GIF Animator

USER GUIDE

First English edition for GIF Animator 4.0, September 1999

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Sample files

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Welcome to GIF Animator

Welcome to Ulead GIF Animator, the industry standard for GIF animation. From its drag-and-drop simplicity to its numerous customization options, GIF Animator takes all the hard work out of building web-animations while giving you room to flex your creative muscles. Its built-in, top-notch optimization engine makes your animation compact and web-ready in seconds while retaining its overall quality. And, when you're ready to embed them in your web pages, GIF Animator generates all the necessary HTML code for you.
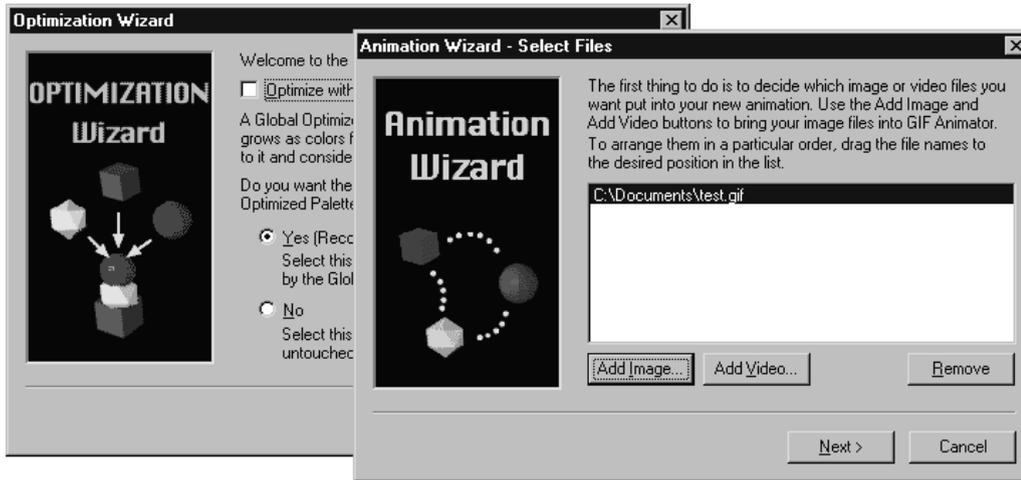
The Animation Wizard walks you through the creative process in three quick and easy steps. When you're finished, run the Optimization Wizard to make your animation as compact as possible for faster download times on the Internet.

GIF Animator's intuitive layout makes working with animations a snap. The Layer pane lists each image layer in the animation, either as thumbnails or as a list, and the Workspace allows you to adjust and position image layers. You can also work with multiple image layers simultaneously. Its mode structure allows you to switch between composition, editing, optimization and preview tasks quickly and easily.

GIF Animator, while primarily a post-production tool, does give you the capability to work on image layers directly within the program. You can perform minor touch-ups and edits right on an image layer, rather than having to open it in an outside image editor.
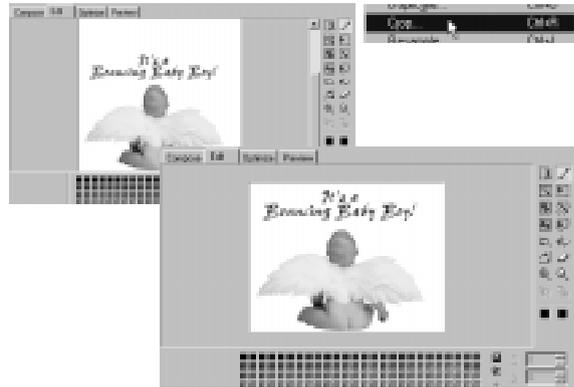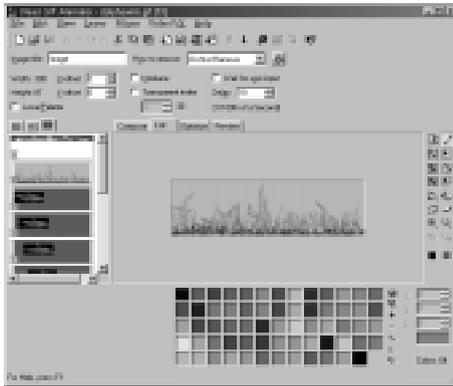
Edit mode lets you add, remove and adjust the pixels in each image layer. It can help you clean up the residue from bad scans, or adjust the color and lines that you want to emphasize on an object. The Edit toolbar also contains tools for manipulating your image layers. The Crop tool pares away excess portions of an image and the Resample tool resizes your animation, just to name a couple.
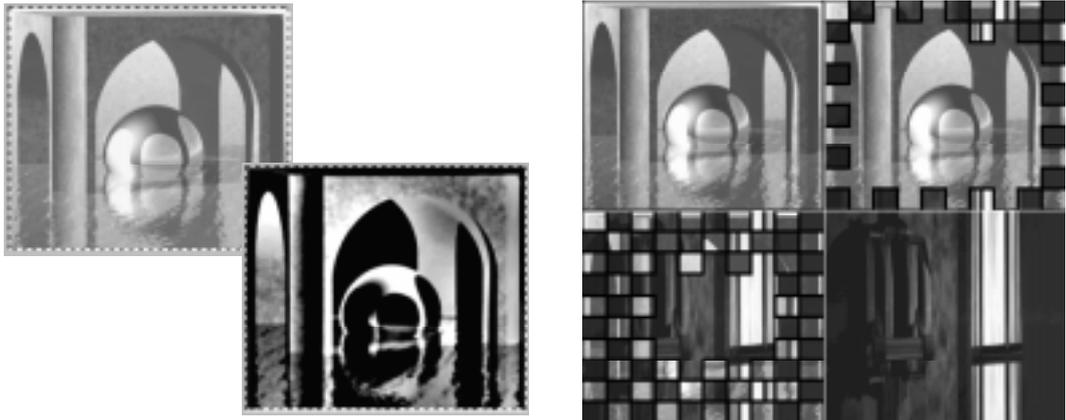
Additionally, GIF Animator supports APS 32-bit plug-ins: any plug-in that you can use in PhotoImpact, Photoshop and Paint Shop Pro can now be used directly within GIF Animator for enhancing image layers. GIF Animator comes with more than 30 custom video filters and effects, borrowed from Ulead's award-winning MediaStudio Pro, and is also capable of both importing and exporting video files.

What's new in this version*

This version of GIF Animator contains some significant improvements and additions to the last version, including:

New work modes – An improved user interface lets you do your layout, edits and touch-ups all directly within the main program window. The work modes are: Compose, Edit, Optimize, and Preview. Intuitively placed tabs let you switch modes instantly while you create your animations.

The four work modes in GIF Animator: Compose, Edit, Optimize and Preview.

Improved optimization – A new algorithm makes your animated GIF files even smaller than before, and easy-to-access optimization presets in Optimize mode make optimizing your files a snap. Once you create and save a preset, you no longer have to concern yourself will all the different optimization options. Simply click the Optimize button and GIF Animator does the rest.
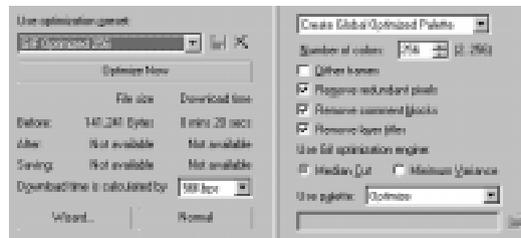
The Optimize mode settings and the Advanced optimization presets in GIF Animator.

Batch Process your web site – If you have an entire web site of animated GIF files that you want to optimize, then GIF Animator is the solution for you. With Batch Process, you can run every animated GIF file through the GIF Animator optimization engine and see the results in seconds. Smaller files mean faster loading web sites.
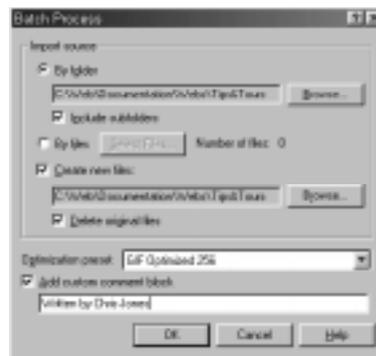
The Batch Process dialog box

More Special F/X – Added special effects expand your creative potential while designing animations. The new effects include Neon, Gradient, and Marquee banner text, among others.

* See the GIF Animator online Help for a complete list of new features.

Getting started

To install GIF Animator:

1   Place the GIF Animator CD into your CD-ROM drive.

2   When the setup screen appears, follow the instructions to install GIF Animator onto your computer.

> **Note:** *If the setup screen doesn't appear automatically, click the Start button on your Windows task bar and then click the Run command. When the Run dialog box opens, enter* D:\setup.exe *and click OK (*where D *is the letter of your CD-ROM drive).*

Once you've installed GIF Animator, take a moment to register online. Just point your web browser to the Ulead web site (*HTTP://WWW.ULEAD.COM*). Becoming a registered user entitles you to product and information updates, as well as technical support if you encounter any problems with the GIF Animator program.

To run the GIF Animator program:

- Click the Start Menu and then click the GIF Animator icon from the Programs: Ulead WebUtilities - GIF Animator subfolder.

> **Note**: If you get stuck at any time when using GIF Animator, you can always use the online help. Simply click the Help: Contents menu command to open it. You can also visit the tutorials on our web site to learn more tips & tricks by clicking the Help: Tutorials menu command.

GIF Animator at a glance

Everything you need to build great animations is included in GIF Animator's single, what-you-
see-is-what-you-get interface. With its drag-and-drop capabilities and the power to import files
from more than 30 different file formats, the sky's the limit to what GIF Animator can help
you create.

Standard toolbar   **Mode tabs**   **Attribute toolbar**

Layer pane   **Palette toolbar**   **Workspace**   **Edit toolbar**
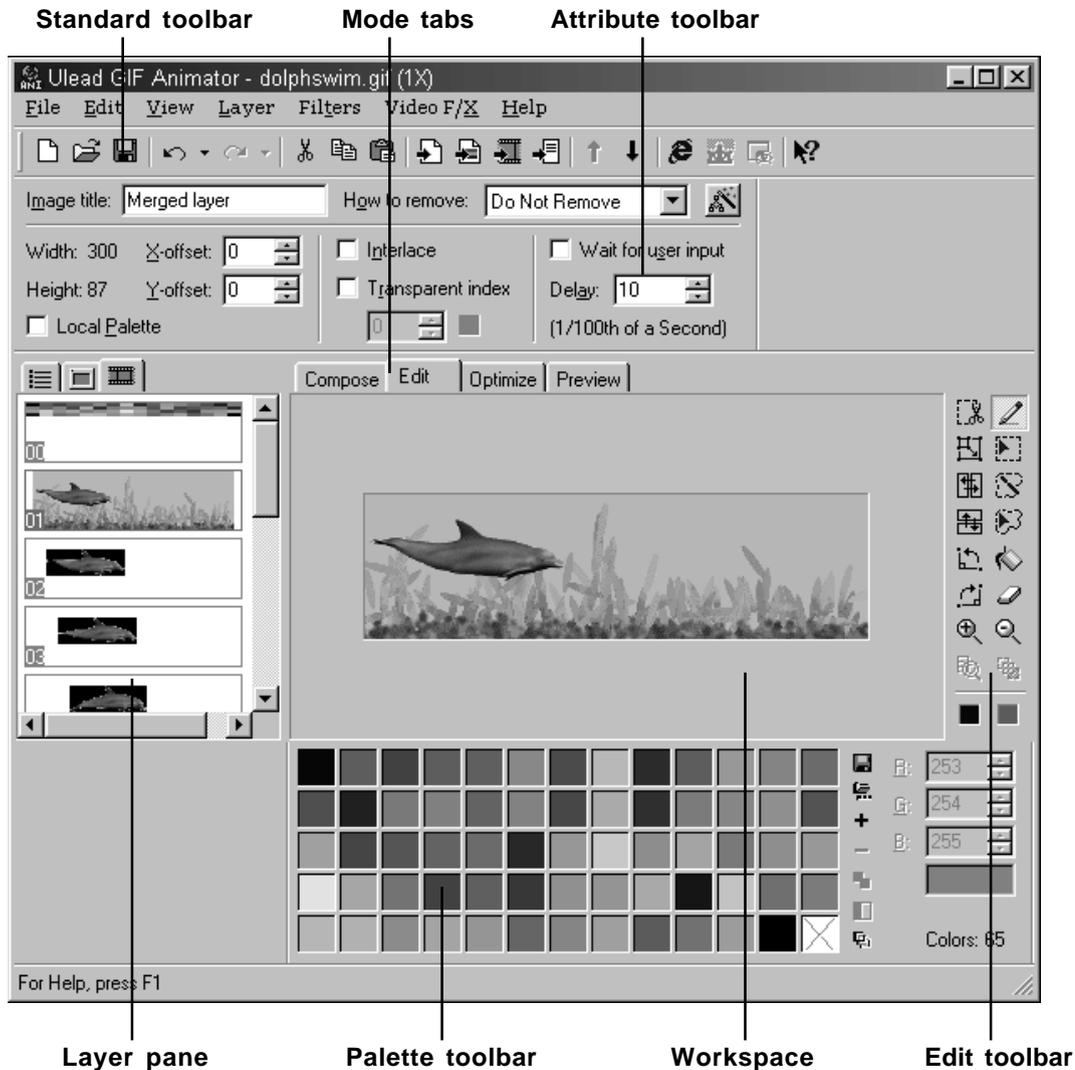
Customizing how you work

With the Preferences dialog box, GIF Animator lets you customize how you work. For example, you can define how images are converted from high color formats down to the basic GIF color palette of 256 colors, append a personalized comment to each animation, and set up the number of undo levels available while working. The Preferences dialog box can be opened by clicking the **File: Preferences** menu command.
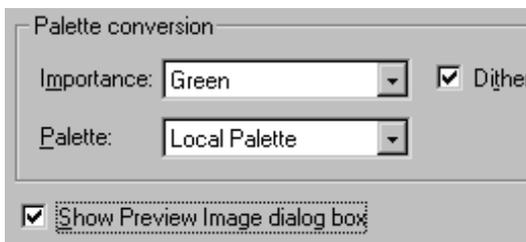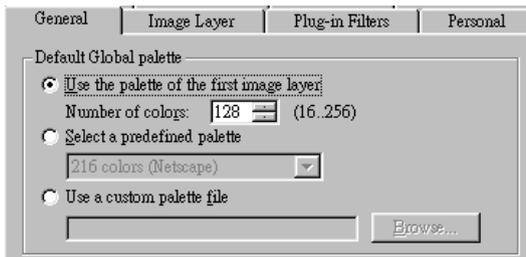
Important Preferences options:

- On the **General** tab, create a custom color index for the Global Palette - you can build this palette based on the first imported image, or use a pre-defined palette of 'browser-safe' colors. You can also use a previously saved color palette file. Generally speaking, the first option (**Use the palette of the first layer image**) offers the most flexibility.

- Because all palettes, including the Global Palette and all Local Palettes, can only contain a maximum of 256 colors, you should select the **Automatically expand Global Palette** option on the General tab in order to fill the Global Palette with as many colors as possible from imported images. This frees up space in each of the Local Palettes for storing colors specific to image layers, making the GIF smaller.

- On the **Image Layer** tab, select the **Show Preview Image dialog box** option to manually build the color palette of each image layer as it's imported. If you want GIF Animator to do this automatically, deselect this option and then set the default **Palette conversion** options for each imported image layer.

Creating a new animation

Getting started with GIF Animator is a snap. All animations consist of a series of 'stacked' images, with each image being a single 'frame' in the animation. You can build frames (called *layers* in GIF Animator) by inserting individual images manually or by inserting portions of digitized videos. You can also insert the contents of an entire folder or a range of selected files.

To create a new animation:

1   Click the **Layer: Add Images** menu command or the Add Images button on the Standard toolbar. The Add Images dialog box opens.

2   Browse for the images you want to add and select them.

3   Click **OK**. The images are added in alphanumerical order to the Layer pane.

   Tip: You can also add images to GIF Animator by dragging them from the Windows Explorer and dropping them directly into the program.

To import video frames:

1   Click the **Layer: Add Video** menu command or the Add Video button on the Standard toolbar. The **Add Video dialog box** opens.

2   Browse for the video file from which you want to extract a sequence.

3   In the **Add Video Dialog box**, click the **Duration** button and then use the **Mark-in** and **Mark-out** buttons to select the sequence. Click **OK** when you're done to close the dialog box.

4   Click **OK** to insert the sequence.
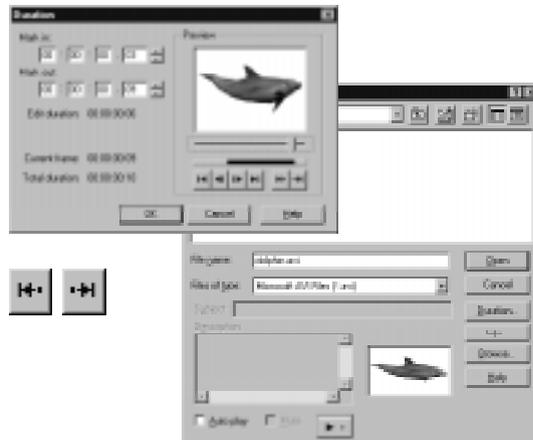
Working with the Layer pane

Understanding how to work with image layers (also called *frames* or *cels*) in the Layer pane, is the key to understanding how animations are built in GIF Animator. Once you comprehend the basics of image layers, everything else is easy.
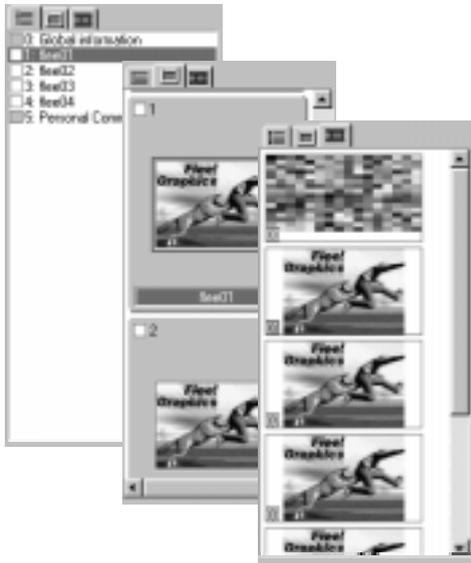
Image Layer Modes:

You can set the Layer Mode through the **View: Layer Pane -** *Mode* submenu.

- **List** - Displays image layers as a list in the Layer pane. Each image layer's default name is based on its original file name (if it was inserted via the Clipboard, then it is assigned a default name).

- **Thumbnail** - Displays each image layer as a thumbnail image. All thumbnails are the same size (sizes can be selected from the View: Thumbnail Size- *Size* submenu).

- **Filmstrip** - Displays the layers as thumbnail images, each one sized in relation to the others in the animation to show how they correspond with one another.
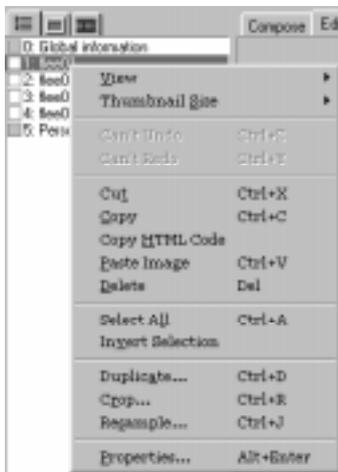
To move image layers in the Layer pane:

- Select the layer you want to move and then click either the **Move up** or **Move down** buttons on the Standard toolbar.

  Tip: Select multiple layers using either the Ctrl or Shift keys while clicking the mouse button.

To use the context menu:

- Right-click over any layer in the Layer pane to get the pop-up context menu of common layer-editing commands.

Editing image layers

When building animations, you'll often find that the work you did in your image editor to prepare the images was not quite right - perhaps the colors didn't quite convert from high color to 256-color as well as you had hoped and visual residue was introduced into the layers, or maybe the frames are too large. Whatever the reason, GIF Animator provides you with simple tools for performing basic edits directly to your image layers within the program rather than having to open them in an outside image editor.

Duplicating image layers

A useful tool for creating moving sprites from a single, still image is **Duplicate**. This allows you to import a small, sprite-like image and place it over a larger background image. Using the Duplicate command is one method of taking a single image and moving it across a larger background. You can also using the **Layer: Moving Sprite** menu command to achieve similar results with an animation rather than a single image

To duplicate image layers:

1   Select the sprite.

2   Click the **Edit: Duplicate** menu command. The Duplicate dialog box opens.

3   Enter the number of **Copies** you want to make of the sprite.

4   Enter the number of pixels that each subsequent copied sprite should be moved from the preceding one in the **Horizontal** and **Vertical shifting** boxes.
    For example, if you enter -10 in each, the first sprite is duplicated and then positioned -10 pixels in both directions away from the original. The second sprite is positioned -10 pixels in both directions away from the first copy, and so on.

5   Click **OK** to close the dialog box.

> **Tip:** If the sprite is not duplicated exactly as you had intended, simply hit the Undo button and try it again. Experiment a little.
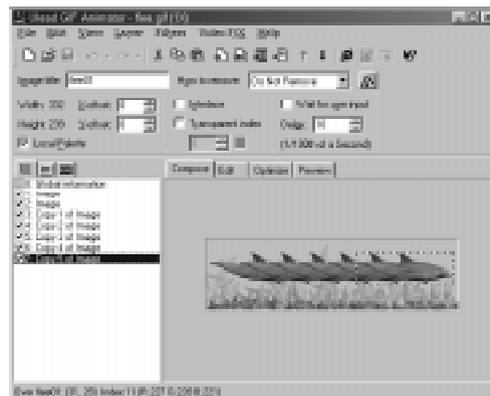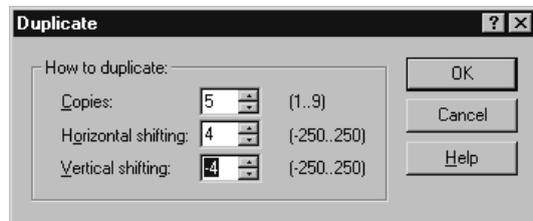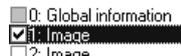
Retouching image layers

GIF Animator comes with a small, built-in image editor that you can use while in Edit mode. While not a full-fledged image editor, it does let you make minor corrections and adjustments to your image layers. This is especially handy for cleaning up resampled layers and scanned images that may have residue.

To work in Edit mode:

1 Select the layer you want to edit in the Layer pane.

2 Click the **Edit** tab to switch modes.

3 Select a tool from the **Edit toolbar** on the right hand side of the Workspace and begin editing.

4 When you're finished editing, click the **Compose** tab or select another layer from the Layer pane and continue editing.

The Tools:

- **Pencil** - Draws lines using the Foreground (left-click) or Background (right-click) colors.

- **Selection Tools** - The 3 selection tools let you make any-shape selections on an image layer. Filters are applied across all image layers in the region delineated.

- **Fill Tool** – Fills an area of similarly colored pixels with either the Foreground or Background colors.

- **Eraser Tool** – Erases pixels and replaces them with either the Foreground or Background colors.

- **View tools** - Lets you zoom-in on and zoom-out of the image, or return it to its normal view.

- **Crop** - Opens the Crop dialog box, letting you pare away excess portions of the image.

- **Resample** - Opens the Resample dialog box, letting you resize the image.

- **Flip tools** - Let you re-orient the image either horizontally, vertically, left or right.

- **Color boxes** - Set the Foreground and Background colors respectively. Click to select a color from either the Workspace or the Palette toolbar.

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Cropping and resampling images

Another common situation when building GIF animations is to discover, after working on your image layers in an outside editor, that they are too large to display properly on a web page. One way to remedy this is to pare away the excess space around the core animation using the Crop tool. Another solution is to resize the entire animation (or just portions of it) with the Resample tool. Both tools can be found on the Edit toolbar in Edit mode.

To crop image layers:

1   Click the **Crop** button on the Edit toolbar while in **Edit** mode. The Crop dialog box opens.

2   Select the image that you want to crop from the **Select source image** menu. The crop settings you apply here can be applied to all image layers or just to selected layers.

3   Use the **Crop Box** in the preview window to establish which portions of the image you want to retain (everything *inside* the box). You can drag the blue handles to resize the box and drag the center of it to position it.

4   Click **OK**. The crop settings are applied.
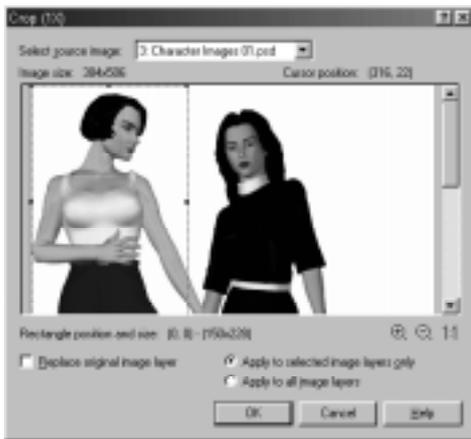
*To resample image layers:*

1   Select the layers you want to resample.

2   Click the **Resample** button on the Edit toolbar in **Edit mode**. The Resample dialog box opens.

3   Enter the new **Width** and **Height**. If you want the resampled image layers to retain their relative dimensions, select the **Keep aspect ratio** option.

4   Click **OK**. The image layers are resampled.
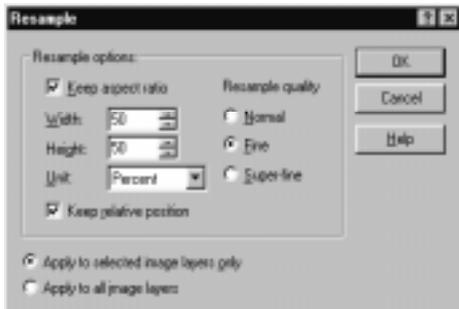
Merging image layers

There are two ways to merge images in GIF Animator. Simple cross-layer merging allows you to combine one image layer with another, creating a new image layer that is a hybrid of the two. Background merging allows you to select multiple layers and then merge each one with a common background layer.
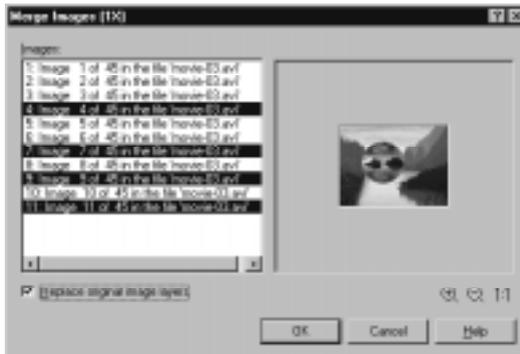
To merge images:

1 Click the **Layer: Merge Images** menu command. The Merge Images dialog box opens.

2 Select the images you want to merge together. Images are merged so that the higher-numbered layers apear in front of (on top of) the lower numbered layers.

3 Select the **Replace original layers** option to remove the selected layers and replace them with the new merged layer.

4 Click **OK** to apply the merge settings.

To merge image layers to a background:
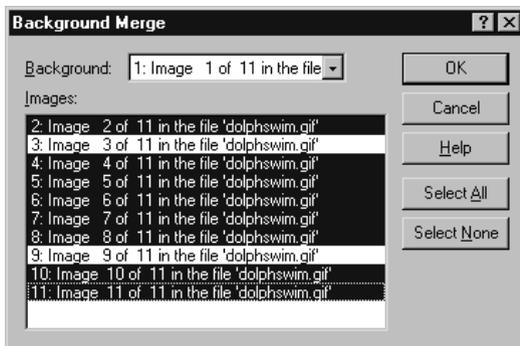
1 Click the **Layer: Background Merge** menu command. The Background Merge dialog box opens.

2 Select the background to which you want to merge the other image layers from the **Background** menu.

3 Select the layers to be individually merged with the chosen background layer.

4 Click **OK** to apply the merge settings.

Other editing tools

GIF Animator comes with other tools to help you edit image layers, offering you a complete and convenient toolkit to use for your projects.

Aligning images:

To change an image's physical alignment, you can use GIF Animator's built-in transform tools.

1   Select the image layer(s) you want to re-align.

2   In the **Edit** mode, click one of the **Flip** buttons on the Edit toolbar.

3   The effect is applied to the selected image layer(s).
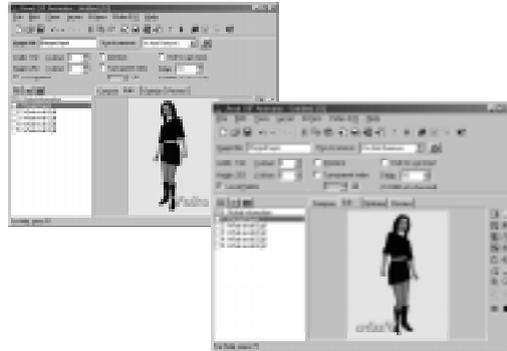
Rebuilding 'broken' image layers:

Sometimes, after optimizing and then saving an image, you'll want to return and edit it again - but once it's been optimized, the frames are 'broken'. The solution to this is the **Frame Regeneration** function.

1   Select the image layer(s) you want to regenerate.

2   Click the **Edit: Regenenerate Frames** menu command. The frames are automatically rebuilt and can be edited.

Note: In some cases, selected frames may not regenerate properly due to massive disparity between them and their preceding frames.
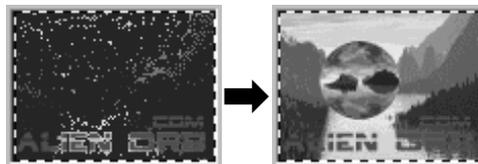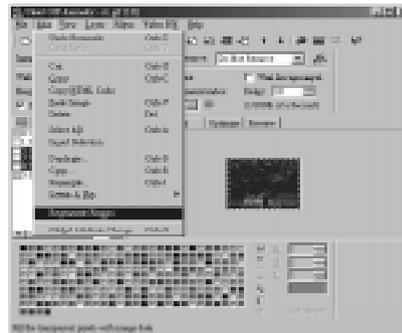
Working with layer attributes

Each image layer has its own set of 'controls' that dictate how that image layer is displayed; you can decide whether or not it has a Local Palette, define its general position, and select which color is the transparent color. All the attributes assigned to an image layer, however, work in conjunction with the other layers, and together they create the properties of the animation as a whole. Image layers can be selected in the Layer pane, located to the left of the Workspace.

Global information layer

In addition to the image layers that constitute the animation, there is one layer that contains the universal properties of the animation as a whole, the Global information layer. Here you can work with the Global Palette (the color palette from which all image layers can draw color information), define whether the animation is played non-stop or a set number of times, and set the dimensions of the Logical Screen. The Logical Screen contains the dimensions of the entire animation as a whole. It is usually determined automatically by GIF Animator as layers are inserted and moved around.
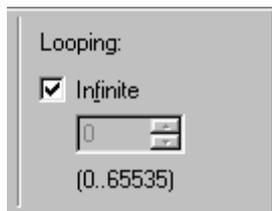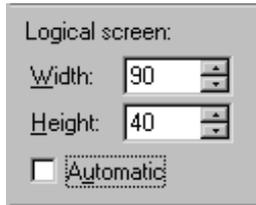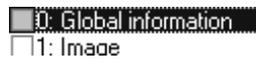
To manually adjust the Logical Screen:

1   Select the **Global information** layer in the Layer pane. The **Attribute** toolbar changes to display the layer's properties.

2   Deselect the **Automatic** option under Logical Screen on the Attribute toolbar.

3   Enter in a new **Width** and **Height**. The Logical Screen (in the Workspace) changes accordingly.

> **Note:** The Logical Screen cannot be smaller than the largest image layer in the animation.

To have the animation play endlessly:

1   Select the **Global information** layer in the Layer Pane.

2   On the **Attribute** toolbar, under **Looping**, select the **Infinite** option.

Positioning images in the Workspace

Each image layer contains its own set of attributes that pertain only to that layer, even though the attributes may be the same for every layer. One of the more important attributes is the ability to position image layers anywhere within the Logical Screen.

To position image layers:

1   Select the layer you want to position from the Layer pane list.

2   On the **Attribute** toolbar, enter in the **X-** and **Y-** coordinates for the image (the coordinate position 0,0 is the top left corner of the Logical screen).

    OR

    In the **Workspace**, click the layer and drag it to its new position. If you drag it outside the boundaries of the Logical Screen, the Logical Screen's dimensions are updated accordingly.

    Note: Because the coordinates for the Logical Screen always originate at 0,0 you cannot enter negative values for an image layer's position.

To view other layers as you work:

•   In the **Layer pane**, check the layers that you want to be visible while you work. By default, when you're dragging an image layer around inside the **Workspace**, you can't see the layers that are under it. By checking them, you make them visible.
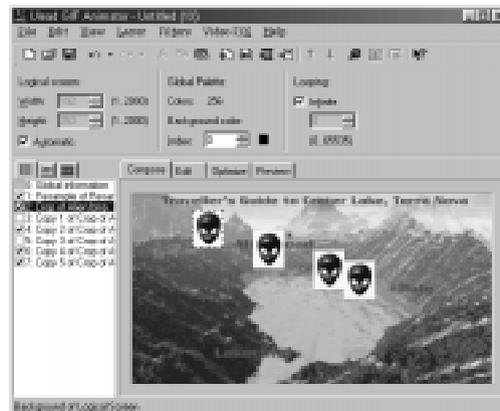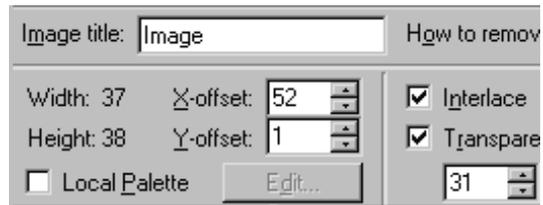
Setting an image layer's transparency

One of the special features about the GIF file format is the transparency attribute, which allows you to select a specific color and then make it effectively invisible to all dedicated GIF viewing software, including web browsers. This lets you create custom shapes that don't conflict with the content of your web pages. For example, if you have an image of a basketball on a black background, and you want your web page to show through the background, you would make the black color transparent.
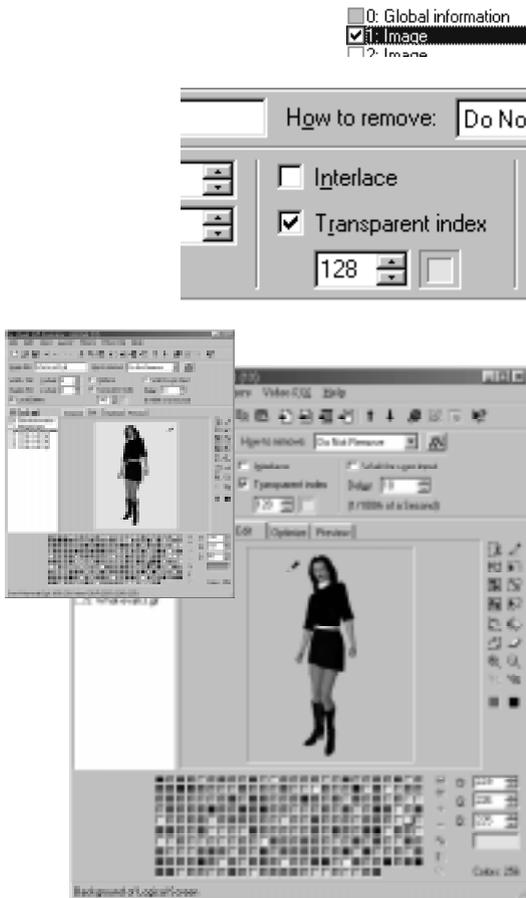
To set an image layer's transparency:

1   Select the layer to which you want to apply transparency.

2   On the Attribute toolbar, select the **Transparent index** option.

3   If you know the indexed color value for the color in the image you want to make transparent, enter it in the **Transparent index** box.

   Otherwise, click the **Edit** tab to switch to that mode.

4   On the **Attribute** toolbar, click the **Color box** under the **Transparent index** setting. Your mouse cursor becomes a color picker.

5   Select the color you want to make transparent from either the image layer itself (this only works in Edit mode), or from the Palette toolbar.

Note: You can make multiple layers transparent simultaneously by selecting them all and then clicking the Transparent index option. Selecting a different color for each one, however, must still be done manually.

Removing image layers

In the course of the animation, each image layer must be 'removed' from the screen once it has been displayed. The removal method affects the overall appearance of the animation - some web browsers, however, don't support all the removal methods available. You can set an image layer's removal method on the Attribute toolbar in the **How to remove** option. The four removal methods are described below:

- **Web Browser Decides** - The image layer is removed using the browser's default method. This method is not recommended because you will probably get different effects with different browsers.

- **Do Not Remove** - The image layer is not cleared from the screen and all subsequent image layers are stacked on top of it.

- **To Background Color** - The image is removed and replaced with the background color. This can cause flashing if used improperly.

- **To Previous State** - The image layer disappears in the same manner it appeared. This is generally the best removal method, but unfortunately, only Microsoft Internet Explorer supports this at this time.

Note: In order to make GIF Animations that are completely cross-browser compatible, make all your image layers full size and then use 'Do not remove'. When you run the Optimization Wizard, GIF Animator removes all the redundant pixels between images. With the *Do not remove* option set for each layer, just enough overlap is retained during optimization that image layers mask out the differences from previous layers as they are stacked during the animation.
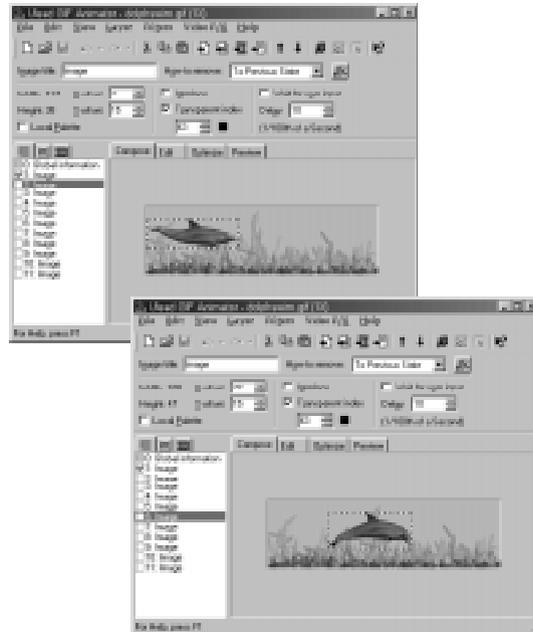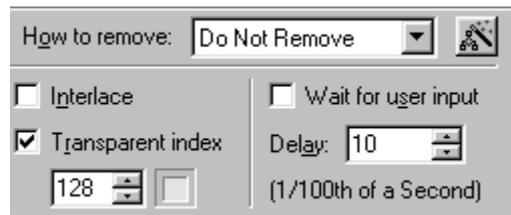
Other image layer attributes

The final three image layer attributes are **Delay**, **Wait for user input**, and **Interlace**. Like all the image layer attributes, their presence is required by the file format (GIF89a), but only one has any visible effect on an animation as it plays in a web browser. They are described below:
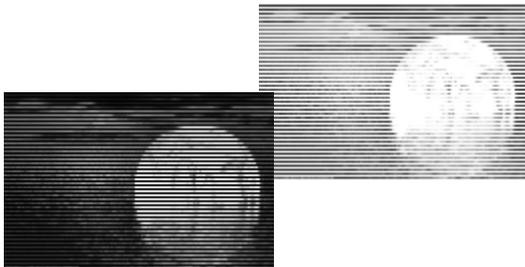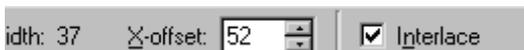
- **Delay** - Of the three image layer attributes, this is the perhaps the most useful. The delay time measures the time that the image remains on screen before being removed and replaced by subsequent images. The delay time is measured in hundredths of a second.

- **Wait for user input** - This option is currently not supported in the major browsers, but it is implemented in dedicated GIF viewers. Setting this option on an image layer forces the layer to pause the animation until the user either clicks the mouse button or presses a key on the keyboard.

- **Interlace** - Interlacing breaks an image into two separate fields, allowing one field to download first while waiting for the other. This gives users an immediate preview of the image rather than having to wait for the entire picture to finish downloading. Static GIF images (i.e., those with single image layers) support this, but in an animated GIF this feature doesn't work on any image layer except the first. If you import any GIF images with their interlacing enabled, be sure to deselect the option inside GIF Animator so that web browsers won't encounter any problems with them.

Using Plug-in Filters

GIF Animator lets you apply wild plug-in effects directly to the image layers in your animation rather than having to open each layer in an outside editor to apply effects there. You can apply the effect to a single layer or to a range of selected layers. Any Adobe Photoshop 32-bit compliant plug-in can be used in GIF Animator.

Loading plug-ins into GIF Animator:

1 Click the **File: Preferences** menu command to open the Preferences dialog box.

2 Click the **Plug-ins** tab to bring it to the foreground.

3 Click a **Browse** button next to one of the empty slots. When the Browse dialog box opens, locate the folder that contains the plug-ins you want to use.

4 Click **OK** and restart GIF Animator. The plug-ins are added to the Filters menu.

To apply plug-in filters:

1 Select the layer(s) to which you want to apply the plug-in filter.

2 Click the **Filter:** *Filter Name* menu command. The filter's dialog box opens.

3 Adjust the filter's settings until you get the desired effect.

4 Click **OK** to apply the filter to the selected layer(s). If you created a selection area in the **Edit** mode, the filter is applied only to that selection, across all layers.

> **Note:** Some plug-ins use 'foreground' and 'background' colors when applying the effect. In GIF Animator, the background color used is the color of the Logical Screen, while the foreground color is white.
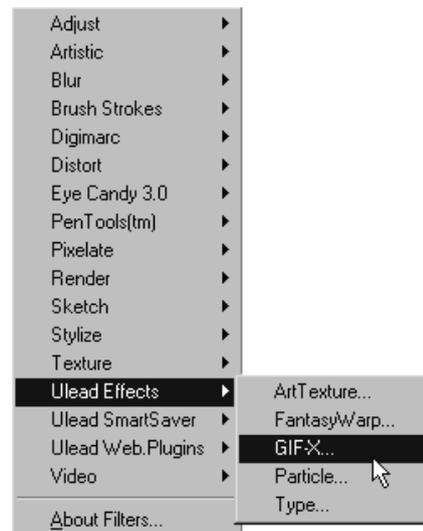
Using Video F/X

Video F/X is a collection of special filters for GIF Animator. Borrowed from Ulead's award-winning digital video software, MediaStudio Pro and VideoStudio, they are professional level video transitions and filter effects. Each filter automatically creates a string of new image layers once it's engaged, so it's usually best to have only one or two image layers at most in your animation when using them. Otherwise, the additional layers generated by the Video F/X may make your animation too large and unwieldy.
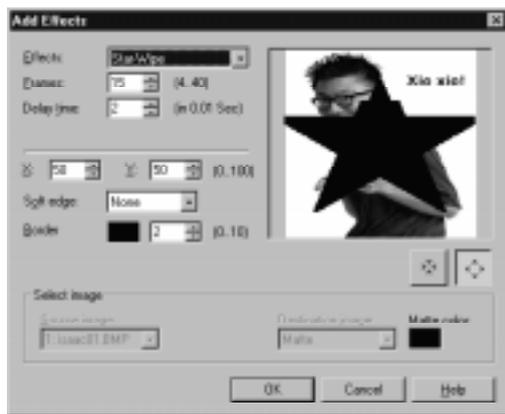
To apply a video effect:

1   Select the layer you want to use as the template image in the transition.

2   Click the **Video F/X:** *Transition or Filter Name* menu command (transition effects occupy the top-half of the menu, filters are on the bottom-half). A dialog box opens for that filter.

3   Enter the number of **Frames** over which you want the effect to occur (these are the image layers that will be added to your animation).

4   Enter the **Delay time** for the transition itself. (The delay time for the image layers themselves is decided by a combination of this and the total number of frames specified in step 3).

5   Set up the **custom options** for the effect, then click **OK**. The new image layers are added to the animation.

Saving GIF images

There are a number of ways to save your work. The first step, obviously, is to save it as an animated GIF file. However, GIF Animator offers you other output methods to meet your specific needs. You can save the image layers of an animation individually, export the animation as a stand-alone executable file, or even output it as a digital movie file.

To save an animation:

1. Click the **File: Save** or **Save As** menu command. The Save dialog box opens.

2. Locate the folder to which you want to save the file, then enter the animation's file name.

3. Click **Save**.
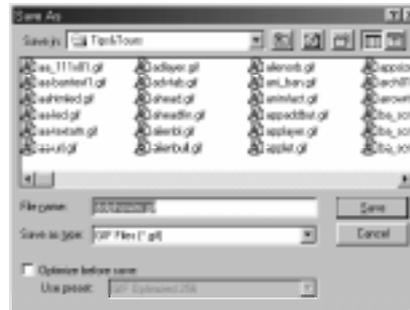
To save an optimized animation:

1. Click the **File: Optimization Wizard** menu command. The Optimization Wizard opens.

2. Follow the steps outlined by the Optimization Wizard.

3. Click **Finish**. The animation file is optimized. Click the Preview button to check out your animation. If you are satisfied with the color reduction and the quality of the animation, click the **Save As** button.

Tip: Use the Optimize mode to create optimization presets so that in the future you can save your animations quickly and with little hassle. The Optimize mode is a slightly more advanced version of the Optimization Wizard built directly into the main program window.
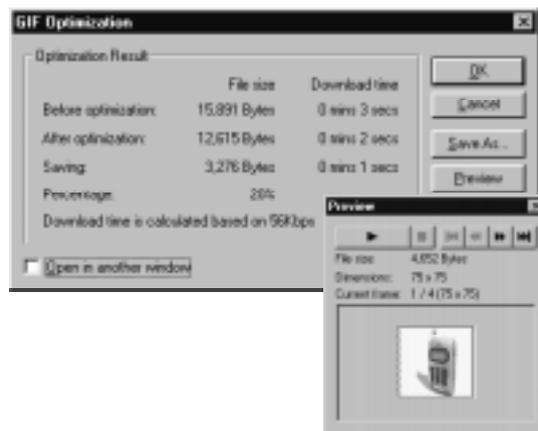
Exporting image layers

Sometimes you may want to open the image layers in your animations outside GIF Animator in order to edit them - the Export function lets you do that quickly and easily. You can also export your work as a stand-alone packaged animation. This file can be conveniently played in any Windows environment outside of your web browsers, making it ideal for sending animated greetings, birthday wishes, and fun messages to friends and family.
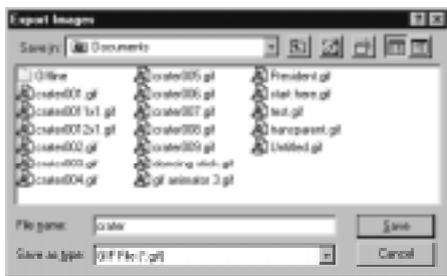
To export image layers:

1 Click the **File: Export - Image Layer**s menu command. The Export dialog box opens.

2 Select the layer(s) you want to export from the Images list.

3 Click the **As a single file** option to output the selected image layers as a new GIF animation, or select the **As a sequence of files** to export each image layer as its own individual file.

4 Click **OK**. A Save dialog box opens. Enter the base name of the image sequence (all images will have this name plus a sequence number) and their location.

5 Click **Save**.

To export HTML:

1 Click the File: Export - As HTML Code menu command.

2 The save dialog box opens. Enter the name of the HTML file.

3 Click **OK**.

To export as a Packaged Animation:

1 Click the **File: Export - As Animated Package** menu command. The Animation Packager dialog box opens.

2 Select a **Message box style** from the list of those provided (or select the **None** option to forego this). This creates a virtual notepad or greeting card in which to play your message and animation.

> **Tip:** You can customize the message files used in the Animation Packager by opening them up in a vector-imaging program, such as CorelDraw or Adobe Illustrator, and then modifying them. Similarly, you can create your own files from scratch and then save them to the 'Msgfiles' folder in the GIF Animator 4.0 directory.

3 Select a **Sound** file to play along with your animation. Click the Browse button next to the entry line and locate it on your computer. The Animation Packager supports both Midi and Wav files.

4 In the **Generate executable file** line, enter the name and location to which you want to save the new packaged animation.

5 Select a **Start frame position** - this is the position on the viewer's Windows desktop where the animation begins.

6 Select an **End frame position** - this is the position on the viewer's Windows desktop where the animation terminates.

7 Enter a message and select the font.

8 Click **OK**.
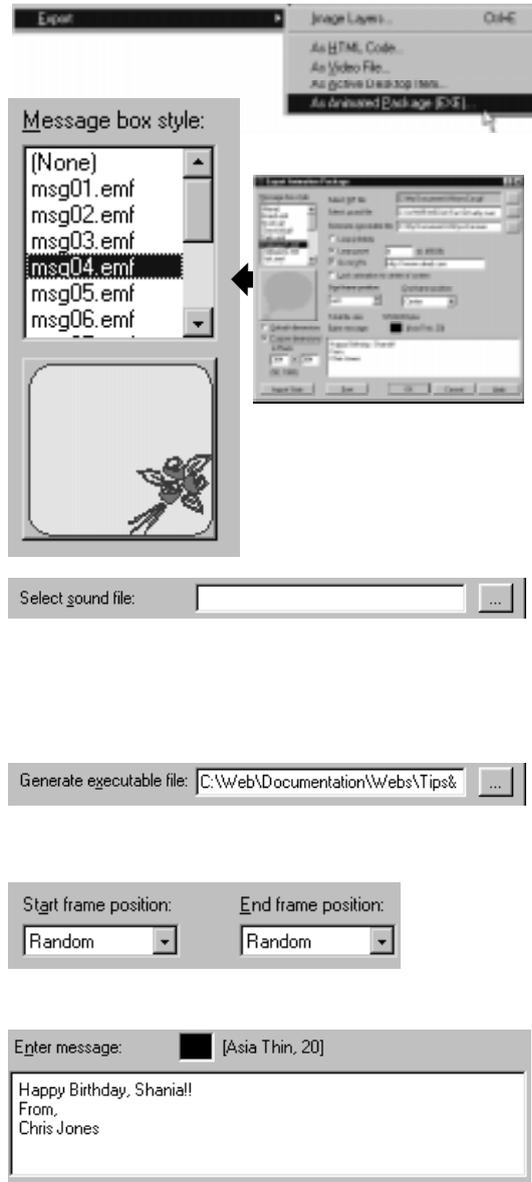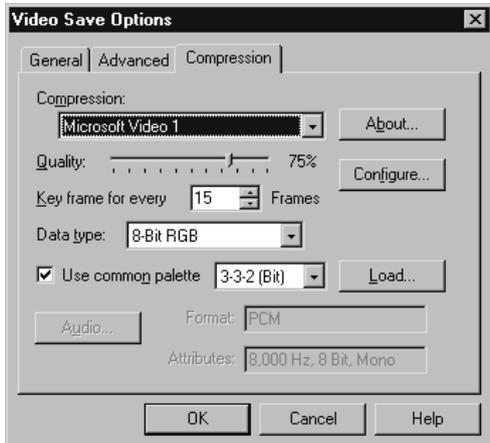
To export as a video file:

1 Click the File: Export - As Video File menu command. The Save Video File dialog box opens.

2 Enter a filename for the new video and the location to which you want to save it.

3 Select the type of video file you want to create. The choices here are dependent on the digital video codecs you have installed on your system. In most Windows environments you should at least have the Microsoft AVI option. The compression settings you'll choose later are also dependent on the codec you select here.

4 Enter a subject and description for the file (this information will only be available to you when working with the file in select video editors).

5 Click Options. The Video Save Options dialog box opens.

6 Set the video options - you can adjust the video's size to be larger or smaller than the original animation, set the frame rate (to control how smooth the animation plays), set the target playback speed (to optimize the files for playing on specific types of computers), and customize the compression options of the video file itself. Click OK when you're finished.

7 Click Save.

Appendix I: About GIF animation

GIF is an acronym for Graphics Interchange Format, an image file format created by CompuServe for conveniently storing and displaying image libraries online. Because of its completely 'lossless' compression and relatively small file size, the GIF file format has become one of the most widely used image file formats on the Internet today. GIF has undergone two major revisions since its inception in 1987, the most recent being the GIF89a specification.

GIF uses the Lempel-Ziv-Welch (LZW) compression method to store and reduce single or multiple images within the file by up to 40% of their original size. These images can contain up to 256 colors, and they do lose any of their original quality when being compressed down to more web-friendly sizes as long as they originally contained 256 colors or less. Even though GIF is a lossless format, images that are imported from other file formats and converted to GIF may lose some of their quality in the transition from True Color to 256-color. This is often the case when working with outside image editors to create the individual frames of the animation. GIF files also possess transparency attributes so that one color in the image is not displayed. This allows users to create clear backdrops for their images, letting the background colors of a web page show through. The file format also supports image interlacing, allowing users to watch the image "fade-in" as it downloads, although for multiple image GIFs (animations), interlacing is disabled beyond the first image layer.

If multiple images are stored within a GIF file, they can be viewed sequentially, much like a slide show or an animated movie. The way they appear is defined by control extensions built into the file. With an appropriate tool, such as Ulead GIF Animator, you can set these controls yourself and bring your web site to life with exciting cartoons, banner ads, glowing bullets, and other animations.
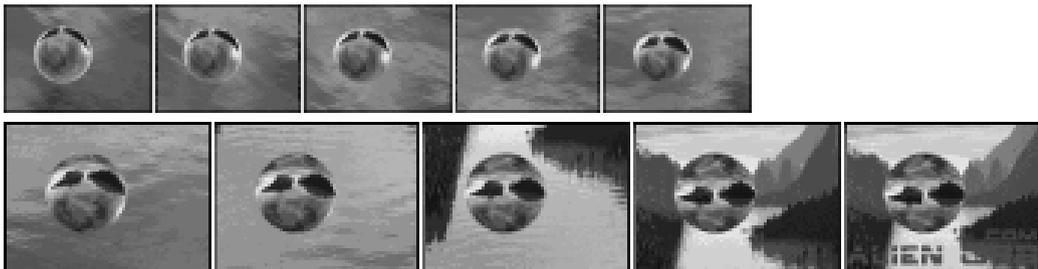
Appendix II: GIF color palettes

Every GIF image file contains an index table that defines the number of colors within an image and exactly which colors each index represents. Every color in the 256-color 'spectrum' has its own unique identification, which is stored in the image's color index (the color palette). In GIF files, every color in the index requires 3 or 4 bytes of data to define it (depending on how it was originally stored). Therefore, an image with a 256-color palette could have a color index of up to 1024 bytes in size.

There are two kinds of palettes for animated GIFs: a Global Palette, which defines the colors all images in the animation use by default; and a Local Palette, which is unique to each image in the file. When an image is inserted into a GIF animation, you can select to use either its Local Palette or the Global Palette. When building the Global Palette, there are two ways to add colors to it from a newly inserted image: the Safe Palette, which matches an image's original palette with colors found in a predefined 'web-safe' palette of 216 specific colors, then adds them to the Global Palette; and the Optimized Palette, which adds only the most predominant colors from an image's color palette to the existing Global Palette.

When you are ready to insert image layers into your animation file, you should decide how you want to manage your color palettes. If every image contains virtually identical colors, then there is no reason to fatten your animation file with redundant information by including a Local Palette in each layer. When you insert the first image into your empty animation file, GIF Animator prompts you to choose how you want to build your Global Palette. If you choose Original Palette, then the Global Palette will be based upon the original palette of that image. After that, Color Remapping prompts you to add a palette each time you insert another image. This dialog box gives you the choice of either adapting the new image to the Global Palette, or keeping its own color palette. If the image contains the same colors as the original, then choose the Global Palette to save space. However, if it has colors not found in the Global Palette, you can add them to it by choosing Safe or Optimized palette, or choose to retain the image's own color palette as a specialized Local Palette instead.

It's not always recommended that you use the Global Palette. Reducing the animation's file size is not as important as maintaining the quality of your work, but it should be a serious consideration. The best time to use a Local Palette instead of a Global Palette is when the image being inserted is drastically different from the original image.

Appendix III: Creating compact animations

There are three ways you can significantly reduce the size of your animated GIF files: reduce the color palettes, reduce the number of image layers, and optimize the individual image layers. There are pros and cons to using the first two methods, and they should be implemented judiciously. Keep in mind that the goal of creating animated GIF files is NOT to make them as compact as possible - creating compelling animations for the web is. However, until data transmission speeds increase and everyone on the net has faster access, file size should still be a significant consideration when composing your animation.

The best way to reduce color palettes is to use the Global Palette as often as possible for displaying the colors of individual layers. If one or more layers have slightly different colors included in their palettes, set your General Preferences to accumulate new colors. This way you needn't create a Local Palette for a layer that varies only by a few colors from the rest. If a layer has radically different colors from the others in the animation, your best bet is to give it a Local Palette and then reduce it by removing the colors that it shares with the Global Palette. Otherwise, the image may not display properly. The best reduced palettes are 16-, 32-, 64-, and 128-color palettes.

The second method of reducing the file size of your animation is to delete any unnecessary layers. In some cases, this may not be desirable due to the adverse affects it may have on the quality of your animation. But if you can get away with cutting out a few layers here and there then you should do it.

Ulead GIF Animator allows you to greatly reduce the file sizes of the individual layers through a third method: optimization. When you select the File: Optimization Wizard command, GIF Animator analyzes the image layers in your animation, compares them with one another, and then removes all the redundant pixels that the layers share with one another. In some cases, this method can reduce your overall file size by as much as 200%.

Finally, you should consider image layer sizes. If the motion of the animation occurs within a smaller field than the size of the "backdrop", then you shouldn't necessarily use image layers that are the same size as your background. With GIF animations, you can easily overlap much smaller GIFs to create small areas of animation set against a static backdrop. This will reduce your file size considerably, but again, do this only if the quality of your animation doesn't suffer as a result.

Appendix IV: Glossary

Aspect ratio
Keeps the basic intrinsic shape of the image layers as they are resized.

Broken frame
Any image layer that has been previously optimized and is subsequently missing pixels.

Browser-Safe
Any color palette that contains the 216 predefined colors used by all web browsers. Guarenteed to always display within those browsers.

Comment layer
The third, optional layer type that allows you to put comments in your animation.

Delay
The duration that the image layer is displayed before being removed and replaced by another.

Global Palette
The GIF file's main palette of 256 indexed colors that all image layers can reference.

Image layer
A single image within the GIF animation. Each image layer contains controls for delay, transparency, and interlacing, among others.

Local Palette
An image layer's individual color palette of up to 256 indexed colors. Image layers need not have a local palette.

Logical Screen
The dimensions of the animation as a whole.

Looping
The number of times that an animation plays. Can be set to a finite number or for infinite looping.

Optimization
Th process of making an animation as small as possible for the fastest download time on the web. Designed to preserve an animation's quality.

Optimized Palette
A palette built from the most commonly occuring colors in an image layer. Optimized for that particular layer.

Palettes
The colors contained within an animation (Global) or an image layer (Local).

Removal method
The technique used to 'wipe' an image layer from the screen before replacing it with a new layer.

Sprite
Any image layer that is smaller than a central background image and designed to be animated over it.

Safe Palette
Any palette with the standard 216 browser-safe colors.

Ulead® WebUtilities FX Razor™

Ulead Systems is pleased to announce the availability of **FX Razor**, a web development suite for Windows 95/98 and NT. **FX Razor** puts the power of high-end imaging right at every web designer's finger tips.

FX Razor is the essential digital artist's special effects toolkit. It comes with 10 powerful 32-bit Adobe Photoshop plug-ins designed for graphic artists who want to turbo-charge their favorite image editing tool with hot special effects plug-ins and make it instantly web-ready with cool web plug-ins.

- *Ulead Web.Plugins 2.0* — A comprehensive suite of 6 effects plug-ins designed to make your image editor web-ready. Included in Web.Plugins are: Button Designer, Background Designer, Shadow Designer and more.
- *Ulead Type.Plugin 1.0* — Make your text and images blaze with fire, shimmer with ice, glow with neon brightness, sparkle like glass, and more.
- *Ulead Particle.Plugin 1.0* — Eight natural particle effects for images and selections -- Smoke, Fire, Bubbles, Clouds, Rain, and more.
- *Ulead ArtTexture.Plugin 1.0* — Explore the possibilities of digital tie-dye by creating multi-color patterns swirl, and backgrounds.
- *Ulead FantasyWarp.Plugin 1.0* —Take any image or selection and warp, distort, and twist it into surreal patterns.

For more information on features, or to download a full working 15-day trial version, visit the Ulead WebUtilities web site. While there, be sure to look at our other award winning software programs: WebRazor Pro, Button.Applet, SmartSaver Pro and more.

Ulead **FX Razor** sells for $89, and is available now for online purchase (electronic download only) from: *http://www.webutilities.com*

www.ulead.com