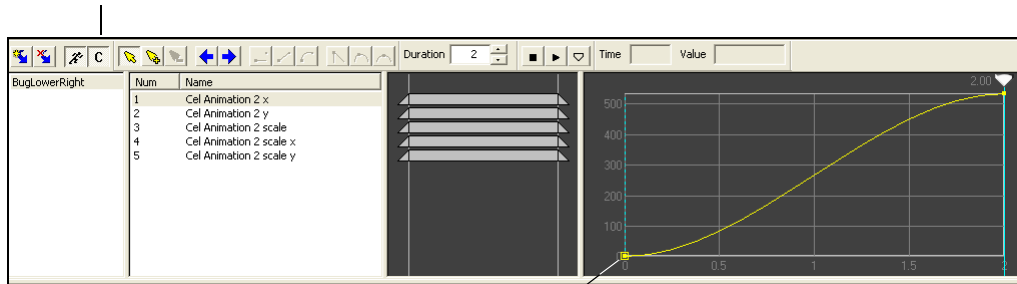
Capture keyframe
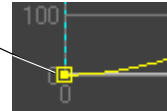
A Capture keyframe is represented by a box around the keyframe.

8. Click the Animate Mode and Auto Capture buttons to deselect them.

9. Preview the action by selecting the name of the action and pressing the space bar or by using another technique, as described in "Playing Actions" on page 317.

10. Save the scene.

Adding a Capture Keyframe

You can manually add a Capture keyframe or change an existing keyframe to a Capture keyframe. A Capture keyframe captures the current state of a selected parameter at the keyframe's point on the Timeline graph.

To add a Capture keyframe:

1. Click the Add Keyframe button and click at any point within the Timeline graph to add a default (numeric) keyframe.

Add Keyframe

2. Double-click the keyframe (small yellow point).

The Edit Value dialog box opens.
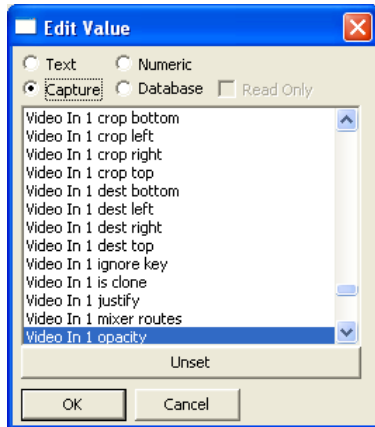
3. Select Capture.

The parameters in the Action Parameter list are listed. The current parameter is highlighted.

4. (Option) Click Unset and select another parameter from the list whose values are to be captured at this point in time.

5. Click OK.

The rectangular Capture keyframe is added to the Timeline graph. When the action plays at that point, the parameter assumes the current value of the parameter selected in the Edit Value dialog box.

Preserving Passive Parameters for Scenes with Multiple Actions

Actions can change the parameters of other actions. If there are parameters in an action that you do not want to change (*passive parameters*), you can preserve their current values. If the parameters are changed as a result of another action, they are reset when you replay the action. Each parameter that you set as a passive parameter appears in the Action Parameter list.

To preserve a current parameter value:

▶ Click its thumbwheel or slider handle.

The parameter is added to the Action Parameter list.

Reordering Parameters in the List

The application processes parameters from the top to the bottom of the Action Parameter list. The order of parameters might become important if you have an action with multiple parameters.

Number column

Num	Name
1	Cel Animation 2 x
2	Cel Animation 2 y
3	Cel Animation 2 scale
4	Cel Animation 2 scale x
5	Cel Animation 2 scale y

To change the position of a parameter in the Action Parameter list, do one of the following:

▶ Select the parameter's number in the Number (Num) column and type a new number. The item is moved to that position in the list, and the list is renumbered.

▶ Select a parameter and drag it to another position.

▶ (Option) Select more than one parameter by using the Ctrl (non-contiguous selection) or the Shift key (contiguous selection) and drag them to another position.

Playing Actions

You can play actions in DekoCast for testing purposes. Use DekoCast Central or Sequence to play actions to air.

Play

Time   Value

Stop   Scrub
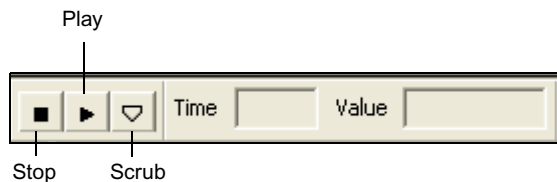
To play an action:

▶   Do one of the following:

-   Click the Play button on the Timeline editor toolbar.

-   With the action selected, press the space bar.

-   Double-click the action in the Action list area.

-   Select the scrub bar and drag it to scrub through the action. The scrub tool on the toolbar is always active.

To stop playback:

▶   Click the Stop button.

Editing Actions

You can edit actions and set parameters to control the effect you want. Procedures for editing actions are described in the following topics:

Copying and Pasting Actions

You can save time by copying one or more actions within a scene or from one scene to another.

To copy and paste actions within a scene:

1. Select one or more actions in the Action list.

2. Do one of the following:

   ▶   Press Ctrl+C.

   ▶   Right-click a selected action and select Copy.

3. Do one of the following:

   ▶   Press Ctrl+V.

   ▶   Right-click one of the selected actions and select Paste.

4. Edit the action as required.

To copy and paste actions from one scene to another:

1. Select one or more actions in the Action list.

2. Do one of the following:

   ▶ Press Ctrl+C.

   ▶ Right-click a selected action and select Copy.

3. Open another scene or display an open scene by clicking it in the Scene list.

4. Do one of the following:

   ▶ Press Ctrl+V.

   ▶ Right-click one of the selected actions and select Paste.

   Because you copied the actions into a new scene, all parameters for the actions lose their links to specific objects (the word "detached" is substituted for the object name). They might also lose their values.

5. Select the object to which you want to link an action.

6. Right-click one or more parameters and select Attach to Selected Object.

   The parameters are linked to the selected object.

7. If necessary, adjust the parameters in the object editor.

You can substitute one parameter for another. See "Replacing One Parameter with Another" on page 320."

Copying and Pasting Parameters

You can save time by copying parameters from one action to another. You can copy from one action to another within the same scene, or copy from one action to another action in a different scene.

To copy and paste parameters between actions:

1. Select one or more parameters in the Action Parameter list.

2. Do one of the following:

   ▶ Press Ctrl+C.

   ▶ Right-click an action and select Copy.

3. If you are copying to another scene, open the scene or display an open scene by clicking it in the Scene list.

4. Select or create the action in which to paste the items.

5. Do one of the following:

   ▶ Press Ctrl+V.

   ▶ Right-click a selected action and select Paste.

   If the you paste the items into a different scene, you need to reattach them to parameters in the new scene.

6. If necessary, select an object, right-click one or more parameters, and select Attach to Selected Object.

   The parameters are linked to the selected object.

📄 *You can substitute one parameter for another. See "Replacing One Parameter with Another" on page 320."*

Detaching and Attaching Parameters

Parameters in the Action Parameter list are linked to particular objects. You can use the Action Parameter list's shortcut menu to unlink (detach) a parameter from one object and link (attach) it to another object. If you copy an action or parameter from one scene to another, parameters are automatically detached and you need to reattach them.

To unlink a parameter from an object:

▶ Right-click one or more parameters and select Detach.

To link a parameter to an object:

▶ Right-click one or more parameters and select Attach to Selected Object.

   The application reassigns the parameters to the identically named parameters in the selected object.

Replacing One Parameter with Another

You can use the Action Parameter shortcut menu to replace one parameter with another parameter.

To replace one parameter with another:

1. Right-click the parameter.

2. Select Change Parameter.

   The Select Parameter dialog box opens.

3. Select a parameter and click OK.

Editing Curves and Keyframes in the Timeline Graph

Each parameter in the Action Parameter list has an associated curve graph, which shows a value versus time plot for the current parameter. You can use this to view the way in which a parameter changes over time. You can modify the change by modifying the shape of the motion curve.

The motion curve's shape controls how a parameter plays back. Abrupt changes in the curve's shape lead to abrupt changes in the object's state, and gradual changes in the curve lead to gradual changes in the state.

Keyframes control parameters by setting a parameter's value at a specific point in time. You can edit the position and values of keyframes and add additional keyframes to a curve.

Editing the Motion Curve

You can control how a parameter plays by changing the shape of its motion curve. You can edit a motion curve by dragging a keyframe or using the keyframe style buttons.
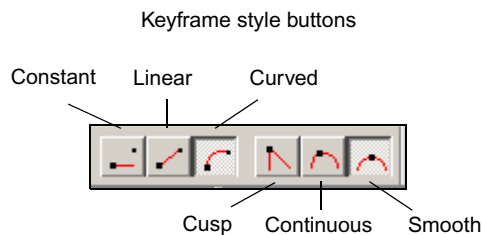
To change the shape of a motion curve, do one of the following:

▶ Select a keyframe and drag it.

▶ Select a keyframe and click a keyframe style button on the Timeline editor toolbar, as described in the following table. If you click the Cusp or Continuous button, drag a tangent handle.

Keyframe Style Buttons

Button	Description
Constant—No Interpolation at Keyframe	Maintains a constant parameter value over time. The Constant setting uses the latest value interpolation from the selected keyframe to the next keyframe, possibly resulting in a discontinuous animation. Selected keyframe Discontinuous animation before the next keyframe
Linear Interpolation at Keyframe	Maintains a straight-line interpolation between keyframes. Selected keyframe Straight-line interpolation to next keyframe.
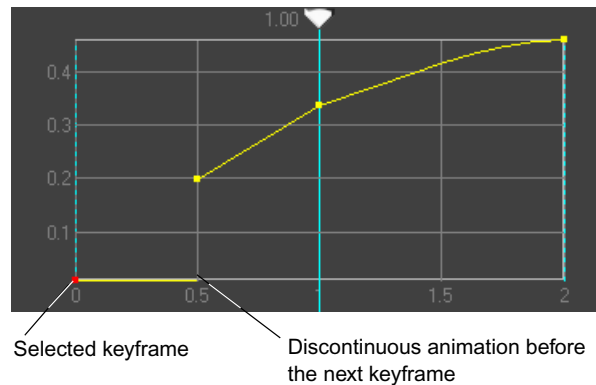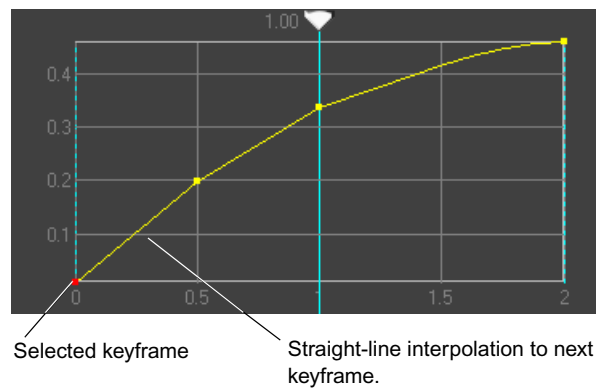
Keyframe Style Buttons (Continued)

Button	Description
Curved Interpolation at Keyframe	Causes the segment following the selected keyframe to interpolate along a curve to the next keyframe.
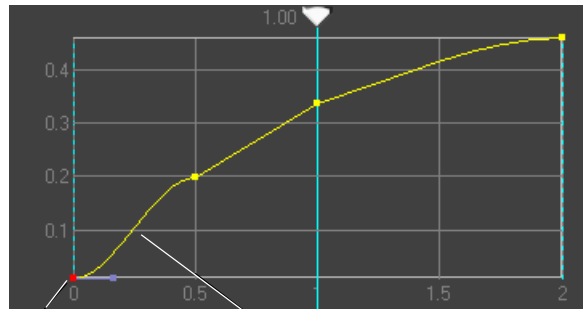
Selected keyframe   Curved interpolation before the
                           next keyframe

Button	Description
Cusp at Keyframe	Allows you to change the slope of the curve abruptly at the selected keyframe. Tangent handles are displayed when the keyframe is selected, allowing separated control of the curve on each side of the keyframe.
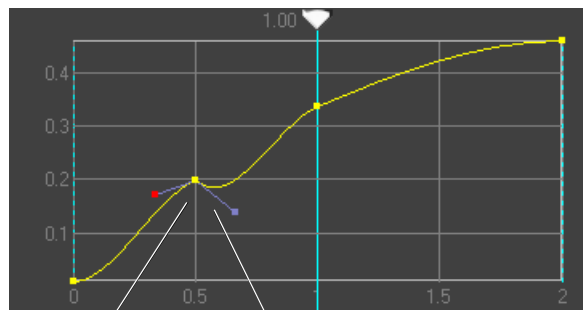
Selected keyframe   Cusp tangent handles allow control of
                           curve on each side of the keyframe

Keyframe Style Buttons (Continued)

Button	Description
 Continuous at Keyframe	Provides tangent handles at the selected keyframe to give control over the slope at this point, but keeps the slope continuous. Selected keyframe Continuous tangent handles control a single slope.
 Smooth at Keyframe	(Default) Provides a smoothly curved transition at the keyframe. Selected keyframe Smoothly curved transition.
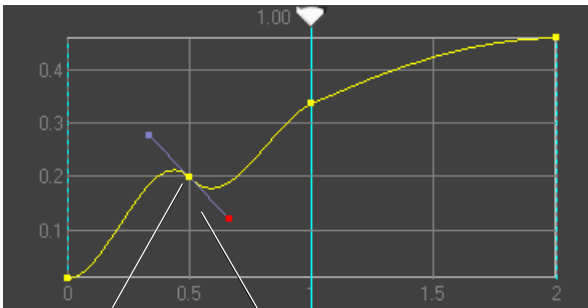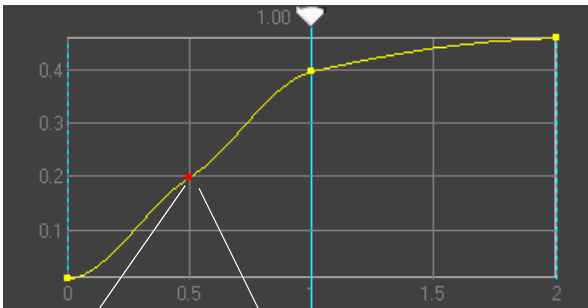
Selecting a Keyframe

To select a keyframe before or after the currently selected keyframe, do one of the following:

▶ Click the Previous Keyframe button to select the keyframe to the left of the currently selected keyframe on the Timeline graph.

Previous Keyframe
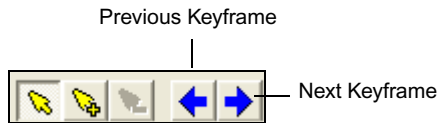
Next Keyframe

▶ Click the Next Keyframe button to select the keyframe to the right of the currently selected keyframe on the Timeline graph.

Adding or Deleting a Keyframe

To add a new keyframe:

▶ Click the Add Keyframe button, then click the location on the Timeline graph where you want to add the keyframe.

Add Keyframe

Delete Keyframe

To delete a keyframe:

▶ Select the keyframe (which then turns red), then click the Delete Keyframe button on the toolbar.

Adjusting the Timing or Value of a Keyframe

To adjust the timing or value of a keyframe, do one of the following:

▶ Click the keyframe in the Timeline graph and drag it along the X axis (time) or Y axis (value).

You cannot drag keyframes beyond the start or end of the parameter's animation. You can adjust the start and end ranges of the animation in the Timeline Bar editor. See "Adjusting Timing in the Timeline Bar Editor" on page 308,

▶ Edit the time in seconds in the Time text box or edit the value in the Value text box on the Timeline editor toolbar.

▶ Double-click the keyframe to display the Edit Values dialog box, and then edit the values, as described in the following procedure.

Editing the Value of a Keyframe

You can edit a keyframe by using the Edit Values dialog box. This dialog box lets you specify the type of value that the keyframe represents as well as the value itself.

To edit the value of a keyframe:

1. In the Timeline graph, double-click the keyframe whose value you want to change.

   The Edit Value dialog box opens.
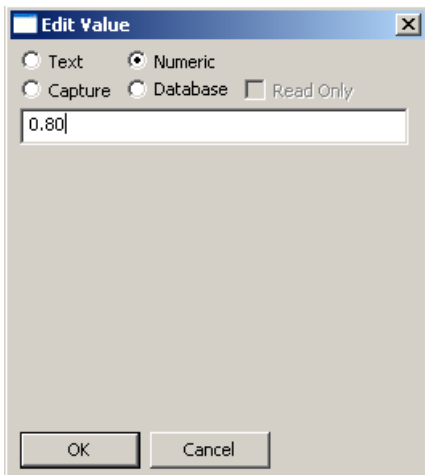
2. Select the type of value you want to create.

   The contents of the dialog box change depending on the type of value, as described in the following table.

Edit Value Dialog Box Options

| Option	Description
Text	Displays a single text box in which to view and modify the text.
	A text keyframe is indicated by a yellow box around the keyframe point.
Numeric	Displays a single text box in which to view and modify a number.
	A numeric keyframe is indicated by a yellow keyframe point.
Capture	Displays a list of all the parameters in the scene, sorted alphabetically. Scroll to a parameter and select it, or click the Unselect button to select none. See "Adding a Capture Keyframe" on page 315.
	A capture keyframe is indicated by a yellow box around the keyframe point.
Database	Displays an ODBC (Open Database Compliant) data source browser, query editor, and viewer. See "Replacing a Parameter with Results of a Database Query" on page 343.
	A database keyframe is indicated by a yellow box around the keyframe point.

3. Type the value for the keyframe.
4. Click OK.

Creating Actions Check List

As you design and create actions, be sure to initialize parameters at the beginning of an action or reset the parameter values at the end of an action to ensure that the action works the same every time that you play it. For example, assume that you have created one action that moves an object from the bottom left to the bottom right and another that moves an object from bottom left to top left. If you do not set the starting location for these actions and play one after the other, the object moves from bottom left to bottom right and then from bottom right to top left. It does not reset to bottom left before moving to top left.

Timeline editor tool buttons and the location of the scrub bar determine the action type. This check list describes the basic setup for each kind of action.

> *The order of actions in the Action list makes a difference. The application processes actions items from the top to the bottom for each frame.*

Creating Actions Check List

Action Type	Steps
Trigger	1. Add an action.
	2. Drag the scrub bar to its start position (leftmost position) if it isn't already there.
	3. Select the Animate Mode (Record) button to record parameters.
	4. Change one or more parameters. Each change is reflected in the Action Parameter list.
	5. Deselect the Animate Mode button.
	6. Select the action and press the space bar to play it.
Timed Action with Defined Start and End Parameters	1. Add an Action
	2. Drag the scrub bar to the start position (leftmost position).
	3. Select the Animate Mode (Record) button.
	4. Change parameters to the desired start configuration.
	5. Drag the scrub bar to the end position (rightmost position).
	6. Set the end parameter values.
	7. Deselect the Animate Mode button.
	> *Keep the Animate Mode button selected until after you have set both the beginning and ending parameters.*
	8. (Option) Add keyframes and change parameters at intermediate positions on the Timeline graph.
	9. Select the action and press the space bar to play it.

Creating Actions Check List (Continued)

Action Type	Steps
Time Capture Action	1. Add an action.
	2. Drag the Scrub bar to its rightmost (end) position in the Timeline graph.
	3. Select the Auto Capture button.
	4. Select the Animate Mode button.
	5. Change one or more parameters.
	6. Select a parameter in the Action Parameter list.
	The application places a Capture keyframe (small yellow square) at the beginning of the Timeline graph. There must be a Capture keyframe for the action to assume the object's current parameter value.
	7. Deselect the Auto Capture button.
	8. (Option) Add keyframes and change parameters at intermediate positions on the Timeline graph.
	9. Deselect the Animate Mode button.
	10. Select the action and press the space bar to play it.
	If there is a problem with playout, examine the current parameter values that the Capture keyframe uses in the action.

Creating Sample Actions

This section includes procedures for creating the following sample actions

Resize the Timeline editor window (and areas within the window) by selecting and dragging a boundary line to the left, right, top, or bottom.

Example 1: Squeeze and Tease

In this example, you create an action that repositions a full-frame video to the upper-right corner over two seconds. As the video frame is squeezed, it reveals an underlying Deko object called a *tease* whose purpose is to entice viewers to stay tuned.

Full Video Frame   Squeezed Video Input Reveals Tease   Full Video Frame

To create a squeeze and tease:

1. Create a new scene and add a Deko graphic (the tease) as the first object in the Scene Tree.

   The Deko graphic might consist of images and text that describe the upcoming programs.

2. Add a Video In object.

3. Click the Create Action button on the Timeline editor toolbar.

   Action 1 appears in the Action list.

4. Rename Action 1 by selecting it, pressing F2, and typing *UpperRight*.

   When a new Action is added, the scrub bar appears in the Timeline graph at the leftmost (start) position.

5. From the Timeline editor toolbar, select the Animate Mode (running man) button.

   With Animate mode on, each change you make to a parameter in an object editor is recorded in the Action Parameter list.

6. Click the Video In object editor's Target tab.

7. For the target rectangle, select Preserve Minimum as the Autoscale option.

   You want to preserve the Video In object's aspect ratio and fit it within the target rectangle whose coordinate parameters you specify.

   The Video In object is full frame by default. You want to record the full-frame parameters at the start of the action. Whenever you click the Reset button in the Target tab, the target rectangle reverts to its default size.

8. Click Reset to set a full-frame Video In object at the start of the action.

   The four parameters added to the list are target left, target right, target top, and target bottom.

📄 *Clicking the text to the left of the Left, Top, Right, and Bottom thumbwheels also records the start parameters as the default full-screen target rectangle. This is the same as clicking the Reset button as long as the initial parameter values have not been changed.*

9. Drag the scrub bar to the far right of the Timeline graph to its end position. The value in the Duration text box determines the duration of the action from start to finish. It should be set to 2.0 seconds.

10. In the Target tab, click the Left thumbwheel and drag it to the right until the video input is positioned in the upper-right corner of the video output frame.

    Because you added a Deko object above the Video In object in the Scene Tree, the Deko object tease is revealed (as an L-shaped graphic).

11. Click the Animate Mode button to deselect it.

12. Select UpperRight in the Action list and press the space bar to play the squeeze action.

Example 2: Unsqueeze

Create a second action that reverses the squeeze by returning the video to full frame (an *unsqueeze*). Because you want the tease text to be read by viewers, the complete unsqueeze takes almost 3 seconds.

To create a second action to return the squeeze to full-screen:

1. Create a new action and name it *FullScreen*.

2. Select the Upper Right action and play it once (press the space bar) to place the Video In object in the UpperRight position.

3. Select the Full Screen action in the Action list, and drag the scrub bar to the start position.

4. Change the duration to 2.75 seconds by clicking the Up arrow to the right of the Duration text box.

5. Click the Animate Mode button and record the ending position of the UpperRight action by clicking the center of the Left, Top, Right, and Bottom thumbwheels in the Target tab.

   This sets your initial keyframes for the FullScreen action to the ending keyframes of the UpperRight action.

6. Move the scrub bar to the end position of the Timeline graph, and click the Reset button to return the target rectangle to its default full-screen value.

7. Turn off the Animate Mode button.

   Now you have created two actions: UpperRight Action scales Video In to the upper right over 2 seconds, and FullScreen Action scales Video In from the upper right to full frame with a 2.75 second duration.

Example 3: Crossfade (Dissolve)

This action is a crossfade (or dissolve) that uses the Group object's composite style. The second object in the group gradually fades in over the first, completely obscuring it.

To create a crossfade:

1. Create a new scene.

2. Add a Group object to the Scene Tree.

3. Add two visual objects as children of the Group object and link them to their source files. The second object will wipe over the first object.

4. Click the Group tab, and select Crossfade from the Composite Style list.

5. Preview the crossfade by dragging the Transition slider from 0 to 1 and back again.

6. With the Group object selected in the Scene Tree, click the Create Action button in the Timeline editor toolbar.

   An action is added to the Action list.

7. Press F2 and edit its name from Action 1 to *Crossfade*.

8. (Option) Change the Duration of the action from the default 2 seconds to another value, if desired by typing the new duration in seconds in the Duration text box.

9. With the scrub bar moved to the start (leftmost) position in the Timeline graph, click the Animate Mode button to record changes you make to parameters in the object editor.

10. Position the Transition slider to 0 and click the slider's handle.

    The slider's parameter value of 0 is recorded at the start position of the wipe.

11. Drag the scrub bar to the far right of the Timeline graph, which is the end position of the action.

12. Drag the Transition slider to the 1 position and click the slider's handle.

13. Deselect the Animate Mode button.

14. Select the Wipe action in the Action list and press the space bar to play the wipe.

You can create another action that reverses the crossfade. Use this procedure but reverse the positions of the Transition slider parameter.

Example 4: Lower-Third Reveal

In this example, you create an action that reveals a clock counter in the lower third of the video frame. If you have a temperature probe interface attached, you can also display the temperature.

To create a lower-third reveal:

1. Create a new scene.

2. To add a clock to the scene, add a Deko object with a text layer to the Scene Tree. In the Deko tab, select the text layer from the Selected Layer menu. Set up the clock as described in "Displaying Clocks" on page 131.

3. In the Position tab, use the X and Y Position and Scale thumbwheels to move the clock output to the lower-right corner of the video frame.

4. (Option) Add a second Deko object with a text layer to display the temperature. Select the text layer. In the Contents tab, click the Browse tab to navigate to the TXT file in which the temperature probe records its data. Position the temperature probe output to the right of the Clock output.

5. Add a Video In object after the Deko objects.

    The Clip clock/temperature probe output is obscured by the Video In full-frame object.

6. With the Video In object selected, click the Create Action button in the Timeline editor toolbar.

7. Press F2 and rename the action *LowerThirdReveal*.

8. Click the Animate Mode button to record parameter values for the action.

9. At the start of the action, set the Cropping values in the Position tab to their default values by clicking the text—*Left*, *Top*, *Right*, and *Bottom*.

10. Drag the scrub bar to the end position.

11. Drag the Bottom cropping thumbwheel to the right until the clock/temperature probe output is visible (with an appropriate margin between the display and the video output).

12. Click the Bottom thumbwheel in its center to record the crop's current parameter value.

13. Deselect the Animate Mode button.

14. With the *LowerThirdReveal* action selected, press the space bar to play it.

As an alternative, you can place the Video In object above the Deko objects in the Scene Tree. At the start of the action, set the Deko object's opacity to full transparency (0). At the end of the action, set the opacity to full opacity (1).

Chapter 6
Working with Parameters

The Parameters tab consolidates parameter data for a scene. It provides a way to display and edit parameter values for a scene, objects within the scene, and the system's video board (or *canvas*). You can search for parameters, create and edit user-defined parameters, add a parameter value to a keyframe, and replace a value with the results of a database query. You can also use the Parameters tab to link objects directly to ODBC-compliant databases in order to cycle updated results on air.

The following topics describe how to work with parameters:

- Using the Parameters Tab
- Searching for a Parameter Value
- Editing a Parameter Value
- Creating User Parameters
- Creating an Action that Triggers Another Action
- Replacing a Parameter with Results of a Database Query

Using the Parameters Tab

The Parameters tab provides a list of parameters for the currently selected scene. You can use the Parameters tab to locate and edit the following types of parameters:

- Object: Parameters for objects in the scene, such as opacity and scaling values.

- Scene: Parameters specific to the scene, such as the name of the scene and its draw state. Actions you create are also listed as scene parameters.

- User: Custom parameters created by a user.

- Canvas parameters: Parameters that represent characteristics of the system's current state, such as the aspect ratio and the current state of the codecs for clip playback.

To display the Parameters list:

1. Select a scene in the Scenes pane.

2. Click the Parameters tab.
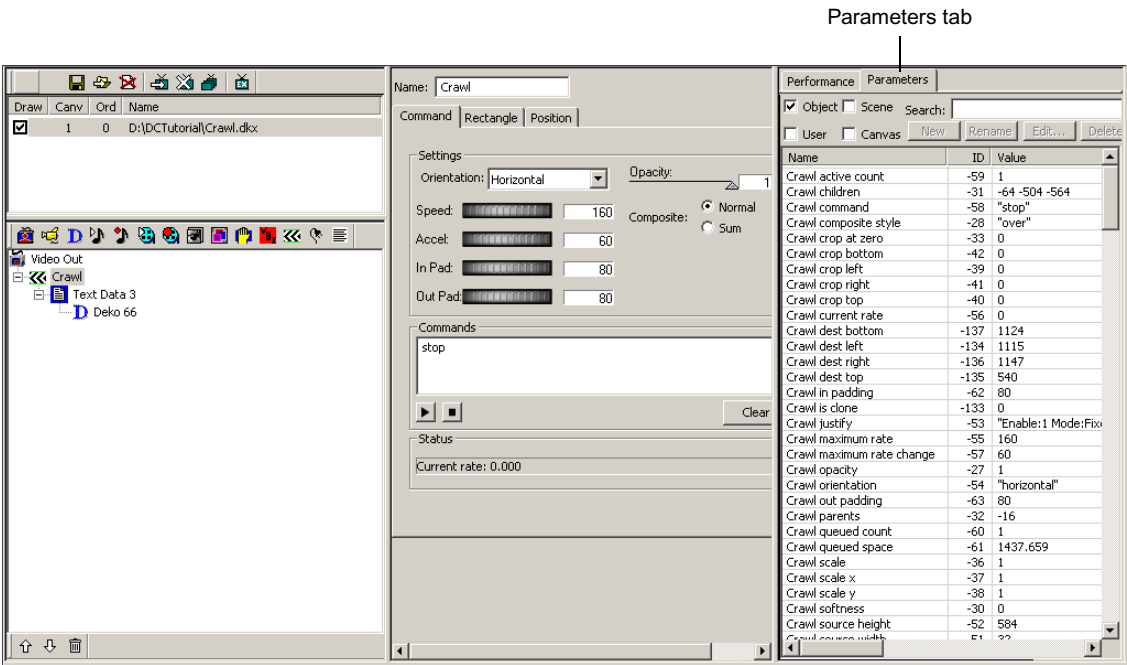
Parameters tab

3. Select which parameter types you want to display in the list:

- Object: Displays parameters for all objects in the scene.

- User: Displays user-created parameters.

- Scene: Displays parameters for the current scene.

- Canvas: Displays parameters for system settings.

You can select one or more parameter types to display in the list.

The list displays the name, ID number, and current value of each parameter.

To adjust the size of a column:

▸ Click the border between two columns and drag it to the left or to the right.

⚠ **After you are finished using the Parameters tab, click the Performance tab. Keeping the Parameters tab displayed might slow down updating of the user interface for a large scene.**

Searching for a Parameter Value

You can display and edit any object, scene, user, or canvas parameter.

The object editor and parameters tab are updated simultaneously so that the values in both are always current.

To search for a parameter value:

1. Select which type or types of parameters you want to search.

   The selected parameters display in the list.

2. Type search characters in the search text box.

   The application displays any parameter containing these characters.

The following illustration shows the results of a search for "opacity" and calls out the relationship between the opacity level set in the object editor and the opacity level listed in the Parameters tab.

Object Editor   Opacity value   Search text box
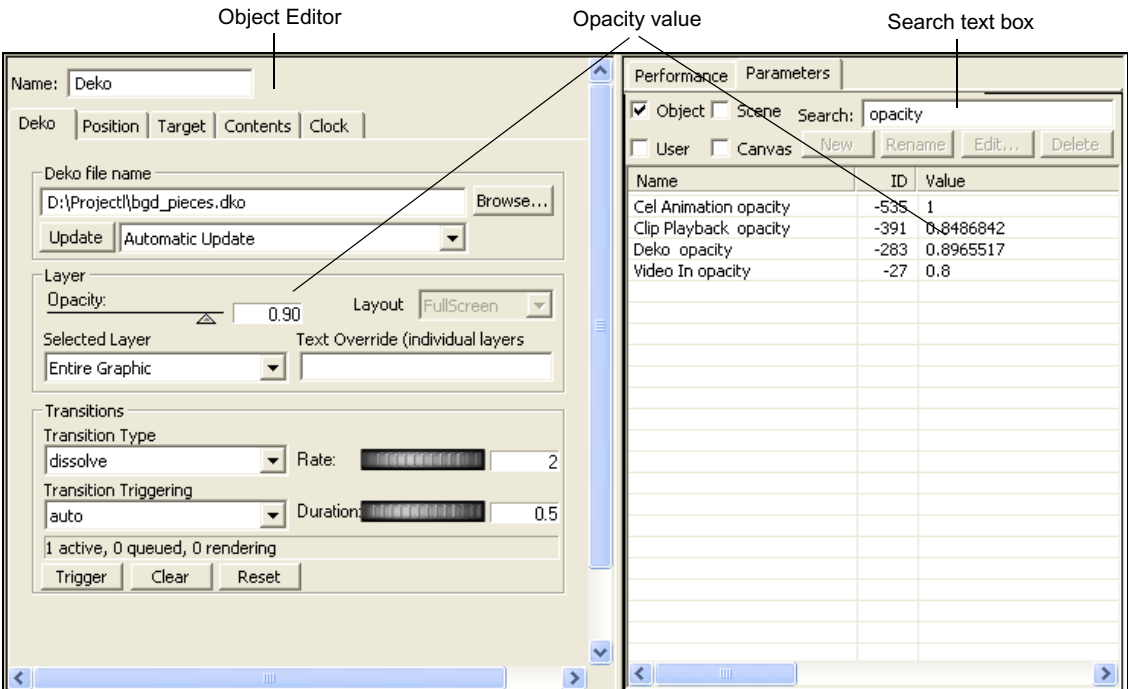
Editing a Parameter Value

You can edit a parameter in the Parameters list. Edits you make for a parameters are reflected in the application's user interface.

To edit a parameter:

1. In the Parameters tab, do one of the following:

   ▶ Double-click a parameter in the list.

   ▶ Select a parameter and click Edit.

The Edit Value dialog box opens.
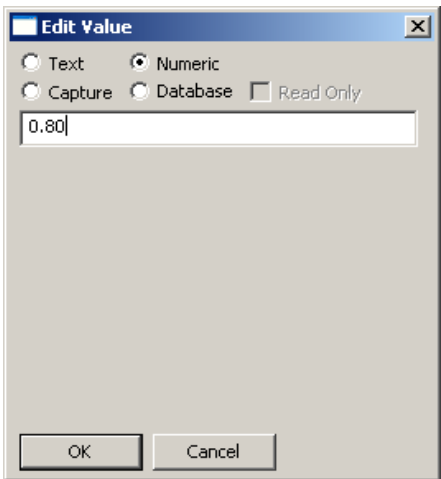
2. Edit the value for the parameter.

Your options depend on the type of value the parameter represents: Text, Numeric, Capture, or Database. See the following table.

Edit Value Dialog Box Options

Option	Description
Text	Displays a single text box in which to view and modify the text.
	A text keyframe is indicated by a yellow box around the keyframe point.
Numeric	Displays a single text box in which to view and modify a number.
	A numeric keyframe is indicated by a yellow keyframe point.
Capture	Displays a list of all the parameters in the scene, sorted alphabetically. Scroll to and click on a parameter to select it, or click the Unselect button to select none. See "Adding a Capture Keyframe" on page 315.
	A capture keyframe is indicated by a yellow box around the keyframe point.
Database	Displays an ODBC (Open Database Compliant) data source browser, query editor, and viewer. See "Replacing a Parameter with Results of a Database Query" on page 343.
	A database keyframe is indicated by a yellow box around the keyframe point.

3. Click OK.

📑 *You can also use this dialog box to edit the value of a keyframe. For more information, see "Editing the Value of a Keyframe" on page 326.*

Creating User Parameters

When you select User as the parameter type, you can create or modify a user-defined parameter. One use of a User parameter is to store extra data, if available, from an external program with a scene. User parameters are typically used with applications that communicate with the application through the application API or XML. For more information, see the Rocket Engine API and Rocket Engine BCI documentation, which is available on the Avid Customer Service Knowledge Base (www.avid.com/onlinesupport).

The Edit button allows you to edit any type of parameters selected in the list. The New, Rename, and Delete buttons are active only when you select the User parameter.

User selected as parameter type
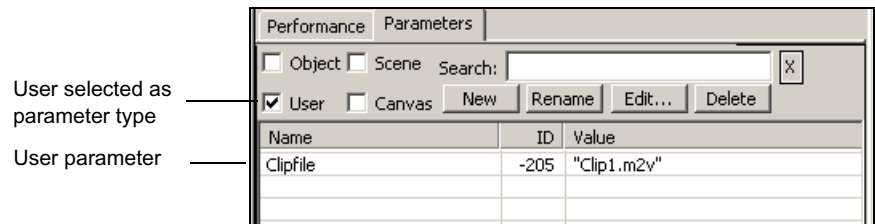
User parameter

To create a user parameter:

1. Select the User as the parameter type.

2. Click the New button.

3. In the Set Parameter Name text box, type a name for the parameter and click OK.

   The application assigns an ID number.

4. With the name of the user parameter selected, click Edit.

5. Edit the parameter value as described in "Editing a Parameter Value" on page 338.

Creating an Action that Triggers Another Action

You can use the Parameters tab to create an action that starts or triggers another action. You can trigger multiple actions in a single action and you can create an action that loops.

The first procedure in this topic describes how to insert an action into an action, and the second procedure describes how to create a looped action.

To create an action that triggers another action:

1. Create a new action (see "Creating Actions" on page 300).

2. Click the Parameters tab and select the Scene option.

   The Scene parameters are displayed. Scene parameters include actions created in the scene.

Name	ID	Value
Loop Clip command	-331	""
Loop Clip status	-332	0
Play Clip command	-323	"play"
Play Clip status	-324	1
Scene convert state	-12	1
Scene deko macro	-6	""
Scene draw	-3	1
Scene draw exclusive	-4	1
Scene draw none	-5	0
Scene draw objects	-2	-16
Scene file modified	-8	1
Scene force bypass	-15	0
Scene licenses	-14	""
Scene modify count	-9	21
Scene path	-7	"D:\DekoCast4
Scene persist	-10	0
Scene stack order	-1	0
Scene state	-11	4
Scene video active	-13	1

Actions

3. Select the scene you just created and position the scrub bar where you want to insert the action.

4. Click the Animate Mode button to enter Animate mode.

5. In the Parameters tab, double-click the action you want to insert.

   The Edit Value dialog box opens.
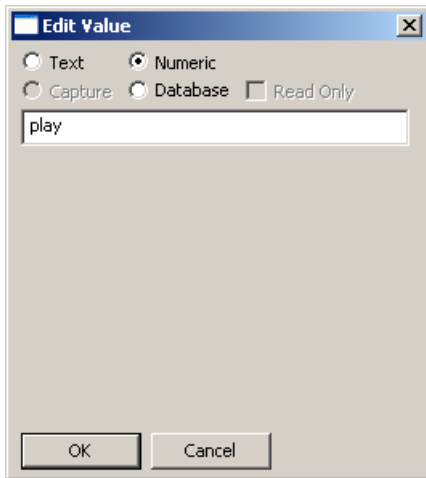
6. Edit the value as appropriate.

   For example, for an action that plays a clip, select Text, type "play" (without the quotes), and click OK.

   A keyframe is created in the action where you inserted the second action.

7. Click the Animate Mode button to leave Animate mode.

8. Play the action.

To create a looped action:

1. Create a complete action.

   For example, create an action that plays a clip, named "Play Clip."

2. Click the Create Action button to create another action. You want this action to loop the first action.

   For example, create an action and name it "Loop Clip."

3. Click the Parameters tab and select the Scene option.

   The actions you created are displayed.

4. In the Action list, select Loop Clip.

5. Move the scrubber bar to the beginning of the Timeline graph.

6. Click the Animate Mode button to enter Animate mode.

7. In the Parameters tab, double-click "Play Clip command."

8. In the Edit Value text box, select Text, type "play" (without quotes), and click OK.

9. Move the scrubber bar to the end of the Timeline graph.

10. In the Parameters tab, double-click "Loop Clip command."

11. In the Edit Value text box, select Text, type "play" (without quotes), and click OK.

12. Click the Animate Mode button to exit Animate mode.

13. Play the Loop Clip action.

    The Loop Clip action now calls itself, creating a loop that continuously plays a clip.

14. To stop play, click the Stop button on the Timeline toolbar or create an action that stops the clip from playing.

Replacing a Parameter with Results of a Database Query

The Database option allows you to replace a parameter value with the results of a database query. This option allows you to link objects directly to ODBC-compliant databases that cycle updated results on air.

⚠ **To use the Database option, you should understand database structure and how to register ODBC databases in the Windows operating system.**

This example uses a simple Microsoft Access database named text.mdb to access parameter values for a text parameter. The following illustration shows the values in the database, as listed in a table named DekoText.
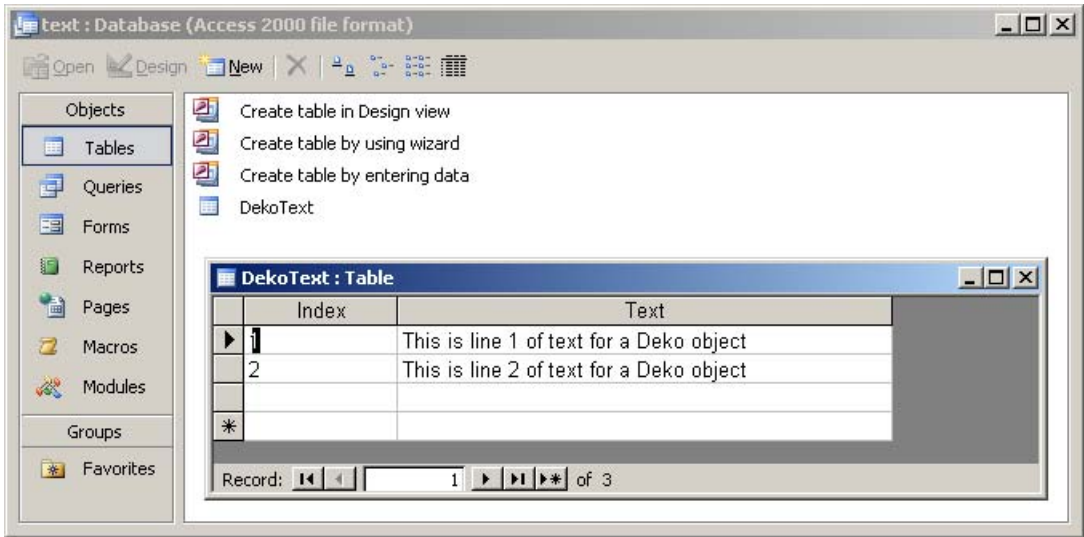
In this example, the Database option lets you replace the text in a Text Override parameter for a Deko object. For more information on Text Overrides, see "Working with Deko Objects" on page 108.

The following illustration shows the Text Override parameter in the Parameters tab and the object editor.

Text override value is empty
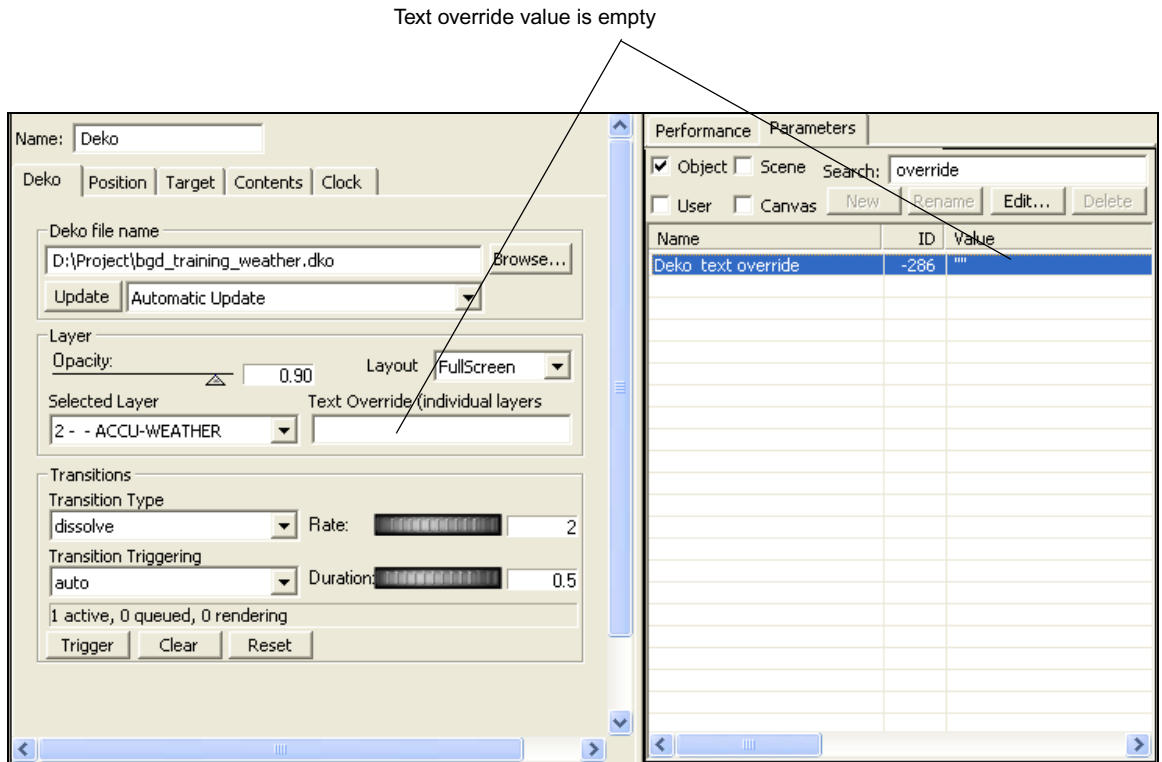
The following procedures use this example.

To locate the parameter to edit:

1. Click the Parameters tab.

2. Select the kinds of parameters to be edited: Object, Scene, User, or Canvas.

3. Type the parameter name in the Search field, such as the term *override*.

   The application displays the parameter in the list.

4. Double-click the parameter name in the list.

   The Edit Value dialog box opens.

Browse button
Query editor
Viewer
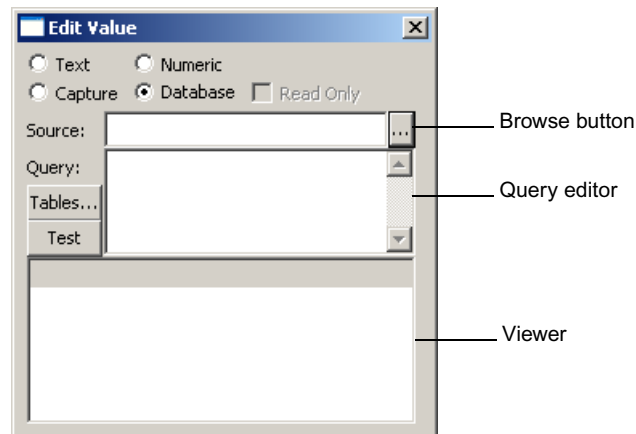
To replace a parameter with the results of a database query:

1. Click the Database button in the Edit Value dialog box.

   The application displays a data source browser, a query editor, and a viewer.

2. Type or paste an existing data source name into the Source field and proceed to Step 3, or do the following to create a new data source name.

   a. Click the Browse button.

       The Select Data Source dialog box opens.
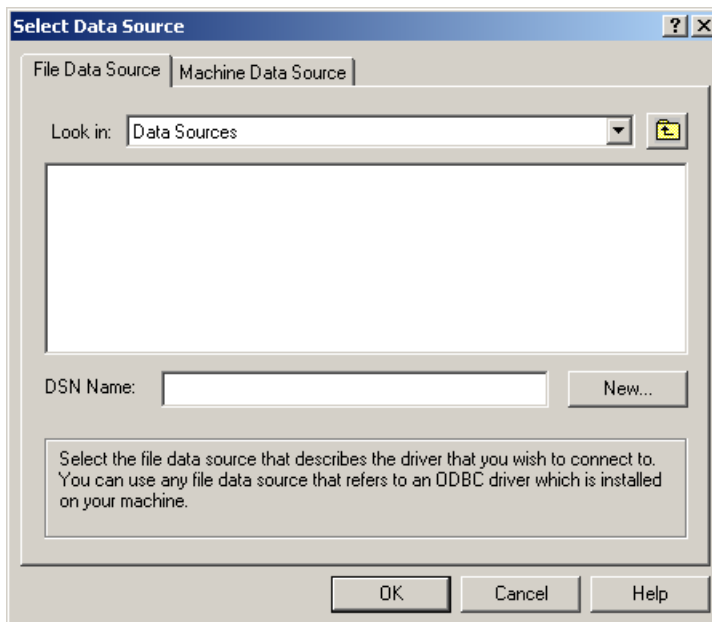
b.   Click New.

The Create New Data Source dialog box opens.

c.   Follow the online instructions to select the database driver and specify the data source name.

The application displays a summary screen with the new data source name and the database driver to be used.

d.   Click Finish.

e.   Follow any additional online instructions related to your database driver.

The Select Database dialog box opens.
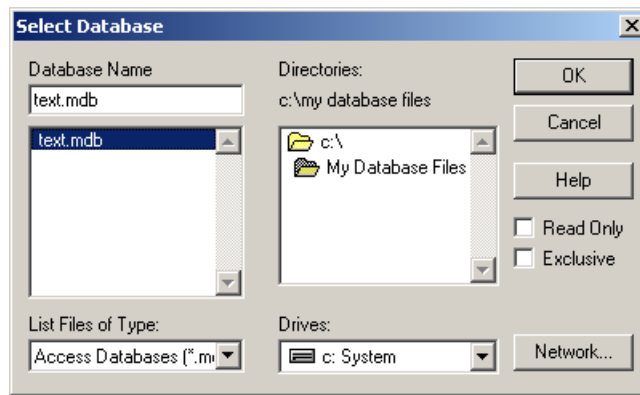
f.   Navigate to the database file you want to use and click OK.

The data source name you specified appears in the Select Data Source dialog box.
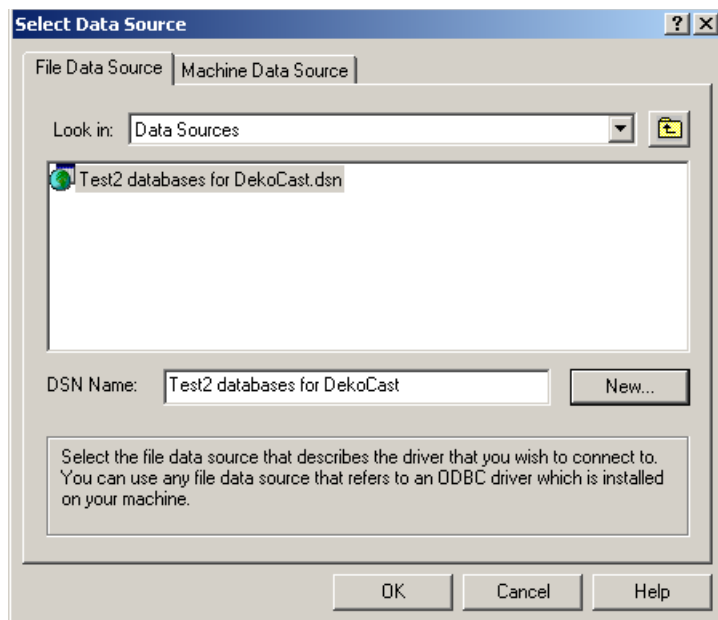
g. Select the data source name and click OK

The database name appears in the Source field.
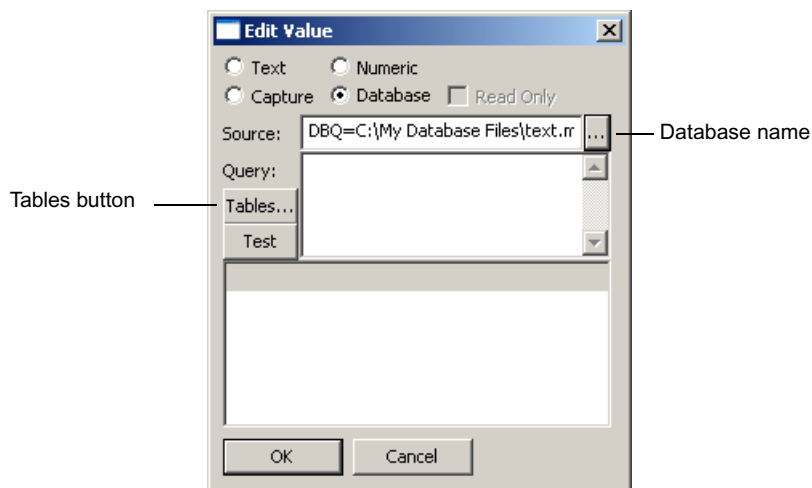
3. Click the Tables button to display a list of all the tables defined in that data source.

4. Select a table from the list. *DekoText* is the name in this example.

5. Do one of the following:
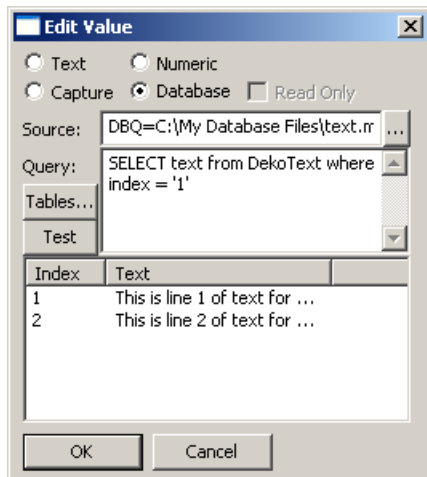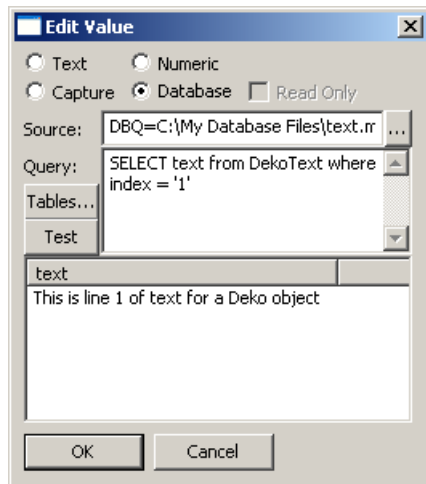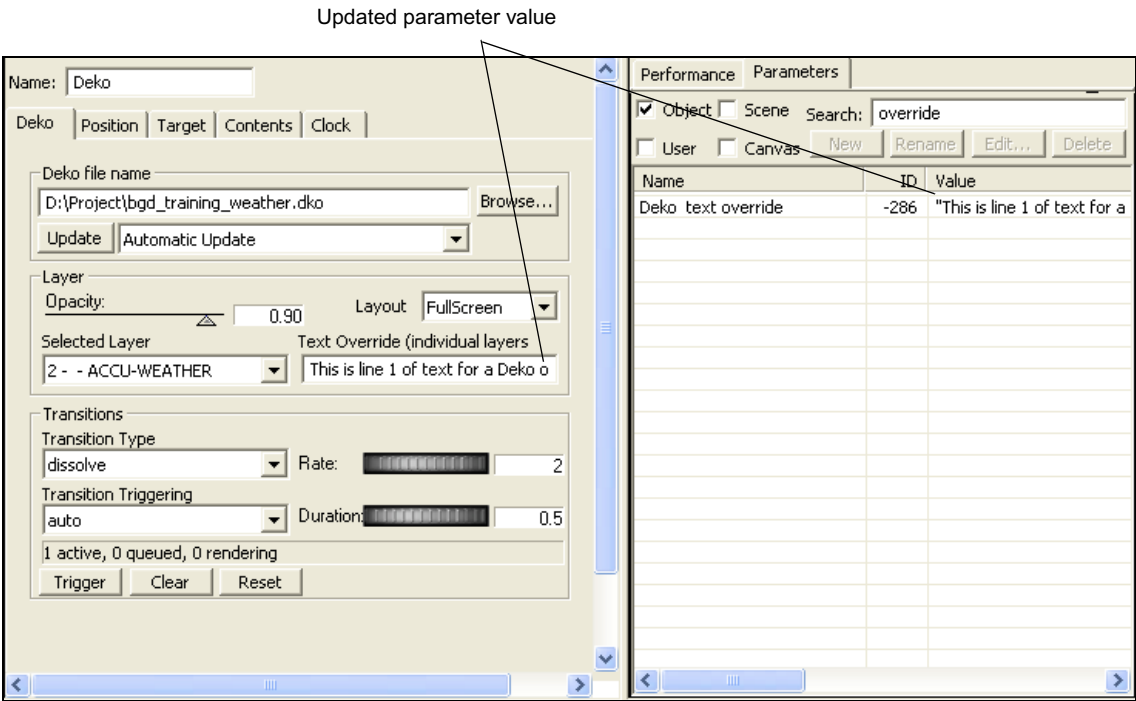
   ▶ Press Use in Query to close the table list and place a "SELECT * from <table>" query into the Query field. Then modify the query to search for a specific item.

   ▶ Type a query into the Query field.

   The following illustration shows the completed query and the two items from the table.

6. Click Test to perform the query and display the result in the table viewer.

   The following illustration shows the query and the test results.

7. Click OK.

The application updates the parameter value as shown in the following illustration.

Updated parameter value

To continually refresh the values from a database:

1. Create an action that updates the database by clicking the Update button on the Deko tab.

2. Create another action that loops the first action every 5 seconds.

Play the second action to refresh the values from the database every five seconds. For more specific information, see

Chapter 7
Using DekoCast Central

This chapter covers all aspects of DekoCast Central: startup, configuration, using the graphical user interface to control scenes and actions, and working with automation systems. It also describes each of the DekoCast Central utilities, such as the Temperature Probe and the Sequencer Control utility.

The following topics describe how to use DekoCast Central:

- Understanding DekoCast Central
- Working with DekoCast Central
- Configuring DekoCast Central for Automation
- Automation Control Interface
- Defining House IDs
- Working with the Playback Controller
- Working with the Graphical User Interface
- DekoCast Central Utilities
- Using the Emergency Alert System Interface

Understanding DekoCast Central

DekoCast Central has two main interfaces: a graphical user interface (GUI) and the Automation Control Interface. You can use DekoCast Central's graphical user interface to play actions in real time by clicking buttons that represent an action, or by pressing the buttons if you have a touchscreen.

DekoCast Graphical User Interface (GUI)

You can configure DekoCast Centrals Automation Control Interface to work with your automation system to control the playback of actions.

Automation Control Interface

DekoCast Central can serve as an automation interface for Triple i (I.I.I automation protocol) and General Purpose Interface (GPI). You can configure DekoCast Central for use with a wide variety of third-party automation systems that employ the Triple i automation protocol to control standard Character Generators. You can also configure DekoCast Central to associate a General Purpose Interface (GPI) with a specific scene or action. Two internal or ten external GPIs are available.

You can set up a House ID with one or more actions and, if you want, you can override the value of object parameters in a scene. When Triple i automation receives a command to play a House ID, it plays all of the actions associated with it (and replaces the value of any object parameter saved with this ID with your specified value). If you import a scene into the DekoCast Central GUI that has been used as a source for a House ID, the House ID is added as an Action button. You can use the Playback Controller to schedule the playback of House IDs by time of day.

Working with DekoCast Central

To start DekoCast Central, do one of the following:

▶   Double-click the desktop icon

▶   Click Start and select All Programs > DekoCast > DekoCast Central.

The DekoCast Central files are located by default in C:\Dekocast\DekoCastCentral.

DekoCast Central has two main windows: the Automation Control Interface, which displays the communications received and sent on automation ports, and the Graphical User Interface (GUI), which has buttons for assigning and selecting scenes and triggering actions.

DekoCast Central initially opens with the Automation Control Interface window displayed. Whenever you restart DekoCast Central, it opens with the interface window that was last open prior to closing the application. Use the View command on each of the windows to switch between interfaces.

To switch between the GUI and Automation Control interface, do one of the following:

▶   From the GUI, select View > Automation Control Interface.

▶   From the Automation Control Interface, select View > Graphical User Interface.

To open both interfaces in the DekoCast Central window:

▶   Select Window > Tile Horizontally (one on top of the other) or Tile Vertically (side-by-side).

By default, both interfaces are open at the same time and are contained in the DekoCast Central application window. You can minimize an interface window while keeping it open, or you can close it by clicking the close box or selecting File > Close.

The Playback Controller also opens by default. For more information, see "Working with the Playback Controller" on page 374.

To close DekoCast Central:

▶   Click the application window's Close button.

Configuring DekoCast Central for Automation

You use the DekoCast Central Configuration dialog box to configure DekoCast Central for automation systems.

To open the Configuration dialog box, do one of the following:

▶ Select Configure from the Automatic Control Interface's menu bar.

▶ Select View > Configure from the GUI window's menu bar.

The dialog box includes three tabs: Data Streams for specifying data streams, GPIs for configuring local and external GPIs, and Logging for specifying which events DekoCast Central writes to log files.

GPIs can be triggered only on an RS-232 port. Triple i commands can be sent on either an RS-232 or RS-422 port.

Configuring Data Streams

You can configure up to two ports to accept Triple i commands. Either port can be RS-232 or RS-422. These streams are not independent and are complementary. Therefore, if Data Stream 1 receives a command to change directories or folders, and then receives a command to change to a different directory on Data Stream 2, all Triple i commands received afterwards point at the second directory. Typically, a single data stream is configured although some automation systems use both streams. For example, the W commands might be sent on COM1 and the Y commands on COM2.

To configure a data stream:

1. Do one of the following:

   ▶ Select Configure from the Automatic Control Interface's menu bar.

   ▶ Select View > Configure from the GUI window's menu bar.

2. Click the Data Streams tab.

3. Specify the COM port for each data stream you want to configure.

4. Select Enable to have DekoCast Central listen for commands on the selected port.

5. Set the baud rate, which is typically 9600.

6. Select "Scene/Action triggered by SWAP command" if you have a Louth Automation® system or any automation system that sends the <F9> command to trigger a play.

   Some automation systems use the Y command to cue a scene/action and the <F9> (hex F9) command to play the scene/action. Other automation systems expect the Y command to trigger the play.

7. Type the Default Scene Directory for your application, unless your system uses the M command.

The M command can specify the directory for a specified scene.

Most automation systems other than Louth Automation systems override the default directory value.

8. Select "Use system default character set" if the font that displays in the Automation Control Interface window is not supported by your system.

9. Select "GUI function overrides Triple i scenes" if you want the GUI function to temporarily override the automation system.

In DekoCast Central, asynchronous Triple i commands always override anything you do using the GUI. When you select this option, if you open a scene that has not already been opened by Triple i, both the preview and program Triple i scenes are aborted, and the GUI function temporarily overrides the automation system until DekoCast Central receives another Triple i command.

10. For the three options that specify how the last number of characters or digits defines actions, select how DekoCast Central is to interpret the data being sent by automation for the Y command. See "The Y Command" on page 366.

11. If the GPI and Triple i data stream commands are in Unicode, select this option.

12. Click Apply.

Configuring GPIs

You can configure *either* local or external GPIs, but not both. To trigger a scene or an action, you can configure as many as two GPIs wired to an RS-232 COM port (local GPIs). If you require more than two GPIs, you must configure an external GPI box. With an external GPI, you can trigger an action on and off. The GPI's tab has two panes, one for configuring local GPIs and the other for configuring external GPIs.

You can configure and save a group of GPIs.

Configuring Local GPIs (Local RS-232 COM Port)

To trigger a scene or action, you can configure a maximum of two GPIs wired to an RS-232 COM port. With local GPIs, you are limited to triggering two actions only. For example, you might want to trigger an emergency slate on and then off.

⧉ *If you require more than two GPIs, you have to configure an external GPI box.*

Local GPIs are triggered by a momentary (5 millisecond) contact closure across two pins of the COM port. GPI 1 is triggered by a short across pins 8 and 7, and GPI 2 is triggered by a short across pins 6 and 7.

To configure a GPI to trigger an action:

1. Do one of the following:
   ▶ Select Configure from the Automatic Control Interface's menu bar.
   ▶ Select View > Configure from the GUI window's menu bar.
2. Click the GPI's tab.
3. Click the Select Scene button.

   The DekoCast Scene Files dialog box opens.
4. Select a scene.
5. Click Open.
6. Select the action to be triggered from the On Action Name menu.

⧉ *The Off Action applies to External GPI setup only.*

7. Choose the port number and select Enable to have DekoCast Central start listening for commands on this port.
8. Click Apply.
9. Repeat these steps to configure a second GPI.

To remove a configured GPI:

▶ Select a configured GPI from the list and click the Remove button.

To save a group of GPIs:

▶ Click Save GPI Group.

   The group is saved as an .ini file in the DekoCast Central application directory.

To load a saved GPI Group:

▶ Click Load GPI Group and select the saved group.

Configuring External GPIs (RS-232 GPI Box)

The steps for configuring external GPIs are the same as those for configuring local GPIs except that you can associate a GPI with both an on action and an off action.

An external GPI can be triggered by any device that sends an ASCII code to trigger the GPI. Up to ten GPIs can be triggered using a three-character ASCII string, which is defined as an asterisk followed by two digits for the GPI number (for example, "*01", "*02",…,"*10").

To purchase an external RS-232 box with ten additional GPIs from Avid, contact your Avid Sales Representative.

Burst™ Electronics sells a GPI to RS-232 Converter device, the GPI-10, that converts a contact closure into these ASCII commands. DekoCast Central supports GPI On and Off using the GPI-10 firmware version I-96 on external GPIs. See the Burst Electronics Web site for more details: www.burstelectronics.com.

Logging DekoCast Central Events

DekoCast Central can log events that you select in the Logging tab: data streams (GPI and Triple i commands), system errors, all actions played in the GUI, and service messages.

To specify which events DekoCast saves to log files:

1. Do one of the following:

   ▶ Select Configure from the Automatic Control Interface's menu bar.

   ▶ Select View > Configure from the GUI window's menu bar.

2. Click the Logging tab.

3. Select any of the activities other than service messages.

Do not select Service Messages unless directed to do so by Avid Technology, Broadcast Support.

To view log files:

1. From the Automation Control Interface select View > Log Files.

2. From the Open Log File dialog box, select a .log file and click Open.

Automation Control Interface

The Automation Control Interface window is divided into two areas. The top section of the window displays the communications received and sent on automation ports (incoming and outgoing automation or GPI commands). You can select a font and style for this text.

To change the font style:

1. Select File > Change Font.

2. In the Font dialog box, choose any font, font style, size, color, and so forth.

To clear all of the text from the display window:

▶ Select File > Clear Display.

The lower section of the ACI window provides the following information:

• Datastream/GPI Port settings and status.

• The name of the current scene and the last action played.

Viewing DekoCast Central Resources

A complete description of resources is available through the DekoCast Central Resources dialog box. The amount of free video memory and the number of free codecs are shown, as well as the video standard (NTSC or PAL) and the total number of scenes opened in the application engine.

Each scene that DekoCast Central has open is associated with its owner, which can be one of the following:

• A preview or current scene associated with Triple i or the GUI.

  A Preview scene is rendered into a preview buffer before it becomes the current scene.

• Local or External GPI.

• *Other* or *Unknown owner* refers to another client application that has one or more scenes open of which DekoCast Central is not aware, such as third-party applications that use the application engine.

The Draw column shows which scene is currently being processed, and Stack number shows the order of processing (higher numbers are processed first).

To view DekoCast Central resources:

▶ Select View > Resources.

To view the DekoCast Central version number:

▶ Select Help > About.

Using the Asset Viewer Utility

The Asset Viewer is a utility for Avid Service use. Use it when requested by Avid Service.

To open the Asset Viewer utility, do one of the following:

▶ In the GUI, select View > Asset Viewer.

▶ In the Automation Control Interface, select Tool > Asset Viewer.

Viewing Automation Notes

Automation notes provide setup and other information about working with automation systems.

To view automation notes:

▶ Select View > Automation Notes.

Ports for Automation Control

The DekoCast system includes one or more COM ports for sending XML commands directly to the DekoCast application, For information about user-written programs that send commands to DekoCast using the XML command set, see the *Rocket Engine BCI XML Bytestream Command Interface,* which is available in PDF format from the Avid Customer Support Knowledge Base (www.avid.com/onlinesupport). Search for "XML Bytestream."

You can configure the COM ports to work with DekoCast Central and an external automation system. To trigger a scene or action, DekoCast Central accepts Triple i commands or GPIs. GPIs can be triggered only on an RS-232 port. Triple i commands can be sent on either an RS-232 or RS-422 port. See "Configuring DekoCast Central for Automation" on page 355.

📖 *To determine your system's port configuration, see the* Avid On-Air-Graphics Setup and Configuration Guide *and the back panel of your DekoCast machine.*

Triple i Command Formats

You can use commands to specify the default scene directory, write to the automation data file, open the scene file, and trigger the action. DekoCast Central supports a subset of the Triple i command set: the M, W, and Y commands. The M command specifies the directory in which scenes are located. The W command writes text data to a layer within a Deko file. The Y command specifies which action within a scene to play. For a description of the command format for each of the three supported DekoCast Central Triple i commands, see the following sections:

- The M Command
- The W Command
- The Y Command

The M Command

The M command, which sets the scene directory, has the following format:

```
M\Drive_letter/FolderName\\CheckSum<CR><LF>
```

where <CR> adds a carriage return and <LF> a line feed to advance to the next line.

Specify the Drive_Letter without a colon (:). The directory name is preceded by the forward slash (/) rather than the back slash (\). To specify subdirectories, type a forward slash between each subdirectory's name. The checksum is an optional field, which is validated.

The following M command instructs DekoCast Central to search the D:\Scenes\Squeezes directory for any DekoCast scenes:

```
M\D/Scenes/Squeezes\\<CR><LF>
```

If no M command is sent, the Triple i class sets the default scene directory to C:\temp.

You can set the default scene directory using the Data Streams tab of the DekoCast Central's Configuration dialog box if your host system does not support the M command.

The W Command

The W command, which writes text data to a layer within a Deko file, has the following format:

```
W\NewFileName\TemplateName\layer 1 text\...
\layer n text\\CheckSum<CR><LF>
```

The NewFileName field specifies the name of a file to be created, which is named *NewFileName* and has the extension .atx. This new file contains the exact string sent in the W command. The checksum is an optional field, which is validated.

For example, the following W command creates a file named NewFileName.atx:

```
W\NewFileName\TemplateName\Layer 1 Text\Layer 2 Text\\
```

If you open this file with Notepad, it contains the single line:

```
W\NewFileName\TemplateName\Layer 1 Text\Layer 2 Text\\
```

To update Deko text layers:

1. Create a Deko template named TemplateName.dko that has two *replaceable* layers.

2. Add a Deko object to your scene and link it to NewFileName.atx.

3. Create an action in your scene that updates the file-name parameter of the Deko object.

When DekoCast Central receives the W command, it creates a new .atx file. When DekoCast Central receives a Y command, it plays the action that updates the file-name parameters of the Deko object, which results in the display of the new data.

The Y Command

The Y command, which specifies which action within a scene to play, has the following format:

```
Y\SceneAction<F8>\\CheckSum<CR><LF>
```

where:

-     <F8> is the hex value F8.
-     *SceneAction* is a sequence of characters parsed according to the rules set up in the configuration.

You can indicate whether the last one, two, or three characters of the string specifies the action's name. The remaining characters at the beginning of the string specify the scene name. The checksum is an optional field, which is validated.

In the following example, the last three characters *ABC* define the action name. The command is parsed such that the scene is named SceneName.dkx, and the action ABC within that scene is played.

```
Y\SceneNameABC<F8>\<CR><LF>
```

If there is an action within the scene whose name ends in these three characters, it is played. Should there be multiple actions whose names end with ABC, only the first such action is played.

Different scene and action names based on the length of the last characters or digits are described in the following table. For example, if the last two characters define the action, and the command is `Y\1234<f8>\\<CR><LF>`, the Scene is named 12.dkx and the action could be named, Action 34, Squeeze 34, Roll Clip 34, and so on.

Command Received	Last Char. or Digit Defines Action	Last 2 Chars. or Digits Define Action	Last 3 Chars. or Digits Define Actions
Y\1234<F8>\\<CR><LF>	Scene = 123.dkx	Scene=12.dkx	Scene=1.dkx
	Action = [any text]4	Action=[any text]34	Action=[any text]234
Y\SceneA<F8>\\<CR><LF>	Scene = Scene.dkx	Scene=Scen.dkx	Scene=Sce.dkx
	Action = [any text]A	Action=[any text]eA	Action=[any text]neA
Y\1234<F8>\\<CR><LF>	Scene = 123.dkx	Scene=12.dkx	Scene=1.dkx
	Action = [any text]4	Action=[any text]34	Action=[any text]234

Some automation systems send Y commands in a form that emulates a Chyron keyboard command, which DekoCast Central interprets in the same manner. For example, instead of sending the `Y\1234<F8>\\<CR><LF>`, the command could be sent as `Y\<C1><C2><C3><C4><F8>\\<CR><LF>`.

To execute a single action:

▶ Send the Y command with a scene name in which only the last character defines the action number.

For example, sending the command `Y\2001<F8>\\` loads scene 200 and plays the action named Action 1.

Using Command Queues

Command queues allow for a fixed length timing of commands between the time they are received by the serial port and the time they are executed either for Triple i or GPI.

The only Triple i command this is affected by is the SWAP command. The SWAP command is the triggering mechanism that initiates a scene on air or an action to play. Some scenes have hundreds of actions and the lookup for these varies in time. This feature allows for a constant time.

To set a command delay for the SWAP command:

1. Do one of the following:

   ▶ Select Configure from the Automatic Control Interface's menu bar.

   ▶ Select View > Configure from the GUI window's menu bar.

2. Click the Data Streams tab.

3. Type the timing (in fields) in the Swap Command Delay text box.

Swap Command
Delay text box. ⎯

To set a command delay for GPI:

1. Click the GPI's tab.

2. Type the timing (in fields) in the GPI Command Delay text box.

GPI Command
Delay text box

Defining House IDs

You can configure a Lookup Table that maps multiple actions in a DekoCast scene to a single House ID. The Lookup Table also allows you to override the values of specified object parameters in the scene. For example, you might define a House ID "scene" named 1234 that plays three actions (LogoOn, TimeOn, and TemperatureOn) and changes the Station Logo object parameter's file name from D:\Logos\Evening.dko to D:\Logos\Morning.dko. When Scene 1234 is called, it plays these three actions, and the Station Logo object reflects the contents of the Morning.dko file. You can use the DekoCast Central Playback Controller to schedule the playback of House IDs by time of day.

House ID "scenes" can also be played from the DekoCast Central GUI. When you assign a scene associated with a House ID to a Scene button, the *description* assigned to a House ID is mapped to an Action button.

The Lookup Table accepts DKX files only. Convert any of the older DKC scene files to DKX by opening them and saving them as DKX files before using them as House ID source files. See "Scene Files" on page 40.

Playing Multiple Actions

To configure a House ID Lookup Table to play multiple actions:

1. From the Automation Control Interface, select View > Lookup Table.

2. Click New House ID, type a number or name of your choosing in the text box, and then click OK.

3. Enter a description for the House ID in the text box and click OK.

   This description is mapped to the Action button in the DekoCast Central GUI.

To avoid having two Action buttons with the same name, the House ID description should not duplicate any other action name in the scene.

4. In the Maps to Scene Name text box, do one of the following:

   ▶ Type the complete path to the scene with the desired actions to map or parameter values to be overridden when this House ID is played.

   ▶ Click Browse and navigate to this scene.

5. To add actions from the scene to the Available Actions list, do one of the following:

   ▶ If the scene is a DKX file, you can click the Import button to import all actions from the scene with a description that is the scene name. Click Modify to edit this description.

   ▶ For individual actions or non-DKX files, click Add Available Action, type the action name, and then click OK. Type a description and click OK.

6. Move Available Actions from the list to the Plays Actions list on the left by selecting one action at a time and clicking the Move (< < <) button.

7. To save this set of actions for this House ID, click Save House ID.

To modify a saved House ID:

1. Select the House ID from the House ID menu.

2. Make your edits and save the House ID.

To delete a House ID:

▶ Select the ID from the menu and click Remove House ID.

House ID Files

House IDs are saved in an XML file named LookupTable.xml in the DekoCast Central directory. You can distribute the XML file to any DekoCast system. If this file is modified through the Lookup Table dialog box, DekoCast Central automatically reloads the file. This means that House ID updates can be made from another location.

If the XML file has been modified, click the Reload Lookup Tables from Disk button to update the House IDs in the Lookup Table.

Overriding Object Parameter Values

You can also configure the Lookup Table so that the value for an object parameter in a DKX scene file is overridden with a value you specify when the House ID is played.

To view a scene's object parameter values:

1. Open the DekoCast application.

2. Open the DKX file whose object parameters are to be overridden.

3. Select the scene in the Scenes pane.

4. Click the Parameters tab in the upper-right of the DekoCast window.

5. Select Object as the only type of parameter to display in the list.

6. Scroll through the listing to view the current values for each object parameter.

7. Use the Lookup Table in DekoCast Central to modify values.

To override object parameters for a DKX scene file:

1. In DekoCast Central, click the Import button in the Lookup Table dialog box to open the Object Override dialog box.

2. Select the object from the Objects menu. The object's parameters are listed.

3. Select an object parameter whose value you want overridden when this House ID is played.

4. Edit the new parameter value in the Object Parameter Value text box and a description in the Description text box. Click Modify to edit this description.

5. Click Apply to add the object with the new parameter to the Available Object Parameter Overrides list.

6. Add any other parameters that you want to make available to be overridden for this House ID, either by you or another user who modifies this House ID.

7. Move the Available Parameters to the Override Parameters list on the left by selecting one action at a time and clicking the Move (< < <) button.

8. To save your changes for this House ID, click Save House ID.

To add available objects to the list manually:

1. Click the Add Available Override button.

2. In the dialog box that opens, type the object name in the text box and click OK.

3. Type the name of the parameter for the object to be overridden and click OK.

4. Type the parameter value in the text box and click OK.

5. Add any other parameters that you want to make available for overriding when this House ID is played.

6. Move the Available Parameters to the Override Parameters list on the left by selecting one action at a time and clicking the Move (< < <) button.

7. To save your changes for this House ID, click Save House ID.

To modify an action or object parameter description:

1. Select the action or parameter from the Available list and click the Modify button.

2. Edit the description.

Working with the Playback Controller

The DekoCast Central Playback Controller provides time-of-day automatic playback of House IDs (events), or you can control playback manually.

To open the Playback Controller:

▶ Select View > Playback Controller from either DekoCast Central interface.

The Playback Controller opens in manual mode.

To exit the Playback Controller:

▶ Select File > Exit.

To add an event to the playlist:

1. Select Event > Add Event.

2. In the Add Event dialog box, select the month and year from the menus, and click the day on the calendar.

3. Select the hour, minute, and second for the event to be triggered.

Make Option ──── Make Option

Copy Events/Increment hit time

4. Select a House ID from the menu.

5. Type a description for the House ID.

6. Click Apply to add the event to the list of events.

   Events are inserted into the playlist and sorted by the number of times played.

7. Enter as many events as appropriate.

   These events are added to the playlist.

8. Click Apply.

You can create one or more copies of an event and increment the hit time for playout of a succession of the same event by a specified time.

To schedule a copy of an event for incremental playout:

1. Select the Make option in the Add Event dialog box.

2. Select the number of copies.

3. Select to increment each hit time from 1 to 30.

   You can also type a number for the hit time.

4. Select either seconds, minutes, hours, or days.

To delete an event:

1. Select the event in the playlist.

2. Select Event > Delete Event.

To modify an event:

1. Select the event in the playlist.

2. Select Event > Modify Event.

To save a playlist:

▶   Select File > Save Playlist.

Playlists are saved as .bin files.

Playing Events

The playlist must be enabled (activated) in order to play events.

To activate the playlist, do one of the following:

▶   Select File > Open Playlist.

▶   Press F1.

The Playback Controller status is Playlist Active. The playlist searches for the next event based on its assigned playback time (hit time). When the Hit Time for an item turns light blue, its associated House ID is the next event to be triggered. After an event is played, its status changes to Complete, and the next event in the list is cued. The cue time is 10 seconds.

📄   *The Playback Controller cannot advance to the next event in the playlist until the previous action is complete. Looping actions halt the execution of subsequent events.*

When the Playback Controller is in manual mode, you can play events manually. Disable the playlist to return to manual mode.

To disable (deactivate) the playlist, do one of the following:

▶ Select Disable Playlist.

▶ Press F2.

To play events manually, do one of the following:

▶ With the Playback Controller in manual mode, select one of the following:

- Event > Cue

- Event > Play

▶ Right-click an event name and select Cue or Play.

Copying Today's Playlist to Tomorrow's List

You can set up a playlist of events for today that you would also like to play tomorrow.

To copy events for today's playlist to a playlist for tomorrow:

▶ Select Event > Copy selected, Add 1 day, and Paste.

This action copies all the selected events, increments the day by one day and adds the new events to the playlist.

Working with the Graphical User Interface

You can use DekoCast Central's Graphical User Interface to control the playout of actions and to change the text values of Deko layers. You can import as many as fifteen DekoCast scenes, which are organized in sets of five under three Preset Scene tabs. After you assign scenes to buttons, the Preset Scenes appear in the same configuration whenever you open DekoCast Central. If you save this configuration, you can work with the same scenes and presets on different DekoCast systems.

If you import a scene into the GUI that is defined in a House ID, the House ID is added as an Action button. See "House ID Files" on page 372.

To open the Graphical User Interface:

▶ From the menu bar, select View > Graphical User Interface.

The Graphical User Interface window has a set of Scene buttons, and each button can be assigned, or mapped to a scene. Each of the scene's actions is mapped to an Action button. When you select a Scene button, it turns red and its Action buttons are displayed. You can trigger one or more actions simultaneously.

The Channel options below each Scene button allow you to force a scene to output to a channel other than the channel for which the scene was designed.

⚠️ **If any button on the Graphical User Interface is colored yellow instead of green or gray, something is wrong. Immediately close all scenes and then close and restart DekoCast Central. A yellow button indicts an immediate application failure.**

Setting the Size of Action Buttons

You can set the size of the Action buttons that are displayed in the GUI. The size determines the number of buttons that are displayed. The default size is Large, which displays 15 buttons.

To set the size of the Action buttons:

1. From the menu bar, select View > Graphical User Interface.

2. Select Action Buttons > Size > *size*.

Setting Up Scenes in the GUI

You need to assign scenes to buttons. You can also organize scenes by Preset tabs.

To assign a scene to a button:

1. From the menu bar, select View > Graphical User Interface.

2. Do one of the following:

   ‣ Right-click the Scene button and select Assign Scene.

   ‣ Select Preset Scenes > Assign Scene

The Scene button shortcut menu and the Preset Scenes menus have the same commands.

3. Select the scene from the Assign DekoCast Scene files dialog box.

DekoCast Central supports DekoCast DKX and the older DKC files.

After assignment, the scene button is labeled with the scene name. You can add additional scenes in the same way, mapping as many scenes to buttons as there are buttons (15 total). Scene buttons are organized by tabs named Preset Scenes 1-5, Preset Scenes 5-10, and Preset Scenes 10-15 whose names you can change. A tab can contain one-to-five assigned scenes.

Presets enable you to group scenes. By default, scenes are assigned to the same presets whenever you open DekoCast Central on the same system (unless a scene has been removed). You do not need to save presets unless you want to use the same scenes and presets on a different system.

To save preset scenes:

1. Assign scenes to buttons in one or more Preset Scene tabs.

2. Select File > Save Preset Group.

   DekoCast Central saves all assigned scenes as they are configured in the Present Scenes tabs, even if one tab is not completely filled and another tab has only one assigned scene. The group is saved as a .psg file.

3. Open this group from another DekoCast system by choosing File > Open Preset Group.

4. The Open Preset Group dialog box opens.

5. Select the file.

To rename a tab:

‣ Right-click a button in the tab and select Rename Current tab from the menu.

To remove a button's scene assignment:

▶ Right-click the button and select Remove Assigned Scene from the menu.

To remove all scenes from the currently selected Preset Scenes tab:

▶ Select Preset Scenes > Remove All Scenes.

Working with Actions in the GUI

In addition to triggering an action by itself or triggering multiple actions simultaneously, you can change the duration (in seconds) of an action, and rename Action buttons.

To trigger an action:

1. From the menu bar, select View > Graphical User Interface.

2. Click the Scene button for the scene whose actions you want to play.

   The Scene button turns red when activated. An Action button is created for each action in the scene. If there are no actions in the scene, no buttons are changed and the Action tab reads No Actions.

3. Click the Action button.

A scene can have an unlimited number of actions. There are fifteen buttons for actions per Action tab. If there are more than fifteen actions in the scene, select an Action tab at the top of the window to display the next set of buttons.

To trigger multiple actions simultaneously:

▶ Hold down the Ctrl key and select the actions by clicking their buttons, then release the Ctrl key.

To change the duration of an action:

1. Right-click the action and select Edit Duration.

2. Type the new duration in seconds in the dialog box and click OK.

To rename an action:

1. Right-click the Action button and select Rename Button.

   The Add New Caption dialog box opens.

2. Type the new name and click the close button.

   If you close the dialog box without typing a name, the button has no name.

To view recent actions:

▶ Select Window > Recent Actions List.

A text file opens in Notepad that shows the time, complete path of a DekoCast file, and the name of recent actions.

Prestarting, Starting, and Exiting Actions

Default actions apply to scenes initialized in the DekoCast Central GUI. If you define a default Start action, DekoCast Central executes it whenever the scene is loaded. If you define a default Exit action, that action plays before the scene closes. You can also define a Prestart action to set the scene is to a certain state before it displays.

To define a default Start and Exit Action:

1. From the menu bar, select View > Graphical User Interface.

2. Select View > Default Actions.

3. Type the name for the Start and Exit actions and click OK.

The names you have chosen appear as the Start/Resume action name and the Stop/Pause action name in the Aut File Sequencer utility. See "Using the Aut File Sequencer Utility" on page 393.

To define a Prestart Action:

▶ Define a Start action, such as *Squeezeback*, and define another action of the same name except that it begins with a period (.); for example, *.Squeezeback*.

The Prestart action plays before the scene is displayed (before the Scene's draw parameter is set to 1). The Start action plays after the scene is visible.

Changing a Deko Object's Text Value

You can overwrite a Deko object's current text value and have the new value display to video output immediately. This change is for one instance only. For example, if you change the text in a Deko object crawl, the change is in effect for a single crawl. The subsequent crawl reverts to the saved value.

To override a Deko object's text value:

1. From the menu bar, select View > Graphical User Interface.

2. Select the Deko object from the Deko Objects menu in the lower-left corner of the GUI window.

The current value for the Deko object's text is displayed in the text window.

Text window

3. Edit the text.

4. Click the Apply New Value button.

DekoCast Central Utilities

You can open the following DekoCast Central utilities by selecting them from the Automation Control Interface's Tool menu:

- Sequencer Control
- Deko Page Recall
- Temperature Probe Interface
- Aut File Sequencer

Using the Sequencer Control Utility

The Sequencer Control utility allows you to play Sequence files (.rks) files, which you build using the Sequence program. Use the top row of buttons to create and refine your playlist. Use the lower row of buttons to control the playout of Sequence files.

To open the Sequencer Control utility:

▶ In the Automation Control Interface, select Tool > Sequencer Control.

Playlist

Play control buttons

Currently playing
Sequence Item

To add Sequence files to the playlist:

▶ Click Add Sequence button, select the RKS file from the Open dialog box, and click Open.

To remove a Sequence file from the playlist:

▶ Select the file in the playlist and click Remove Selected.

To remove all Sequence files from the playlist:

▶ Click Clean Scenes.

The Item box in the Status pane shows the currently playing Sequence item number.

To play all of the files in the playlist:

▶ Select "Cycle through list of sequences."

To play selected files in the playlist continuously:

1. Select one or more files in the playlist.

2. Select "Loop currently selected option."

To stop the playout of Sequence files:

▶ Click the Stop button.

To control the playout of Sequence files (.rks files) via external GPIs:

▶ Select the option "Enable GPI control for lower set of buttons."

The GPIs are mapped to the control buttons as follows:

GPI 1=Play

GPI 2=Pause

GPI 3=Step

GPI 4=Rewind (Home)

Using the Deko Page Recall Utility

The Deko Page Recall utility allows you to operate DekoCast as if it were a page-based CG. You can open a file to serve as a cut effect or as a dissolve effect. The application creates a scene with one Deko object and sets the file-name parameter of the object to the name of the opened file.

To open the Deko Page Recall utility:

▶ In the Automation Control Interface, select Tool > Deko Page Recall.

To open a file for a cut effect:

1. Select File > Open File as Cut Effect (F9).

   The Open Deko File dialog box opens.

2. Select the file and click Open.

To open a file for a dissolve effect:

1. Select File > Open File as Dissolve Effect (F11).

   The Open Deko File dialog box opens.

2. Select the file and click Open.

To clear the screen, do one of the following:

▶   Select File > Screen Cut Effect (F7).

▶   Select File > Clear Screen Dissolve Effect (F8).

Using the Temperature Probe Interface Utility

The Temperature Probe Interface utility enables the outside temperature to be displayed on the video output. You need to purchase a temperature probe and attach it outdoors; typically the probe is placed on a building's roof. The probe connects to the DekoCast system through an RS-232 COM port. The Temperature Probe Interface saves the data as a text file (TXT) in a directory that you specify.

When a scene with a linked temperature is active, the temperature automatically displays. The Temperature text file can be linked to any Deko object in a scene that has text layer. When the Temperature Probe Interface saves the temperature to a text file, it also queries all open scenes in DekoCast. If it finds a Deko object whose name is "Temperature," it sets the text override parameter value to the new temperature value.

This utility requires a temperature probe. The Temperature Probe Interface Utility supports two models of temperature probe:

•   DGH D1331, manufactured by DGH Corporation. For more information, see their Web site www.dghcorp.com.

•   Sensatronics™ Series E and F, manufactured by Sensatronics. For more information, see their Web site www.sensatronics.com.

Configuring the DGH Temperature Probe

To open the DGH temperature probe interface:

▶ In the Automation Control Interface, select Tool > Temperature Probe Interface > DGH D1331 Series.

The DGH D1331 Interface window opens.

DGH D1331 Interface

To configure the COM port:

1. Select Settings from the menu.

   The Communication Settings dialog box opens.

Enter complete path for
Temperature.txt file.

2. Set the Baud rate.

3. Set the Data Bits, Stop Bits, Echo, and Parity.

   By default, the settings are Data Bits = 8; Stop Bits = 1; Echo = Off; and Parity = None.

4. Set the COM port for the probe communication.

5. Set the Flow Control to the default value None.

6. Type the complete path for the Temperature.txt file in the Text File Location text box.

7. Type the Response Delay time in milliseconds.

   After the Probe command is sent to the probe requesting the temperature, you can set a delay time that instructs the probe to respond a specified number of milliseconds after it receives the command. The delay/response time depends on the length of the cable.

8. Click OK.

Use the DGH D1331 Interface to set up and start the temperature probe.

To set up and start the Temperature Probe:

1. In the Temperature Probe Interface utility, select either Fahrenheit or Celsius by clicking the appropriate button.

2. Enter the rate that you want the temperature to be updated (in minutes/seconds).

3. Click Send.

The Probe command is the command sent to the probe to ask for the temperature. See your probe's documentation for command information.

Configuring the Sensatronics Temperature Probe

To configure the Sensatronics temperature probe interface:

1. In the Automation Control Interface, select Tool > Temperature Probe Interface > Sensatronics Series E and F.

   The Temperature Probe Interface window opens.

2. Complete the configuration as described in the following table.

Temperature Probe Interface Configuration Options

Option	Description
Connection section	Options for connecting the probe.
TCP/IP	The IP address of the Sensatronics module.
Port	The module port for the probe. The default is port 80.
Page to receive	The page sent from the module. For temperature only data use "temp" in lower case.
Save Data section	Options for what to do with the raw data retrieved by the probe.
Store Raw Data	Stores data in the application's subdirectory `Data` in a file named `RawData.txt`. This is useful to those macro users who want to parse this data manually.
	The following is an example of the raw data.
	`Probe 1| 71.3|Probe 2|34.5|Probe 3| 77.0|Probe 4| 52.3`
Update Frequency	Specifies how often to update the data.
All Probes' Data in Single File	Stores data for each of the 4 probes in a single text file on separate lines. This is useful for DekoCast to allow for cycling the data. Set the Text File parameter of a Deko object to this file and you can cycle the data. This data is stored in the application's subdirectory `Data` in a file named `ProbeData.txt`.
	See the example at the end of this topic.
Each Probe's Data in Separate Files	Stores data for each of the 4 probes into separate text and macro files. This data is stored in the application's subdirectory `Data` in files named by the probe's names, for example: `Probe 1.txt` and `Probe 1.mcr`.
	Macro files are created so that Deko users can use them immediately. Set a Deko Layer to Macro and set the Macro text box to this file name. If the Probe name has spaces in it, they will be removed from the macro file name.
	The following Deko Macro can also be used to read the text file. Put this macro in the Macro text box
	`return (readtext "Probe 1.txt` `"E:\Sensatronics.Temperature.probe\Data")`

Temperature Probe Interface Configuration Options

Option	Description
Deko Global Variable	Use this setting ONLY if the Temperature Probe module is running on the Deko machine. If so, this is the preferred method for displaying the data. Using this setting allows the Temperature Probe module to create native Deko global variables so the probe data can be displayed without having to save any data to disk. The variable names are $PROBE1,$PROBE2, $PROBE3, and $PROBE4. Set the Deko layer to Macro and set the Macro text box to "return $PROBE1.
Round Decimals	Rounds numerical data to decimal values. When the fractional part is exactly 0.5, the application rounds it to the nearest even number. For example, 0.5 rounds to 0, and 1.5 rounds to 2.
Include Probe Name	Includes the probe's name in all return values. If your probe name is "Springfield," the return data might be `Springfield 76`.
Append Degree Symbol	Adds the degree symbol in all return values. The return data might be `Springfield 76`$^{\circ}$.
Log Events	Copies all the data from the log window into a text file. Files are saved for 14 days.
Log Errors	Copies any errors reported by the application into an error file. Select this option only if you experience any issues or problems.

3. Click Apply to accept the settings.

4. Click Send to send the Probe command to the probe to ask for the temperature.

5. Click OK to close the window.

Example

The following illustration shows a Deko object named Temperature Probe. In this example, data from four probes are stored in a single text file (ProbeData.txt) and can be cycled on separate lines.

Using the Aut File Sequencer Utility

You can use the Aut File Sequencer utility to cycle .aut or .atx automation files (an .atx file is the text version of a binary .aut file). If your automation system constantly sends W commands to DekoCast Central, this utility enables DekoCast Central to write and store the automation files locally and to update text layers for Deko objects. You can then play these files with the updated layer text to air whenever you choose. You might use this utility to display lower-third sports scores.

The W command writes text data to a layer within a Deko file. See "The W Command" on page 364.

The Aut File Sequencer dialog box has two parts. The left side allows you to set up and control the playback of automation files. The right side allows you to select layers that are to be replaced with text specified by the W command.

Move button

To set up the automation files:

1. In the Automation Control Interface, select Tool > Aut File Sequencer.

2. Click Set Directory and select the directory location of the automation (.aut or .atx) files.

   The individual automation files are added to the Automation Files list.

3. Select a file and click the Move (>>) button to add the file to the Files Dated Today list.

   Files dated today are files for the current day. For example, if the directory contains .atx files of sports scores from yesterday and today, you can choose to air only today's files.

4. Select "Poll for new files" to have DekoCast check for new automation files and add them to the Automation files list.

5. Click the "Set DekoCast Scene and Deko object" button and select the scene with the Deko object whose text layer is to be updated.

6. From the "Select the DekoCast Deko object" list, select the object whose layer is to be replaced with the text specified in the W command.

7. Type the number of Seconds between pages, which is the time in seconds that a page displays on air before it is replaced by another page.

   For example, if you are cycling sports scores, specify how long you want each score to remain on air.

8. Type the number of Cycles, which is the number of times to play each file in the list (one is the default).

9. Type the Start/Resume action name and the Stop/Pause action name (as set in DekoCast Central).

   The names you have chosen appear as the Start/Resume action name and the Stop/Pause action name in the Aut File Sequencer utility. See "Working with Actions in the GUI" on page 381.

To control playback of the automation files:

▶ Click buttons in the Playback Controller pane to start, pause, resume, and stop the playout of the automation files.

To delete files from the automation list:

▶ Select the file and click Remove.

   Click the Refresh button to update the listing.

Using the Emergency Alert System Interface

The DekoCast Emergency Alert System (EAS) module provides an interface for EAS encoders and lets you create scenes to display EAS messages in different formats. The DekoCast EAS interface is designed for encoders that use the TFT EAS 911 interface.

You can design message-specific scenes, based on the EAS event code. For example, if you want to create a scene for "Blizzard" (event code BZQ) you can link the message with a scene composed of clips and graphics that depict blizzard conditions.

Creating an EAS Scene

Use the EAS interface to link a DekoCast scene that you created for a type of EAS event.

Note the following requirements for this scene:

• Use the name of the EAS event code to name your scene. For example, for a blizzard scene, name the scene BZQ.dkx.

• Scenes must be in the default directory: C:\DekoCast\DekoCastCentral\EASScenes\

• All EAS scenes must have a Deko object named EAS.

- The EAS interface uses a default scene named EAS.dkx. You can design this scene with a generic background.

Starting and Configuring the EAS Interface.

To open the EAS interface:

▶ Select View > Emergency Alert System Interface.

The EAS window opens.

To configure DekoCast for EAS:

1. Click Settings in the EAS window menu bar.

   The EAS Configuration dialog box opens.

2. Select Enable EAS to open the serial port for receiving EAS messages. This setting is persistent: after you select it, it remains set until you deselect it.

3. Complete the configuration as described in the following table.

EAS Interface Configuration Options

Option	Description
Comport Number	Defines the serial port receiving the EAS message. The port settings are 9600, n, 8 and are set by the DekoCast EAS module.
Loop Count	Defines the number of crawl loops.

EAS Interface Configuration Options (Continued)

Option	Description
Scene Name	The default scene name. This entry is not configurable. The EAS module looks for scene names based on the EAS event code. If no scene exists by that name, it defaults to the name defined by the scene name setting. If an EAS message is sent for a "Severe Thunderstorm Warning" event code "SVA," the module looks for a scene by the name of "E:\DekoCastCentral\EASScenes\SVA.dkx." If this scene doesn't exist, it defaults to "E:\DedkoCastcentral\EASScenes\EAS.dkx."
Show EAS scene exclusively	Sets the Show Exclusive parameter of the EAS scene to "1," so that it is displayed on top of all other scenes. All other scenes have their Draw parameter set to "0." When the EAS "End of Message" is received or the "EAS Message Complete Action" is complete, the scene whose Draw parameter was set from 1 to 0 is set back to 1 and the EAS scene is unloaded from the application engine.
	If this option is not checked then all open scenes stay open and their Draw parameter stays as is. The EAS scene is appended to all open scenes. The EAS scene is unloaded when complete.
Scene Text Object Name	The default Deko Object name. This name is not configurable. All EAS scenes must have a Deko object named EAS.
EAS Message Begin Action Name	(Option) Defines a DekoCast action name to execute when an EAS Message is received. For example, use Squeezeback to begin a squeezeback action. This action needs to be in the EAS scene.
EAS Message Complete ActionName	(Option) Defines a DekoCast action name to execute when an EAS Message End-of-Message (EOM) is received. For example, use Bringfull to return video to full screen. This action needs to be in the EAS scene.
During an EAS Transmission	Options to allow during an EAS Transmission.
Allow GPI's	Allows GPI's to be executed during an EAS transmission.

EAS Interface Configuration Options (Continued)

Option	Description
Allow Automation commands to be processed	Allows serial port automation commands to be processed during EAS transmissions. If this option is not selected, commands are received and acknowledgements are sent back to the automation system but the commands are *not* processed.
Allow use of the Graphical User Interface	Allows the use of the DekoCast GUI during EAS transmissions.

4. Click Apply to apply the selected options.

5. Click OK to close the dialog box.

Chapter 8

Using Sequence to Play Back Actions

The Avid Sequence application allows you or an automation system to play sequences of actions from DekoCast scenes without modifying the original scene or actions. A *sequence* is a select list of actions from scenes that is saved as a file in the .rks format. Working with a Sequence file, you can manually execute a single action, automatically play the entire list, and change the timing between actions or the parameter data for an action. To control playback of actions in Sequence files, use tools in the Sequence application or DekoCast Central's Sequence Control utility such as the Play, Pause, and Stop buttons. You can also configure GPI automation in DekoCast Central for playback of actions in Sequence files.

The following topics describe how to use Sequence:

- Starting Sequence
- Creating a Sequence
- Editing Sequence Items
- Editing a Sequence List
- Changing an Action's Timing
- Controlling Playback
- Editing Action Parameters
- Using the Sequence Toolbar

Starting Sequence

To start the Sequence application, do one of the following:

▶   Go to Start > DekoCast > Sequence.

▶   Double-click the Sequence icon on the desktop.

The Sequence window opens. This window contains the menu bar and toolbar for the application.

You can work with multiple Sequence files. Each Sequence file has its own window within the main Sequence window, which is the name of the RKS file.

When a window is active, its RKS file name appears in the main window's title bar. The Status Bar displays brief descriptions of the tools and menu items as you move the pointer over them.

When working with multiple Sequence files, there are two Windows commands that help you organize windows:

•   When you copy and paste among multiple Sequence files, you can arrange the windows one above another by selecting Window > Tile.

- If you minimize Sequence files, selecting Window > Arrange Icons places the minimized files into the lower-left corner of the Sequence application window.

For a description of each of the tools in the Sequence toolbar, see "Using the Sequence Toolbar" on page 412.

Creating a Sequence

A Sequence consists of a list of actions that you select from DekoCast scenes and organize for playout. Each action is associated with a single scene. In addition to the actual actions in a scene, there are six special actions in this list that you can add to a Sequence. Four of these have an equivalent View Control tool in the toolbar. See "Using the Sequence Toolbar" on page 412.

Action	Description
Activate Video	Sequence automatically controls the video-out hardware. Same as the manual View Control tool that toggles between Activate and Deactivate.
Deactivate Video	DekoCast automatically controls the video-out hardware. Same as the manual View Control tool that toggles between Activate and Deactivate
Hide Scene	Does not send the actions for this scene in the Sequence list to video output. Same as the manual Hide Scene tool.
Nothing	A Sequence item that has no associated action. You might add Nothing as a Sequence item to add a stop or duration at a point in the Sequence.
Show Only Scene	Specifies that the scene is the only scene that is displayed on video output.
Show Scene	Automatically displays the actions in the Sequence for this scene on video output. Same as the manual Show Scene tool.

To create a new Sequence file, do one of the following:

▶ Select File > New.

▶ Click the New button on the toolbar.

A blank Untitled Sequence window is displayed.

To select a DekoCast scene and add actions to a Sequence:

▶ Do one of the following:

- Select Edit > Add Action.

- Click the Add Action button on the toolbar.

The Add Actions to Sequence dialog box for this Sequence file is displayed.

📄 *Each Sequence file has an associated Add Actions to Sequence dialog box.*

Click Add to select a scene

6. Click the Add button to select a DekoCast scene whose actions you want to add to the Sequence.

   The Open dialog box opens.

7. Select the DKX file and click Open.

📄 *Sequence can open scene files in the older DKC format. Avid recommends that you open DKC files in DekoCast and save them as DKX files (and then delete the source DKC file).*

All of the actions in this scene (and the additional six Sequence-specific actions) are displayed in the Actions pane.

📖 *Actions are displayed by scene. If there are multiple scenes, select the scene whose actions you want to display in the Actions pane.*

Select a scene to display its actions below.

Select an action to adds it to the Sequence file.

8. Click an action to add it to the Sequence list. Select actions one at a time. In most cases, you want to add one of the two actions that allows the scene to be visible on video output: Show Scene or Show Only Scene.

A scene is automatically drawn to video output only if one of its actions in the Sequence list is Show Scene or Show Only Scene. As an alternative, you can manually click the Show Scene button to display the scene.

📖 *Each click adds an action to the Sequence list in the Sequence file. Clicking multiple times adds duplicate actions to the list in the Sequence File window.*

Actions are added to the Sequence File window in the order selected. Subsequently, you can change the order of Sequence items by copying and pasting them.

9. To add actions to a Sequence from another scene, click the Add button and select the DekoCast file.

The actions in the selected scene are added to the Sequence list. The actions for each scene display separately.

10. Select any actions from this scene that you want to add to the Sequence list.

Sequence columns

Sequence actions

Selected action added
to Sequence list.

Editing Sequence Items

You can manually edit any of the columns for a Sequence item in the list other than S and Default. A description of each column follows.

Sequence Items Columns

Column	Description
S (step)	An open arrow (>) indicates the currently playing item.
Num	The number of the items within the list. Edit it to rearrange the position of items.
Description	By default, any parameters set for the action. (Option) Enter a description of the item.
Action	The name of the action. Triple-click an action to open a menu from which you can select another action from the same scene.
Scene	The scene in which the action is a part.
Default	The default duration of the action as specified in the scene.
Override	(Option) A value that changes an action's duration (timing).
Delay	The number of seconds in which the action is to be delayed.

Editing a Sequence List

You can delete, replace, copy, paste, and move items in the Sequence list.

Deleting and Replacing Items

To delete an item from the Sequence, do one of the following:

▶   Select the item from the list and select Edit > Cut.

▶   Select the item and click the Cut button on the toolbar.

To replace an item in the Sequence:

1. Select the item.

2. Double-click its action column.

3. Select another action in the scene from the menu that is displayed.

Select another action

Copying and Pasting Sequence Items

You can cut, copy, and paste items in the Sequence File window. When you move an action, it is automatically renumbered. Copy and Paste is an effective way to reuse actions that are similar but have different parameters. You can also cut, copy, or paste actions from one Sequence file to another.

To move an item to another position in the list, do one of the following:

▸ Select the number in the list and type a new number. The item is moved to that position in the list and the list is renumbered.

▸ Select the item to be moved and click the Copy button. Select the item in the list directly *after* the action to be pasted. Click the Paste tool. The copied item is placed before the selected item, and the list is renumbered.

To remove a scene from the Add Actions to Sequence dialog box:

▸ Select the scene from the Scenes list and click Remove.

Only scenes whose actions are not used in the Sequence file can be removed from the Add Actions to Sequence dialog box.

To save a Sequence file:

1. Click the Save button on the toolbar.

   If the file is new, the Save As dialog box opens.

2. Type a file name and click Save.

Changing an Action's Timing

You can change the duration of an action and specify the delay between two actions.

To change the duration of an action:

1. Click the Sequence item's Override column to display a text box.

2. Type a value (in seconds) in the text box.

   For example, type 3.00 to change the value to 3 seconds. This value overrides the default duration until you select and delete the override value.

To clear the Override field:

▶ Select the value and press the Delete key.

To delay the start of an action:

1. Click the Sequence item's Delay column to display a text box.

2. Type a value (in seconds) for the duration of the delay.

   For example, if Action 3 is a Squeezeback and Action 4 is a Logo Out, entering a delay of 2.00 (two seconds) for Action 3 causes Action 4 to start two seconds after Action 3 triggers.

Controlling Playback

The Sequence application provides Playback Control buttons on the toolbar and Sequence menu commands for controlling the playback of actions.

You can also control the playback of actions in Sequence files through DekoCast Central (using the Sequence Control utility or by configuring GPI automation).

To play the actions in the Sequence:

▶ Click the Play button on the toolbar.

   If no item is selected in the list, the items are played from the first to the last. If an item is selected, playout starts with that item. If looping is not set, the playout stops.

   The currently playing action is indicated by an open arrow (>) in the Step column.

> = currently playing action

S	Num	Description	Action	Scene	Default	Override	Delay
	1		Activate Video	2_example_getti...	0.00	1.00	
	2		Crop Video	2_example_getti...	2.00		
>	3		Deactivate Video	2_example_getti...	0.00	3.00	
	4		Full Screen	2_example_getti...	2.00		stop
	5		Hide Scene	2_example_getti...	0.00		0.00
	6		Nothing	2_example_getti...	0.00		
	7		Show Only Scene	2_example_getti...	0.00		
	8		Show Scene	2_example_getti...	0.00		

To pause playout:

▶ Click the Pause button.

To stop the Sequence after an item in the list:

1. Select the last item in the list that you want to play before the stop.

2. Do one of the following:

    ▶ Select Sequence > Set Stop.

    ▶ Click the Stop button on the toolbar.

    The word *stop* is added in the Delay column. The Sequence stops after this item. You can restart the Sequence by clicking the Play button, but the Sequence always stops when it encounters a *stop* in the Delay column.

    Although the Sequence stops, the playout to video does not necessarily stop. For example, if you set a stop at an item whose action plays a looped clip, the clip continues to play until another action stops it.

To remove a stop:

▶ Select the Delay column and delete the word *stop*.

To resume playout:

▶ Click the Play button.

Editing Action Parameters

You can add or modify parameter values for a action within a Sequence. The original action in the scene is unchanged.

To add a parameter value for an action:

1. Select the action and click the Add Parameter tool.

   The Add Parameters to Sequence Item dialog box opens.

Text box

2. Select the parameter from the list.

3. Double-click the Set To column to display a text box.

4. Type the parameter value in the text box.

Some actions, such as those associated with object parameters, can be readily modified. For example, you might edit text strings associated with a parameter, or change the source file for a Cel Animation object.

To modify the parameters for an action:

1. Select the parameter from the list.

2. Double-click the Prompt column to insert a text box.

3. Type the replacement parameter value in the text box.

Using the Sequence Toolbar

The toolbar provides quick, one-click access to common Sequence tools.

To display a brief description of a tool, move the cursor over its button.

| File and Edit Tools | Setup Tools | Playback Tools | View Control Tools |

The following tables describe these tools.

File and Edit Tools

Tool	Description
New	Creates a new Sequence file.
Open	Opens an existing Sequence (.rks) file.
Save	Saves the Sequence file. Prompts for a new file name.
Cut	Places the currently selected action on the Clipboard, removing it from the list.
Copy	Copies the currently selected action to the Clipboard.
Paste	Pastes the most recently cut or copied action from the Clipboard to the Sequence list.

There is no print capability available for this version.

Sequence Setup Tools

Tool	Description
Add Action	Opens the Add Action dialog box and choose a scene from which you can select one or more actions to add to the Sequence.
Add Parameter	Opens the Add Parameter dialog box to add a parameter value.

Playback Control Tools

Tool	Description
Insert Stop	Inserts a Stop into the Sequence after the selected action. (Use the Pause button to pause a playing Sequence.)
Loop	Switches to loop back to the top of the Sequence after playing or stepping through the last action. When the button is selected, looping is on; when not selected, looping is off.
Play	Plays the Sequence, beginning with the selected action.
Pause	Pauses a playing Sequence.
Start of Sequence	Moves the currently playing action to the start of the Sequence.
End of Sequence	Moves the currently playing action to the end of the Sequence.
Step	Steps through one action at a time starting with the currently selected action.

The action that is currently playing has the open arrow (>) next to its number.

View Control Tools

Tool	Description
Show Scene	By default, the actions in the Sequence file display on video output when played.
Hide Scene	Stops display of the Sequence file to video output.
Activate Video Output	Determines whether Sequence or DekoCast controls the video output. Select to have Sequence control the video-out hardware. When the button is not selected, DekoCast controls it.

Appendix A
Configuring DekoCast

Settings in the Preferences dialog box let you configure DekoCast for your installation and requirements. These settings control video hardware parameters, specify XML settings, set applications options such as the level of logging, and define the coordinates for the output frame.

The following topics describe how to configure DekoCast:

* Opening the Preferences Dialog Box
* Video Hardware Options
* XML Configuration
* Application Options
* Output Frame Coordinates
* Transcode and Scene Options

Opening the Preferences Dialog Box

To open the Preferences dialog box:

▶ From the DekoCast menu bar, select Options > Preferences.

The Preferences dialog box has four tabs: Video Hardware Options, XML Configuration, Application (App) Options, and Coordinates.

To save changes you made in the Preferences dialog box:

▶ Click OK to apply any new settings.

If prompted to restart the system after making changes, click OK, and then exit and restart the DekoCast application.

Video Hardware Options

Use the Video Hardware Options tab to configure options for your system's video board (canvas). The type of video board (TARGA or Corsica) is listed near the top of the tab.

Type of video board

The following topics describe options in the two sections of this dialog box:

Video Format Settings

The video format settings in the Video Hardware Options tab determine the expected format of video inputs, outputs, and clip playback files for the video board. Changes to these settings take effect after you restart the application. DekoCast is available in a standard definition model (DekoCast SD), a high-definition model (DekoCast HD) and a hybrid model (DekoCast SD/HD). The options that appear in this tab depend on the model of your system.

The following topics provide information about the video format settings.

Video Standard and Aspect Ratio Options

Your options available for the video standard depend on the model of your DekoCast system. If you have a hybrid system, you can switch between an SD and an HD format. For more information, see .

To set the video standard:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. From the Standard menu, select one of the following:

   - NTSC

   - PAL

   - 720p 59.94

   - 720p 60

   - 1080i 50

   - 1080i 59.94

   - 1080i 60

4. If necessary, select the appropriate aspect ratio.

For SD, you can select 4 x 3 or 16 x 9. HD formats always use 16 x 9.

5. Click OK.

Dolby-E Passthrough Option

If you select Enable from the Dolby-E Passthrough list, all typical audio processing, such as mixer routing and level changes, is disabled. With this option enabled, DekoCast passes through the compressed audio streams unaltered and delayed the same as the video.

For each output port listed in the Hardware Configuration section, select the input port for the compressed audio from the output port's Dolby-E Source menu. No other manipulations of the audio stream are possible in this passthrough mode. When DekoCast is started, audio passthrough occurs immediately and continues until DekoCast is shut down.

If you select Disable, normal audio processing occurs. In normal DekoCast processing, audio is not heard on output unless a scene is created or opened that has a video input object as a child of a video output object. Audio level settings and mixer route settings are applied normally.

To enable Dolby-E passthrough:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. From the Dolby-E Passthrough list, select Enable.

4. For each output port listed in the Hardware Configuration section, select the input port for the audio from the output port's Dolby-E Source menu.

5. Click OK to apply your settings and close the dialog box.

Encode/Decode Option

This option is available only on Corsica-based systems.

A Corsica video board is designed to function with four codec streams. These streams are used by the DekoCast application to encode (capture) and decode (render and play) video media. A Corsica video board can encode up to two independent streams of video (one clip with key or two clips) and can decode a combination of video and key for a total of four streams (for example, one clip with key and two clips without key, or four clips without key). For more information, see "Playing Back Clips" on page 140 and "Capturing Clips" on page 165.

You have three options for assigning these streams:

• 4 *decoders* (streams used for playback)

• 2 *encoders* (streams used for capture)

• 1 encoder, 2 decoders (1 stream for used for capture, 2 streams used for playback)

To set the encoding/decoding option:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. Select the setting you need for your task (playback, capture, or both).

   After you change the encoder/decoder setting, the video board shuts down, the clip and audio capture and playback objects stop, and the video board is reprogrammed with the new configuration. During this process, which takes from 15 to 20 seconds, the OK and Cancel buttons in the dialog box are not available.

4. Click OK.

Hardware Configuration Settings

Hardware configuration settings in the Video Hardware Options tab let you configure input and output ports.

📄 *Enable additional video ports only when necessary. Using video ports consumes a portion of the total pixel-processing power of the system.*

The following topics describe hardware configuration settings:

Video Output Configuration Settings

A DekoCast system has one video output port, Output A, which is always active. You can configure a second video output port (Output B) for upstream mode operation.

To use an output port in upstream mode:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. In the Hardware Configuration section, select Enable for Output B.

Output B set for upstream mode with key

4. Select the As Key option.

5. Click OK.

To view the keyable objects in a DekoCast scene, you have to delete or reduce the size of the Video Input object because its full-screen key obstructs the individual keyable elements in the scene.

Audio Output Configuration Settings

You can enable embedded audio for one output port, Output A. Enable audio output only if you need it because a port with audio enabled consumes audio mixer hardware resources, leaving fewer resources available for voice-overs or audio associated with video clips.

📧 *Disabling audio on Output A disables all audio in DekoCast.*

To enable embedded audio output:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. In the Hardware Configuration section, select the Enable Audio option.

Output A configured for 8 channels of embedded audio

4. From the Embedded Audio Channels list, select the number of audio channels available for the output:

   - DekoCast SD can process up to 8 channels of embedded audio.

   - DekoCast HD can process up to 16 channels of embedded audio.

The number of output channels is always selected in pairs.

5. Click OK.

Changes to these settings do not take effect until you restart DekoCast.

📧 *TARGA-based SD systems support 16-bit audio. Corscia-based SD systems support 20-bit audio, and Corsica-based HD systems support 24-bit audio.*

VBI Source and Extra Lines

You can select the video input source for Vertical Blanking Interval data used with the VBI object (see "Working with VBI Objects" on page 188).

The following table shows which lines of vertical blanking are passed from the selected input to the output for each video standard.

Standard	First Line of VBI	No. of Lines of VBI
NTSC	10	10 per field
PAL	13	10 per field
1080i	6	15 per field
720p	6	20 per frame

The Extra Lines setting, which is used in conjunction with the VBI Source setting, sets the number of additional lines at the top of the visible picture that are to be considered part of the VBI data. These lines are copied from the VBI source and protected from modification resulting from DVEs and overlaid graphics. The setting selects from 0 to 10 lines per field.

📧 *Enable the VBI Source and Extra Lines options only when necessary. Each of these consumes a portion of the total pixel processing power of the system.*

To enable VBI preservation:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. In the Hardware Configuration section, select the input port from the VBI source list: Video In A or Video In B.

VBI source selected with 3 extra lines

4. From the Extra lines list, select the number of extra lines to be passed to output.

5. Click OK.

Changes to these settings do not take effect until you restart DekoCast.

Horizontal Delay

By adjusting the Horizontal Delay thumbwheels, you can set the video output horizontal timing delay relative to the current reference. Units are in pixel components. If an analog video or black burst signal is present on the reference port, it is used as the system timing reference. If neither is present, the first video input port is used. The setting can be positive for delay and negative for advance to reference. For example, a setting of 4 delays the output four components, or two pixels relative to reference.

To set the video output horizontal timing delay:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. In the Hardware Configuration section, click and drag the Horizontal Delay thumbwheel for the appropriate output port. Units are in pixel components.

Horizontal timing delay set for 4 pixel components

4. Click OK.

Changes made to this setting take effect immediately.

Video Input Configuration

A DekoCast system has two video input ports. Video Input A is enabled by default. Input B can be enabled as a second video in, or set as key.

To enable a second video input port:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. In the Hardware Configuration section, select the Enable option for Input B.

Input B enabled as key

4. (Option) Select the As Key option.

5. Click OK.

Audio Source Configuration

You can enable audio input for Input A or Input B. Depending on your system, you can also select the audio mode.

• On a DekoCast SD system, only SDI audio is available (Audio Mode is dimmed).

• On a DekoCast HD system, the Audio Mode menu lets you choose either SDI or AES.

A DekoCast HD system might include a special board that includes two AES input connectors. Each connector carries a stereo pair. Each Video Input object in DekoCast has associated audio controls and when in AES mode, the Video Input objects obtain their audio from the AES connectors. Both video input ports obtain the same audio from these AES connectors. That is, they both obtain channels of audio from AES ports 1/ 2 and 3/ 4.

When Dolby-E passthrough is enabled, you can select SDI or AES input. See "Dolby-E Passthrough Option" on page 418.

To enable audio input:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. In the Hardware Configuration section, select the Enable Audio option for Input A or Input B.

Input A enabled for audio

	Enable		Enable Audio		
		As Key		Shape Input	Audio Mode
Input A			☑	☐	
					SDI ▼
Input B	☑	☐	☐		

4. (DekoCast HD only) Select the Audio Mode: SDI or AES.

5. Click OK.

> *An Audio Input or Output is available only if the corresponding Video Input or Output is enabled.*

Shape Input and Output

Select the Shape Input option for Video Input A or Video Input B signals to have the video multiplied by its key (shaped).

By default, the outputs of the HD video board are *shaped*, which means that the video is multiplied by its key. (Deko graphics are shaped.) The transparent areas of a shaped graphic are black. When the video is multiplied by a key of zero, the result is zero for the video component and by definition, zero is black.

> *SD output is always shaped.*

Some mixers require unshaped video. In this case, DekoCast HD systems can output video that is not multiplied by the corresponding key output. Unshaped output can be selected only when the video output is configured to have a video plus a key.

For example, Video Out A can be set to unshaped only if Video Out B is configured as key. To unshape a video source, the corresponding key that shaped the video is required.

To configure shaped input and output:

1. Select Options > Preferences.

2. Click the Video Hardware Options tab.

3. In the Hardware Configuration section, select Shape Input.

4. Select Shape Out A.

    Output B must be selected as key.

5. Click OK.

Related Topics

Editing Video Out Objects

Editing Video In Objects

XML Configuration

DekoCast can accept external XML commands through IP sockets or serial ports. The XML Configuration tab lists the ports that can receive XML commands and displays details about a selected port's settings that you can modify. XML commands and output are included in the DekoCast message log file.

For more information, see "Ports for Automation Control" on page 363.

To add a port for receiving XML commands:

1. Select Options > Preferences.
2. Click the XML Configuration tab.
3. Select Add New Serial Port or Add New IP Socket Port.

   Information about the port is displayed.
4. If desired, modify the socket port or the serial port configuration.
5. Click OK.

To remove a port from the list:

▶ Select it from the list, click Remove, and click OK.

To turn off DekoCast logging of XML commands and output:

▶ Deselect Enable XML Message Logging and click OK.

Application Options

The App Options tab lets you set these DekoCast options:

- Application Logging Report Level

  Use the Application Logging Report Level option to specify the level of messages to be recorded in the log window. In decreasing order of severity, the levels are Fatal, Severe, Warning (the default), Info, and Verbose, which records everything. All messages up to and including the selected severity level are written to the DekoCast log file.

The DekoCast log files are located in the same directory as the application.

- Rounding Options

  By default, pixels are rounded to whole pixels for cropping, X and Y coordinates, and Target Rectangles. If you want fractional control of pixel positions, deselect this option.

- Hide Clone Objects in the Scene Tree

  Copies of the objects called *clones* are added to the Scene Tree as children of the Crawl object as each line of the crawl is buffered for output. By default, cloned objects are not shown in the Scene Tree. Select this option to have clones display in the Scene Tree.

  Clones are deleted when the object no longer displays on the video output (has crawled off). A changing list of clones indicates that the text continues to crawl. When the clones disappear from the Scene Tree, the text has stopped crawling. Objects that you insert between lines of text also generate clones that function in the same way.

- Polling Interval for Folder on Network

  Normally, DekoCast relies on the Windows Notification application to inform it when a .txt file linked to a Deko object (in the Contents tab of the Deko object editor) has changed. Sometimes, particularly when a .txt file is located on a remote node, Windows Notification fails. In this case, select this option to set how often DekoCast checks for an updated file.

Click OK to save your settings.

Output Frame Coordinates

The Coordinates tab lets you define the coordinates for the output frame. Changing the coordinates in this tab does not change the video resolution or aspect ratio, but it does change how the coordinates map to the user interface for the Target tab.

For example, DekoCast's point of origin is at the top left, so by default the Top setting and the Left setting are both 0 (zero). If in a 1080i project you prefer to use the center of the screen as the point of origin for Target rectangles, you can change the scene coordinates to Top –540, Left –960, Right 960, Bottom 540. Create a new scene using the 1080i standard and notice that the Target rectangle reflects these new coordinates.

However, keep in mind that changing the output frame coordinates in this way is for the user's preference and does not change the actual resolution of the scene. To change the resolution of the scene, change your hardware settings.

You can select to be prompted to enter scene coordinates each time a scene is opened or created.

Any currently opened scene has to be reopened before the new coordinates take effect.

To set the output frame coordinates:

1. Select Options > Preferences.

2. Click the Coordinates tab.

3. Select a video format from the list in the upper right.

4. Select one of the three options:

    - Use device coordinates: The application uses the default coordinates of the video format.

    - Use these scene coordinates: type coordinates in each text box.

    - Ask each time a scene is opened or created: When you open a scene, a dialog asks you which coordinates you want to use: coordinates for the default format or coordinates that you have set.

5. Click OK.

Transcode and Scene Options

If your system uses a Corsica video board, you can use the Transcode and Scene Options tab to configure options for transcoding clips to the native playback format MPEG-2 MXF I-Frame. This topic describes options on this tab. For more information on transcoding clips and using the Transcode application, see "Transcoding SD Clips to MPEG-2 MXF I-Frame" on page 149.

⚠ **Transcoding uses CPU resources and could delay playout to air. Avid recommends that you perform transcoding on a DekoCast Authoring Station or when a DekoCast system is not on-air.**

To set the transcode preferences:

1. Select Options > Preferences.

2. Click the Transcode and Scene Options tab.

3. Select the options you want and click OK.

The following table describes the options you can select.

Transcode and Scene Options

Option	Description
Enable Watch Folder	Enables the watch folder you specify. To specify a watch folder, click the browse button, navigate to the folder you want to use, and click OK. When you copy non-compatible clips into this folder, they are automatically transcoded using the settings in this tab. Transcoded clips are saved in the watch folder. See "Transcoding Clips By Using a Watch Folder" on page 159.
	This option also sets the Transcode application to start automatically whenever DekoCast starts. Setting this option and clicking OK starts Transcode immediately, if it is not currently running.
	Disabling this option does not close Transcode immediately. Transcode continues to process any current jobs and closes when no jobs are in process.
Watch subfolders	Specifies that Transcode should watch for clips that need transcoding in all folders that are contained in the watch folder you specify.
Number of simultaneous transcodes	Specifies the number of jobs that Transcode can process simultaneously, from 1 to 4. This number is used only when Transcode is automatically started. If you open Transcode manually (standalone mode), Transcode processes up to four simultaneous jobs.
	Specify a number higher than 1 only if you plan to transcode clips when the system is off-air.
Scene Options section	Lists options for how Transcode opens and closes a scene if the scene references clips not compatible with the Corsica hardware (for example, DV clips).

Transcode and Scene Options (Continued)

Option	Description
Transcode clips if no hardware-compatible clips are found when the scene is opened.	Sets Transcode to automatically transcode any non-hardware-compatible clips if it cannot find corresponding hardware-compatible clips. If this option is not set, the scene plays but does not play the non-hardware-compatible clips. See . ⚠ **If you enable this option, a scene might not play at the desired time. Enable this option only if there is sufficient time between opening a scene and sending it to air.** Selecting this option also enables automatic transcoding of clips that you link to through the Clip Playback editor.
Automatically save the scene with new clip references	Sets DekoCast to save a scene that references hardware-compatible clips when you close the scene. This option takes effect if the original scene referenced non-hardware-compatible clips and compatible clips were found. Selecting this option overwrites the original .dkx scene or converts a .dkc scene (created on an earlier version of DekoCast) and saves the scene using the extension .dkx. For example, if the scene references "OTSleft.dv" and DekoCast finds and plays "OTSleft_IF.MXF," the scene is saved with a reference to "OTSleft_IF.MXF." Saving a scene with this option keeps references to the actual clips that played, and minimizes confusion if you copy the scene to different machine. If you do not select this option, the scene is not changed, and DekoCast searches for the compatible clip every time the scene is opened.
Delete original .dkc scene	Sets DekoCast to delete the original .dkc scene to avoid confusion about which scene file is correct.
Transcode Settings section	Lists options for default transcode settings
Color format	Sets MPEG-2 4:2:2 or MPEG-2 4:2:0. Both are MXF I-Frame formats.
Bitrate	Sets the bitrate for the clip. A larger bitrate number results in a superior image, but uses more disk storage and network bandwidth. In most cases, use the bitrate of the source file; using a bitrate higher than that of the source does not improve the image.

Transcode and Scene Options (Continued)

Option	Description
Delete original clip	Sets Transcode to delete the clip that uses the non-compliant format. This option does not apply when you transcode clips by opening the Transcode application or by dragging clips to the Transcode icon. This option applies only when you transcode through a default watch folder or automatically when a scene opens.
	Select this option only if you have tested your workflow and are confident that transcoding works successfully.

Appendix B

DekoCast Tips

The following tips can help you manage your system resources and work more efficiently.

⚠ **Save your work frequently to avoid losing any part of your project. DekoCast does not have an autosave feature or an undo command.**

- When creating projects, be aware of DekoCast resource limitations. If the output is jittery, you have exceeded the limit.

- Check the Performance meters. The video processing resources for your system are exceeded when the meters enter the red zone. As you develop your scenes, it is best not to exceed 80 percent on any of the meters. See "Performance Tab" on page 34.

- Determine how much video memory is available (free). To do so, select Help > About DekoCast. Clip Playback and Clip Capture objects consume a significant amount when clips are cued or playing. Cel Animation objects consume a variable amount. Other objects consume little or no additional video memory. To compute the amount of video memory used by a Cel Animation object, use this formula:

  Memory requirement (in bytes) = width (in pixels) x height (in lines) x total frames x 4

  For example, for a Cel Animation object that measures 200 x 200 and has 30 frames:

  200 x 200 x 30 x 4 = 4,800,000 bytes = 4.8 Mb

  Cel animation frames should be created as small as possible.

- When you create a Cel Animation objects and specify a set of files, those files are stored in memory. If you are working with several Cel Animation objects, and you need to free memory, clear the file name of one of the Cel Animation objects.

- Determine how many streams (sometimes called codecs) are in use. For information about how your DekoCast system uses codecs, see "Understanding Clip Playback" on page 141.

- Clip playback objects consume codec resources whenever clips are playing or are cued. A single clip playback can consume twice as many codecs if it is playing one clip and has another cued. You can monitor the number of streams available by checking the value of the *Canvas-number codecs free* parameter in the Parameters tab of the main DekoCast window. For example, a value of 2 means there are two free streams available from the video board's codec.

- DekoCast processing resources can be estimated in full screens of pixels (or full-screen layers).

  - A DekoCast SD system with a TARGA video board has an approximate limit of six-to-eight screens of pixels.

  - A DekoCast SD system with a Corsica video board has an approximate limit of 20 screens of pixels (full-screen layer).

  - A DekoCast HD systems with a Corsica video board has an approximate limit of six-to-eight screens of pixels.

  To conserve processing resources, do not build a full-screen layer (even if it is mostly empty). For example, one object might cover one-third of a screen (the upper-third), another object might coves the middle-third, and another object might cover the lower-third of the screen. These three objects together equal one screen of pixels. If the objects are built full screen, but contain graphics or text that covers only a third of the screen, then each full-screen layer is counted as one screen of pixels.

- Avoid using Deko objects set to Entire Graphic when only one layer is desired. Doing so forces the object to be resized or resampled, which slows processing and produces a soft appearance.

- Graphics should be 720 x 486 pixels for NTSC and 768 x 576 for PAL.

- The home position of a PostDeko graphic is the position of the layer in the original graphic (DKO file).Therefore, when the values of X and Y are set to their default of zero, the layer is in the home position. The default value for Scale is 1, and the size is that of the original graphic.

- X Position parameters should always be integers.

- Y Position parameters should always be even integers.

The following tips can help you work more efficiently.

- Create only one custom typeface directory. It is recommended to create one custom typeface directory called D:\CustomTypefaces. Keep all custom typefaces together in this directory. Be sure that the preferences in PostDeko Lite (select Options > Preferences > Paths) use the Custom Typeface field with the correct directory location. If you use macros in PostDeko Lite to change directories, then name the directory CustomTypefaces. (Macros do not recognize a space between names for a directory.) You should also avoid using underscores and spaces in directory names.

- Directory defaults for Deko graphics and all components of Deko graphics are set within PostDeko Lite.

- Always name Deko layers and refer to them by name in DekoCast.

- If DekoCast is on air, do not use the DekoCast interface. DekoCast must be offline to edit or add scenes.

- Close DekoCast before running DekoCast Central on air.

- Keep data sources local, not networked. Whenever possible, keep the data sources of text files or databases local to the DekoCast computer instead of having the scene access files across a network. Six-to-ten layers in a DekoCast scene updating every second across a network could result in varied runtimes and various networking issues.

B **DekoCast Tips**

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