

## PolyView Help Contents

PolyView is a multi-threaded 32-bit Microsoft Windows 95 and Windows NT application which provides viewing, file conversion, and image manipulation support for GIF, JPEG, photo-cd, PNG, TIFF, and Windows and OS/2 BMP files.

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## Registering PolyView

PolyView is distributed as shareware. This allows you to try it out to determine if it fits your needs. If you decide you like PolyView and intend to keep it and use it, you are obligated to register with Polybytes. The current registration rate for PolyView is:

Single user license:     \$20.00

### Registration Benefits

Registered users receive a license key number from Polybytes that enables several features of the program not accessible to non-registered users. These features include:

- Export of Run Length Encoded (RLE) bitmap files
- Export of 16 bit bitmap files
- Export of Portable Network Graphics (PNG) files
- Export of GIF files
- Multiple image file select from the file open dialog
- Printing images
- Storing of user supplied text in exported or saved image files

When the registration key is received, execute the [Licensing Information](#) dialog under the [Registration](#) menu to enter the key information. It is important to enter the information **exactly** as received from Polybytes.

A user registration and the associated key does not expire and will work with all future versions of PolyView. The user registration information is stored in the Windows Registry. If for some reason this information is lost from the registry, simply rerun the [Licensing Information](#) dialog and re-enter the key information.

### Registration Restrictions

Registered users are required to abide by the provisions of the [licensing agreement](#) with Unisys Corporation concerning the usage of LZW-GIF compression/decompression technology.

### How to Register

Users in the United States can register PolyView by sending a check or money order for the registration amount to:

Polybytes  
3427 Bever Avenue S.E.  
Cedar Rapids, Iowa 52403

Registration checks sent directly to Polybytes should be made payable to Polybytes.

Registrations for PolyView are also handled by **Kagi Shareware** services. **Kagi Shareware** can process payments in many forms, including personal checks, foreign currency, and a variety of credit cards. In addition, an electronic mail or FAX registration service is available from **Kagi Shareware**. The companion [Register](#) program provides the access to **Kagi Shareware** registration services for the purpose of registering PolyView. To run [Register](#), choose the [Register Now](#) option from the [Registration](#) menu. To contact **Kagi Shareware** for information about their service send electronic mail to [kee@kagi.com](mailto:kee@kagi.com) or point your WWW browser to <http://198.207.242.3/> (the final slash is important, so be sure to include it!).

Please be sure to include your electronic mail address with your registration so that we can provide you with more timely information about PolyView. Registration key information is sent to registered users via electronic mail if your electronic mail address is available. Otherwise the information will be sent via the US Postal Service.

## Execution Options

### Running PolyView

PolyView.exe is the executable file which contains the implementation of the PolyView application. PolyView can be executed by Running it from the Program Manager or File Manager under Windows NT. Windows 95 users can run PolyView from the Windows 95 Explorer or through the many varieties of Windows 95 shortcuts that can be created.

### Drag-and-Drop

Drag-and-drop a file on a running PolyView application, on a PolyView shortcut, or on a minimized PolyView icon, to send the file or files to PolyView. Depending upon the setting of the [Drag and Drop File Actions](#) property of the File Properties Tab of the Properties dialog, PolyView will

Create a new window for each dragged file

Create a new slide show from the dragged files

Add the new files to an existing slide show

Start a slide show if the file is a Slide Show Script file

See the information about Full Screen Display Modes for an explanation of slide show mode characteristics.

**Caution:** If PolyView is configured to create a new window for each dragged file and a large number of files are "dropped", then PolyView can fairly quickly use up large amounts of the real and virtual memory resources in your system. If this occurs accidentally, the multithreaded nature of PolyView will allow you to correct your mistake by choosing the File:Exit command to terminate file decompression and release all resources.

**Limitation:** When multiple files are dragged from the Explorer to a PolyView shortcut, the method used by the Explorer is to pass the file names on the internal command line used to execute PolyView. Since there is a limit to the number of characters allowed on an application command line, there is a significant limitation to the number of files that can be dragged at once using this method. If the line length limit is exceeded, one of two things will happen. Under Windows 95 a notification will be issued that there is a problem, and PolyView will not be executed. Under Windows NT the file name at the end of the command line may be truncated, resulting in an error message from PolyView. The work-around to this problem is to execute PolyView first and then drag and drop files on it.

## Windows Registry Usage

PolyView uses the Windows registry for the storage of all information pertaining to individual user settings from the Properties menu, most recently used file list, and the most recently used directory. The polyview.ini file in the windows directory (WINNT35, WINDOWS, etc.) created by PolyView versions prior to 1.70 is no longer needed and may be discarded.

PolyView automatically registers itself with the File Manager or Windows 95 Explorer upon startup, but only for the purpose of storing user preferences under the HKEY\_CURRENT\_USER\Software\Polybytes\PolyView key. The association of file types with PolyView is done only by user direction from the Register File Types dialog which is selected from the Options menu.

## The Toolbar and the Status bar

### The Toolbar

The PolyView toolbar contains buttons for:

Opening image files

Copy and Paste

Printing the visible portion of the current image

Invoking full screen display mode

Manipulating the image appearance

Viewing the PolyView About dialog box

### Tool Tips

The function of a toolbar button can be determined by placing the mouse cursor over the button. After a few moments a small caption will be drawn near the cursor indicating the function of the button.

### Toolbar Positioning

The PolyView toolbar is a docking toolbar. This means that it can be grabbed with the left mouse button and dragged to a new position within the PolyView window. If positioned against an edge of the window it will be docked there. The toolbar can also be left floating anywhere in the window, or made invisible through the View:Toolbar command.

### The Status Bar

The Status Bar contains an indicator which displays the action a highlighted menu option will perform, and a "Working" indicator which is displayed when a PolyView background thread is working on reading or saving a file, or adjusting the appearance of an image.

## Full Screen Display Modes

The File:Slideshow, View:Full Screen View, and View:Auto-browse Images commands display the current image using the entire display screen. Images displayed in full screen mode will be downscaled to fit within the screen boundaries if the raw image size exceeds the screen pixel dimensions.

### Automatic Image Cycling

In slide show or auto-browse modes, images will be changed at the rate indicated by the [Browsed Image Display Time](#) property of the Browsing Properties Tab of the Properties dialog.

### Randomized Slide Shows

If [Randomize Slide Shows](#) has been selected from the Browsing Properties Tab of the Properties dialog then the ordering of images displayed in a slide show will be randomized.

### Manual Image Cycling

While browsing images in full screen mode, the left and right mouse buttons can be used to manually cycle through the selected images, canceling any timed image cycling that is in progress. The left mouse button causes the display of the previously displayed image, and the right mouse button causes the display of the next image.

**Note 1:** When a slide show is manually browsed there will be periods of time after a new image is displayed when the next image will not be available for display. During this period while the next image is decompressed the system displays an hourglass cursor. PolyView attempts to load the next image to be displayed by assuming that it is the next file in the slide show list in the direction that was directed by the last mouse click. When a manual slide show is initially started, PolyView displays the first image and begins reading the next image to the right (the second image in the list of slide show files). At this time the last file in the slide show file list is not loaded, so a left mouse button click after the hourglass cursor disappears will start it loading. When the hourglass again disappears a left button click will move to that image.

**Note 2:** Under Windows 95 a right mouse button click near the top of the screen will invoke the standard Windows 95 popup menu, interfering with the full screen mechanisms used by PolyView. There is currently no workaround for this problem except to avoid this area of the screen with the mouse cursor while using the right button to cycle images.

### Canceling Full Screen Mode

Full screen mode is canceled by entering a key from the keyboard.

## Panning and Zooming Images

### Panning

Images that do not fit within a displayed window can be panned (positioned) by using the scroll-bars that appear on the window.

### Zooming the Image

PolyView can change the magnification of a displayed image in several ways.

The View:Zoom In command increases the magnification of a displayed image by about 50%. If the image displayed at the resulting magnification level will fit entirely within the dimensions of the PolyView viewing area, then the image window size is increased. Otherwise, the original window size is maintained, with the center of the newly magnified image the same as that at the previous magnification. In the latter case, scrollbars are added to the image window.

The View:Zoom Out command changes the magnification and image display position to the conditions which existed prior to the previous View:Zoom In command.

A more interactive zoom is available by using the left mouse button to draw a rectangle around the area to be displayed in the magnified image. When the button is released the image will be rescaled. The View:Zoom Out command can be used to go back to the previous magnification. (This action is only available if the [Enable interpolated zoom](#) option of the General Properties Tab of the Properties dialog is **not** selected.)

### Interpolated Zoom

If the [Enable interpolated zoom](#) option of the General Properties Tab of the Properties dialog is selected then a zoom operation invoked by drawing a rectangle around an area of an image causes a new window to be created which contains an interpolated version of the area of interest. The interpolation method of zooming typically results in much better looking images than non-interpolated zooming. As usual, the tradeoff is speed and memory usage versus image quality. The interpolated image takes significantly longer to produce (especially on 386 systems without math coprocessors) and causes a new internal memory structure to be allocated to hold all the data associated with the new image.

**Recommendation:** Leave the [Enable interpolated zoom](#) option disabled so you can quickly zoom in on an area of interest in an image. Once the area is displayed at the appropriate scale use the [Smooth to New Window](#) command from the Options menu to create a smoothed version of the image view you are looking at.



## Image Appearance Manipulation

The appearance of an image can be manipulated using the brightness/contrast/color/rotation selections of the Options menu, or via the appearance manipulation buttons on the toolbar.

The following selections are available. The actions of all but the [Gray Scale](#) and Rotation selections are modified by the appropriate adjustment percentage properties of the General Properties Tab of the Properties dialog.

### **Brighter+**

### **Brighter-**

Adjusts the brightness level of the current image.

### **Contrast+**

### **Contrast-**

Adjusts the contrast of the current image.

### **Color+**

### **Color-**

Adjusts the relative color saturation level of the current image. (Disabled for gray scale images.)

### **Red+**

### **Green+**

Adjusts the red/green tint of the current image. (Disabled for gray scale images.)

### **Gray Scale**

Converts the current image to gray scale. (Disabled for images which are already gray scale.)

### **Rotate Clockwise**

Rotates the current image clockwise by 90 degrees.

### **Rotate Counter Clockwise**

Rotates the displayed image counter clockwise by 90 degrees.

## Properties

The PolyView Properties dialog box, accessed through the Properties selection of the Options menu, is used to control the user preferences for the operations performed by PolyView during its operations. The various properties are organized under the tabs of the dialog box. These tabs include:

### Properties Dialog Tabs:

File Properties Tab

General Properties Tab

Browsing Properties Tab

JPEG Properties Tab

MRU File List Properties

## File Properties Tab

The file properties are available from the [Files](#) tab of the [Properties](#) dialog. These include:

### Drag and Drop File Actions

Options to control whether files dragged from the File Manager and dropped on PolyView create new image windows, or are used to create or augment a slide show. Two options are presented:

- [Create a window for each file](#)
- [Create a slide show from files](#)
- [Add to existing list](#)

### Image File Open Actions

Options to control whether a file opened by PolyView creates a new image window or replaces the current image window. Two options are presented:

- [Create New Window](#)
- [Replace Current Window](#)

### Prompt for file save on exit

If this option is checked then PolyView will remember if the appearance of the image is altered and will allow a last chance to save the image when the image is closed.

If this option is chosen, then each file dragged and dropped on PolyView will create a separate image window. **Caution:** if a large number of files are dropped, then correspondingly large quantities of memory resources will be consumed.

If this option is chosen, then a group of files dragged and dropped on PolyView will be used as the file list for a slide show and the slide show will be automatically entered.

If this option is chosen, then each file opened by PolyView will be displayed in a separate, newly created window.

If this option is chosen, then each file opened by PolyView will be displayed in the current window, replacing any existing image. If no images are currently being displayed then PolyView will create a new window for the image. **Note:** If multiple files are dropped on PolyView when this option has been selected, then only the first file will be opened.

If [Create a slide show from files](#) has been selected, then this option controls whether the dropped group of files replaces an existing slide show list or is added to it. **Note:** this option will be disabled unless [Create a slide show from files](#) has been selected.



## General Properties Tab

The general properties are available from the [General](#) tab of the [Properties](#) dialog. These include:

### Image Adjustment Percentages

These controls set the percentage change that will occur when the [Image Manipulation](#) commands are used to adjust brightness, contrast, color saturation, and red/green tint. Setting the [Brightness Adjustment Percentage](#) value to 10, for example, will cause the [Options:Brighter+](#) command to increase the overall brightness of the image by 10 percent. The allowable range for each item is 1 to 20.

### Default One-For-One Mapping

This option controls the way PolyView deals with images that are larger than the maximum size image that can be displayed in the current viewing area. If [Default One-For-One Mapping](#) is selected, then PolyView will prepare the largest size window possible and equip it with scroll-bars to enable panning around in the image. If [Default One-For-One Mapping](#) is not selected, then PolyView will scale the image to fit within the viewing space. In this case the [View:One-for-One Mapping](#) command can be used to achieve the same view of the image.

### Disable All Editing (Viewing only)

Turns off the retention of the device independent bitmap associated with an image. With certain display modes this will reduce memory consumption and increase file loading speed. It will also, however, disable most editing functions including color manipulation, rotation, copy, save, export, etc.

### Enable interpolated zoom

This option controls the way PolyView zooms an image when a rectangle within the image is drawn with the mouse to define an area to be zoomed. If interpolated zoom is enabled then a new window will be created from the contents of the defined area. The size of the new window will be the maximum size that can be created within the confines of the current viewing area within PolyView. An interpolation algorithm will be used to present as realistic an image as is possible based on the original resolution of the image.

If interpolated zoom is disabled, then a quick zoom will be executed which simply rescales the current window to display an enlarged version of the area of interest.

### Photo-CD Upsizing

The [Photo-CD Upsizing](#) options control the way PolyView selects the image size to use from a Photo-CD image file.

## Photo-CD Upsizing

The algorithm that PolyView uses to select the display image size of a photo-cd file depends on the [Enable Photo-CD Upsizing](#) option of the General Properties Tab of the Properties dialog.

If upsizing is not enabled, then PolyView chooses an image size which fits within the dimensions of the full screen viewing area, yielding the most accurate display of the image. For example, if a horizontal image is to be displayed on an 800x600 resolution display, then the 768x512 image size will be chosen. On the same display, however, a vertical image will be displayed in a 256x384 format, since the next available size of 512x768 will overfill the screen in the vertical direction.

If upsizing is enabled, then PolyView chooses an image which fills the screen to the [Screen Fill Percentage](#) in at least one direction. For example, consider the case where a 75% [Screen Fill Percentage](#) has been chosen. On an 800x600 display, a horizontal image will be displayed in the 768x512 image size because this fills the screen to 96% in the horizontal direction, and 85% in the vertical direction. For a vertical image a 512x768 image will be chosen, because the next smaller size of 256x384 will fill the screen to only 32% in the horizontal direction, and 64% in the vertical direction. In this case, the 512x768 image will be "shrunk" to exactly fill the available display area.

**Caution:** upsizing can cause PolyView to use a significantly larger amount of memory during photo-cd image decompression and display. Specifying a 90% [Screen Fill Percentage](#) on an 800x600 display will result in PolyView choosing a 1536x1024 image. During decompression this size image requires a 4.6 Mbyte memory structure to be allocated for the storage of a device independent bitmap. On a 24 bit display the resulting device dependent bitmap is also 4.6 Mbytes in size, so the peak memory requirement to display this image is more than 9.2 Mbytes. This may lead to excessive disk activity and performance degradation on memory challenged systems.

## Browsing Properties Tab

The browsing properties are available from the Browsing tab of the Properties dialog. These properties include:

### Browsed Image Display Time

The number of seconds an image is to be displayed in auto-browse or slide show modes. This is the minimum time for the display of the image in slide show mode. The next image load is started when an image is displayed, so long image load times may increase the image display time.

### Timed Browsing Mode

These properties control the method used to terminate auto-browse or slide show mode. Three alternatives are provided:

Cycle Images Once

Cycle Images Continuously

Cycle Images Manually

### Randomize Slide Shows

This property controls the order in which images are displayed during slide shows. If selected then the image display order will be randomized. If not selected, then the image display order will be the same as the order shown in the slide show open dialog, or the order of the files listed in a slide show script file.

### Ignore read errors during slide shows

This property controls the behavior when image file decode errors occur during slide shows. If checked then any errors that occur will be ignored and the offending file will just be skipped over. If unchecked then any error will abort the slide show with a message indicating the file that caused the problem. **Note:** if an error occurs while reading the first file to be displayed in a slide show then the show will always be aborted.

### Display Filenames with Full Screen Image

This property controls whether or not the name of the displayed image is displayed along with the image when in full screen mode.

The images are cycled once from the beginning to the end of the list. When the end of the image list is reached the full screen mode will be terminated.

The images are cycled continuously. When the end of the image list is reached the list is restarted from the beginning. User intervention via the mouse or the keyboard is required to interrupt the display cycling.

Image cycling is controlled by the user via the mouse or the keyboard. The right mouse button advances to the next image in the list. The left mouse button advances to the previous image in the list.

## JPEG Properties Tab

The JPEG properties are available from the [JPEG](#) tab of the [Properties](#) dialog.

### DCT Arithmetic Method

The PolyView JPEG algorithms provide several methods for performing the Discrete Cosine Transform (DCT) used during JPEG file reading and writing. The methods available are:

[Accurate Integers](#)

[Fast Integers](#)

[More Accurate Floating Point](#)

### Chroma Component Upsampling Method

The Chroma component upsampling method controls the speed and accuracy of certain color manipulations performed during JPEG file reading. The methods available are:

[Slow, careful, and accurate](#)

[Fast, but less accurate](#)

### Output Quality Factor

Controls the relative quality of the image resulting from saving to a JPEG format file, and is proportional to the resulting size of the file. (Higher quality images result in larger files.) The PolyView default value of 50 is a reasonable compromise between output quality and file size.

Fast but inaccurate integers - this is the fastest method on most machines, but may suffer from degraded image quality. For many images there will be insignificant visible degradation.



Slow but accurate integers - this method is slower than the fast integer method, but achieves high quality results.

Fast or slow but accurate floating point - this highly accurate method may be the fastest on some machines, but on machines without floating point capability will be VERY slow.

Chroma (color) upsampling is performed very carefully and accurately. This is the slowest method.

Chroma (color) upsampling is performed with a sloppier method that leads to some image degradation. This method is much faster, however, and the degradation is frequently not detectable.

## Credits and Acknowledgments

The Graphics Interchange Format(c) is the Copyright property of CompuServe Incorporated. GIF(sm) is a Service Mark property of CompuServe Incorporated.

The LZW compression/decompression technology in GIF files is licensed under U.S. Patent No. 4,558,302 and foreign counterparts.

Microsoft Windows NT and Windows 95 are registered trademarks of the Microsoft Corporation.

OS/2 is a registered trademark of the International Business Machines Corporation.

JPEG file support in PolyView is based on the work of the Independent JPEG Group.

Tagged Image File Format support is based on the work of Sam Leffler. This work was made available according to the following statement:

Copyright (c) 1988, 1989, 1990, 1991, 1992 Sam Leffler  
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The Photo-CD decompression algorithm in PolyView was derived from the algorithm in the XLI application, an X Windows based image viewing utility. This work of many authors was made available according to the following statement:

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The Portable Network Graphics (PNG) format software is based on the Zlib compression software. The following statement applies to its use:

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The PNG library itself is covered by the following copyright statement:

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Contributing Authors:  
Dave Martindale  
Guy Eric Schalnat  
Paul Schmidt  
Tim Wegner

Lastly, Polybytes would like to acknowledge the many comments and suggestions received from the users of PolyView. And a special thanks to Albert Collver for his untiring critiques of the operation of PolyView under Windows 95.

## **The PolyView Warranty**

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IN NO EVENT SHALL LARRY REEVE OR POLYBYTES BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER OR NOT ADVISED OF THE POSSIBILITY OF DAMAGE, AND ON ANY THEORY OF LIABILITY, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

## Supported Formats

PolyView supports the following standard graphics formats for image viewing:

Bitmap (BMP)

Graphics Interchange Format (GIF)

Joint Photographics Experts Group (JPEG)

Photo-CD

Portable Network Graphics Format (PNG)

Tagged Interchange File Format (TIFF)

TIFF files come in many shapes, sizes, and colors. Because of this it is virtually impossible to guarantee that all possible combinations of TIFF storage techniques will be interpreted and rendered correctly. PolyView **does**, however, support 1-4-8 bit grayscale images, 8 bit color mapped images, and 24 bit RGB images. These formats are supported with a variety of compression methods, planar configurations, and in both tiled and non-tiled forms.



Photo-CD is the Kodak Photo CD format. PolyView can extract any of the image sizes stored within these files.

JPEG format files containing 8 and 24 bit images are read and displayed by PolyView.

GIF file images are read and displayed by PolyView. PolyView ignores non-image related information found in GIF 89a files.

BMP format files in both Windows and OS/2 formats are read and displayed by PolyView.

## File Menu

### Open...

Presents a standard file-open dialog box from which a graphics image file or a slide show script can be selected for display. Newly opened files will be created in a new window or in an existing window, depending on the settings of the Image File Open Actions property of the File Properties Tab of the Properties dialog. If a Windows 95 Explorer dialog is available for the file-open dialog box, then multiple files can be selected at once using the standard technique of combining the control and shift keys with mouse button selections.

### Save

Saves the current file in the original format, subject to the default settings for that format as specified by the Properties dialog. This menu option is enabled only for images that are in a format supported by PolyView for file saving.

### Close

Closes the currently displayed image.

### Delete

Deletes the file associated with the currently displayed image and closes the image window. A confirming dialog box will be presented to reduce the chances of accidentally deleting an image.

### Export Image...

Exports the current file in a format supported by PolyView for file saving.

### Page Setup...

Invokes the Page Setup dialog for the specification of print margins and centering options.

### Print Setup...

Invokes a standard printer setup dialog for the specification of the printer to use, properties for the printer, page orientation, and other print related items.

### Print

Brings up a choice of printing the current image in its entirety, or printing just the currently visible portion of the current image. Either choice leads to a dialog box which offers another opportunity to change printer characteristics before printing commences.

### Print Preview

Brings up a choice of previewing the printing of the current image in its entirety, or previewing just the currently visible portion of the current image. The print preview window which will be displayed on the screen as a result of this command shows the general relationship of the image to the page it will be printed on. In most cases the colors seen in the print preview will not reflect the actual color to be printed, but the preview display can be useful to view the proportions and positioning of the image with respect to the printed page.

### Slide Show...

Presents a modified file-open dialog box from which a list of images can be created for use in a full screen slide show presentation. A pre-display rotation can be selected for individual image files if the default orientation of the image file is not correct. In addition, the timing of the display of the individual images in the slide show can be specified.

The behavior in the full screen display mode is controlled by the settings of the Browsing Properties

Tab of the Properties dialog.

**Save Slide Show...**

Saves the current slide show in a slide show script file.

**Image Properties...**

Displays a dialog box which provides information about the specific properties of the currently displayed image and, for registered users, the opportunity to add or modify the comments for subsequent saving to any supported file format which can contain embedded comment text, such as JPEG.

**Recently Opened File List**

A list of the most recently opened image files. Selecting one of these file names is equivalent to selecting it again through the Open... command. The characteristics of this list can be manipulated through the MRU tab of the Properties dialog.

**Purge recent file list**

Immediately clears the most recently opened image file list from the file menu.

**Exit**

Closes all image windows and exits PolyView.

## View Menu

### Zoom In and Zoom Out

See [Panning and Zooming](#).

### Auto-browse Images

Presents a full screen slide show of the currently open images. The behavior in the [full screen display mode](#) is controlled by the settings of the [Browsing Properties Tab](#) of the [Properties](#) dialog.

### Full Screen View

Displays the current image in [full screen mode](#).

### One-for-One Mapping

Changes the display of the current image to be actual size. The default PolyView behavior when opening large images is controlled by the [Default One-For-One Mapping](#) property of the [General Properties Tab](#) of the [Properties](#) dialog.

### Resize to fit main window

Scales or rescales the current image to better fit the display area in the PolyView main window. A large image will be shrunk to fit the display, but small images will not be expanded.

### Toolbar

Enables or disables the display of the [toolbar](#).

### Status Bar

Enables or disables the display of the status bar.

## Options Menu

### Image Appearance Adjustments

See [Image Appearance Manipulation](#).

### Smooth to New Window

Creates a new window from the currently visible area of the current image. The new window is the same size as the current window but is created using an interpolation algorithm which eliminates much of the pixelation effects which occur when an image is magnified by rescaling.

### Change Resolution...

Invokes the [New Image Dimensions](#) dialog to specify the dimensions of a new image which is to be created from the current image. This command is useful for creating wallpaper bitmaps from images which are not large enough to fill the entire screen.

### Transparent Color...

Invokes the [Choose Transparent Color](#) dialog to specify the color to represent transparency if the current image is exported as a GIF file.

### Properties...

See [Properties](#).

### Register File Types...

See [Register File Types](#).



## **Window Menu**

### **New Window**

Creates a new view of the current image. This might be useful for viewing separate portions of the same image at the same time.

### **Arrange Icons**

Arranges the current image icons in an orderly fashion within the PolyView main window.

### **Current Image List**

The list of image files currently open. Select an image from this list to make it the current image.

## **Help Menu**

### **Help Contents**

Displays the contents page of the PolyView help system.

### **Search For Help On**

Search the PolyView help system for information on a specific subject.

### **About PolyView**

Displays a dialog box with information about the current version of PolyView.

**Note:** Context sensitive help is also available by pressing the F1 key. Context sensitive help directs the user to the help topic appropriate to the action currently being performed.

## PolyView Version History

### 2.21

Added Transparent Color dialog for specification of GIF transparency.

File type used for the last file exported is now remembered as the starting type for a new export.

Fixed incompatibilities with Windows 95 taskbar during full screen modes.

Fixed a problem where errors occurring during manual slide shows were not ignored.

Fixed a problem with recovering from certain varieties of GIF file corruption.

Fixed several problems with image sizing and full screen behavior when the PolyView toolbar is floating instead of docked on a window edge.

### 2.20

Changed method of opening a file in one-for-one mapping to eliminate resolution change at end of read.

Added interpolated zoom.

Added the Change Resolution and Smooth to New Window commands.

Added option to the Browsing Properties Tab of the Properties dialog to ignore errors during slide shows.

Corrected behavior when [Prompt for file save on exit](#) is in effect and a close on a created window is attempted.

### 2.19

Added printing.

Corrected the behavior which occurs when the display resolution is changed under Windows 95 while images are being displayed.

### 2.18

Added individual image timing during slide shows.

PNG files are now written as 8 bit gray scale even if the source is 24 bits if it is found that the source is really gray scale in disguise.

Added exporting to GIF files.

Added exporting to progressive JPEG files.

Added separate storage of open and save directory paths.

Added Most Recently Used file list manipulation functions.

Removed support for LZW compressed TIFF files due to patent licensing restrictions.

Fixed a bug which caused incorrect operation of the Browsing Properties dialog.

## **2.17**

Added support for reading progressive JPEG files.

Restored the ability to convert 8 bit images to JPEG format.

Added saving (exporting) to PNG format files.

Added slide show randomization.

## **2.16**

Fixed a bug which caused image size problems when the toolbar was positioned at the right or left edge of the viewing area.

Fixed a bug which caused name recognition problems for folders with names which ended in .GIF, .JPG, etc.

Enhanced the image context menu.

Added .JPEG and .TIFF as recognized file types.

Added support for viewing PNG files.

Enhanced Register File Types dialog to show current PolyView registrations.

**2.15** Fixed a bug which prevented the file-open dialog from working correctly.

**2.14** Added saving to 8 bit RLE bitmap format.

Added saving to 16 bit bitmap format.

Added multiple file selection from Explorer file open dialog.

Added editing and saving of comments to JPEG files.

Added user registration for feature set enabling.

**2.13** Corrected processing of multiple files dragged to a PolyView shortcut.

Corrected processing of dragged files containing slide show scripts.

**2.12** Added the optional display of the image file name during full screen mode.

**2.11** Fixed a bug which caused JPEG file handle ownership to be retained.

Added File:Image Properties command.

Added image context menu from right mouse button.

**2.10** Added scripted slide shows.

Added copy and paste operations.

Added support for reading 1, 4, 16, and 32 bit BMP files, and 4 and 8 bit RLE BMP files.

Added background operation of color manipulation, rotation, and image exporting operations.

**2.00** Removed image configuration file usage.

Changed image appearance algorithms to work on all systems.

Added gray scale operation.

- Added image save operations.
- Improved capabilities for reading damaged files.
- 1.92 Added Register File Types dialog box.
- 1.91 Added context sensitive help.
- 1.90 Added TIFF file support.
  - Added 24 bit BMP support in 256 color modes.
  - Added File:Delete option.
- 1.80 Added photo-cd upsizing option.
- 1.70 Added photo-cd file support.
  - Added system registry use for file association.
- 1.60 Added slide show viewing mode.
  - Added properties dialog and additional JPEG decompression options.
- 1.50 Added full screen viewing mode.
- 1.40 Added "on-the-fly" image painting during file reading.
  - Remember last screen position and state.
  - Remember last directory used to open a file.
- 1.30 Added support for 8 bit color modes.
- 1.20 Added JPEG DCT method choice.
  - Changed bitmap algorithms for better Win95 compatibility.
- 1.10 Added default saving for application and image configuration defaults.
  - Added "View:Resize to fit" command.
- 1.00 Initial release.

## Register File Types

The Register File Types dialog is accessed through the [Register File Types](#) selection of the Options menu. This dialog provides direct control over the file extensions which the Windows NT File Manager or the Windows 95 Explorer associate with PolyView. Once this association is made, [running](#) the image file or [slide show script](#) file will result in the launching of PolyView and the display of the image or slide show.

The dialog box offers file types with their most common extensions:

Bitmap image files (.bmp)

GIF image files (.gif)

JPEG image files (.jpg and .jpeg)

Photo-CD image files (.pcd)

PNG image files (.png)

TIFF image files (.tif and .tiff)

Slide show script files (.pvs)

When the dialog [OK](#) button is pressed, the Registry file associations for the checked extensions will be updated, replacing any previous association for those extensions. Press the [Cancel](#) button to close the dialog without making any changes.

## Saving and Exporting Files

PolyView saves files in the following formats:

8 bit Windows BMP  
8 bit Windows Run Length Encoded (RLE) BMP  
16 bit Windows BMP  
24 bit Windows BMP  
GIF  
JPEG  
PNG

The save format is determined according to the user operations performed, and the original format of the image to be saved.

If the [Save](#) selection from the [File Menu](#) is made, then the image is saved in the same format as the original format of the current image, and replaces the original input file. The [Save](#) selection is only enabled if the original image format is one of the formats supported by PolyView for file saving.

If the [Export Image...](#) selection from the [File Menu](#) is made, the [Export Image](#) dialog box is invoked. The save format is specified by the user by selecting the format from the [Files of Type:](#) drop down list in the [Export Image](#) dialog box.

If the [Yes](#) response is chosen from the [Save changes to <filename>](#) dialog invoked when closing a modified image, and the original format is one of the formats supported by PolyView for file saving, then the modified image will replace the original image in the input file. If the format of the current image is not supported for saving, then the [Yes](#) response will invoke the [Export Image](#) dialog box where the new name and format for the file can be specified.

**See also:**

[JPEG Properties](#)

## **Edit Menu**

### **Copy Full Image**

Copies the current image to the Windows clipboard. The entire image is copied, not just the currently displayed portion.

### **Copy Visible Image**

Copies the currently displayed portion of the current image to the Windows clipboard.

### **Paste**

Creates a new image window from any bitmap currently stored in the Windows clipboard.

### **Flush Clipboard**

Removes all information from the Windows clipboard.



## Slide Show Scripts

### Script File Operations

Slide show script files contain a list of image file names to be included in a slide show. The ordering of the file names in the script determines the order the images will be displayed during the slide show.

Slide show script files should be stored in a text file with the file type PVS. When a file with the type PVS is opened by PolyView, the contents are read and the slide show is started. If the PVS file type has been registered for PolyView through the [Register File Types](#) dialog, then Windows 95 Shortcuts or Program Manager Program Items can be created for the script file.

### Rotation Options

In some cases, particularly with photo-cd images, the default orientation of an image is incorrect. Script files can therefore contain rotation options for each individual file. A rotation option is a character string of the form "/rn" attached to the end of a line in the script file for a specific image, where "n" is in the range from 1 to 3 and indicates the number of 90 degree clockwise rotations to be applied to the image prior to display. For example, if the following lines are stored in a file named "slideshow.pvs"

```
c:\images\image1.jpg  
d:\images\image2.pcd /r1  
c:\images\image3.bmp
```

then the images "image1.jpg", "image2.pcd", and "image3.bmp" will be displayed in the order shown, with "image2.pcd" rotated clockwise 90 degrees from its "normal" orientation.

### Timing Option

A timing options is a character string of the form "/ts" attached to the end of a line in the script file for a specific image, where "s" is in a non-zero number specifying the display time for the image named on that line. For example, if the following lines are stored in a file named "slideshow.pvs"

```
c:\images\image1.jpg  
d:\images\image2.pcd /t100  
c:\images\image3.bmp
```

then the images "image1.jpg" and "image3.bmp" will be displayed for the time which is specified by the [Browsed Image Display Time](#) property of the [Browsing Properties Tab](#) of the [Properties](#) dialog, and "image2.pcd" will be displayed for 100 seconds.

### Saving Script Files

Each time a slide show is displayed during PolyView operation, the list of files and their rotation options are maintained in memory. When the [Slide Show](#) option of the [File](#) menu is invoked, the current slide show list is displayed in the dialog box. At this point the files in the show can be removed or have their rotation options changed, or new files can be added. After the slide show is started and then stopped, the [Save Slide Show](#) option of the [File](#) menu can be invoked to create or change a script file. By using this mechanism, script file creation and editing can be accomplished entirely within PolyView, minimizing the chances for creating script files with incorrect formats.

8 bit Windows BMP files contain up to a 256 element color table and the uncompressed bits which make up the image - one byte per pixel. The pixel data from 24 bit images will be color reduced for storage in this format.

8 bit Windows RLE BMP files contain up to a 256 element color table and the run length encoded bits which make up the image. The pixel data from 24 bit images will be color reduced for storage in this format. The storage size for this format may be smaller than an uncompressed 8 bit Windows BMP file, particularly when an image has large areas of constant color. In some cases, however, an RLE file will be larger than an uncompressed image.

**Note:** this storage option is only available to registered users.

16 bit Windows BMP files contain the uncompressed bits which make up the image - two bytes per pixel. Up to 65536 colors can be represented by this format, using 5 bits for red, 6 bits for green, and 5 bits for blue. This format is only available for storing 24 bit images.

**Note:** this storage option is only available to registered users.

24 bit Windows BMP files contain the uncompressed bits which make up the image - three bytes per pixel. Up to 4 billion colors can be represented by this format. **Note** that this format is only available for storing 24 bit images.

All images can be saved to JPEG format files. 256 color image such as those produced from GIF files, however, may create JPEG files which, although much smaller than the original GIF file, have considerable visual distortion as compared to the original. You should compare the exported JPEG file against the original image and experiment with the JPEG Output Quality Factor to achieve the best results.

If the embedded comments for a file have been updated from the [Image Properties](#) dialog box accessible from the [File](#) menu then these comments will be written to the JPEG file as marker text. **Note** that this option is available only to registered users of PolyView.

The behavior when multiple files are selected from an Explorer dialog depends on the current PolyView property options, and the types of files that are selected. In particular, if [Replace Current Window](#) has been selected from the [Image File Open Actions](#) property, or if any one or more of the files selected is a slide show script file, then a slide show will be created. Otherwise a window will be opened for each file selected and a separate thread will begin reading each image.

**Note:** multiple file selection is available only to registered users of PolyView.

The Register program is a creation of Grzegorz (Greg) Kochaniak, who is also the author of the SnapShot/32 screen capture utility. To contact Greg for information about Register, SnapShot/32, or other software that he has available, send electronic mail to **gregko@kagi.com**, or check his WWW page at **<http://198.207.242.3/gregko/gregko.htm>**.



PNG, or Portable Network Graphics Format (pronounced ping) is a new format that may eventually become the standard for lossless image storage. PNG was initially designed to replace GIF, but offers many features that were lacking in GIF, including higher resolution color, potentially better compression, and patent free implementation.

## **Support and Availability**

All users are encouraged to communicate praise and problems via e-mail to:

`polybytes@kagi.com`

Every effort will be made by Polybytes to provide satisfaction.

To see the latest information about PolyView, or to download the most current version, visit our WWW page at:

[http:// 198.207.242.3/authors/polybytes/default.html](http://198.207.242.3/authors/polybytes/default.html)

All images can be saved to non-interlaced and interlaced PNG formats. Interlaced PNG files use a complex two-dimensional interlacing scheme that is useful when the file is to be displayed while it is being received over a relatively slow medium like a serial network link. In these situations the PNG interlacing scheme allows a highly intelligible view of the image to be displayed when only a small portion of the entire image has been received. If PNG files are only to be displayed by viewers like PolyView, then the non-interlaced format will display faster and will be slightly smaller.

If the embedded comments for a file have been updated from the [Image Properties](#) dialog box accessible from the [File](#) menu then these comments will be written to the PNG files as comments identified by the Comment keyword. **Note** that this option is available only to registered users of PolyView.

All images can be saved to non-interlaced and interlaced GIF formats. Interlaced GIF files use a scheme that is useful when the file is to be displayed while it is being received over a relatively slow medium like a serial network link. In these situations the GIF interlacing scheme allows a partial view of the image to be displayed when only a small portion of the entire image has been received.

GIF files can contain at most 256 colors. The pixel data from 24 bit images will be color reduced for storage in this format.

If the embedded comments for a file have been updated from the [Image Properties](#) dialog box accessible from the [File](#) menu then these comments will be written to the GIF files as comment records.

**Note** that saving to GIF format is available only to registered users of PolyView.

## MRU File List Properties

The Most Recently Used (MRU) File List Properties are available under the [MRU Files](#) tab of the Properties dialog. The following options are available for manipulating the properties of the MRU file list:

### # of files in MRU file list

Controls the maximum number of files in the MRU file list. This can be any number between 0 and 16 inclusive, where 0 indicates that the MRU file list should always be empty. **Note** that changes in this option will not take effect until PolyView is restarted.

### Purge MRU file list on exit

When this option is checked the MRU file list will behave normally while PolyView is executing, but will be emptied when PolyView is closed. PolyView will then always start with an empty MRU file list.

## **LZW-GIF Licensing Information**

The Unisys Corporation owns U.S. Patent 4,558,302, and foreign counterparts, and has the right to grant licenses for the use of this technology. Polybytes has licensed this technology, subject to the following restrictions for registered users:

A single user PolyView license is restricted to being used on a single computer. If a registered version of PolyView is to be used on multiple computers, then the agreement requires that an additional registration be purchased for each computer.

## Print Page Setup Dialog

PolyView uses the specification for the top, bottom, left, and right margins to define the area on the printed page where an image will be placed. Note that PolyView always preserves the aspect ratio (ratio of height to width) of an image or the visible portion of an image. Within that restriction an image will be expanded in all directions to fit within the specified margins. The Page Setup dialog box displays and changes the settings for the margins .

### Units

This drop down list sets the dimensional units used to interpret the margin settings for printing. The available units are inches, centimeters (CM) and millimeters (MM).

### Top Margin

The distance from the top of the printed page to the top of the printed image. The actual distance used may be different if **Center Vertically** is selected.

### Bottom Margin

The distance from the bottom of the printed image to the bottom of the printed page. The actual distance used may be different if **Center Vertically** is selected.

### Left Margin

The distance from the left edge of the printed page to the left edge of the printed image. The actual distance used may be different if **Center Horizontally** is selected.

### Right Margin

The distance from the right edge of the printed image to the right edge of the printed page. The actual distance used may be different if **Center Horizontally** is selected.

### Center Horizontally

If selected then an image which does not fill the area defined by the right and left margins will be centered between those margins.

### Center Vertically

If selected then an image which does not fill the area defined by the top and bottom margins will be centered between those margins.

## New Image Dimensions

The [New Image Dimensions](#) dialog is used to specify the dimensions of a new image which is to be created from an existing image.

### Height and Width

Enter the height and width, in pixels, of the new image to be created.

### Full or Visible Image

If Full Image is selected then the resulting image will be based on the entire contents of the source image. If Visible Image is selected then the resulting image will be based on only the portion of the source image that was visible when the dialog was invoked.

### Interpolate

If selected then an interpolation algorithm will be used to generate the final image. This algorithm can significantly enhance the appearance of the resulting image when the final image is larger than the source image. It may or may not improve the appearance of an image whose size is being reduced.

### Retain Aspect Ratio

If selected then the original aspect ratio (ratio of width to height) of the source image will be taken into account whenever the height or width values are changed, and the corresponding dimension will be automatically updated. For example, if the height is changed then the width value required to maintain the source aspect ratio will be calculated and inserted into the width field.



## Transparent Color Specification

Graphics Format Information (GIF) files can include the specification of a color which is to be treated as transparent by the decoder of the file. Although PolyView displays this transparent color using the specified color, World Wide Web browsers will display the current background color or pattern in the transparent areas, resulting in the display of irregularly shaped or overlaid images on web pages.

The [Choose Transparent Color](#) dialog is used to specify the color in the current image which is to be output as the transparent color if the image is exported or saved to a GIF file. The dialog displays the current palette for the image and a check box which enables the output of a transparent color to the GIF file. Up to 256 colors are displayed in the dialog. Either the color map from the input image will be displayed, or the 256 colors which were calculated for an image which did not include a color map. Clicking on a color will select it as the transparent color, and will cause the display of the Red, Green, and Blue intensities for the chosen color.

The intensity of a color component varies from 0 to 255. The color 0,0,0 is black and the color 255,255,255 is white.

