

# Welcome to LView Pro



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If you are new to LView Pro or graphics processing, start with the following help topics:

- [Purchasing Information](#)
- [What is LView Pro?](#)
- [Image Editor](#)
- [Catalog Editor](#)

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## Purchasing LView Pro

The [Evaluation Version](#) allows you to evaluate the software for a period of up to 21 days. Purchase of the Full Version is mandatory for use extending beyond the evaluation period.

**Description:** The Full Version of LView Pro is available in CD-ROM format. The CD-ROM contains the LView Pro and Setup software, and documentation files. Included in the CD-ROM is a collection of +800 high resolution images scanned from photographs taken from various sites in the Greater Miami Area.

**Pricing:** The price of a **single user copy** of LView Pro is **US\$40.00**. Volume discounts are available as described on the [purchase form](#).

### Accepted Payment Options

- **Credit Cards** (VISA, MasterCard, American Express, Discover, Diners).
- **Checks or Money Orders** in US currency drawn on a US bank.
- **Purchase Orders:** Available for corporate or governmental purchasers; for a maximum payment term of 30 days; must be pre-paid for orders of 6 or less copies; option restricted to mail or fax ordering methods.

### Ordering Methods

- **Secure on-line Credit Card orders** made at the LView Pro Web site: <http://www.lview.com>.
- **Mail orders:** Must be accompanied by [Purchase Form](#), mail to address listed on form.
- **Fax orders:** Must be accompanied by [Purchase Form](#), fax to number listed on form.
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[Click here to access the Purchase Form.](#)

# LView Pro Full Version, Purchase Form

## 1. Shipping Information (please PRINT):

Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State: \_\_\_\_\_  
ZIP, \_\_\_\_\_  
Country: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

## 2. Pricing for LView Pro 2.0 or newer: (Please write for quantities over 99 copies)

1st copy (w/CD-ROM) US\$40.00			US\$ 40.00	<b>A</b>
2nd to 24th copies US\$20.00	—	x	_____	<b>B</b>
ea		US\$20.00=	_____	
25th to 99th copies US\$17.00	—	x	_____	<b>C</b>
ea		US\$17.00=	_____	
Additional CD-ROMs US\$10.00	—	x	_____	<b>D</b>
ea		US\$10.00=	_____	
Sub total (add <b>A + B + C + D</b> )			_____	<b>E</b>
Florida orders add required sales tax ( <b>6% of E</b> )			_____	<b>F</b>
Non US orders add <b>US\$ 8.00</b> additional S&H			_____	<b>G</b>
<b>Total</b> (add <b>E + F + G</b> )			_____	

## 3. Payment:

US funds only. Send check or money order drawn on a US bank, payable to MMedia Research Corp. Select payment option:

Enclosed check or money order, number: \_\_\_\_\_

Credit card: ( ) VISA ( ) MasterCard ( ) AMEX ( ) Discover ( ) Diners

Cardholder name: \_\_\_\_\_

Card number: \_\_\_\_\_

Expiration date \_\_\_\_\_

(MM/YY): \_\_\_\_\_

Cardholder signature: \_\_\_\_\_

## 4. Send this form together with payment to:

**Mail:** MMedia Research Corp.  
LView Pro Purchase  
1501 East Hallandale Beach Boulevard #254  
Hallandale, FL 33009 -- USA

**Fax:** 954-458-9698 (Florida, USA) (**Credit card only**)

**Email** purchase@lview.com (**Credit card only**)

:

**Credit card orders may be submitted on-line at <http://www.lview.com>**

## What is LView Pro?

LView software was first published in early 1993, as a standalone utility for viewing and editing image files. From its first version, LView became well known for its key characteristics: ease of use, reliability, and performance. Evaluation copies of LView software were made available on the Internet, where it quickly became the preferred tool to work with images found on ftp sites and newsgroups.

By the time when Web publishing became popular, LView had already been upgraded to LView Pro, and included support for the creation of images with transparent colors, and other features specific to Web graphics. Maintaining its characteristic of providing state-of-the-art software quality, the first 32-bit versions of LView Pro were available one year before the release of Microsoft Windows 95.

This version of LView Pro continues the trend set by its predecessors. It is custom made to take advantage of features found in Microsoft Windows 95 and Windows NT 4.0 operating systems.

Being a complete image processor, LView Pro allows you to create images from scratch and/or from existing image files. TWAIN compatible devices are supported, such as scanners and frame grabber cards, making it easier to transfer images into your computer.

LView Pro helps organize image libraries, by creating image catalogs. Slideshow and format conversion operations, as well as regular file operations (such as copy, move, delete, rename) are available.

Whether you are an expert or novice in digital image processing, use graphics at work or for the pleasure of viewing and building image libraries, you will find an invaluable tool in LView Pro.

 [LView Pro Feature Summary](#)

# Summary of Features

The following paragraphs summarize main features of this version of LView Pro:

- Ü **Create Image Catalogs:** Manage large number of image files, copy/move/rename/delete image files, optionally store thumbnails (miniatures of the original images) and text descriptions. Make slideshows with the original images, with interactive or timed slide advancement. Browse original images in Full Screen mode. Batch convert image files to another format.
- Ü **Full Support for Multi-Frame Image Creation:** Create Multi-Frame Images for animation. Clone frames, insert frames from disk files, change frame order, choose undraw methods, and frame delays. Use transparency. Create a single global color palette based on colors in all frames. Preview animation without leaving the editor.
- Ü **Advanced Image Selection Operations:** Select rectangles, ovals, circles, or squares. Free hand selection. Fill selection tool. Selection paint brush, with user defined size and shape. Combine selections by adding or subtracting from selected areas. Save selections to the disk for later use. Copy and paste selections to/from the image or clipboard. Move or clone selected areas. Use selections to clip painting operations. Drop Shadows from selected areas. Change the selection transparency, increase its feather, remove transparent pixels. Colorize selected areas. Crop image to selected area. Paste from the clipboard into new or existing selections.
- Ü **Advanced Color Matching:** Match colors by Red/Green/Blue components, or by Hue/Saturation/Value attributes, or by Brightness. User defined tolerance factor, matches similar colors. Color matching is used in several operations, such as Color Fill, Selection Fill, Transparent Pixel removal, etc.
- Ü **Undo and Redo operations:** Multiple level Undo and Redo operations, up to the last 32 editing operations, per image frame.
- Ü **Paint Colors:** Individual support for Foreground, Background, and Transparent colors.
- Ü **Color Selection Window:** Select paint colors for palette based and True Color images. Sort palette entries, delete unused entries, swap palette entries, change color specifications, save and open palette specifications to/from disk files. Display colors attributes in Red/Green/Blue or Hue/Saturation/Luminance, in decimal or hexadecimal base. Use the Mask feature to quickly match image pixels to respective palette entries.
- Ü **Functional Zoom:** Scaling from 1:16 to 16:1, change zoom factor with the mouse, menu, or keyboard shortcut. All editing operations are available in all zoom levels.
- Ü **Functional Grid:** User configurable size, pixel grid, snap painting operations to grid.
- Ü **Open Multiple Windows for the Same Image or Catalog:** View the image in its normal size in one window, while editing a zoomed part of it in another window. Browse catalog images in one window while viewing the original image files in another window.
- Ü **Brush Shapes and Sizes:** Square, Round, Slash, Back slash, Horizontal and Vertical brushes, sized from 1 to 200 pixels.
- Ü **Paint Brushes:** Normal, anti-aliasing Pen, Pencil, Marker, Crayon, Chalk, and Charcoal. Optionally using a Paper Texture.

- Ü **Clone Brush:** Paint an image over another image, with user defined opacity control, optionally using a Paper Texture.
- Ü **Retouch Brush:** Paint localized retouch operations, such as Lighten, Darken, Soften, Sharpen, Blur, Emboss, and Smudge, with user defined opacity and optionally using a Paper Texture.
- Ü **Color Replacer Brush:** Paint replacing Foreground, Background or Transparent colors for another color. Replace colors throughout the whole image or selection.
- Ü **Advanced Fill Tool:** Fill with solid colors, Patterns, Images or Gradients (Linear, Rectangular, Diamond, Cross, Oval, and Radial). Use Advanced Color Matching (see above). Fill within Selections.
- Ü **Airbrush:** Anti-aliasing, with variable shape, size and opacity, optionally using a Paper Texture.
- Ü **Color Channel Separation and Merging:** RGB and YUV color models.
- Ü **Image Transformations:** Mosaic, Ellipse, Pinch, Punch, Horizontal/Vertical Convex/Concave Cylinder, Horizontal/Vertical Perspective, Horizontal/Vertical Skew, etc. User defined transformations are supported.
- Ü **Image Special Effects:** Add Borders, Buttonize, Gray Palette, Motion Blur, and Seamless Pattern.
- Ü **Image Filters:** Edge enhancement, Find edges, Trace contour, Blur, Soften, Sharpen, Emboss, Despeckle, Median, Erode, Dilate, Noise, etc. User defined filters are supported.
- Ü **Image Color Depth:** Change the number of colors on an image, creating adequate palettes or using user supplied palettes. Optional inclusion of Windows' colors. User defined number of palette entries.
- Ü **Image Color Editing:** Negative, Grayscale, Contrast, Brightness, Red/Green/Blue, Gamma Correction, HSV, YUV, etc. User defined color transformations are supported.
- Ü **Common Image Operations:** Flip Horizontal/Vertical, Rotate left, right, or user defined angle, Resize, with resample option for True Color images.
- Ü **Advanced Image Operations:** Combine images with Add, Subtract, Multiply, Difference, Darker, and Lighter pixels, with optional divisor and bias parameters.
- Ü **OLE2:** Use LView Pro to embed images into Word Processor documents, Database records, etc.
- Ü **TWAIN Support:** Use LView Pro to interface with your TWAIN compliant device, such as a scanner or frame grabber card. Images are transferred directly into LView Pro, to be edited and saved to the disk.

**Miscellaneous:** Page setup and print preview. Associate with graphics file types, and activate LView Pro from the Explorer to view, edit, or print files.

**Graphics File Formats:** LView Pro supports the formats most commonly found on the Internet and in Microsoft Windows environments:

- **BMP**




Windows and OS/2 Bitmap

- **GIF**  
CompuServe's Graphics Interchange Format, including subformats GIF87a and GIF89a. Support for transparency, interlacing, and animation.
- **JPG**  
Joint Photographer's Experts Group, lossy compression, JFIF format. Support for progressive encoding and decoding.
- **PBM**  
Jef Poskanzer's Portable Bitmap.
- **TGA**  
Truevision TARGA.
- **PCX**  
ZSoft's PCX.
- **TIFF**  
Aldu's Tagged Image File Format.

## Acknowledgments

- This software is based in part on the work of the **Independent JPEG Group**.
- Windows, Windows 95 and Windows NT are trademarks of Microsoft Corporation.
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- The Graphics Interchange Format (C) is the Copyright property of CompuServe Incorporated. GIF (SM) is a Service Mark property of CompuServe Incorporated.
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  - Copyright © 1988, 1989, 1990, 1991, 1992, 1993, 1994 Sam Leffler
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## Context Help

When you click on the  [Main Toolbar button](#), or use the [Context Help](#) menu command, LView Pro switches into Context Help mode and waits for a command. Click the mouse pointer anywhere, or use the mouse or keyboard to select a menu item. LView Pro will display the help topic associated with the interface item or menu command you selected.

# The Title Bar



The title bar is located along the top of a window. It contains the name of the application and document.

To move the window, drag the title bar. Note: You can also move dialog boxes and document windows by dragging their title bars.



click to open the Control Menu, double click to exit LView Pro



click to [Minimize](#) LView Pro or a document window



click to [Maximize](#) LView Pro or a document window




click to exit LView Pro or close a document window

## The Main Toolbar



The Main Toolbar is initially displayed across the top of the LView Pro window, below the menu bar. It can be moved and sized. This toolbar provides quick mouse access to commands used in LView Pro.

 Click on this Main Toolbar button to use [Context Help](#).

To hide or display the Main Toolbar, use the [Main Toolbar menu command](#).

## The Status Bar

The status bar is displayed at the bottom of the LView Pro window. To display or hide the status bar, use the [Status Bar command](#) in the View menu.





The left area of the status bar describes actions of menu items as you use the arrow keys to navigate through menus. This area similarly shows messages that describe the actions of toolbar buttons as you depress them, before releasing them. If after viewing the description of the toolbar button command you wish not to execute the command, then release the mouse button while the pointer is off the toolbar button.

The right areas of the status bar provide information about the active image or catalog:

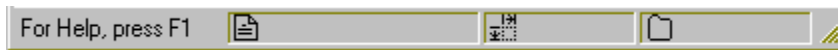
- When the [Active Editor](#) is the [Image Editor](#), the status bar information is:






Where:

-  displays the mouse pointer position, from the upper left corner of the image.
-  displays the size of the image or current operation.
-  displays the current zoom level.
-  displays the frame number in a multi-frame image.

- When the [Active Editor](#) is the [Catalog Editor](#), the status bar information is:



Where:

-  displays the filename corresponding to a catalog record
-  displays the original size of the image in a catalog record.
-  displays the position of a record and the number of records in the catalog.

## Mouse Buttons

LView Pro uses both the left and right mouse buttons on selection, painting and drawing operations. The help topics use the terms **primary** and **secondary** to refer to these mouse buttons. When Windows is configured for **Right-handed** operation, the primary button is the **left** mouse button (and the secondary is the **right** button). When Windows is configured for **Left-handed** operation, primary button means right button (and secondary means left).

Whichever configuration is used, the primary mouse button is the one you use to access window menus, click on buttons, etc.

## Multiple Document Interface

A Windows application has a **single document interface**, when it can only work with a single document at a time. An example of single document interface application is Windows' Notepad. To edit more than one document, using a single document interface application, you need to start more than one **instance** of that application (one for each document).

LView Pro implements a **multiple document interface**, which means that a single instance of LView Pro can edit multiple documents (images or catalogs). In fact, you can even open more than one window for the same document, to edit different parts of the same image, or to view the same part using different zoom levels. As a rule, each **document** (image or catalog) being edited is displayed in its own window, and a document can be displayed in more than one window.

Multiple Document Interface is useful for a number of reasons: all documents share the same system resources (such as menus, buttons, bitmaps, etc.) which saves memory; multi-document operations can be performed (such as cloning parts of one image into another; operating images together; splitting images into color channels; etc).

### Active Document



## Active Document

When more than one document is opened, the one that was edited last (or opened last) is called the **active document**. Menu, mouse, or keyboard commands operate on the active document. LView Pro displays the name of the active document on its [title bar](#), so you know which one it is. You will also notice that the window title of the active document is painted with a different color.

You can make another document become active by either clicking the mouse button on the document's title bar, or by selecting it on the [Window menu](#).

 Active Editor

## Active Editor

LView Pro supports two types of documents: images and catalogs. Each type has its own editor. When the active document is an image, the **active editor** is the [Image Editor](#). Conversely, when the active document is a catalog, the active editor is the [Catalog Editor](#).

The terms **active image** and **active catalog** are also used to refer to the active document.

Images in LView Pro may be composed of more than one frame. Throughout the documentation, the term **active image** is used to refer to the frame of the active image that is currently being displayed and edited.

### Multiple Document Interface



# Image Editor

LView Pro Image Editor can create new images from scratch or from existing images. It can also be used to view or edit existing image files.

- [Flip \(Image Menu\)](#)
- [Rotate \(Image Menu\)](#)
- [Resize \(Image Menu\)](#)
- [Redimension \(Image Menu\)](#)
- [Understanding Color Adjustments](#)
- [Understanding Filters](#)
- [Understanding Transformations](#)
- [Understanding Color Depth Conversions](#)
- [The Draw Toolbar](#)
- [The Draw Options DialogBar](#)
- [The Color Selection DialogBar](#)
- [Zooming and Scrolling](#)
- [Using a Grid](#)
- [Frames and Animation](#)
- [Working with Selections](#)
- [Painting and Drawing](#)

## The Draw Toolbar



The Draw Toolbar is initially displayed across the left side of the LView Pro window. It can be moved and sized. This toolbar provides quick mouse access to painting, drawing, and other image related commands used in LView Pro.

- Click on this [Main Toolbar](#) button to use [Context Help](#).

To hide or display the Draw Toolbar, use the [Draw Toolbar menu command](#).

# The Draw Options DialogBar

The Draw Options DialogBar is initially displayed across the bottom side of the LView Pro window. It can be moved. This DialogBar provides access to configuration options for the tools available in the LView Pro [Draw Toolbar](#). This DialogBar changes contents according to the currently selected tool in the Draw Toolbar.

Some of the options displayed in this DialogBar are used by more than one tool. Below is a list of all of these options:

- |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Feather</b>    | <p>This option determines the increment amount that is automatically applied to selections being created. The selection feather may be incremented after selections are created, with the <a href="#">Increase Feather command</a></p> <p><b>Available for Selection tools:</b></p> <ul style="list-style-type: none"><li><a href="#">Selecting Shapes</a></li><li><a href="#">Freehand Selections</a></li><li><a href="#">Painting Selections</a></li><li><a href="#">Filling Selections</a></li></ul> |
| <b>Line</b>       | <p>This option determines the thickness of the line used in line drawings and to bound shapes.</p> <p><b>Available for Drawing tools:</b></p> <ul style="list-style-type: none"><li><a href="#">Line drawing</a></li><li><a href="#">Shapes</a></li></ul>                                                                                                                                                                                                                                               |
| <b>Match mode</b> | <p>This option determines the desired type of color comparison.</p> <p><b>Available for tools that use <a href="#">Advanced Color Matching</a>:</b></p> <ul style="list-style-type: none"><li><a href="#">Color Replacer Brush</a></li><li><a href="#">Fill Tool</a></li><li><a href="#">Filling Selections</a></li></ul>                                                                                                                                                                               |
| <b>Opacity</b>    | <p>This option determines the opacity of the paint used in a brush. Small values make the paint more transparent, higher values make the paint more opaque.</p> <p><b>Available for some Brushes:</b></p> <ul style="list-style-type: none"><li><a href="#">Clone Brush</a></li><li><a href="#">Retouch Brush</a></li><li><a href="#">Airbrush</a></li></ul>                                                                                                                                            |
| <b>Shape</b>      | <p>This option determines the shape of the brush. Available selections are <b>Square</b>, <b>Round</b>, <b>Slash</b>, <b>Back slash</b>, <b>Horizontal</b>, and <b>Vertical</b>.</p> <p><b>Available for all Brushes:</b></p> <ul style="list-style-type: none"><li><a href="#">Paint Brushes</a></li><li><a href="#">Clone Brush</a></li><li><a href="#">Retouch Brush</a></li><li><a href="#">Color Replacer Brush</a></li><li><a href="#">Airbrush</a></li></ul>                                     |
| <b>Size</b>       | <p>This option determines the size of the brush. Available sizes range from <b>1 to 200</b> pixels.</p>                                                                                                                                                                                                                                                                                                                                                                                                 |

**Available for all Brushes:**

[Paint Brushes](#)

[Clone Brush](#)

[Retouch Brush](#)

[Color Replacer Brush](#)

[Airbrush](#)

**Texture**

This option determines the type of **paper texture** LView Pro simulates when painting with brushes. Paper textures alter the way the paint mixes with the paper (the image being painted). Use **No Texture** to paint without paper texture simulation.

**Available for all Brushes:**

[Paint Brushes](#)

[Clone Brush](#)

[Retouch Brush](#)

[Color Replacer Brush](#)

[Airbrush](#)

**Tolerance**

This option determines the margin of tolerance for color comparison operations.

**Available for tools that use [Advanced Color Matching](#):**

[Color Replacer Brush](#)

[Fill Tool](#)

[Filling Selections](#)

# The Color Selection DialogBar

The Color Selection DialogBar is initially displayed across the right side of the LView Pro window. It allows quick access to painting colors. For [palette based images](#), the Color Selection DialogBar provides access to palette entry colors and performs palette related operations.

## Elements of the Color Selection DialogBar

<b>Paint Colors</b>	Three rectangles located on the upper part of the DialogBar. Display the Foreground, Background, and Transparent colors.
<b>Color Information</b>	Under the Paint Colors area. Displays the color components of a color, can display Red, Green, and Blue or Hue, Saturation, and Luminosity. For palette based images, displays the palette index of the color.
<b>Current Color</b>	Color rectangle under the Color Information area. Displays the color under the dropper mouse pointer.
<b>HSL/RGB button</b>	Selects between Red, Green, and Blue or Hue, Saturation, and Luminosity display.
<b>DEC/HEX button</b>	Selects between decimal or hexadecimal numeric base.
<b>Operation Buttons</b>	For palette based images only, provide access to palette related operations.
<b>Color Palette Area</b>	On the bottom part of the DialogBar, select the Foreground, Background, and Transparent colors among the colors displayed here. When the active image is in True Color format, contains 24-bit colors. When the active image is in Palette Based format, contains the color palette entries for selection.

## Changing paint color specifications

Click the primary mouse button on one of the three color boxes (Foreground, Background, or Transparent) located on the upper part of the DialogBar. This will display a color selection dialog, where you can specify the color attributes for the color you clicked on. On this color selection dialog, you can also **define up to 16 custom color combinations**. LView Pro remembers these custom colors between sessions, and you can use them to quickly select paint colors.

## Selecting colors from the Color Palette Area

<b>Foreground color</b>	Click the <b>primary</b> mouse button on the color
<b>Background color</b>	Click the <b>secondary</b> mouse button on the color
<b>Transparent color</b>	Click either mouse button on the color, while pressing the <b>Alt</b> key.



## Changing the color specification of a palette entry

Available for palette based images: Double click either mouse button on the palette entry you wish to modify. Select the new color on the color selection dialog that is displayed.

## Specifying Foreground, Background, and Transparent colors

Click the primary mouse button on the color rectangle displaying the color you wish to modify. Select the color you wish on the color selection dialog that is displayed. If the active image is in palette based format, LView Pro automatically finds and uses the palette entry containing the color specification closer to the one you selected.

## Operation Buttons (available for palette based images)



### Mask

Press this button to turn on the **Mask** feature. When the Mask feature is on, clicking the dropper tool on the image or on the Color Palette Area activates a visual cue to identify pixels painted with the selected color: Pixels in the image are all painted **Black**, except pixels painted with the selected color, which are painted **White**.



### Open

Click on this button to open a previously saved color palette specification from a disk file.



### Save

Click on this button to save the color palette specification to a disk file, for future use.



### Sort

Click on this button to sort palette entries using the [Sort Palette Entries dialog](#).



### Swap

Click on this button to swap palette entries using the [Swap Palette Entries dialog](#).



### Delete

Click on this button to delete palette entries using the [Delete Palette Entries dialog](#)

## Zooming and Scrolling

LView Pro can display images in Zoom levels ranging from 1:16 to 16:1. The Zoom level can be increased with the [Zoom In command](#), decreased with the [Zoom Out command](#), and turned off with the [Zoom Off command](#). The keys + and - can also be used to increase and decrease the Zoom level.



Use this [Main Toolbar](#) button to quickly turn Zoom off.



When you select the Zoom tool on the [Draw Toolbar](#), the mouse pointer takes the shape of a magnifying lens. Click the primary mouse button on an image, and LView Pro will increase the Zoom level and try to center on screen the portion of the image where you clicked the mouse. Clicking the secondary mouse button decreases the Zoom level.

### While the mouse pointer is shaped as a magnifying glass:

- If you **click and hold** down either mouse button **without moving the mouse pointer**, Zoom levels are automatically increased/decreased after a short initial delay.
- **Zooming and Scrolling are intimately related** in LView Pro. You can **click and hold** down either mouse button and **move it around** to make LView Pro scroll the image on screen. It is as if you were grabbing and moving the image with the mouse pointer.



When you select the Hand Scroller tool on the [Draw Toolbar](#), the mouse pointer takes the shape of a hand. **Click either mouse button** on an image, and **move it around**. LView Pro scrolls the image on screen, as if you were grabbing and moving it with the mouse pointer.

### While the mouse pointer is shaped as a hand:

- If you **click and hold** down either mouse button **without moving the mouse pointer**, Zoom levels are automatically increased/decreased after a short initial delay (just like when the mouse is shaped like a magnifying lens).



When you select either the [Grid](#) or the [Frames](#) tool on the [Draw Toolbar](#), LView Pro transforms the mouse pointer into the shape of a magnifying lens or of a hand, whichever of these tools was used last. The commands described above also work in this case.

## Using a Grid

LView Pro can display a Grid to aid in the process of painting and drawing. The Grid helps you position drawings at precise distances and compare the position of different parts of the image. Some painting, drawing, and selection operations can be constrained to operating over grid lines, making it easier to paint/draw in straight lines, draw squares and circles.



Use this [Main Toolbar](#) button to quickly show/hide the Grid. This is equivalent to using the [Grid command](#).

When you select the Grid Tool on the [Draw Toolbar](#), the [Draw Options DialogBar](#) displays and allows you to modify the following grid setting options:

### Show

Select this option to show the **Normal Grid** or the **Pixel Grid** (depending on their individual settings). This is equivalent to using the [Grid command](#).

When this option is not selected, LView Pro does not show the Grid.

### Normal Grid

Select this option to show the **Normal Grid** when **Show** is selected. The Normal Grid is displayed as squares of configurable **Size**.

### Size

Set this option to the desired size for the **Normal Grid**.

### Pixel Grid

Select this option to display a **Pixel Grid** (a pixel size grid), instead of the **Normal Grid**, when the current [Zoom level](#) is greater than the selected value for **Zoom**. The **Pixel Grid** is useful for pixel precise drawing/painting/selecting operations, it clearly individualizes pixels in the image. Note that the **Pixel Grid** is only displayed when **Show** is selected, and it takes precedence over the **Normal Grid**, depending on the current Zoom level.

### Zoom

Set this option to the minimum Zoom level from which the **Pixel Grid** should take precedence over the **Normal Grid**.

### Style

There are four available styles for the Grid:

**Reverse Color:** This style of grid is always visible. The grid is painted by reversing the color of pixels underneath it. If you are editing an image with many gray colors, the grid may appear too faint. Select another style of grid in this case.

**B&W Selection:** This style of grid is painted with alternating Black and White line segments (resembling a selection frame).

**Solid White:** This style of grid is painted with solid White lines. It is useful when editing a dark image.

**Solid Black:** This style of grid is painted with solid Black lines. It is useful when editing a light image, or images that do not have many dark areas. This grid may be smoother to work with than the Reverse Color grid, for most photographic quality images.

### Snap To

Select this option to make LView Pro snap drawing/painting/selecting operations to the Grid, **when the Grid is visible**.



# Frames and Animation

LView Pro offers complete support for the creation, editing and previewing of multi-frame images, for the purpose of animation. Multi-frame images are popular on Web graphics publishing, and use the GIF89a graphics file format. At the moment of writing, GIF89a is the only multi-frame image format (aside from movie type formats, like AVI) used for image frame animation.

To select **global** animation options for the active image, such as frame relative order and looping, use the [Animation command](#).



When you select the Frames Tool on the [Draw Toolbar](#), the [Draw Options DialogBar](#) displays and allows you to modify and execute the following Frame setting options:

## Frame

Set this option to the frame number of the active image you wish to view/edit. You can also change the frame number with the [Goto Frame command](#) or its keyboard shortcuts.

## Left and Top

Set these options to the desired left and top coordinates of the current frame within the animation. Image frames need not be all the same size, if an animation frame changes a small part of the image, you can make that frame small and position it to cover the affected area of the image. Doing this reduces the overall image file size. The Left and Top frame position can also be changed using the **keyboard arrow keys while pressing the Alt key** (**Alt+Left** to move one pixel left, **Alt+Right** to move one pixel right, **Alt+Up** to move one pixel up, **Alt+Down** to move one pixel down).

## Duration

Set this option to the desired duration of the current frame. When the image is animated, the current frame will be displayed for the duration you select, before advancing to the next frame. **Duration** is expressed in **100ths of a second** (i.e. use 100 to achieve a 1 second duration).

## Undraw Method

Select the action that should be taken when the current frame's duration expires, and the animation advances to the next frame. Available methods are:

<b>Undefined</b>	This method leaves the undraw decision to the software performing the animation. It is that software that decides what to do when advancing to the next frame. LView Pro uses the <b>Leave</b> method when the <b>Undraw Method</b> is set to for <b>Undefined</b> .
<b>Leave</b>	The image is not changed
<b>Restore Background</b>	The area painted with the current frame is filled with the selected background color
<b>Restore Previous</b>	The area painted with the current frame is restored to its previous contents (the image that was displayed before the current frame was painted)



## Use Transparency

Select this option to activate transparent color processing for the current frame.

When this option is selected, transparent pixels in the current frame (pixels that are painted with the currently selected transparent color) are not displayed during the animation. This option is useful for frames that contain non-rectangular images.



### **Insert New Frame**

Click on this button to insert a new frame after the current frame. LView Pro displays a dialog to prompt for frame dimensions before creating the new frame.



### **Insert Existing Frame**

Click on this button to insert a new frame, after the current frame, from the contents of an existing image file. LView Pro displays a dialog to select the image file name.



### **Insert Clone Frame**

Click on this button to insert a new frame, after the current frame, initialized with the same image as the current frame. This option is useful when creating animations that display similar frames. You can clone frames and then edit the cloned images to introduce animation changes.



### **Delete Frame**

Click on this button to remove the current frame from the animation. LView Pro confirms the deletion before performing it. **Frame deletion cannot be undone.**



### **Create Global Color Palette**

Click on this button to create a global (single) color palette for all the frames in the animation. This button activates the [Create Global Palette dialog](#).



### **Animate Frames**

Click on this button to animate the frames in the active image. Click on this button again to stop the animation. You can also animate frames with the [Animate command](#) and its keyboard shortcut.

# Working with Selections

## LView Pro Selections have multiple purposes

- **Drop shadows** from selected parts of the active image. This is especially useful to create effects when adding text.
- **Colorize** the selected part of the active image with a user selected tone of color.
- **Overlay** the active image **with semi-transparent images**. This feature can be used to create amazing visual effects.
- **Restrict the scope of editing/painting** commands. Painting operations are **clipped** to selected areas, which means that non-selected areas are not affected by painting operations. This is useful for precise painting, when you don't want paint to go outside well delimited areas, or to perform color replacement operations within a bounded area.
- **Restrict cut/copy/paste** operations to the selected parts of the active image. This is useful for creating images by piecing other images together, without seams.
- **Restrict the scope of Color Adjustment, Filter, Transformation, and some Special Effects** operations to the selected parts of the image. This is useful to retouch or enhance parts of the image without modifying parts that do not need changing.
- **Restrict** the scope of **Flip** and **Rotate** commands.

## Two Selections States

- **Non-floating**

When a selection is first defined (delimited) or when areas are removed from or added to a selection, the selection state is set to non-floating.

Non-floating selections are easily recognizable because they are delimited with a moving frame (also called **marquee**) painted with **Red and Gold** colors.

Non-floating selections are used for clipping, clipboard processing and some special effect purposes. They can easily be transformed into floating selections.
- **Floating**

When a selection is moved, by clicking the mouse pointer in a selected area and dragging it, a non-floating selection is switched into floating state.

Floating selections are easily recognizable because they are delimited with a **Blue and Gold marquee**.

Selections also switch into floating state when the commands Copy or Cut from image (Selection Menu) are used.

Floating selections switch back to non-floating state when the mouse is clicked outside the selected area, or when the command Paste to image (Selection menu) is used.

Floating selections are used for the same purposes as non-floating selections, and, in addition, can be moved, made semi-transparent and be tiled (pasted) anywhere on the active image.

## Simple and Complex Selections

- Simple selections can be defined from simple shapes, such as rectangles, ovals,

squares, and circles. Defining simple selections is as easy as drawing these shapes with the Shape Selection tool.

- Complex selections, made from irregular shapes, would be very hard to draw or to define in terms of simple shapes. LView Pro makes it easy to define complex selections, with the **Free Hand**, Selection Brush and Fill Selection tools.

## Changing Selections

Complex selections may sometimes be easier to define when broken down into pieces. LView Pro allows you piece a selection together by removing areas from and adding areas to existing selections:

- When you hold down the **Control key** while using a selection tool, the area you define is **removed** from the current selection. The mouse pointer signals that the area will be removed from the selection by displaying a minus sign -
- When you hold down the **Shift key** while using a selection tool, the area you define is **added** to the current selection. The mouse pointer signals that the area will be added from the selection by displaying a plus sign +

## Re-using Selections

LView Pro allows you to save selections to disk files, and to read them back whenever needed, even when editing a different image. This is useful when you define a complex selection, that can be used in more than one image. It is also useful when you are not quite done defining a selection but must interrupt your work.

### Related Topics

-  [Selecting Shapes](#)
-  [Freehand Selections](#)
-  [Painting Selections](#)
-  [Filling with Selections](#)
  
-  [Paste as a New Selection \(Edit Menu\)](#)
-  [Paste Into Selection \(Edit Menu\)](#)
-  [Drop Shadow \(Selections Menu\)](#)
-  [Colorize \(Selections Menu\)](#)
-  [Copy from Image \(Selections Menu\)](#)
-  [Cut from Image \(Selections Menu\)](#)
-  [Paste to Image \(Selections Menu\)](#)
-  [Replace Image \(Selections Menu\)](#)
-  [Change Opacity \(Selections Menu\)](#)
-  [Remove Transparent \(Selections Menu\)](#)
-  [Open \(Selections Menu\)](#)
-  [Save As \(Selections Menu\)](#)



# Selecting Shapes



Click on this [Draw Toolbar](#) button to use the **Shape Selection** tool.

This tool allows you to [select areas](#) of the active image by **enclosing them into simple shapes**.

To achieve greater precision, you can [Zoom into](#) the image, and optionally use the [Grid](#) to help you draw straight lines.

Options for this tool are set using the [Draw Options DialogBar](#). Available options are:

## **Shape**

Select the shape you would like to use among **Rectangle**, **Square**, **Oval**, and **Circle**.

## **Feather**

Select the increment amount to be automatically applied upon selections creation.

- [Working with Selections](#)
- [The Draw Options DialogBar](#)
- [The Draw Toolbar](#)
- [Zooming and Scrolling](#)
- [Using a Grid](#)

# Freehand Selections



Click on this [Draw Toolbar](#) button to use the **Freehand Selection** tool.

This tool allows you to [select areas](#) of the active image by freely **drawing a line around these areas**.

Click either mouse button and, without releasing it, drag the mouse pointer around the area you would like to select. When you release the mouse button, LView Pro **automatically closes the area** by connecting the initial point to the final point.

To achieve greater precision, you can [Zoom into](#) the image, and optionally use the [Grid](#) to help you draw straight lines.

Options for this tool are set using the [Draw Options DialogBar](#). Available options are:

## **Feather**

Select the increment amount to be automatically applied upon selections creation.

- [Working with Selections](#)
- [The Draw Options DialogBar](#)
- [The Draw Toolbar](#)
- [Zooming and Scrolling](#)
- [Using a Grid](#)

## Painting Selections



Click on this [Draw Toolbar](#) button to use the **Selection Brush**.

This tool allows you to paint [selected areas](#) on the active image.

Click either mouse button and, without releasing it, **drag the mouse pointer over the areas you would like to select**.

To achieve greater precision, you can [Zoom into](#) the image, and optionally use the [Grid](#) to help you draw straight lines.

Options for this tool are set using the [Draw Options DialogBar](#).

- [Working with Selections](#)
- [The Draw Options DialogBar](#)
- [The Draw Toolbar](#)
- [Zooming and Scrolling](#)
- [Using a Grid](#)

# Filling with Selections



Click on this [Draw Toolbar](#) button to use the **Selection Fill Tool**.

This tool allows you to [select areas](#) of the active image using the [Advanced Color Matching](#) algorithm.

This tool works exactly like the [Fill Tool](#), except that areas of the image become selected, rather than painted. This is the indicated tool to quickly select areas with complex boundaries, yet filled with pixels of similar colors.

Click either mouse button on a **pixel within the area you would like to select**.

Options for this tool are set using the [Draw Options DialogBar](#).

- [Working with Selections](#)
- [Fill Tool](#)
- [Understanding Advanced Color Matching](#)
- [The Draw Options DialogBar](#)
- [The Draw Toolbar](#)



# Painting and Drawing

LView Pro offers a variety of painting and drawing tools.



Choosing Paint Colors



Paint Brushes



Clone Brush



Retouch Brush



Color Replacer Brush



Fill Tool



Airbrush



Text Tool



Line drawing



Shapes

## Choosing Paint Colors

- Click on this [Draw Toolbar](#) button to use the **Dropper** Tool.

This tool allows you to choose painting colors from colors found on pixels of the active image. LView Pro uses three colors: the Foreground color, the Background color and the Transparent color. Select the Dropper tool, and the mouse pointer takes the shape of a dropper. Move the dropper over the active image, or current selection, and the color of the pixel exactly underneath the dropper is displayed on the [Color Selection DialogBar](#). When you see the color you would like to paint with, select it to be the new Foreground, Background or Transparent color using a mouse click:

- **Foreground color:** click the primary mouse button
- **Background color:** click the secondary mouse button
- **Transparent color:** click either mouse button, **while pressing the Alt** key.

You can select painting colors from the active image or selection while using other painting tools, **without having to switch to the Dropper tool**. When you press the **Control** key, the mouse pointer temporarily switches into the shape of the Dropper, and allows you to select colors. This feature is available when you use any of the following painting tools:

**NOTE:** You can also select paint colors using the [Color Selection DialogBar](#).

- [Paint Brushes](#)
- [Color Replacer Brush](#)
- [Fill Tool](#)
- [Airbrush](#)
- [Text Tool](#)
- [Line drawing](#)
- [Shapes](#)

You can also choose paint colors using the [Color Selection DialogBar](#).

# Paint Brushes

■ Click on this [Draw Toolbar](#) button to use one of LView Pro's **Paint Brushes**.

There are 7 Paint Brushes in LView Pro, you can choose one of the following brushes from the **Brush Type** list in the [Draw Options DialogBar](#):

- **Normal**: Draws solid colors.
- **Pen**: Draws solid colors, uses anti-aliasing when painting over [True Color](#) images.
- **Pencil, Marker, Crayon, Chalk, and Charcoal**: Imitate the drawing patterns of the real world tools they are named after.

To use a Paint Brush, click a mouse button on the active image, or current selection, and drag it to paint. You can draw a **straight line** going from the last point you painted to the current mouse position if you press the **Shift** key before clicking the mouse button. To select which paint color is used by the brush:

- **Foreground color**: click the primary mouse button
- **Background color**: click the secondary mouse button
- **Transparent color**: click either mouse button, **while pressing the Alt** key.

Other options for Paint Brushes are **Size**, **Shape** and **Paper Texture**, which are set in the [Draw Options DialogBar](#).



## Clone Brush

■ Click on this [Draw Toolbar](#) button to use the **Clone Brush**.

Use of the Clone Brush is restricted to [True Color](#) images.

With the Clone Brush you can **paint** one image over another image, with variable opacity. The Clone Brush operates over one **Source Image** (the image that is to be cloned), one or more **Target Images** (images over which the Source Image is painted) and a choice of **Clone Mode**.

To select the **Source Image** for the Clone Brush, press and hold the **Shift** key and click either mouse button on a image being edited by LView Pro. The selected image becomes the source for the Clone Brush, and the point where the mouse was clicked establishes the **cloning anchor point**. You can change the Source Image at any time, by repeating this operation.

There are two **Clone Modes**:

- **Non-aligned: Every time you click** a mouse button to start a cloning operation, the cloning anchor point of the source image is aligned with the point where the mouse is clicked on the target image. This is useful to clone the area around the anchor point on the source image over different areas on the target image.
- **Aligned: The first time you click** a mouse button to start a cloning operation, the cloning anchor point of the source image is aligned with the point where the mouse is clicked on the target image. **Subsequent mouse clicks do not change that alignment**. This is useful to keep source and target images aligned while performing more than one cloning operation.

To use the Clone Brush, click a mouse button on the active image (which becomes the Target Image), or current selection, and drag it to paint. You can draw a **straight line** going from the last point you painted to the current mouse position if you press the **Shift** key before clicking the mouse button.

Other options for the Clone Brush are **Size**, **Shape**, **Opacity**, and **Paper Texture**, which are set in the [Draw Options DialogBar](#).

## Retouch Brush

■ Click on this [Draw Toolbar](#) button to use the **Retouch Brush**.

Use of the Retouch Brush is restricted to [True Color](#) images.

The Retouch Brush is similar to a [Paint Brush](#), but instead of painting with colors, it performs retouch effects on the active image or current selection.

There are 7 retouch modes in LView Pro, you can choose one from the **Retouch Mode** list in the [Draw Options DialogBar](#), among **Lighten**, **Darken**, **Soften**, **Sharpen**, **Blur**, **Emboss**, and **Smudge**.

To use the retouch Brush, click a mouse button on the active image, or current selection, and drag it to retouch the image underneath the brush. You can retouch a **straight line** going from the last point you retouched to the current mouse position if you press the **Shift** key before clicking the mouse button.

Other options for the Clone Brush are **Size**, **Shape**, **Opacity**, and **Paper Texture**, which are set in the [Draw Options DialogBar](#).

## Color Replacer Brush

■ Click on this [Draw Toolbar](#) button to use the **Color Replacer Brush**.

The Color Replacer Brush is very similar to the Normal [Paint Brush](#), except that it only paints over pixels whose color matches the color selected to be replaced.

To select which color to paint with (**Paint Color**) and which color to replace (**Replacing Color**), use one among the possible combinations of keyboard and mouse button selections, summarized below:

Mouse Button	Keyboard	Paint Color	Replacing Color
Primary	---	Foreground	Background
Secondary	---	Background	Foreground
Primary	Alt	Transparent	Background
Secondary	Alt	Transparent	Foreground
Primary	Alt+Shift	Foreground	Transparent
Secondary	Alt+Shift	Background	Transparent

The Color Replacer Brush uses the [Advanced Color Matching algorithm](#) to match image colors to the Replacing Color. Note that the **None** Color Matching mode is not intended for use with the Color Replacer Brush. When this mode is selected, the Color Replacer automatically uses the Red, Green and Blue mode instead.

To use the Color Replacer Brush, click a mouse button on the active image, or current selection, and drag it to replace colors on the area of the image underneath the brush. Colors on that area, that match with the Replacing Color, are painted with the Paint Color.

**Shortcut:** To make the Color Replacer Brush act over the whole image or selection, painting with the Paint Color all pixels currently painted with colors that match the Replacing Color, **double click** the mouse button.

Options for the Color Replacer Brush are **Size**, **Shape**, **Opacity**, **Match Mode**, **Tolerance**, and **Paper Texture**, which are set in the [Draw Options DialogBar](#).

# Fill Tool

■ Click on this [Draw Toolbar](#) button to use the **Fill Tool**.

The **Fill Tool** operates in two steps: (1) First it determines which pixels will be painted in the fill operation, using the [Advanced Color Matching algorithm](#). (2) Then, it paints these pixels according to options set in the [Fill Options dialog](#), accessible when you click the button labeled **Options** on the [Draw Options DialogBar](#).

To use the Fill Tool, **click and release a mouse button** while the mouse pointer is on the active image, or current selection. **The color of the pixel underneath the mouse pointer** is compared to neighboring pixels, in a search for matches using the Advanced Color Matching algorithm. Every time a color match is successful, neighbor pixels of the newly matched pixel are added to the search. In other words, it is the color of the pixel under the mouse pointer that, together with color matching options, **determines which pixels will be painted**.

When the **Solid** option is selected (see [Fill Options dialog](#)), you can select which paint color to use:

- **Foreground color:** click the primary mouse button
- **Background color:** click the secondary mouse button
- **Transparent color:** click either mouse button, **while pressing the Alt** key.

**Gradients** are always painted the Foreground and Background colors.

Options for the Fill Tool are **Match Mode**, **Tolerance**, and **Fill Style** (configured by clicking on the **Options** button), which are set in the [Draw Options DialogBar](#).

# Airbrush

■ Click on this [Draw Toolbar](#) button to use the **Airbrush**.

To use the Airbrush, **click and hold a mouse button** while the mouse pointer is on the active image, or current selection. LView Pro simulates one spray of paint with an airbrush, and after a short delay starts continuously spraying paint. You can move the airbrush around, while it is spraying. You can select which paint color to use:

- **Foreground color:** click the primary mouse button
- **Background color:** click the secondary mouse button
- **Transparent color:** click either mouse button, **while pressing the Alt** key.

Options for the Airbrush are **Size**, **Shape**, **Opacity**, and **Paper Texture**, which are set in the [Draw Options DialogBar](#).

# Text Tool

- Click on this [Draw Toolbar](#) button to use the **Text Tool**.

To use the Text Tool, click the mouse on the active image, where you would like to add text. The [Add Text dialog](#) dialog will display to allow you to type the text you would like to add. Text is created using the options currently set for the Text Tool. Text is added to the image as a new floating selection, which can be moved around. The floating selection has the shape of the letters on the text you typed, and is filled with one of the painting colors. To select which painting color should be used:

- **Foreground color:** click the primary mouse button
- **Background color:** click the secondary mouse button
- **Transparent color:** click either mouse button, **while pressing the Alt** key.

Options for the Text Tool are:

## Font

Set this option to the font name you would like to use

## Size

Set this option to the desired (average) size of text characters



## Bold

Click on this button to select bold characters



## Italic

Click on this button to select italic characters



## Underline

Click on this button to select underlined characters



## Strikeout

Click on this button to select strikeout characters



## Left

Click on this button to left-justify multiple lines of text



## Center

Click on this button to center multiple lines of text



## Right

Click on this button to right-justify multiple lines of text

## Line drawing

■ Click on this [Draw Toolbar](#) button to use the **Line Tool**.

To use the Line Tool, click a mouse button on the starting point of the line you would like to draw. Without releasing the button, drag the mouse pointer to the ending point of the line, and only then, release the button. To select which painting color should be used:

- **Foreground color:** click the primary mouse button
- **Background color:** click the secondary mouse button
- **Transparent color:** click either mouse button, **while pressing the Alt** key.

Options for the Line Tool are:

### **Line**

Select the desired line width

### **Connected**

Select this option to draw a line starting at the ending point of the previous line. This option is useful to draw a sequence of connected lines.

# Shapes

- Click on this [Draw Toolbar](#) button to use the **Shape Tool**.

To use the Shape Tool, click a mouse button on the active image and drag it to draw the currently selected shape. When the size of the shape is satisfactory, release the mouse button. To select which painting color should be used:

- **Foreground color:** click the primary mouse button
- **Background color:** click the secondary mouse button
- **Transparent color:** click either mouse button, **while pressing the Alt** key.

Options for the ShapeTool are:

## Line

Select the desired line width for the shape borders

## Shape

Select the shape you would like to draw, among: **Rectangle, Square, Oval, Circle, Round Rectangle, and Round Square**

## Filled

Select this option to fill the shape with the same color used for the border. When this option is not selected, shapes are hollow.



# Catalog Editor

LView Pro Catalogs are useful for organizing groups of image files, performing common file operations, executing slideshow, or format conversion operations.

- [Creating a Catalog](#)
- [Updating a Catalog](#)
- [Browsing a Catalog](#)
- [Catalog Navigation Commands](#)
- [Performing Slideshows](#)
- [Converting File Formats](#)
- [Performing File Operations](#)

## Creating a Catalog

Use the [New \(File Menu\)](#) command to create a new Catalog. Select LView Pro Catalog for the type of document to be created, and then select the filename where the new Catalog will be stored. Finally, fill out the [Catalog Properties dialog](#) with options for the new Catalog. If you are creating a Catalog to perform a Slideshow or Format Conversion operation, you may not need to store Thumbnails. Preventing Thumbnail storage speeds up the creation process, and this option can always be changed in the future. You can add new folders to the list of folders that are automatically searched for files when the Catalog is updated.

## Updating a Catalog

Select the [Update \(Catalog Menu\)](#) command. Data stored in each catalog record is compared to the current status of the image file the record represents. If the catalog stores Thumbnails, these are updated to reflect changes made to the original image files. Folders listed in the [Catalog Properties dialog](#) are searched for new or changed image files. You can stop the Catalog update operation by selecting **Stop Update** from the Catalog menu.

## Browsing a Catalog

Use the **arrow keys** to move from one record to the other. Use the **PgUp** and **PgDn** keys, to advance or return one page at a time. The keys **Home** and **End** take you to the first and last records.

### Selecting Records

Press the the **Shift** key while browsing with the keyboard to select records visited. When the **Shift** key is pressed, you can also select groups of records by clicking the mouse button on a last record of the group. Records are selected from the current one to the one you click. Press and hold the **Control** key and click the mouse button on a record, to toggle its selected state.

### Moving Records

Records may be moved within the catalog to change the order of processing for slideshows or browsing operations. Click the mouse button on selected records and drag it to the position where you would like to move them. Records are moved to the position preceding the record where the mouse button is released.

# Catalog Navigation Commands

## **During normal edition:**

- Arrow keys
- Page up and Page down keys
- Home and End keys

## **During Slideshow Operations:**

- Right arrow, spacebar and one mouse click advance to the next slide
- ESC key, and mouse double-clicks interrupt the slideshow

## Performing Slideshows

Select the [Start Slideshow \(Catalog Menu\)](#) command to start a slideshow. The original image associated with each catalog record is exhibited in Full Screen. Exit the slideshow with the ESC key, or by double-clicking a mouse button. The order of records in a slideshow is the same as their order in the Catalog. Each catalog record determines how the slideshow should proceed after displaying its associated image. You can change record slideshow properties with the [Record Properties \(Catalog Menu\)](#) command, for a single record or for multiple records. Use the [Catalog Properties \(Catalog Menu\)](#) command to select if slideshow operations should cycle back to the first slide after the last one is displayed.

## Converting File Formats

Use the [Convert Files \(Catalog Menu\)](#) command to convert the format of files in the Catalog.

## Performing File Operations

File **Rename**, **Move**, **Copy**, and **Delete** operations can be performed to the original image files associated with selected catalog Records. All File Operations are performed using the Windows shell functions, which allows them to be undone with the Windows Recycle Bin.

Select the records you would like to perform operations with (Rename operations can be performed to a single record at a time), and then use one of the following menu commands:

- Rename File (Catalog Menu)
- Copy Files (Catalog Menu)
- Move Files (Catalog Menu)
- Delete Files (Catalog Menu)





## New (File Menu)

Use this command to create a new image or catalog in LView Pro. Select the type of new document you want to create in the [File New dialog box](#)

New images can also be created directly from the Windows' clipboard, with the [Paste As New Image](#) command, or with the [Acquire](#) command.

Existing image files can be opened with the [Open command](#), and existing catalogs with the [Catalog Command](#)


- [Open Command](#)
- [Catalog Command](#)

## Open (File Menu)

Use this command to open an existing image file in a new [Image Editor](#) window. Multiple images and catalogs can be edited, each in its own window. Use the [Window menu](#) to switch among the multiple opened documents.

Recently used image or catalog files may still be in the [recently used document list](#), where they can be directly selected.

You can create new images or catalogs with the [New Command](#).

 [Catalog Command](#)

## Catalog (File Menu)

Use this command to open an existing catalog file in a new [Catalog Editor](#) window. Multiple images and catalogs can be edited, each in its own window. Use the [Window menu](#) to switch among the multiple opened documents.

Recently used image or catalog files may still be in the [recently used document list](#), where they can be directly selected.

You can create new images or catalogs with the [New Command](#).

 [Open Command](#)

## **Close (File Menu)**

Use this command to close all windows containing the active document, image or catalog.

Catalog files do not need saving, they are automatically updated.

LView Pro suggests that you save changes to your image before you close it. If you close an image without saving, you lose all changes made since the last time you saved it.

## Save (File Menu)

Use this command to save the active image to its current name and directory. When you save an image for the first time, LView Pro displays the [Save As dialog box](#) so you can name your image. If you want to change the name and directory of an existing image before you save it, choose the [Save As menu command](#).

When editing an image embedded in an external [OLE2](#) container, this command is not available.

## Save As (File Menu)

Use this command to save and name the active image.

To save an image with its existing name and directory, use the Save command.

When editing an image embedded in an external OLE2 container, this command is replaced by the Save Copy As menu command.

## Save Copy As (File Menu)

This command is only available when editing an image embedded in an external [OLE2](#) container. Use it to save a copy of the active image.



## **Delete (File Menu)**

This command is available when editing an existing image or catalog. Use it to delete the file corresponding to the image or catalog. This command works with the file delete options set for the Windows' recycling bin.

## On Open (File Menu)

This command is available when Windows is set to use a [palette based display mode](#) .

Use this command to activate the [Color Conversion on Open dialog](#).

## On Save (File Menu)

Use this command to activate the [Color Conversion on Save dialog](#).

## File Type Associations (File Menu)

Use this command to activate the [File Type Associations dialog](#).

## Graphics File Formats (File Menu)

Use this command to activate a dialog to configure options for handling different graphics file formats.

- BMP Options
- GIF Options
- JPG Options
- PBM Options
- TIFF Options

## Recent File List (File Menu)

Use this command to activate the [Recent File List dialog](#).

## Taskbar Start Menu (File Menu)

Use this command to activate the [Create Taskbar Start Menu dialog](#).

## Undo/Redo Levels (File Menu)

Use this command to activate the [Undo/Redo Levels dialog](#).



## **Acquire (File Menu)**

Use this command to interface with a TWAIN compatible device (such as a scanner or frame grabber card). The TWAIN device will display a dialog and allow you to obtain an image. Once the TWAIN device is finished obtaining the image, it will transmit the image data to LView Pro so you can view, edit and save it.

## Select Source (File Menu)

Use this command to select among different available TWAIN devices. TWAIN will display a dialog to allow you to select a device for use with the LView Pro [Acquire command](#).

## **Page Setup (File Menu)**

Use this command to select options for printing the active image or catalog.

## Print Preview (File Menu)

Use this command to preview how the active image or catalog would be printed using the currently selected [Page Setup options](#).

## **Print (File Menu)**

Use this command to print the active image or catalog. Printing is performed according to the currently selected [Page Setup options](#). You can preview how images and catalogs will be printed using the [Print Preview command](#).

## Send (File Menu)

This command is available when the active editor is the [Image Editor](#). The active image must have been saved to the disk, or opened from an existing file, before this command is made available.

Use this command to send the file from where the active image was read from, or saved to, through electronic mail. This command presents a mail window with that file attached to it. You may then fill out the To: field, Subject: field, etc., and add text to the body of the message if you wish. When you are finished you may click the "Send" button to send the message.

## **1, 2, 3, 4 ... (File Menu)**

Use the numbers and filenames listed at the bottom of the File menu to open the last documents you closed. Choose the number that corresponds to the document you want to open.

## **Exit (File Menu)**

Use this command to end your LView Pro session. You can also use the Close command on the application Control menu. LView Pro prompts you to save documents with unsaved changes.



## Undo (Edit Menu)

This command is available when the active editor is the [Image Editor](#).

Use this command to reverse the last editing action, if possible. The Undo command dims on the menu if you cannot reverse your last action.

You can redo editing actions with the [Redo command](#).

You can specify the maximum number of undo (and redo) actions, per image frame, using the [Undo/Redo levels](#) command.

## Redo (Edit Menu)

This command is available when the active editor is the [Image Editor](#).

Use this command to reverse the last [Undo](#) action, if possible. The Redo command dims on the menu if you cannot reverse your last Undo.

You can undo editing actions and Redo commands with the [Undo command](#).

You can specify the maximum number of undo (and redo) actions, per image frame, using the [Undo/Redo levels](#) command.

## Clear Undo (Edit Menu)

This command is available when the active editor is the [Image Editor](#).

Use this command to clear (empty) all undo buffers, for all image frames. Undo and Redo actions will become unavailable.

## Cut (Edit Menu)

This command is available when the active editor is the [Image Editor](#).

One of the following actions is performed:

- If there is no defined selection: Cut copies the active image to the clipboard and then paints it with the currently selected background color.
- If a selection is defined, but is not floating: Cut copies the selected area to the clipboard and paints the selected area with the currently selected background color.
- If a floating selection exists: Cut copies it to the clipboard and eliminates the selection.

Cutting data to the clipboard replaces the contents previously stored there.

## Copy (Edit Menu)

This command is available when the active editor is the [Image Editor](#).

One of the following actions is performed:

- If there is no defined selection: The active image is copied to the clipboard.
- If a selection is defined: The selected area is copied to the clipboard.

Copying data to the clipboard replaces the contents previously stored there.

## **Paste as a New Image (Edit Menu)**

This command is available when there is image data on the clipboard. Use this command to create a new image and initialize it with a copy of the image on the clipboard.

## Paste as a New Selection (Edit Menu)

This command is available when the active editor is the [Image Editor](#), and when there is image data on the clipboard. Use this command to create a new floating selection and initialize it with a copy of the image on the clipboard.

## Paste Into Selection (Edit Menu)

This command is available when the active editor is the [Image Editor](#), when there is image data on the clipboard, and a selection is defined on the active image. Use this command to replace the contents of the selection with the image on the clipboard. The image is sized to fit inside the current selection.



## Clear (Edit Menu)

This command is available when the active editor is the [Image Editor](#).

One of the following actions is performed:

- If there is no defined selection: The active image is painted with the currently selected background color.
- If a selection is defined: The selected area is painted with the currently selected background color.

## **Empty Clipboard (Edit Menu)**

This command is available when there is image data on the clipboard. Use this command to clear (empty) the clipboard contents. This can be useful if the system is running low in memory.

## Main Toolbar (View Menu)

Use this command to show/hide the [Main Toolbar](#).

## Draw Toolbar (View Menu)

Use this command to show/hide the [Draw Toolbar](#).

## **Draw Options (View Menu)**

Use this command to show/hide the [Draw Options DialogBar](#).

## Color Selection (View Menu)

Use this command to show/hide the [Color Selection DialogBar](#).

## Status Bar (View Menu)

Use this command to show/hide the [Status Bar](#).

## Hide Tools (View Menu)

Use this command to hide/undo hide all tool windows ([Main Toolbar](#), [Draw Toolbar](#), [Draw Options](#), [Color Selection](#), and [Status Bar](#)). When you use this command, LView Pro hides all tool windows that are currently visible, and changes the name of this menu command to **Undo Hide**. Select Undo Hide to make these tool windows visible again.

You can also hide/undo hide all tool windows by pressing the **H** keyboard shortcut key.



## Zoom In (View Menu)

This command is available when the active editor is the [Image Editor](#).

Use this command to [zoom](#) into the active image. You can also use the keyboard shortcut + or the zoom tool in the [Draw Toolbar](#) to achieve the same result.

Note that changing the zoom level does not alter the dimensions of the image. To alter the dimensions, use the [Resize command](#).

## Zoom Out (View Menu)

This command is available when the active editor is the [Image Editor](#).

Use this command to [zoom](#) into the active image. You can also use the keyboard shortcut - or the zoom tool in the [Draw Toolbar](#) to achieve the same result.

Note that changing the zoom level does not alter the dimensions of the image. To alter the dimensions, use the [Resize command](#).

## Zoom Off (View Menu)

This command is available when the active editor is the [Image Editor](#).

Use this command to view the active image without [zoom](#).

You can also use the keyboard shortcut **Z** or the zoom-off button in the [Main Toolbar](#) to achieve the same result.


## Grid (View Menu)

This command is available when the active editor is the [Image Editor](#).

Use this command to show/hide the [Grid](#). You can also use the keyboard shortcut **G** or the grid button in the [Main Toolbar](#) to achieve the same result.

## Goto Frame (View Menu)

This command is available when the active editor is the [Image Editor](#) and when the active image has more than one [frame](#).

Use this command to view or edit another frame of the active image. You can go to the **first**, **last**, **next**, and **previous** frame. You can also change the frame number on [Draw Options DialogBar](#), when you select the  [Frames Tool](#) on the [Draw Toolbar](#).

### Keyboard shortcuts:

<b>Alt+PgUp</b>	<b>Goto previous frame</b>
<b>Alt+PgDn</b>	<b>Goto next frame</b>
<b>Alt+Home</b>	<b>Goto first frame</b>
<b>e</b>	
<b>Alt+End</b>	<b>Goto last frame</b>

 [Frames and Animation](#)

## Animate (View Menu)

This command is available when the active editor is the [Image Editor](#) and when the active image has more than one [frame](#).

Use this command to start/stop animating the active image. Animations can also be started/stopped with the **keyboard spacebar**.

 [Frames and Animation](#)

## Record Display (View Menu)

This command is available when the active editor is the [Catalog Editor](#).

Use this command to change the way LView Pro displays catalog records. Options are:

- Both Thumbnail and Title (available for catalogs that store thumbnails)
- Thumbnail only (available for catalogs that store thumbnails)
- Title only
- Original image

Note that you can display the same catalog in more than one window, using different options in each window. To open a catalog in more than one window, use the [New Window command](#)

## Full Screen (View Menu)

Use this command to enter/leave **Full Screen** mode. LView Pro positions its window over all available display area, including over the task bar area. The LView Pro caption is hidden, and the menu is positioned just outside the display area, to make more editing/viewing space. You can still access menu commands if you click the mouse pointer on the first row of pixels, or if you use a keyboard shortcut to access top level menu items, e.g. Alt+F to access the File Menu, Alt+V to access the View Menu, etc.

Full Screen mode is specially useful if your display is configured for less than 1024x768 resolution. You can also enter/leave Full Screen mode by pressing the **F** keyboard shortcut key.



## Flip (Image Menu)

Use this command to flip (mirror) the active image or current selection in the horizontal or vertical direction.

## Rotate (Image Menu)

Use this command to activate the [Rotate dialog](#).

## Resize (Image Menu)

Use this command to activate the [Resize dialog](#).

## Redimension (Image Menu)

Use this command to activate the [Redimension dialog](#).

## Color Adjustments (Image Menu)

Both [pre-defined](#) and [user-defined](#) color adjustments operations are supported.

## Filters (Image Menu)

Both [pre-defined](#) and [user-defined](#) are supported.

## Transformations (Image Menu)

Both [pre-defined](#) and [user-defined](#) transformations are supported.

## **Add Borders (Image Menu)**

Use this command to activate the [Add Borders](#) dialog.



## Buttonize (Image Menu)

Use this command to activate the [Buttonize](#) dialog.

## Gray Palette (Image Menu)

Use this command to transform the active image into **gray palette** format. The image will be transformed into palette based [grayscale](#) format, with an associated [color palette](#) with entries ranging from pure black to pure white.

## Motion Blur (Image Menu)

Use this command to activate the [Motion Blur](#) dialog.

## Seamless Pattern (Image Menu)

Use this command to create a new image from the active image, or [current selection](#). LView Pro will create an image suitable to be used as a pattern with the [Fill Tool](#), in the sense that it can be tiled without showing seams.

## Count Colors (Image Menu)

Use this command to count the number of distinct colors used in the active image.

If the active image is palette based, LView Pro will open the Count Colors dialog to show an individual usage count per palette entry.

If the active image is in True Color format, only the color count is displayed.

## Color Depth (Image Menu)

Use this command to activate the [Color Depth](#) dialog.

## Color Channels (Image Menu)

LView Pro can split images into their color components (channels) in two modes: Red, Green, and Blue, and Y, Cb, Cr. In either case, three images are created, each composed of a single color channel of the original image. You can edit these images in separate, and then use the [Combine Channels](#) dialog to re-create the original image with the changes made.

## Operate (Image Menu)

Use this command to activate the [Operate Images](#) dialog.



## **Animation (Image Menu)**


This command is available when the Active image has more than one frame.

Use this command to activate the [Animation dialog](#).




## Select All (Selections Menu)

Use this command to add the whole active image into a selection.

 Working with Selections

## Select None (Selections Menu)

Use this command to remove the current selection, if one is defined.

 Working with Selections


## Invert Selection (Selections Menu)

Use this command to invert the current selection: selected areas become de-selected, de-selected areas become selected.

■ Working with Selections


## Cut from Image (Selections Menu)

Use this command to cut the current selection from the active image. The selection becomes floating, and the image under the selection is painted with the background color. You can achieve the same effect by clicking the primary mouse button on a non-floating selection.

 Working with Selections

## Copy from Image (Selections Menu)

Use this command to copy the current selection from the active image. The selection becomes floating, and the image under the selection is preserved. You can achieve the same effect by clicking the secondary mouse button on a non-floating selection.

 Working with Selections

## Paste to Image (Selections Menu)


Use this command to copy the current selection to the image at its current position. The selection becomes non-floating.

■ Working with Selections




## Replace Image (Selections Menu)

Use this command to replace the active image with the current selection. The selection may be floating or not.

 Working with Selections


## Change Opacity (Selections Menu)

Use this command to activate the [Change Selection Opacity](#) dialog.

 Working with Selections

## Colorize (Selections Menu)

Use this command to activate the [Colorize Selection](#) dialog.

 Working with Selections


## Drop Shadow (Selections Menu)

Use this command to activate the [Drop Shadow](#) dialog.

 Working with Selections


## Increase Feather (Selections Menu)

Use this command to activate the [Increase Selection Feather](#) dialog.

 Working with Selections

## Remove Transparent (Selections Menu)

Use this command to activate the [Remove Transparent Pixels](#) dialog.

 Working with Selections

## Open (Selections Menu)

Use this command to read a previously saved selection.

■ Working with Selections

## Save As (Selections Menu)

Use this command to save the current selection position, shape, and size for future use.


 Working with Selections



## Update (Catalog Menu)

Use this command to start a catalog update operation. Each record stored in the catalog is updated by trying to read information from the original image file. This operation can, optionally, delete records associated to files that are not found during the update. The update operation also searches the folders listed in the [Catalog Properties](#) dialog for new image files.


Several catalog operations become unavailable during the update operation. While the update is performed, this menu command is renamed to **Stop Update**. You can stop an update operation at anytime, by selecting this menu command.

 Catalog Editor

## Scan Folder (Catalog Menu)


Use this command to scan a folder for image files. New catalog records will be created to newly found files, and existing catalog records will be updated if they correspond to any files in the folder being scanned. This command is useful to introduce records for image files stored in folders that are not listed in the [Catalog Properties](#) dialog.

Several catalog operations become unavailable during the scan folder operation. While the operation is performed, the [Update command](#) in the catalog menu is renamed to **Stop Update**. You can the scan folder operation at anytime, by selecting Stop Update.

 [Catalog Editor](#)


## Sort Records (Catalog Menu)

Use this command to activate the [Sort Records](#) dialog.

 Catalog Editor


## Find Record (Catalog Menu)

Use this command to activate the [Find Record](#) dialog.

 Catalog Editor


## Repeat Find (Catalog Menu)

Use this command to repeat the find operation from the current record in the catalog, using the same options as in the last [Find Record](#) command.

 Catalog Editor


## **Remove Records (Catalog Menu)**

Use this command to remove the currently selected records from the catalog. The remove operation cannot be undone.

 Catalog Editor

## Select All Records (Catalog Menu)

Use this command to set all catalog records in selected state.

 Catalog Editor

## **Rename File (Catalog Menu)**

This command is available when only a single catalog record is in selected state.

Use this command to rename the original file corresponding to the selected catalog record. The catalog record is updated to store the new file name you choose.

 Catalog Editor



## Copy Files (Catalog Menu)

Use this command to copy the original files corresponding to the selected catalog records into a destination folder.


 Catalog Editor

## **Move Files (Catalog Menu)**

Use this command to move the original files corresponding to the selected catalog records into a destination folder. The catalog records are updated to reflect the change of folder.

## Convert Files (Catalog Menu)

Use this command to activate the [Convert Files](#) dialog.

 Catalog Editor

## Delete Files (Catalog Menu)


Use this command to delete the original files associated with the selected catalog records. Optionally, the records are also removed from the catalog, depending on the current settings of the [Catalog Properties](#) dialog.

This command works with the file delete options set for the Windows' recycling bin.

 Catalog Editor


## Start Slideshow (Catalog Menu)

Use this command to start a Full Screen slideshow with the original images corresponding to records in the catalog. Slide advancement is performed according to options set for each catalog record in the [Record Properties](#) dialog.

 Catalog Editor


## Record Properties (Catalog Menu)

Use this command to activate the [Record Properties](#) dialog for the currently selected catalog records.

 Catalog Editor

## Catalog Properties (Catalog Menu)

Use this command to activate the [Catalog Properties](#) dialog for the active catalog.

 Catalog Editor

## **New Window (Window Menu)**

Use this command to create a new window to display and edit the active document (image or catalog). New windows can be created and closed individually. The document is closed only when the last window associated with it is closed.



## **Cascade (Window Menu)**

Use this command to arrange multiple opened windows in an overlapped fashion.

## **Tile Horizontally (Window Menu)**

Use this command to vertically arrange multiple opened windows in a non-overlapped fashion.

## **Tile Vertically (Window Menu)**

Use this command to arrange multiple opened windows side by side.

## **Arrange Icons (Window Menu)**

Use this command to arrange the icons for minimized windows at the bottom of the main window. If there is an open document window at the bottom of the main window, then some or all of the icons may not be visible because they will be underneath this document window.

## **Auto Fit (Window Menu)**

Use this command to resize the active document window to better fit the document's dimensions.

## **1, 2, 3, 4 ... (Window Menu)**

LView Pro displays a list of currently open document windows at the bottom of the Window menu. A check mark appears in front of the active document. Choose a document from this list to activate it.

An asterisk \* next to an image's name indicates that the image has not been saved since was last modified.

## **Help Topics (Help Menu)**

Use this command to access the LView Pro help file.

## Context Help (Help Menu)

Use this command to make LView Pro switch into [Context Help mode](#).



## Tip of the Day (Help Menu)

Use this command to activate the [Tip of the Day](#) dialog.

## Visit Web Page

Use this command to visit the LView Pro Web Page. Internet Web access from your computer and Web browsing software are required.




LView Pro can be [purchased on-line on the Web](#).

## About LView Pro



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-  [License Agreement](#)
-  [Purchasing Information](#)
-  [Acknowledgments](#)

## **Restore (Control Menu)**


Use this command to return the active window to its size and position before you chose the Maximize or Minimize command.

## Move (Control Menu)

Use this command to display a four-headed arrow  so you can move the active window or dialog box with the arrow keys.

Note: This command is unavailable if you maximize the window.

## Size (Control Menu)

Use this command to display a four-headed arrow  so you can size the active window with the arrow keys.

After the pointer changes to the four-headed arrow:

- Press one of the DIRECTION keys (left, right, up or down arrow key) to move the mouse pointer to the border you want to move.
- Press a DIRECTION key to move the border.
- Press ENTER when the window is the size you want.

Notes:

- This command is unavailable if you maximize the window.
- You can use the mouse to drag the size bars at the corners or edges of the window.

## Minimize (Control Menu)

Use this command to reduce the LView Pro window to an icon, or to reduce the active document window to an icon.

You can minimize a window with the mouse, by clicking on the minimize button on the [window caption](#).

## Maximize (Control Menu)

Use this command to enlarge the active window to fill the available space.

You can maximize a window with the mouse, by clicking on the maximize button on the [window caption](#).



## Close (Control Menu)

Use this command to close the active window or dialog box.

Double-clicking a Control-menu box is the same as choosing the Close command.

Note: If you have multiple windows open for a single document, the Close command on the document Control menu closes only one window at a time. You can close all windows at once with the Close command on the File menu.

## **Next Window (Control Menu)**

Use this command to switch to the next open document window. LView Pro determines which window is next according to the order in which you opened the windows.

## **Previous Window (Control Menu)**

Use this command to switch to the previous open document window. LView Pro determines which window is previous according to the order in which you opened the windows.



## Add Borders (Dialog)

Use this dialog to add borders to the active image. Borders are painted with the currently selected [background color](#).

Dialog box options:

**Left, Top, Right, and Bottom**

The desired size, in pixels, of the border at each side of the image.

**Use same size on all sides**

Check to use the same size on all sides.

[Choosing Paint Colors](#)

[Color Selection DialogBar](#)

## Add Text (Dialog)

Use this dialog to type text to be added as a floating selection to the active image, at the mouse pointer location.

Dialog box options:

### **Type Text Below**

Window where text is typed. Text is displayed on screen as you type it. Use Ctrl-Enter to insert a new line into the text.

Working with Selections

Add Text Tool

## Animation (Dialog)

Use this dialog to select **global** animation options for the active image. Global options are: **frame relative order and looping**. For information about setting local animation options (options related with frame attributes) see [Frames and Animation](#).

Dialog box options:

### Frame

Select the frame to move up or down from this list.

### Move Up

Click on this button to move the selected frame up (swap it with the previous frame).

### Move Down


Click on this button to move the selected frame down (swap it with the next frame).

### Count

Select the number of times the animation should loop. Select **0** to avoid looping: animation will be executed only once from the first to last frame.

### Forever

Check this option to loop forever. When this option is not checked, the image will loop **Count** times.

 [Frames and Animation](#)

## Buttonize (Dialog)

This dialog is available when the active image is in [True Color](#) format.

Use this dialog to create a Windows rectangular **button** effect around the active image, or current selection. LView Pro uses the currently selected Foreground and Background colors to paint the edges of the button.

Dialog box options:

### **Edge Size**

Select the percentage of the image that should be included in the border of the button. The smallest allowed percentage 1%. Use 50% to include all image in the border.

### **Transparent Edge**

Check this option to create a transparent edge. The edge is created opaque if this option is unchecked.

### **Image Preview**

Click this button to preview the button on the active image.

### **Thumbnail preview**

A small size preview of the results of this operation is exhibited on this window.

- [Understanding Image Colors](#)
- [Working with Selections](#)
- [Choosing Paint Colors](#)
- [Color Selection DialogBar](#)



# Catalog Properties (Dialog)

Use this dialog to view/change the properties associated with the active catalog.

Dialog box options:

## **Filename**

The filename where the catalog is stored. For information only, cannot be changed.

## **Auto Record Removal**

Select optional update removal policies for catalog records:

### **When Image File is Deleted during catalog operation**

Check to delete records when you use the [Delete Files command](#)

### **When Image File is not Found or unreadable during update**

Check to delete records without image when you use the [Update command](#)

## **Thumbnail Storage**

Select options for thumbnail (small copies of the original image file) storage on catalog records:

### **Do not store (this can be changed later)**

Check to avoid thumbnail storage. This option makes the catalog file smaller, and speeds up update operations. This may be useful if you are creating a catalog for the purpose of performing slideshows or format conversion operations. You can change this option after the catalog is created.

### **Store with maximum pixel Width and Height of ...**

Select the maximum dimensions of a catalog thumbnail. Smaller dimensions result in smaller catalog files.

## **During Updates, scan these Folders for new/changed Image Files**

Select a list of folders to be automatically scanned for new or changed image files, when you use the [Update command](#).

### **Add**

Click this button to add a folder to the list.

### **Remove**

Click this button to remove the current folder from the list.

## **Cycle back to first slide after last slide is shown**

Check this box to make slideshow operations restart from the beginning after the last slide is exhibited. When this box is unchecked, slideshow operations end at the last slide.

## Change Selection Opacity (Dialog)


This dialog is available when a floating selection is defined.

Use this dialog to change the opacity of the current floating selection.

Dialog box options:

### **Opacity Factor**

Select higher values to make the selection more opaque. Smaller values make the selection transparent, and allow the active image to be seen through the selection image. The opacity factor is taken into account when you use the [Paste on Image command](#).

 Working with Selections

# Color Adjustment Specification (Dialog)

Use this dialog to create or edit a user-defined color adjustment operation.

Dialog box options:

## **Name**

Use this box to select the name of the operation. This name is displayed in the list of operations in the [User-defined Color Adjustments](#) dialog.

## **Message**

This box displays a message about the expressions that are typed in the following options. The message helps you find errors and correct the expressions.

## **Initial Expression**

Type an expression that will be executed once, in the beginning of the operation. This expression is useful to initialize variables for use on the other expressions.

## **New Red Component Values**

Type an expression to specify the new Red component of a pixel. This expression is evaluated for each pixel of the image.

## **New Green Component Values**

Type an expression to specify the new Green component of a pixel. This expression is evaluated for each pixel of the image.

## **New Blue Component Values**

Type an expression to specify the new Blue component of a pixel. This expression is evaluated for each pixel of the image.

## **Curve Window**

The shape of component expressions is displayed in this window, as you move the focus from expression to expression.

- [Understanding Colors](#)
- [Understanding Image Colors](#)
- [Understanding Color Adjustments](#)
- [Understanding Expressions](#)

## Pre-defined Color Adjustments (Dialog)

Use this [Multiple Operation Dialog](#) to apply one of the **pre-defined Color Adjustment operations** to the active image or current selection. Color Adjustment operations work restricted to the current selection only when the active image is in [True Color](#) format.

Available pre-defined color adjustments include:

<b>Name</b>	<b>Action</b>
Negative	Photographic negative
Grayscale	Remove color
Contrast	Adjust contrast
Brightness	Adjust brightness
Logarithmic Brightness	Alternative brightness increase
Hyperbolic Sine	Alternative brightness + contrast increase
Exponential De-contrast	Reduce contrast maintaining bright colors
Red, Green, and Blue	Adjust color components individually
Gamma Correction	Adjust individual R, G, and B gamma values
Hue, Saturation and Value	Adjust color components by <a href="#">hue, sat, and val</a>
YUV (Y, Cr, and Cb)	Adjust color components by <a href="#">YUV</a>

- [Understanding Computer Colors](#)
- [Understanding Image Colors](#)
- [Understanding Multiple Operation Dialogs](#)
- [Understanding Color Adjustments](#)
- [Understanding Color Models](#)

## User-defined Color Adjustments (Dialog)

Use this [Multiple Operation Dialog](#) to apply one of the **user-defined** [Color Adjustment operations](#) to the active image or current selection. Color Adjustment operations work restricted to the current selection only when the active image is in [True Color](#) format.

From this dialog you can also [create new or edit existent user-defined Color Operations](#).

- [Understanding Computer Colors](#)
- [Understanding Image Colors](#)
- [Understanding Multiple Operation Dialogs](#)
- [Understanding Color Adjustments](#)

## Color Conversion on Open (Dialog)

Some image file formats are capable of storing images in [True Color](#) format, or images without color palettes. When such image files are opened, and Windows is set to use a [palette based display mode](#), LView Pro automatically converts the image into [palette based format](#). Use this dialog to select how this type of [Color Depth](#) conversion should be performed.

Color Conversion on Open is not necessary when Windows is set to use a True or High color display mode. In this case, this dialog will not be available.

- [Understanding Computer Colors](#)
- [Understanding Image Colors](#)
- [Understanding Display Modes](#)
- [Understanding Color Depth Conversions](#)

## Color Conversion on Save (Dialog)

Some image file formats are not capable of storing images in [True Color](#) format, or images without color palettes. When LView Pro is asked to save a True Color image in such image file formats, it automatically converts the image into [palette based format](#). Use this dialog to select how this type of [Color Depth](#) conversion should be performed.

- [Understanding Computer Colors](#)
- [Understanding Image Colors](#)
- [Understanding Color Depth Conversions](#)

## Color Count (Dialog)

This dialog is displayed when you select the [Count Colors command](#) and the active image is in [palette based](#) format.

This dialog informs the total number of unique colors that are actually used (**Colors Used**) and, for each palette entry, the total number of pixels that are colored with the entry's color specification.



## Color Depth (Dialog)

Use this dialog to change the [Color Depth](#) of the active image. LView Pro does not convert an image into [True Color](#) format, when Windows is set to use a [palette based display mode](#).

- [Understanding Color Depth Conversions](#)
- [Understanding Image Colors](#)
- [Understanding Display Modes](#)

## Colorize Selection (Dialog)

This dialog is available when the active image is in [True Color](#) format and a selection is defined.

Use this dialog to colorize the current selected area. The brightness of the pixels in the area is used, together with the color options, to colorize the area.

Dialog box options:

**U (or Hue) value**

Enter the desired amount of the U (or Hue) component.

**V (or Sat) value**

Enter the desired amount of the V (or Sat) component.

**Method**

**YUV Method:** Check this option to use the [YUV color model](#).

**HSL Method:** Check this box to use the [Hue/Saturation/Luminance model](#).

**Apply**

Click this button to preview the button on the active image.

**Color preview bar**

A vertical bar showing the possible colors resulting from the selection of options, from darkest to lightest color.

**Thumbnail preview**

A small size preview of the results of this operation is exhibited on this window.

- [Working with Selections](#)
- [Understanding Image Colors](#)
- [Understanding Color Models](#)

## Combine Color Channels (Dialog)

This dialog is only available when Windows is set to use a [True of High color](#) mode.

Use this dialog to combine 3 images into a single [True Color](#) image.

Dialog box options:

**Extract First Color Component From**

Select the image containing the first color component (Red or Y) from the list.

**Extract Second Color Component From**

Select the image containing the second color component (Green or U) from the list.

**Extract Third Color Component From**

Select the image containing the third color component (Blue or V) from the list.

**Color Components are**

**Red, Green, and Blue**

Check this option if the source images contain [Red, Green, and Blue components](#).

**Y, U, and V**

Check this option if the source images contain [Y, U, and V components](#).

[Understanding Display Modes](#)

[Understanding Image Colors](#)

[Understanding Color Models](#)

## Create Global Palette (Dialog)

Use this dialog to create a global (single) [color palette](#) for all [frames](#) in the active image. LView Pro creates a global palette, and then uses it to [convert](#) each frame to palette based format.

- [Understanding Image Colors](#)
- [Frames and Animation](#)
- [Understanding Color Depth Conversions](#)

## Create Taskbar Start Menu (Dialog)

Use this dialog to create a menu for LView Pro on the Windows taskbar, accessible through the **Start** button. The menu will be created under the **Programs** submenu.

Dialog box options

**Menu name (under Programs menu)**

Type the desired name for the menu.

**Create Menu**

Click to create the menu and exit the dialog.

**Existing folders**

If you wish to add LView Pro to an existing menu, select it from the list (**not recommended**).

# Delete Palette Entries (Dialog)

This dialog is available when the active image is in [palette based](#) format.

Use this dialog to delete entries from the color palette associated with the active image. Pixels that are painted using deleted entries are re-mapped to remaining entries by a nearest color matching algorithm. This command is useful for reducing the number of colors in an image, when the image does not use (or does not need to use) a large number of palette entries. Palette based images with fewer palette entries may result in smaller files depending on the format they are saved to.

Dialog box options:

## Select Entries to Delete

### Unused Entries

Check this option to delete entries that are not used by any pixels in the image.

### Foreground Entry

Check this option to delete the entry associated with the foreground color.

### Background Entry

Check this option to delete the entry associated with the background color.

### Transparent Entry

Check this option to delete the entry associated with the transparent color.

### Entries used by less than ... pixels

Check this option to delete entries that are used by less than a total number of pixels you select. Using this option with a **0** value is equivalent to selecting

**Unused Entries.**

- [Understanding Image Colors](#)
- [Choosing Paint Colors](#)
- [Color Selection DialogBar](#)

# Drop Shadow (Dialog)

This dialog is available when the active image is in [True Color](#) format and a selection is defined.

Use this dialog to create a shadow for the current selection. The shadow is created using the current [background color](#).

Dialog box options:

## Offsets

### Horizontal and Vertical

Select the offsets of the shadow from the selection area. A value of 0 and 0 places the shadow directly under the selection area. Positive values move the shadow to the right and down. Negative values move the shadow to the left and up.

## Opacity

Select the opacity level of the shadow. Higher values make the shadow more opaque, lower values make it more transparent, combining the shadow with the image.

## Blur

Select the blur level of the shadow edges. Select 0 for no blurring. Lower values result in crisp, well defined, edges. Higher values increase blurring.

## Thumbnail preview

Shows the relative position of the shadow to the selection area, using the selected **Horizontal** and **Vertical** offsets.

- [Working with Selections](#)
- [Choosing Paint Colors](#)
- [Color Selection DialogBar](#)

# File Type Associations (Dialog)

Use this dialog to create or delete file type associations with LView Pro.

## File types (extensions)

In this dialog, file type means file extension. The type of a file named **image.bmp** is **.bmp**.

## Automatic file association

Every time LView Pro is executed it associates itself with image file types that are **not associated with other applications**. LView Pro never associates with file types that are currently associated with other applications, unless instructed to do so in this dialog. If you run other image processing software on your computer, it is possible that file type associations be redirected by that that other software to itself, without consulting you first.

## Purpose of establishing file type associations with LView Pro

- Windows Explorer
  - When you double click on a file associated with LView Pro, the Explorer automatically starts LView Pro to view/edit the file.
  - When you click on a file associated with LView Pro using the secondary mouse button, the Explorer displays a menu from where you can open or print the file
  - The Explorer menu command **File | Print** works with files associated with LView Pro
- Web, FTP, Email software
  - If the Web/FTP/Email software you are using consults the Windows Registry, it will automatically start LView Pro to view/edit images downloaded from the Internet or embedded in email messages.
- Other software
  - Any software that consults the Windows Registry will start LView Pro to view/edit files associated with LView Pro.

Dialog box options:

### Types (Extensions)

Lists the file types that will be associated with LView Pro if you exit this dialog with **OK**.

### Add Defaults

Click to add the default file types to the **Types** list.

### Add Type

Click to add a new type to the list. For instance, you may have files with **.jpeg** extension, and wish to associate them with LView Pro.

### Remove Type

Click to remove the selected type from the **Types** list.



## Fill Options (Dialog)

Use this dialog to select options for the [Fill Tool](#).

Notes: Gradients are painted with color tones that vary from the [background to the foreground color](#). The only mode that works with [palette based images](#) is **Solid**.

Dialog box options:

### Select

Select the **Fill mode** from the list. Available modes are **Solid**, **Pattern**, **Image**, **Linear** gradient, **Rectangular** gradient, **Diamond** gradient, **Cross** gradient, **Oval** gradient, and **Radial** gradient. The best way to understand these modes is through the observation of the **Preview** window.

### Angle

This option is available when **Fill mode** is set to **Linear**. Select the angle for the gradient lines.

### Vertical(%) and Horizontal(%)

This option is available when **Fill mode** is set to any of the **gradient** modes, except Linear gradient. Select the Vertical and Horizontal percentage over the image (or selection) dimensions, where the center of the gradient will be placed.

### Preview

This window shows a preview of the results of the selected options.

### Parameter list

The parameter list appears under the **Select** list when **Fill mode** is set to **Pattern** or **Image**. When Fill mode is set to pattern, select one of the pre-defined patterns from the list. When Fill mode is set to image, select one of the images that are currently being edited by LView Pro.

- [Understanding Image Colors](#)
- [Fill Tool](#)
- [Choosing Paint Colors](#)
- [Color Selection DialogBar](#)

## Filter Specification (Dialog)

Use this dialog to create or edit a user-defined filter operation.

Dialog box options:

### **Name**

Use this box to select the name of the operation. This name is displayed in the list of operations in the [User-defined Filters dialog](#).

### **Kernel**

Enter the multiplication factors that compose the Kernel matrix.

### **Divisor**

Select the global division factor to be applied after multiplication by the Kernel matrix.

### **Bias**

Select the global additive factor to be applied after division.

### **RGB**

Check this option if the filter should be applied over color components. If this option is unchecked, the image or selection is converted to grayscale prior to applying the filter.

- [Understanding Filters](#)
- [User-defined Filters dialog](#)
- [Understanding Image Colors](#)

## Pre-defined Filters (Dialog)

Use this [Multiple Operation Dialog](#) to apply one of the **pre-defined Filters** to the active image or current selection. Filter operations are available to images in [True Color](#) format.

Available pre-defined filters include: Edge Enhance, Edge Enhance More, Find Edges, Find Vertical Edges, Find Horizontal Edges, Trace Contour, Blur, Blur More, Soften, Soften More, Sharpen, Sharpen More, Emboss, Despeckle, Median, Erode, Dilate, Add Random Noise, Add Uniform Noise.

- [Understanding Multiple Operation Dialogs](#)
- [Understanding Image Colors](#)
- [Understanding Filters](#)

## User-defined Filters (Dialog)

Use this [Multiple Operation Dialog](#) to apply one of the **user-defined Filters** to the active image or current selection. Filter operations are available to images in [True Color](#) format.

From this dialog you can also [create new or edit existent user-defined Filters](#).

- [Understanding Computer Colors](#)
- [Understanding Image Colors](#)
- [Understanding Multiple Operation Dialogs](#)
- [Understanding Filters](#)

## Find Record (Dialog)

Use this dialog box to find a record among all records in the active catalog. Records may be searched by the original filename or by their [descriptive text](#).

Dialog box options:

**Enter full or partial text**

Type, in full or in part, the file name or descriptive text you are trying to locate.

**Find by Title**


Check this option to search for a file name (Title).


**Find by Description**

Check this option to search for a record description.

**Find**

Click this button to start the search.

 [Catalog Editor](#)

 [Record Properties dialog](#)

# Format Conversion (Dialog)

Use this dialog to convert the selected [catalog records](#) to a target graphics file format.

Dialog box options:

## Select Target File Format

Select the target image file format from the list. The image files associated with the selected catalog records will be converted to that format.

## Options

Click to configure options for the target file format.

## Overwrite Original Image Files

Select this option to overwrite the original image files with the converted files.

## Store Converted Files on Folder

Select this option to store converted files on a specified folder. Original files **may still be overwritten**, if they reside on that folder.

## Browse...

Click on this button to select the folder where converted files should be stored.

## Stop on errors

Check this option to make LView Pro stop the format conversion operation if an error occurs. If this option is not checked, LView Pro will proceed to convert the next file after an error occurs.

## Conversion Log

A log of the conversion operations is displayed in this window.

## Save Log

This option is available after the conversion operation is completed, and allows saving the **Conversion Log** into a text file.

## Start

Click on this button to start the conversion operation. During conversion, this button is renamed to **Stop**. Click on Stop anytime during the conversion operation and LView Pro will interrupt the conversion **after finishing the conversion** of the current file.



## Increase Selection Feather (Dialog)


This dialog is available when a [selection](#) is defined.

Use this dialog to increase the current selection feather. Increasing the selection feather makes the selection edges advance outward, which may make the edges smoother.

Dialog box options:

**Increase Feather by**

Enter the number of pixels to increase the feather.

 [Working with Selections](#)



## Motion Blur (Dialog)

This dialog is available when the active image is in [True Color](#) format.

Use this dialog to create a motion blur effect on the active image or current selection.

Dialog box options:

**Direction**

Select the direction of the motion, in degrees.

**Intensity**


Select the intensity of the motion, in pixels.


**Image Preview**

Click on this button to view the results of the above options on the active image.

**Thumbnail preview**

This window displays a small size preview of the motion blur effect.

 [Understanding Image Colors](#)

 [Working with Selections](#)

## New (Dialog)

This dialog is displayed when you select the [New command](#).

Use this dialog to select the type of new document you wish to create. Available types are **LView Pro Image** and **LView Pro Catalog**.

## New Image (Dialog)

This dialog is displayed when you request LView Pro to create a new image.

Dialog box options:

### Dimensions

Enter the desired width and height for the new image. Image dimensions can be changed after the image is created, by using the [Resize command](#) or the [Redimension command](#).

### Number of colors

Select the desired number of colors from the list. [True Color](#) images cannot be created when Windows is set to use a [palette based display mode](#). The number of colors of an image can be changed after the image is created, by using the [Color Depth command](#).

- [Understanding Image Colors](#)
- [Understanding Display Modes](#)
- [Color Depth dialog](#)

## New Type Extension (Dialog)

This dialog is displayed when you select the **Add** option in the [File Type Associations dialog](#).

Dialog box options:

**Enter extension**

Type the file extension you wish to add. For instance: **.jpeg**

## Operate Images (Dialog)

This dialog box is available when Windows is set to use a [True Color display mode](#).

Use this dialog to create a new image as a result of an operation between two images being edited by LView Pro. The resulting image is created in [True Color](#) format.

Dialog box options:

### Select Source Image 1

Select the first source image for the operation. Image selection order matters for pixel operation **Subtract**.

### Select Source Image 2

Select the second source image for the operation.

### Select Pixel Operation

<b>Add</b>	pixels are added.
<b>Multiply</b>	pixels are multiplied.
<b>Darker</b>	darker pixel is selected.
<b>Lighter</b>	lighter pixel is selected.
<b>Subtract</b>	pixels in the first image are subtracted from pixels in the second image.
<b>Difference</b>	resulting pixel is the absolute value of the difference from pixels in the two images

### Divisor

Resulting pixel is divided by the value you select for this option.

### Bias

Resulting pixel is added to the value you select for this option (after applying divisor).

### When Over/Underflow Occurs

#### Truncate Result to [0..255] Range

Check this option to truncate resulting pixel to the range. For instance, if pixels are added, and the resulting color component is 256, it will be truncated to 255.

#### Let Result Wrap Around [0..255] Range

Check this option to let results wrap around the range. For instance, if pixels are added, and the resulting color component is 256, it will be wrapped around to 0.

[Understanding Display Modes](#)

[Understanding Image Colors](#)

## Recent File List (Dialog)

Use this dialog to select the number of files that are available on the File menu, in the [1, 2, 3, 4 ... file list](#).

Changes made in this dialog will only take place the next time LView Pro is started.

Dialog box options:

**Number of files in the Recent File list**

Type the desired number of files.

## Record Properties (Dialog)

Use this dialog to view or change properties for the selected records in the active catalog.

Most options in this dialog are for information only, and cannot be edited. When more than one record is selected when this dialog is activated, only the slideshow advancement options can be edited. This way, you can change slideshow advancement options for a group, or for all the records with a single operation.

Dialog box options:

**Title**

The original file name, associated with the catalog record.

**Folder**

The folder where the original file is stored.

**Size (KB)**

The size in Kilobytes of the original file.

**Type**

The graphics file format of the original file.

**Dimensions**

The original image dimensions.

**Description**

Type a description of the original image file. Catalog records can be sorted by description.

**Slideshow Advancement**

**Interactive (after mouse click, spacebar)**

Select this option to make a slideshow operation stop after displaying the original image associated with catalog record. Slideshow will resume after a mouse button is clicked, or after keying the spacebar.

**Timed, after delay (seconds) of**

Select this option to make the slideshow operation display the original image associated with the catalog record and then advance to the next record after the time delay expires. Keep in mind that there are additional delays, due to the time consumed to read an image file from the disk. When timed delay is selected, the slideshow **will still advance** if you click a mouse button or key in the spacebar.

## Redimension Image (Dialog)

Use this dialog to change the active image dimensions. Unlike the [Resize command](#), Redimension **does not change the appearance** of the image. It simply enlarges or shrinks the editing area, creating empty spaces or removing part of the image. The original image is placed on the upper left corner of the new editing area. When Redimension is used to enlarge the editing area, new areas are painted with the current [background color](#). The options in this dialog are the same as in the [Resize dialog](#).

- [Resize command](#)
- [Choosing Paint Colors](#)
- [Color Selection DialogBar](#)



## Remove Transparent Pixels (Dialog)

This dialog is available when a [selection is defined](#).

Use this dialog to remove transparent pixels from the selection.

Dialog box options:

**Tolerance**

Select the level of tolerance for the [Advanced Color Matching](#) algorithm.

**Match mode**

Select the color match mode for the Advanced Color Matching algorithm.

[Working with Selections](#)

[Understanding Advanced Color Matching](#)

## Rename File (Dialog)

This dialog is available when a single record is selected in the active catalog.

Use this dialog to rename the original file associated with the selected record.


Dialog box options:

**Current name**

    Informs the current file name of the original image.

**New name**

    Type the new file name for the original image.

 Catalog Editor

## Resize Image (Dialog)

Use this dialog to change the dimensions of the active image or current selection. The image or selection is enlarged or shrunk to fit in the selected new dimensions. To change the size of the editing area without altering the image, use the [Redimension command](#).

Dialog box options:

### **Current size**

Displays the active image or current selection dimensions, click on this button to initialize the new size options to with the current image size.

### **320x200, 640x350, 640x480, 800x600, 1024x768 and 1280x1024**

Click on one of these buttons to select the corresponding width and height. When the option **Preserve Aspect Ratio** is selected, LView Pro computes new width and height values to fit the image into the selected size.

### **New size**

Type the desired values for the new width and height. When the option **Preserve Aspect Ratio** is checked, LView Pro computes the other dimension when you change either width or height.

### **Preserve Aspect Ratio**

Check to make LView Pro preserve the current image aspect ratio (the proportion between image width and height). If this option is unchecked, the resized image may appear wider or taller than the original image.

### **Resample (higher quality, slower)**

This option is available when the active image is in [True Color format](#). Check this option to instruct LView Pro to perform a higher quality, yet slower, type of resize algorithm, where colors are averaged to reduce jagged lines and image artifacts.

[Understanding Image Colors](#)

## Rotate Image (Dialog)

Use this dialog to rotate the active image or [current selection](#). When a [True Color](#) image is rotated by an arbitrary angle, LView Pro applies a color averaging algorithm to reduce jagged lines and image artifacts.

Note: Display coordinates grow left to right, and top to bottom. The origin of an image (point 0, 0) is at the left and top position. Therefore, positive angle rotations (between 1 and 359 degrees) are performed in the clockwise direction.

Dialog box options:

### **Right (clockwise)**

Check this option to rotate the image in the same direction as the rotating hands of a clock. This is equivalent to rotating the image by an angle of 90 degrees.

### **Left**

Check this option to rotate the image in the opposite direction that the **Right** option would. This is equivalent to rotating the image by an angle of 270 degrees.

### **Upside down**

Check this option to rotate the image upside down. This is equivalent to rotating the image by an angle of 180 degrees.

### **Angle (1-359 degrees)**

Check this option to rotate the image by the specified angle, in degrees.

[Working with Selections](#)

[Understanding Image Colors](#)

## Sort Records (Dialog)

Use this dialog to sort all records in the active catalog. Note that the sort order you select does not become an attribute of the catalog. In other words, the catalog may become unsorted as new records are introduced, or as changes are made to the original image attributes used as sort keys.


Dialog box options:

### **First, Second, and Third Keys**

Select the sort keys from these list. The second and third keys are used to break ties, and may be set to **None** when not needed. Available sort keys are: File Title, File Pathname, Record Description, File Size, File Date, File Type, Image Area (width multiplied by height), Image Width, and Image Height.

### **Ascending**

Check this option (there is one associated with each key) to instruct LView Pro to sort the associated sort key in ascending order. When this option is unchecked, LView Pro sorts the key in descending order.

 Catalog Editor

## Sort Palette Entries (Dialog)

This dialog is available when the active image is in [palette based format](#), and is accessible through a button in the [Color Selection DialogBar](#).

Use this dialog to sort the palette entries in the color palette associated with the active image.

Dialog box options:

### Sort Key

#### Utilization

Sorts entries based on the number of pixels that utilize each entry.

#### Brightness

Sorts entries based on the brightness of the color at each entry.

#### RGB, GRB, BRG, RBG, GBR, and BGR

Sorts entries based on their Red, Green, and Blue component values, in the order of the component initials, e.g. RGB means Red first, Green second, Blue third.

#### User defined expression on Variables

Sorts entries based on a [user defined expression](#) on the variables described on the dialog box. For instance, to sort entries by the sum of their Red, Green, and Blue components multiples by their utilization, you would enter:  $(R+G+B)*U$ .

### Range

#### First palette entry to sort

Set this option to the index of the first entry to be included in the sort operation. For instance, to exclude the first 8 palette entries from the sort operation, set this option to 8 (palette indices start at 0).

#### Last palette entry to sort

Set this option to the index of the last entry to be included in the sort operation. For instance, to exclude the last 8 palette entries in a 256 color palette from the sort operation, set this option to 247 (palette indices start at 0, the 256th entry is numbered 255).

### Order

Select between **Ascending** and **Descending** order.

- [Understanding Image Colors](#)
- [Color Selection DialogBar](#)
- [Understanding Expressions](#)

## Splash Window (Dialog)

The Splash Window is displayed when LView Pro starts. On the [LView Pro Evaluation Version](#), it reminds you of the remaining evaluation time and provides easy access to [purchasing information](#).

- [License Agreement](#)
- [Purchasing LView Pro](#)

## Swap Palette Entries (Dialog)

This dialog is available when the active image is in [palette based format](#), and is accessible through a button in the [Color Selection DialogBar](#).

Use this dialog to swap the color specification between two palette entries.

Dialog box options:

### Select Entries to Swap

#### Foreground with Background

Select this option to swap the palette entries associated with the [Foreground and Background](#) colors.

#### Background with Transparent

Select this option to swap the palette entries associated with the [Background and Transparent](#) colors.

#### Transparent with Foreground

Select this option to swap the palette entries associated with the [Foreground and Transparent](#) colors.

- [Understanding Image Colors](#)
- [Color Selection DialogBar](#)
- [Choosing Paint Colors](#)



## Tip of the Day (Dialog)

This dialog is optionally displayed when LView Pro starts, and is activated by the [Tip of the Day command](#).

Use this dialog to read tips about using some of the features in LView Pro.

Dialog box options:

**Show Tips on StartUp**

Select this option to display this dialog when LView Pro is started. If this option is unchecked, this dialog will only display when you select it on the Help menu.

**Back**

Click on this button to review the previous tip.

**Next**

Click on this button to read the next tip.

# Transformation Specification (Dialog)

Use this dialog to create or edit a user-defined transformation operation.

Dialog box options:

## **Name**

Use this box to select the name of the operation. This name is displayed in the list of operations in the [User-defined Transformations dialog](#) dialog.

## **Message**

This box displays a message about the expressions that are typed in the following options. The message helps you find errors and correct the expressions.

## **Initial Expression**

Type an expression that will be executed once, in the beginning of the operation. This expression is useful to initialize variables for use on the other expressions.

## **New Column Expression**

Type an expression to specify how columns are transformed. This expression is evaluated for each pixel of the image.

## **New Row Expression**

Type an expression to specify how rows are transformed. This expression is evaluated for each pixel of the image.

[Understanding Expressions](#)

[Understanding Transformations](#)

## Pre-defined Transformations (Dialog)

Use this [Multiple Operation Dialog](#) to apply one of the **pre-defined** [Transformations](#) to the active image or current selection.

Available pre-defined transformations include: Mosaic, Ellipse, Pinch, Punch, Horizontal or Vertical Concave or Convex Cylinders, Horizontal or Vertical Perspectives and Skews, and the Spinning Wheel. The effect of these transformations is best described by seeing their results.

- [Understanding Multiple Operation Dialogs](#)
- [Understanding Transformations](#)

## User-defined Transformations (Dialog)

Use this [Multiple Operation Dialog](#) to apply one of the **user-defined** [Transformations](#) to the active image or current selection.

From this dialog you can also [create new or edit existent user-defined Transformations](#).

[Understanding Multiple Operation Dialogs](#)

[Understanding Transformations](#)

## Undo/Redo Levels (Dialog)

Use this dialog to select the maximum number of [Undo commands](#) that can be applied to image frames. Each time an Undo command is applied, the action can be re-done by applying the [Redo command](#).

Note that some editing operations require and generate more than one undo operation. For instance, when a non-floating selection is cut from the image, and moved in a single mouse operation, there will be separate undo levels for each step of the operation (moving the selection, painting the image with the background color and floating the selection).

Changes made in this dialog will only take place the next time LView Pro is started.

Dialog box options:

### **Number of Undo/Redo Levels**

Select the desired maximum number of undo levels. Select 0 to prevent LView Pro from storing undo or redo information. Higher values require more disk space for temporary files.

### **Windows Temporary file folder**

This option cannot be edited, it informs the location of the temporary file folder as designated by Windows. Undo/Redo buffers are stored in temporary files on that temporary file folder. Each frame of each image has its own Undo/Redo buffers.

# JPG Options

Use this dialog to select options for the JPEG graphics file format.

Dialog box options:

**Use Progressive JPEG Compression Format**

Select this option to save JPEG files using progressive compression format.

**Perform Entropy Optimization**

Select this option to perform an entropy optimization algorithm when saving JPEG files. This may produce slightly smaller files.

**Save in JPEG Grayscale Format**

Select this option to save JPEG files using grayscale format. Color information is lost in the process. Slightly smaller files are produced.

**Compression Quality Factor**

Use this option to trade-off between image quality and compression ratio. Higher values produce larger files, preserving more image quality. Lower values produce smaller files, preserving less image quality.

## **BMP Options**

Use this dialog to select options for the Windows Bitmap graphics file format.

Dialog box options:

### **Create Files Using Format**

Select among Windows Bitmap and OS/2 Bitmap.

## GIF Options

Use this dialog to select options for the CompuServe GIF graphics file format.

Dialog box options:

### **Create Files using Version**

Select the version to use. Version GIF87a cannot be used if animations or images with transparent colors are to be created.

### **Use Interlaced Format**

Select this option to create interlaced GIF files.

### **Save Transparent Color Information (GIF89a only)**

Select this option to save transparent color information (version must be GIF89a). If this option is not selected, transparent color information is not saved.



## TIFF Options

Use this dialog to select options for the Aldu's TIFF graphics file format.

Dialog box options:

**Create File With**

Select the type of compression to be used when creating TIFF files.

## PBM Options

Use this dialog to select options for the Jef Poskanzer's Portable Bitmap graphics file formats.

Dialog box options:

### **Create Files In**

Select between **Binary** and **Ascii** formats. Files in Ascii format can be edited using a text editor such as Windows Notepad.

# Understanding Computer Colors

Computer display colors are described in terms of basic color components: Red, Green, and Blue (**RGB** for short). In general, each color component can assume values between 0 and 255, for two reasons: values limited to this range can be in a single computer byte, and 256 values seem to provide a sufficient variety of shades. The value 0 is normally associated with the absence of color, and the value 255 with the full color. Examples:

- RGB = **(255, 0, 0)** represents the brightest pure **Red** color.
- RGB = **(0, 255, 0)** represents the brightest pure **Green** color.
- RGB = **(0, 0, 255)** represents the brightest pure **Blue** color.
- RGB = **(0, 0, 0)** is pure **Black**.
- RGB = **(255, 255, 255)** is pure **White**.
- RGB = **(255, 255, 0)** is pure bright **Yellow** (Red combined with Green)

A **shade of gray** is obtained when all color components have the same value, varying from black to white. A light gray color can be described with RGB = (192, 192, 192), dark gray with (128, 128, 128).

When and each of R, G, and B are encoded with a single byte, RGB color descriptions require 3 bytes of storage, and are called **24-bit colors**, because each byte has 8 bits. Images described with 24-bit colors are also called **True Color images**. Images composed only of shades of gray are called **Grayscale** images.

## Display Modes

# Understanding Display Modes

Your computer is equipped with a display card (hardware) and a **display driver (software)**. The card+driver combination is what enables the computer display. While you can't easily change the display card (unless you purchase a new one to replace the old one inside your computer), you can change the way the display driver works.

Display drivers are capable of working in different (display) **modes**. In some modes, only 16 simultaneous colors can be rendered. In other modes, it may be possible to display 256 simultaneous colors, out of a **color palette** (table of color descriptions). These are called **Palette Based** display modes.

Display modes capable of rendering 24-bit colors are called **True Color** display modes.

Some display modes can display 24-bit colors, but need to truncate color components. For instance, a display mode may be able to display only 6 bits of Red, 5 bits of Green, and 5 of Blue (a total of 16 bits, or 2 bytes). [True color images](#) can be viewed and edited in these display modes, although they will not display as accurately as they would in a true color mode. Display modes that render 24-bit colors after truncation are called **High Color** modes.

It is recommended that you work with images using a High or True color mode. LView Pro can view and even edit True Color images under palette based display modes, but color detail is lost in the process. You can use **Control Panel's Display** settings to check and change the display mode you are using (click on the **Settings** tab).

 [Click here to activate Control Panel's Display](#)

# Understanding Image Colors

Computer images can be thought of as a finite collection pixels (dots) disposed in rows and columns. Pixels contain the [RGB description](#) of the image color at the pixel's position. In one image, pixels describe colors in two different ways:

- Each pixel contains its RGB color description, the image is in **True Color** format.
- Each pixel contains one index to the image's color table (**color palette**), the image is in **palette based** format.

## Color Palette

A color palette is a table of RGB color descriptions. Normally, color palettes are limited to 256 entries, indexed from 0 to 255. On a palette based image, each pixel contains a palette entry, a number from 0 to 255, which can be stored in a single computer byte.

The potential number of colors of an image is called [Color Depth](#).

### Notes about palette based images

- Palette based images are limited to 256 colors (the max. number of palette entries).
- Because of this limitation on the number of colors, **several editing operations cannot be applied to palette based images**. If you wish to perform an operation that is restricted to True Color images, use the [Color Depth dialog](#) to transform the image into True Color format.
- More than one palette entry can contain the same RGB color specification
- Two pixels that are painted with the same RGB combination may refer to different palette entries
- The memory, in bytes, required to store an uncompressed palette based image is roughly equal to the product of the image's dimensions (width x height) in pixels.

### Notes about True Color images

- True Color images are limited to slightly less than 17 million colors, the number of RGB color descriptions that can be made with 1 byte for each R, G, and B. The actual number of colors in a given image is limited to the total number of pixels it contains, e.g. a 1,000 x 1,000 (width x height) image can contain at most one million colors (if each of its pixels contains a different RGB combination).
- The memory, in bytes, required to store an uncompressed true color image is roughly equal to 3 times the product of the image's dimensions (width x height) in pixels.

# Understanding Advanced Color Matching

Advanced Color Matching is an algorithm that finds pixels with similar colors, based on user selected comparison criteria and variable margin of tolerance.

## LView Pro uses Advanced Color Matching to

- Determine which pixels are affected by fill operations, when using the [Fill Tool](#).
- Determine which pixels will compose a selection (or be removed or added to a selection) when using the [Selection Fill Tool](#).
- Determine which pixels will be removed from a selection when using the [Remove Transparent command](#).
- Determine which pixels will have their colors replaced when using the [Color Replacer Brush](#).

## Comparison Criteria and Variable Tolerance

The Tolerance option dictates how strict Advanced Color Matching should be. Setting Tolerance to 0 makes only exact matches acceptable. Non zero Tolerance allows similar color matching. The degree of similarity required for a color match is loosened as Tolerance values increase. Four color comparison modes are available:

- **None**  
Pixels are matched regardless of their color. This mode is useful when using the [Fill Tool](#) to completely fill the area defined by [a selection](#). In this case, all pixels in the selection must be affected by the operation, regardless of their color. The value assigned to the Tolerance option is not used in this mode.
- **Red, Green, and Blue**  
Pixels are matched by their [RGB color encoding](#). The Tolerance value is used to determine how much RGB deviation is acceptable.
- **Hue**  
Pixels are matched by their similarity in color (see [Understanding Color Models](#)). Use this mode to match similar tones of a color. The Tolerance value is used to determine how much Hue deviation is acceptable.
- **Brightness**  
Pixels are matched by their similarity in brightness. The Y component of each pixel is calculated to check for matches (see [Understanding Color Models](#)). The Tolerance value is used to determine how much Y deviation is acceptable.

# Understanding Multiple Operation Dialogs

Multiple Operation Dialogs are dialog boxes that can perform more than one operation. Each operation may work on image data processed by previous operations. At any time, all preceding operations may be reverted, and the editing process be restarted from the original image data.

LView Pro groups similar operations into Multiple Operation Dialogs, because it is often the case that more than one of such operations are needed. [Color Adjustment operations](#), for instance, are grouped into a Multiple Operation dialog. If the image needs both Brightness and Contrast adjustments, both are performed in a single dialog box and the overall adjustment does not require entering and leaving different dialog boxes.

Multiple Operation dialogs also make it easier to experiment with options for individual operations, and to try changing the order of different operations.

## LView Pro uses Multiple Operation Dialogs for

- [Color Adjustment operations](#), pre-defined or user-defined
- [Filter operations](#), pre-defined or user-defined
- [Transformation operations](#), pre-defined or user-defined

Multiple Operation Dialog box options:

### Select

A list of available operations. When an operation is selected, LView Pro immediately applies it to the image in the **Preview** window.

### Revert before apply

Check this option if you want LView Pro to change the image using only the currently selected operation. If this option is unchecked, operations will modify the image data maintaining all modifications made by previously selected operations.

### Preview

This window shows a preview of the effects of operations performed to the active image or current selection.

### Close

Click on this button to close the Multiple Operation Dialog and keep changes made.

### Apply

Click on this button to apply modifications to the active image or selection. If the option **Revert before apply** is selected, the image reverts to the state it was before the previous operation was applied.

### Revert

Click on this button to revert the image to the state it was when the Multiple Operation Dialog was started. This button can undo changes even when the **Revert before apply** option is not selected.

### Help

Click on this button to obtain help about the type of operations offered in the Multiple Operation Dialog box.

### New

This button is available for user-defined Multiple Operation Dialog boxes. Click on

this button to create a new user-defined operation.

### **Edit**

This button is available for user-defined Multiple Operation Dialog boxes. Click on this button to edit the specification of the currently selected user-defined operation.

### **Delete**

This button is available for user-defined Multiple Operation Dialog boxes. Click on this button to delete the currently selected user-defined operation.

### **Options**

Options for the operations in the **Select** list appear under the **Preview** window, when the selected operation accepts optional parameters. When a Multiple Operation Dialog box displays user-defined operations, optional parameters will appear when the selected operation uses any of the adjustment factor variables available for their [expressions](#).



# Understanding Color Adjustments

LView Pro Color Adjustments are operations that change the color of all pixels in the active image, or (when a selection is defined and the image is in [True Color](#) format) the color of all pixels in the [current selection](#).

In a color adjustment operation, the new color of a pixel is determined by **two factors**: the **current color of the pixel**, and the **type of color adjustment** operation. In other words, the colors of neighboring pixels is not taken into account (unlike in a [Filter operation](#)), and the position of pixels in the image is not changed (unlike in a [Transformation operation](#)).

Using Color Adjustment operations is a matter of understanding how to work with a [Multiple Operation Dialog](#), selecting the desired operation from the list and adjusting the options of the operation while previewing its effects. Most of the pre-defined Color Adjustment operations are very straightforward and act like the buttons on a TV set (like brightness, contrast, etc.).

## Creating user-defined Color Adjustment operations

The following text assumes that you have read the section [Understanding Expressions](#).

You can create new color adjustment operations by teaching LView Pro new ways to translate Red, Green, and Blue components. The [Color Adjustment Specification dialog](#) (accessible from the [User-defined Color Adjustments dialog](#)) allows you to do just that. New operations are defined by three required expressions (one for each color component) and one optional initialization expression. Some of the pre-defined color adjustment operations have options that can be adjusted during the execution of the operation. User-defined operations can also use up to 3 adjusting factors. The variables are:

<b>X</b>	Color value normalized to [0..1]
<b>A1</b>	Adjustment factor 1 [-255..255]
<b>A2</b>	Adjustment factor 2 [-255..255]
<b>A3</b>	Adjustment factor 3 [-255..255]

If you use any or all of the adjustment factors in the expressions, LView Pro will display them just like Red, Green, and Blue offset options are displayed in the pre-defined Color Adjustment Operation. Adjustment factors can be set to values in the range [-255..255]. You can transform them into another range, in the Initial Expression. For instance, if you would like to have an adjustment factor in the range [0..100], you could use the initial expression:  $A1=(A1+255)/510 * 100$ .

The variable X represents the current value of each component of each pixel, when you edit. If you wish to compute the negative of an image, you would set the new value of each component to 1-X (remember that X is normalized to the [0..1] range).

Here is another example of a more complex (and probably useless) operation, just to illustrate the process. This is what the operation will do:

- For pixels that have less than 64 on their current Red component, triple the Red component value. For other pixels, double the Red component.
- Divide the Green component by a user selected adjustment factor, between 1 and 2.
- Multiply the Green component by a second user selected adjustment factor, between 1.1 and 1.6.

To specify the above operation, you would set:

<b>Initial Expression</b>	<b>RedThreshold = 64/255 ;</b> <b>A1=(A1+255)/510+1 ;</b> <b>A2=(A2+255)/510*0.5+1.1</b>
<b>New Red Component Expression</b>	<b>X &lt; RedThreshold ? X * 3 : X * 2</b>
<b>New Green Component Expression</b>	<b>X / A1</b>
<b>New Blue Component Expression</b>	<b>X * A2</b>

# Understanding Filters

LView Pro Filters are operations that change the color of all pixels in the active image, or (when a selection is defined and the image is in [True Color](#) format) the color of all pixels in the [current selection](#).

In a Filter operation, the new color of a pixel is determined by the **current color of the pixel and its neighbors**, and the **type of color filter** operation. Unlike in a [Transformation operation](#) pixel positions are not changed.

Using Filter operations is a matter of understanding how to work with a [Multiple Operation Dialog](#), selecting the desired operation from the list and adjusting the options of the operation while previewing its effects. Most of the pre-defined Filter operations have self-explanatory names, and the best way to describe what they do is by using them on a number of images.

## Creating user-defined Filter operations

You can create new filter operations by teaching LView Pro new ways to compute colors from groups of pixels. The [Filter Specification dialog](#) (accessible from the [User-defined Filters dialog](#)) allows you to do just that. New operations are defined by a matrix called the **Kernel**, one **Divisor** factor, one **Bias** factor, and the option to perform the filter operation over **RGB values** (as opposed to grayscale values).

## Kernel, Divisor, Bias, and RGB

The Filter operation works by sliding the Kernel over each pixel in the image or each pixel in the current selection. The new color of the pixel is computed by multiplying the elements on the Kernel by the color of pixels covered by the it. The results of these multiplications are added together, then divided by the Divisor factor, and finally added to the Bias factor to obtain the new color.

When the Filter operation is performed over RGB values, the whole operation is repeated once for each component (Red, Green, and Blue). Alternatively, the Filter operation may be performed over the corresponding grayscale value of each pixel. This is equivalent to transforming the image into grayscale format, and then using the same Kernel, Divisor, and Bias over RGB values.

# Understanding Transformations

LView Pro Transformation operations do not change the color of pixels, but their position. A Transformation is a function from the 2-dimensional plane into the 2-dimensional plane, that associates a new position to every existing position in the image, or [current selection](#).

Using Transformation operations is a matter of understanding how to work with a [Multiple Operation Dialog](#), selecting the desired operation from the list and adjusting the options of the operation while previewing its effects. Most of the pre-defined Transformation operations have self-explanatory names, and the best way to describe what they do is by using them on a number of images.

## Creating user-defined Transformation operations

The following text assumes that you have read the section [Understanding Expressions](#).

You can create new Transformation operation by teaching LView Pro new ways to re-position pixels. The [Transformation Specification dialog](#) (accessible from the [User-defined Transformations dialog](#)) allows you to do just that. New operations are defined by two required expressions (one for the new column and another for the new row of each pixel) and one optional initialization expression. Some of the pre-defined Transformation operations have one option that can be adjusted during the execution of the operation. User-defined operations can also use one adjusting factor. The variables are:

<b>I</b>	Column being computed
<b>J</b>	Row being computed
<b>X</b>	Column normalized to [0..1]
<b>Y</b>	Row normalized to [0..1]
<b>W</b>	The image (or selection) Width
<b>H</b>	The image (or selection) Height
<b>A</b>	Adjustment factor [0..100]

If you use the adjustment factor in any or all the expressions, LView Pro will display it and allow it to be modified in the [User-defined Transformations dialog](#). The adjustment factor can be set to values in the range [0..100]. You can transform it into another range, in the Initial Expression. For instance, if you would like to have an adjustment factor in the range [0..pi], you could use the initial expression:  $A1=A1/100*\pi$ .

For example, a transformation that would act like LView Pro's [Flip Horizontal command](#), could be defined as follows:

<b>Initial Expression</b>	<b>not needed, leave blank</b>
<b>New Column Expression</b>	<b>W - I - 1</b>
<b>New Row Expression</b>	<b>J</b>

The new row expression is set to J (the row being computed), because Flip Horizontal does not change the row of any pixels. The new column expression is set to **W - I - 1**, because

we want to invert the horizontal position of pixels. When the new position of a pixel in the first column (column **0**) is computed, the result is:  $W - 0 - 1$ , which is equal to  $W - 1$  (the last column, since columns are numbered from 0). When the new position of a pixel in column  $W - 1$  is computed, the result is  $W - W + 1 - 1$ , which is equal to **0** (the first column).

All of LView Pro's pre-defined Transformation operations can be described in terms of an Initial Expression, New Column Expression and New Row Expression. The specification of one of the pre-defined Transformation operations, the **Spinning Wheel**, is added by default to the list of user-defined Transformation operations.

# Understanding Color Models

It is beyond the scope of this document to fully and precisely describe what **color** is. Our description is restricted to common color models used in computer graphics (and elsewhere), and in LView Pro.

Color models are used to describe colors, breaking it down to color components. Given a set of color components and a color model, one can re-construct a color.

## The RGB model

The RGB model is used to specify colors in display devices. Windows bitmaps are encoded using this model and so are several other graphics file formats.

The RGB model breaks colors into three components: Red, Green, and Blue (RGB). Virtually every computer software, and so does LView Pro, encodes RGB using one byte for each component, which yields 256 values per component and nearly 17 million ( $256 * 256 * 256$ ) possible color combinations.

LView Pro uses the RGB model in most occasions. The Red Green, and Blue [pre-defined Color Adjustment](#) operation, for instance, works directly with the RGB components of each pixel in the image, allowing you to add or subtract a constant value from each component (the changing the options for the operation). For an example of RGB encoded colors, see [Understanding Computer Colors](#).

## The HSL and HSV models

HSL stands for Hue, Saturation, and Luminosity. HSV stands for Hue, Saturation, and Value. HSL and HSV are different by we will focus on what they have in common.

Unlike the RGB model, HSV and HSL aim to describe colors in a way that is suitable for humans to describe it. For instance, if an image looks dark, we can lighten it up by increasing the Luminosity of all pixels in the image. If an image looks too colorful, we can reduce the Saturation component. If skin looks too yellow or too green, we can adjust the Hue.

Roughly speaking, the Hue component describes the hue of the color (as expected), the Saturation component describes the amount of color, and the Luminosity and Value components describe the brightness of the color. Maximum Luminosity always produces white, and minimum luminosity produces black, no matter what the Hue or Saturation components are. Absence of Saturation produces grayscale images.

LView Pro uses HSL and HSV in a number of occasions:

- [The Color Selection DialogBar](#) can display colors using HSL (or RGB) components.
- The [Colorize Selection Dialog](#) accepts color descriptions using the HSL model, in addition to YUV (see below).
- The Hue, Saturation and Value [Pre-defined Color Adjustments](#) allows you to manipulate image or selection pixels in terms of HSV components.

- The [Advanced Color Matching](#) algorithm can compare colors by their Hue components.

### **The YCbCr and YUV models**

YCbCr and YUV are different models, but again we will focus on their commonalities. The Y component represents brightness, much like the Luminosity in HSL. The Cb (U) and Cr (V) components represent color. YUV and YCbCr (or similar models) are used in a variety of occasions, including television broadcast, JPEG compression, Kodak Photo CD format, MPEG encoding, etc. YUV offers greater resolution than HSL, in the sense that changes in YUV component values are more perceptually uniform.

LView Pro uses YUV and YCbCr in two occasions:

- The [Colorize Selection Dialog](#) accepts color descriptions using the YUV model, in addition to HSL. Using YUV in this dialog may allow you to find more precise colors for the image you are trying to colorize.
- LView Pro can [split an image into YUV](#) color channels, and combine YUV channels to produce an image.
- The YCbCr [Pre-defined Color Adjustments](#) allows you to manipulate image or selection pixels in terms of YCbCr components.
- The [Advanced Color Matching](#) algorithm can compare colors by their Brightness (Y) components. This is more precise than using the L component of the HSL method.

# Understanding Color Depth Conversions

A palette based image can contain at most 256 colors (see [Understanding Image Colors](#)) and a True Color image can contain any RGB color combination (see [Understanding Computer Colors](#)). There are occasions when a True Color image must be converted to palette based format, and vice-versa. In other cases, a palette based image must be converted to use a different color palette, perhaps with a different number of color palette entries. This topic explains how these type of conversions are performed in LView Pro, and what options are available.

## Color Depth conversions in LView Pro

The following are all the occasions where color conversions occur in LView Pro.

1. When a True Color image is opened for viewing/editing and Windows is set to use a palette based display mode. This color depth conversion is performed automatically. You may configure options for this type of conversion using the On Open command.
2. When a True Color image is saved using a graphics file format that cannot store images in True Color format. LView Pro automatically performs a color depth conversion. You may configure options for this type of conversion using the On Save command.
3. When you select the Global Palette button to create a single color palette for all frames in the active image. LView Pro displays a dialog box to obtain options for a color depth conversion operation.
4. When you select the Color Depth command. LView Pro displays a dialog box to obtain options for a color depth conversion operation.

## Steps in a color depth conversion operation

- Decide if the conversion result will be in True Color or Palette based format. In cases 1-3 above, the result is a palette based image. In case 4, you may wish to convert a palette based image into True Color format. This is useful, because many editing operations cannot operate on palette based images, because of their intrinsic limitation on number of colors. Conversion from palette based to True Color format is straightforward and does not require any other options to be specified. Note that LView Pro will only convert to True Color format when Windows is set to use a [True or High color display mode](#).
- If the conversion result is a palette based image, the next step is to create a new color palette. LView Pro can create the palette based on the colors of the image being converted, or it can read a palette specification from a user selected file. In general, best results are achieved by allowing LView Pro to create the palette. But, it may be necessary to convert an image to use a determined palette, e.g. when preparing images that will coexist in a software or environment that is limited to displaying certain color palettes.
- If you do not choose to specify a palette file, other palette creation options are taken into consideration. You specify the maximum number of colors on the color palette (a number greater than 1 and smaller or equal to 256). Optionally, you may request that the default Windows colors be added to the palette. This is useful if the converted image will be displayed in Windows environments. Palettes containing the default Windows colors must have at least 16 entries.



- Once the palette creation method is selected, LView Pro proceeds to create the palette based on the image colors or to read a palette from the selected file. When the palette is available, LView Pro converts the image to use it by matching the current colors in the image with the colors in the new palette.
- Two color matching methods are available, **Error Diffusion** and **Nearest Color**. When converting a True Color image into palette based format, it is virtually impossible to find matches for the (potentially) thousands or millions of colors in the original image among the (at most) 256 colors in the new palette. The Error Diffusion method tries to correct errors made when matching colors by propagating these errors into subsequent matching operations. This method is best applied when converting photographic quality images of people, sceneries, wildlife, etc. The Nearest Color method simply picks the best color in the new palette to match each color in the image. This method works best with line drawings, cartoons, etc.

# Understanding Expressions

LView Pro has an embedded expression evaluator software, capable of evaluating floating point arithmetic and logic expressions over constants and variables. You can think of it as a fancy calculator.

## LView Pro uses Expressions to

- Specify user-defined [Color Adjustment](#) operations.
- Specify user-defined [Transformation](#) operations.
- Specify user-defined [palette entry sort keys](#).

## How to use Expressions

When a dialog box requires an expression, it displays the list of available variables and descriptions in the context. Some of the variables represent the data being manipulated, other are adjustment factors that may be changed when executing the operation. Write the expressions using these variables and the operators, functions and constants listed below.

## Operators

+ - * /	Addition, subtraction, multiplication and division
%	Remainder
^	Exponentiation
( )	Grouping
=	Assignment
== !=	Equal to, different than
< > <= >=	Less than, greater than, less or equal, greater or equal
! &&	Logical not, logical and, logical or
? :	Ternary assignment
;	Expression separator (allows you to write a sequence of expressions anywhere an expression is used)

## Built-in Functions (trig functions operate with angles in radians)

<b>Sqrt (X)</b>	Square root of X
<b>Abs (X)</b>	Absolute (unsigned) value of X
<b>Sin (X)</b>	Sine of X
<b>Cos (X)</b>	Cosine of X
<b>Tan (X)</b>	Tangent of X
<b>Log (X, Y)</b>	Logarithm of X on base Y
<b>Ln (X)</b>	Logarithm of X on base e
<b>Exp (X)</b>	e raised to X
<b>Floor (X)</b>	X rounded down
<b>Ceil (X)</b>	X rounded up

<b>CoTan (X)</b>	Cotangent of X
<b>Sec (X)</b>	Secant of X
<b>CoSec (X)</b>	Cosecant of X
<b>ArcTan (X)</b>	Arc-tangent of X
<b>ArcSin (X)</b>	Arc-sine of X
<b>ArcCos (X)</b>	Arc-cosine of X
<b>HSin (X)</b>	Hyperbolic sine of X
<b>HCos (X)</b>	Hyperbolic cosine of X
<b>HTan (X)</b>	Hyperbolic tangent of X

**Constants:** pi and e

## OLE2 Support

LView Pro implements the **LView Pro Image** OLE2 document type. You can embed images in word processing documents, databases, and virtually any application that supports OLE2. Select the menu command **Insert | Object** on the software you are using, and select LView Pro Image from the list of available objects. LView Pro will start and create a new image that will be embedded in the document where it was inserted.

## **No Help Available**

There is no help available.


## **Size Window**

Click and drag the mouse pointer to change the active window size.





# LView Pro on the Web

## How to: Create Animated Images

Animated images are often used on Internet Web pages. LView Pro can create animated images from existing image files (each image file is used to define one frame of the animation) or from scratch.

Clicking the button  on the [Draw Toolbar](#) activates the [Frames tool](#), which allows you to add, clone, and delete frames from the active image. A number of other operations related with image frames are also available.

At the time of writing, the only graphics file format used for Web animation (aside from movie formats, such as AVI) is CompuServe's GIF, using its [GIF89a format version](#). When the image frames are created, make sure to save the image using this format with the [Save As command](#).

-  [The Draw Toolbar](#)
-  [Frames and Animation](#)
-  [GIF Options](#)
-  [Save As \(File Menu\)](#)



# How to: Create Transparent Images

Images with transparent background are often used on Internet Web pages. LView Pro can save images with transparent color information in CompuServe's GIF graphics file format, using its [GIF89 format version](#).

Images saved into GIF file format must be in [palette based format](#). The **transparent color** is, in fact, one of the image's palette entries. Software that exhibits images using transparency attributes, do not display pixels that would be painted using the color specification in that palette entry. That's how the transparency effect is achieved.

Follow these steps to produce an image with transparent pixels:

- **Make sure the image is in palette based format**  
Use the [Color Depth](#) command to check if the image is palette based, and to change it into that format, if needed.
- **Select the palette entry corresponding to the transparent color**  
Use either the [Dropper tool](#) or the [Color Selection DialogBar](#) to select the Transparent color for the image. The Mask feature in the Color Selection DialogBar helps you determine which palette entry is used to paint the pixels you would like to make transparent. If the pixels you would like to make transparent are painted using more than one palette entry, you will have to paint them all using the same entry (there can only be one transparent color - palette entry). The [Color Replacer tool](#) is very useful for this task.
- **Select GIF file format options**  
Use the [Graphics File Formats command](#) to access the [GIF options](#) dialog. On that dialog, make sure that the options **GIF89a** and **Save Transparent Color Information** are both selected.
- **Save the image to a file using GIF format**  
Use the [Save As command](#) for that purpose, select the GIF format from the list of available formats.

- [Understanding Image Colors](#)
- [Understanding Color Depth Conversions](#)
- [Choosing Paint Colors](#)
- [The Color Selection DialogBar](#)
- [GIF Options](#)
- [Save As \(File Menu\)](#)

## How to: Create Slideshows

LView Pro performs Slideshows on the original image files associated with [Catalog](#) records. The quickest way to perform a slideshow, or to browse images in Full Screen mode, is to create a [catalog without Thumbnails](#). Catalogs that are not required to store Thumbnails create and update quicker than those that do store them. Once the Catalog is created, use the [Start Slideshow command](#).

You can customize slide advancement using the [Record Properties command](#) for an individual record or a group of catalog records. To change the order of slides, remove slides, etc., and for a list of navigation commands, see the topics about the [Catalog Editor](#).

- [Catalog Editor](#)
- [Catalog Properties \(Dialog\)](#)
- [Record Properties \(Dialog\)](#)

## How to: Create New Patterns

One of the Fill Styles available for the LView Pro [Fill Tool](#) is **Pattern**. All patterns are stored in **pattern files** in the **Patterns** folder, located in the folder where LView Pro software was installed to. Pattern files are in Windows Bitmap format, using the file extension **.pat**. LView Pro can read these files for viewing or editing, although it is not recommended that you change them directly or their original contents will be lost.

You can add new patterns for use with the Fill Tool, here's how to do it:

- **Create the file containing the new pattern**

Must be a file containing an image in Windows Bitmap format. Use LView Pro to create the image, or to read it from an existing image file. Then, use the [Save As command](#) to save the file into the Patterns folder.

- **Instruct LView Pro to use the new pattern**

You must edit the file named **Patterns.txt**, located in the Patterns folder. This file can be edited using the Windows Notepad application. This file contains 2 lines of text for each pattern: the name of the pattern (displayed in the list of available patterns) and the filename where the pattern image is stored. Type a name for the new pattern, and the name of the file where you saved the pattern image (no path, just the filename and extension). **Make sure to enter information in that order, and not to disturb existing information.** The best way to enter the new information is by adding two new lines of text at the end of the file. The next time you execute LView Pro, the new pattern will be added to the list of available patterns.

## How to: Create New Textures

LView Pro may, optionally, simulate [Paper Textures](#) when performing painting operations. Paper textures are stored in **texture files**, in the **Textures** folder, located in the folder where LView Pro was installed to. Texture files are in Windows Bitmap format, using the extension **.tex**. LView Pro can read these files for viewing or editing, although it is not recommended that you change them directly or their original contents will be lost.

In addition to being stored in Windows Bitmap files, Texture images must be in [palette based format](#), and their color palette must contain 256 grayscale entries, from Black - palette entry 0 with RGB (0, 0, 0) - to White - palette entry 255 with RGB (255, 255, 255). Pixels in Texture images vary in transparency according to their color. White pixels are completely opaque, and Black pixels are completely transparent.

You can add new textures for use with LView Pro painting operations, here's how to do it:

- **Create the Texture image**

You can use LView Pro to paint it from scratch, to read it from an existing image file, or to scan it (or otherwise obtain it from a [TWAIN compatible device](#) ). Once you have the image, it must be prepared to be used as a Texture. Because of the way transparency in Textures is implemented, you may want to use the **Negative pre-defined Color Adjustment operation** , if your texture is defined using dark pixels. Then, use the [Gray Palette](#) Special Effect to transform the Texture image in palette based format with the color palette described above.

- **Store the Texture and instruct LView Pro to use it**

Once the Texture image is ready, follow the same steps as you would to [create a new Pattern](#) . The differences are: Textures are stored in the **Textures** folder (not in the Patterns folder), and the text file to edit is named **Textures.txt** (not Patterns.txt).

## How to Quickly Adjust Brightness & Contrast

Brightness and Contrast image attributes, among other color related attributes, can be edited using one of the [Color Adjustment commands](#). However, because both these attributes are commonly used, LView Pro provides keyboard shortcuts to quickly change them. Unlike all other editing commands, these keyboard shortcuts also work when viewing the original images associated with [Catalog Records](#).

<b>Key</b>	<b>Effect</b>
Asterisk ( * )	Small <b>Brightness Increase</b>
Slash ( / )	Small <b>Brightness Decrease</b>
Shift Asterisk ( <b>Shift+*</b> )	Small <b>Contrast Increase</b>
Shift Slash ( <b>Shift+/**</b> )	Small <b>Contrast Decrease</b>

