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 most popular graphics image format files.

General Information:

Menus:

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 US

A single user license is to interpreted as a license to use PolyView on one machine at a time. If PolyView is to be installed and used on multiple machines simultaneously, then multiple single user licenses should be purchased.

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 images to formats beyond simple BMP, GIF, and JPEG

Multiple image file select from the file open dialog

Printing and print preview of images

Storing of user supplied text in certain 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 run 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/TIFF compression/decompression technology.

Registering Directly With Polybytes

You can register PolyView by sending an order form along with a check or money order for the registration amount (in US$ please) to:

Polybytes
3427 Bever Avenue S.E.
Cedar Rapids, Iowa 52403-3161

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

Registering Through Kagi Shareware

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 point your WWW browser to http://www.kagi.com.

Registering Through Compuserve

Compuserve users can use the Compuserve Shareware Registration service to register for PolyView. There is an additional $2.00 charge for registration via this means. GO SWREG to access the service and use ID 10664 to register PolyView.

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.

Command Line Arguments

The command line which executes PolyView can contain 0 or more file names separated by spaces. If multiple file names are passed to PolyView on the command line the action taken depends upon the setting of the Drag and Drop File Actions property of the File Properties Tab of the Properties dialog, and is the same as those action taken when multiple files are dragged and dropped on Polyview. Warning: file paths containing spaces must be enclosed in double quote characters to be interpreted correctly.

The Explore Window can be automatically started by including the /E option on the command line:

```
polyview /E
```

Optionally, the name of a folder can be added to the /E option to start the Explore Window with the named folder opened:

```
polyview /E:foldername
```

Note: the entire /E:foldername option must be the last entry on the PolyView command line. Do not enclose the folder name in quotes, even if it contains spaces.

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:

Starting the Explore Window

Opening image files

Playing slide shows

Copy and Paste

Printing the visible portion of the current image

Invoking full screen display mode

Undoing previous operations
See also: Undo Properties

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, creating thumbnail sketches, or adjusting the appearance of an image.

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, and 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.

Credits and Acknowledgments

PolyView Icon and Logo Design by George Edward Purdy (slogan@i-link.net)

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

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/TIFF files is licensed under U.S. Patent No. 4,558,302 and foreign counterparts.

Portions of the imaging technology in PolyView are copyrighted by Snowbound Software.

Portions of the JPEG imaging technology in PolyView are based on the work of the Independent JPEG Group.

Portions of the Tagged Image File Format imaging technology are based on the work of Sam Leffler. This work was made available under the copyright notices:

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

(C) 1995 Jean-loup Gailly and Mark Adler

The PNG imaging technology used in PolyView is copyrighted by:

Copyright (c) 1995 Guy Eric Schalnat, Group 42, Inc.
Contributing Authors:
Dave Martindale
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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 III for his untiring critiques of the operation of PolyView under Windows 95.

The PolyView Warranty

THE POLYVIEW SOFTWARE IS PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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:

- Adobe Photoshop (PSD)
- Apple PICT
- Bitmap (BMP)
- Commodore-Amiga IFF
- Computer-aided Acquisition and Logistics Support (CALS)
- DCX
- Encapsulated PostScript (EPS)
- FAX
- GEM IMG
- Graphics Interchange Format (GIF)
- Halo CUT
- IBM IOCA
- Joint Photographics Experts Group (JPEG)
- LaserData LaserView
- MacPaint (MAC)
- Microsoft Paint (MSP)
- Photo-CD
- Pixmap (XPM)
- Portable Network Graphics (PNG)
- Sun Raster
- Tagged Interchange File Format (TIFF)
- Truevision TARGA
- Windows ICON
- Windows Metafile
- WordPerfect Metafile (WPG)
- Xbitmap
- X Windows Dump
- ZSoft PCX

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 File Manager or the Windows 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.

Caution: PolyView provides no method of undoing an association. If PolyView is instructed to change an existing association it will do so. Restoring the original association is usually accomplished by reinstalling the originally associated application, although this varies from application to application.

Saving and Exporting Files

The save format for an image 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
Supported Formats

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://www.kagi.com/gregko/gregko.htm**.

Support and Availability

Support

All PolyView support is handled by Polybytes through electronic mail. Our support address is:

polybytes@kagi.com

If you have bugs to report or suggestions for additional features we encourage you to write to us. (Whether or not you are a registered user.) Every effort will be made by Polybytes to provide satisfaction. If you have image files in formats supported by PolyView which are not reading correctly, please tell us about them. We can provide the best service in this regard if the problem images are made available to us. You can either attach them to an email message, tell us the address of the FTP or WWW site where they can be accessed, or mail them to us on a disk. Our mailing address is:

Polybytes
3427 Bever Avenue SE
Cedar Rapids, Iowa 52403

Availability

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

http://www.kagi.com/authors/polybytes/default.html

LZW-GIF/TIFF 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 at a time. If a registered version of PolyView is to be used on multiple computers simultaneously, 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 pixel 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. The new dimensions can be entered directly, or a standard screen width and/or height can be selected from the drop down list for the associated item.

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 to be used 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.

The Explore Window

The PolyView Explore window provides a method of exploring the contents of the folders accessible to a compatible computer system and creating, viewing, and manipulating the thumbnail sketches of the image files found.

The appearance and operation of the Explore window is the same in most ways as the appearance and operation of the Windows Explorer. The Explore window presents a hierarchical tree view of the folders accessible to your computer in the left pane of the window, and a representation of the image files in the currently selected folder in the right pane of the window.

When the Explore window opens a folder it reserves a rectangle for each image file found in the folder. If a thumbnail is available for an image then it is displayed, otherwise the name of the file is displayed against a gray background. Since the display rectangle for files is frequently too small for the long file names commonly used, PolyView displays the full path name of a file on the Explore window status bar whenever the mouse cursor is positioned over the file. Also, if the mouse cursor is left stationary for a few moments then a small window containing the name of the file under the cursor will be displayed.

The following operations are available within the Explore window:

Selecting Images

Images are selected by clicking the left mouse button on the rectangle for the image. If the Control key is held down while a selection is made, then any previously selected images will remain selected. If the Shift key is held down while a selection is made, then all images will be selected between and including the current image and the previously selected image.

A selected image is indicated by a reddish colored outline on the image rectangle.

Opening and Viewing Images

An image can be opened for viewing by double-clicking the image rectangle, by selecting Open from the context menu for an image, or by selecting the image and choosing Open from the File menu. Note: the Open command will open **all** selected images if the Create New Window property from the File Properties tab is selected. If the Replace Current Window property is active, then only the first selected image will be opened.

Creating or Recreating Thumbnails

Thumbnail sketches of images are created by choosing Create All, Create Selected, Recreate All, or Recreate Selected from the Thumbnails menu, or by choosing Create, Create All, or Create Selected from the context menu for an image. The context menu Create command creates a thumbnail only for the image that was clicked. The All and Selected variants of the Create and Recreate commands create thumbnails for all the images in a folder or the selected images in a folder respectively.

PolyView creates thumbnails using a background thread to insure that user operations can occur responsively at the same time. While thumbnail creation is taking place, the working indicator on the status bar will be active. If the Explore window is closed while thumbnail creation is ongoing, then the operation will be aborted. Any thumbnails created before closing will be preserved.

Moving and Copying Images

Image files can be moved and copied by using drag and drop. Drag an image by pressing and holding the left or right mouse button on the image rectangle and moving the mouse cursor to the folder which is to be the destination of the move or copy. The operation will be completed when the mouse button is released while the destination folder is highlighted.

If the left mouse button is used for the drag and drop operation, then the default operation performed is to move the file to the destination folder. To copy a file using the left mouse button, hold down the Control key on the keyboard before releasing the mouse button.

If the right mouse button is used for the drag and drop operation, then a popup menu will appear when the button is released over a destination folder. This menu offers the choices of moving, copying, or canceling.

Renaming Images

An image can be renamed by choosing Rename from the context menu for the image, or by selecting the image and choosing Rename from the File menu. Either method will invoke a dialog box into which the new name for the image file can be entered. Note: you cannot rename a file into a different folder using this method.

Deleting Images

An image that is not currently selected can be deleted by choosing Delete File from the context menu for the image. All the selected images in a folder can be deleted by choosing Delete from the File menu, or by choosing Delete File from the context menu for one of the selected images. Note: Files deleted from a folder in the Explore window are actually sent to the Recycle Bin. The properties set in the Recycle Bin control whether or not a confirmation message is displayed when files are deleted from the Explore window.

Deleting Thumbnails

The thumbnail sketch of an image that is not currently selected can be deleted from the thumbnail database by choosing Delete Thumbnail from the context menu for an image. The thumbnails of all the selected images in a folder can be deleted by choosing Delete Selected Thumbnails from the File menu, or by choosing Delete Thumbnail from the context menu for one of the selected images.

Hiding and Unhiding Images

An image can be hidden from display in the Explore window by choosing Hide from the context menu for an image, or the selected images can be hidden by choosing Hide Selected from the Thumbnails menu. Hidden images can be seen again by choosing Show Hidden from the Thumbnails menu at which point they can be unhidden using the unhide commands in the menus. Note: when an image is hidden its thumbnail sketch is lost and must be recreated when it is unhidden.

Adding Images to a Slide Show

An image can be added to the current slide show by choosing Add to slide show from the context menu for an image, or the selected images can be added by choosing Add to slide show from the File menu. Images added to the slide show are added to the end of the existing list.

Accessing Image Properties

The properties for an image can be viewed by choosing Image Properties from the context menu for the image.

Thumbnail Database Maintenance

The Thumbnail Database Maintenance dialog displays the following information about the current thumbnail database:

- The name of the current database
- The number of thumbnail sketches in the current database
- The space occupied by the thumbnail sketches
- The unused space in the database

Unused space in the database is the space occurs when:

- Thumbnails are deleted
- Images are deleted
- Thumbnails are hidden

The Thumbnail Database Maintenance dialog provides two methods of maintenance on the database:

Reclaim unused space

The current thumbnail database is packed to remove all unused space and reduce the size of the database file.

Purge thumbnails for non-existent files

The computer system is scanned to determine the accessibility of all file reference in the current thumbnail database. Inaccessible files are removed from the database index file. By itself this operation does not reclaim the associated space in the database file. Check both the Reclaim unused space and Purge thumbnails for non-existent files to perform complete maintenance on the database.

A context menu is a popup menu that is invoked by clicking the right mouse button on an object. In PolyView, context menus are available for thumbnails in the Explore window, or for any open image file.

The Thumbnail Database

The Thumbnail Database is used by PolyView to store the thumbnail sketches for the images on a computer system and the indexing information needed to rapidly access the thumbnails while navigating through the system with the Explore window. The Thumbnail Database consists of two files: the index file, which has a file type of PVX, and the database file, which has a type of PVD.

When the Explore window is invoked for the first time, a Thumbnail Database named PolyView is automatically created. The two files for this default database are:

PolyView.PVX

PolyView.PVD

These files are created in the same directory as PolyView.exe. Warning: If PolyView.exe resides in a read-only directory, then the Explore operation will fail when executed for the first time. To get things started successfully, move PolyView.exe to a writable directory before invoking the Explore window.

Once the Explore window is active, the Open Database command under the Thumbnails menu can be used to open or create an alternate database. It will be useful to use an alternate database if thumbnail sketches of images on a removable device such as a CD or floppy disk are to be created. This will allow the management of the Thumbnail Database through the Thumbnail Database Maintenance dialog to be most effective, since the main database for the non-removable devices in the system can be maintained without regard to which removable devices are currently resident.

There is no hard limit to the number of thumbnails that can be managed by a single Thumbnail Database, except the limits imposed by the size of the database and the available disk space for its storage.

The Explore window requires Windows 95 or Windows NT 4.0. The Explore window also runs on Windows NT 3.51 if the Shell Technology Preview from Microsoft is installed.

The Working indicator is the word Working which appears on the right side of the PolyView status bar to indicate that a background operation is in progress.

Setting Metafile Display Dimensions

Windows metafiles contain a series of graphics commands that draw an image when played back into a window. The size of the window to be used is arbitrary, although some metafiles contain information about the intended size of the viewing window. Whether or not a suggested size is available, PolyView offers the Metafile Dimensions dialog to allow the dimensions to be entered, or altered.

The Metafile Dimensions dialog contains:

Original Width
The width specified for the metafile. (0 if the metafile contained no dimensional information.)

Original Height
The height specified for the metafile. (0 if the metafile contained no dimensional information.)

Bitmap Width
Edit this field to change the width of the window for the metafile.

Bitmap Height
Edit this field to change the height of the window for the metafile.

Keep Aspect Ratio
If checked, then changes to the width or height fields will be reflected in the opposite field to keep the window size at the same aspect ratio as the originally specified width and height.

Thumbnail Size Dialog

The size used to create and display thumbnails is initially controlled by the Default thumbnail dimensions option of the Thumbnails tab of the Properties dialog. Once a thumbnail database is created and thumbnails are being displayed, the Thumbnail Size Dialog can be used to change the creation and display size.

PolyView creates and displays thumbnails to fit square regions which are 100, 150, or 200 pixels on each edge. When the display size is changed then the new size is programmed into the current thumbnail database and the display dimensions for thumbnails will be immediately changed. Previously existing thumbnails must be deleted and recreated to make optimal use of the new display size.

Adjusting Gamma

The Gamma Adjustment dialog offers an interactive method of adjusting the gamma factor for an image.

The gamma value shown on the Gamma Adjustment dialog represents the current gamma setting for the image.

The action taken for the buttons on the Gamma Adjustment dialog are:

Apply

Apply the current gamma value to the image. The image intensity is changed and the image is redisplayed.

Accept

Accept the current gamma value for the image. The stored image information is updated to reflect the current settings.

Cancel

Cancels the dialog box and leaves the image unchanged.

Note: The changes made to an image by the Gamma Adjustment dialog cannot be completely undone by running the dialog again and changing back to the original gamma factor. Certain distortions are inevitable due to the flattening or expansion of the intensity curves for an image. Use the Undo command on the Edit menu to cancel the effects of a gamma adjustment operation.

About Gamma

The appearance of an image displayed on a computer screen, or any other media, is dependent on a complicated interaction between the way humans perceive colors and intensities and the way the particular media translates its input signals into light. Although a host of other factors contribute, it is these two which dominate.

Human visual perception is sensitive to the ratios between light intensities. Consider a gray light intensity scale where 0 indicates a black image and 100 represents a white image. The three intensities 25, 50, and 75 will not be seen by the eye as linearly increasing in intensity, as you might expect. Instead, the intensity of 50 is twice as bright as 25, while 75 is only 1.5 times as bright as 50.

The rendering of an image on a computer display is a highly non-linear problem which is potentially different for every system. The intensity of a pixel depends on the characteristics of the screen phosphor and the characteristics of the electron beam that is exciting the phosphor to radiate light. Add to this the intensity response of human vision and the problem of correctly displaying the colors and brightness of an image becomes quite a challenge.

Gamma attempts to compensate for these effects by pre-adjusting the intensities of the pixels in an image according to the equation:

```
NewIntensity = Intensity**(1/Gamma)
```

where ** represents the exponentiation operation. The overall effect of this operation is that for Gamma settings greater than 1.0 there is a brightness boost in an image which tends to decrease as the intensity of a pixel increases. That is, the dark areas of an image increase more in brightness than do the light areas. Choosing the right gamma factor can result in the realistic display of an image.

The wide variety of image storage formats available treat gamma compensation with an equivalently wide variety of methods. Some formats, like Portable Network Graphics (PNG) format, offer the capability of storing the gamma compensation for an image along with the bits of the image. Others, like JPEG File Interchange Format (JFIF), simply specify that the images be stored with a gamma factor of 1.0 - leaving it up to the viewers to appropriately compensate the image for display. In both cases, the specification and compensation of gamma is widely ignored. Many PNG images have no or incorrect gamma compensation, and many JPEG, GIF, and other formats are corrected to something other than 1.0.

PolyView takes an ambivalent approach to gamma. Unless specified in the input file, as is the case with many PNG images, PolyView assumes that the compensation of the input image is satisfactory as is, and displays the image colors exactly as stored. For images where this behavior is inappropriate, the Gamma Adjustment dialog provides interactive adjustment of the gamma factor for an image. For lack of a better starting point, images with unspecified gamma are assumed to have a gamma factor of 1.0.

TIFF files come in many shapes, sizes, and colors. Because of this it is difficult 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, 4 and 8 bit color mapped images, and 24 bit RGB, CMYK, and JPEG color images. These formats are supported with a variety of compression methods, planar configurations, and in both tiled and non-tiled forms.

TIFF files can contain multiple images. PolyView currently reads and displays only the first image.

PolyView saves or exports images to TIFF files in 1 bit monochrome, 8 bit grayscale, 4 and 8 bit color mapped, 24 bit RGB, and JPEG formats. TIFF images can be saved in uncompressed or LZW compressed form, as well as CCITT Group 3 and 4 FAX formats (1 bit monochrome images).

Note: exporting to TIFF files is only available to registered users.

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

PolyView cannot write files in Photo-CD format.

JPEG format files containing 8 and 24 bit images in both progressive and non-progressive form are read and displayed by PolyView. Progressive format JPEG files use a storage scheme that allows images to be displayed while they are being received, useful when the file is to be displayed while it is being received over a relatively slow medium like a serial network link.

All images with a storage format greater than or equal to 8 bits per pixel can be saved to JPEG format files, both progressive and non-progressive. 256 color images 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 saving to progressive JPEG format and output of embedded comments are available only to registered users of PolyView.

GIF file images in 4 and 8 bit formats are read, written, and displayed by PolyView. PolyView ignores non-image related information found in GIF 89a files.

All images with at least 4 bits per pixel (16 colors) 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 interlaced GIF format and output of embedded comments are available only to registered users of PolyView.

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

All images can be saved to some form of BMP format file.

1 bit Windows BMP files are bit-packed monochrome images stored as 8 bits per pixel.

4 bit Windows BMP files contain up to a 16 element color table and the uncompressed bits which make up the image - two pixels per byte.

4 bit Windows RLE BMP files contain up to a 16 element color table and the run length encoded bits which make up the image. The storage size for this format may be smaller than an uncompressed 4 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.

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.

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.

24 bit Windows BMP files contain the uncompressed bits which make up the image - three bytes per pixel. Up to 16 million colors can be represented by this format. Note that this format is only available for storing 24 bit images.

Note: only 8 bit uncompressed BMP file storage is available to non-registered users.

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.

8 and 24 bit format 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: PNG file storage is available only to registered users of PolyView.

Adobe Photoshop format images in 1, 4, 8, and 24 bit format with a variety of compression and color space types can be read and displayed by PolyView.

All but 4 bits per pixel images can be saved to Adobe Photoshop files.

Note: Adobe Photoshop storage is available only to registered users of PolyView.

Apple PICT is a common format for the Apple Macintosh. PolyView can read and display the raster form of PICT files.

All images can be saved to Apple PICT files.

Note: Apple PICT storage is available only to registered users of PolyView.

Commodore-Amiga IFF image files in all forms can be read and displayed by PolyView.

All images can be saved to IFF files.

Note: IFF storage is available only to registered users of PolyView.

Computer-aided Acquisition and Logistics Support (CALS) images can be read and displayed by PolyView.

1 bit per pixel monochrome files can be saved to CALS format.

Note: CALS file storage is available only to registered users of PolyView.

DCX files contain multiple PCX formatted images in a single file. PolyView can read and display the first image in a DCX file.

All images can be saved to DCX files. PolyView always creates a DCX file containing one image.

Note: DCX file storage is available only to registered users of PolyView.

Encapsulated PostScript files can contain vector, bitmap, and screen preview image data. PolyView can extract and display the screen preview data from EPS files.

PolyView cannot write files in EPS format.

PolyView can read and display FAX a variety of FAX formats, including AT&T G4, Brooktrout, KOFAX, etc.

PolyView cannot write files in FAX formats.

GEM IMG are 16 color or grayscale bitmap files.

PolyView can read and display but cannot write files in IMG format.

Halo CUT files are 8 bit image files generated by various DOS paint programs.

PolyView can read and display but cannot write CUT files.

IBM IOCA files are 1 bit per pixel files that support various FAX compression schemes. PolyView can read and display all variants of IOCA files.

PolyView cannot write files in IOCA format.

LaserData LaserView files are 1 bit per pixel files which contain data in CCITT Group 4 format.

PolyView can read and display but cannot write LaserView files.

MacPaint files are 1 bit per pixel files that are always in a 720x576 size.

PolyView can read and display but cannot write MacPaint files.

Microsoft Paint files are 1 bit per pixel files.

PolyView can read and display but cannot write Microsoft Paint files.

Pixmap is a 256 color format developed for X Windows by MIT. Polyview can read and display Pixmap files.

PolyView can write 8 bit images to Pixmap files.

Note: Pixmap storage is available only to registered users of PolyView.

Sun Raster is a 1, 8, 24, or 32 bit raster image format from Sun Microsystems. PolyView can read and display all variants of Sun Raster files.

All images can be saved to Sun Raster files.

Note: Sun Raster file storage is available only to registered users of PolyView.

Truevision TARGA files are 8, 16, or 24 bit format images. PolyView can read and display all variants of TARGA files.

All images can be saved to TARGA files. Either 8 or 24 bit storage will be used, depending on the format of the image being saved.

Note: TARGA file storage is available only to registered users of PolyView.

Windows ICON files can be read and displayed by PolyView.

PolyView cannot write Windows ICON files.

Windows metafiles are Windows standard image formats that contain series of graphics commands which describe images. Metafiles are found in three formats:

Windows Metafile Format - the original standard format

Aldus Placeable Metafile - a Windows Metafile with a header containing dimensional information.

Windows Enhanced Metafile - a new metafile format.

PolyView can read and display but cannot write metafile images.

WordPerfect metafiles contain both vector and bitmap information. PolyView can display only the first bitmap record from a WordPerfect metafile.

PolyView cannot write WordPerfect metafiles.

X Bitmaps are monochrome bitmaps. PolyView can read and display X Bitmaps.

PolyView can write 1 bit per pixel monochrome files to X Bitmaps.

Note: X Bitmap file storage is available only to registered users of PolyView.

X Windows Dump files are 1, 4, 8, and 24 bit image files. PolyView can read and display all variants of X Windows Dump files.

All images can be saved to X Windows Dump files.

Note: X Windows Dump file storage is available only to registered users of PolyView.

XSoft PCX files are 1, 4, 8, and 24 bit image files. PolyView can read and display all variants of PCX files.

All images can be saved to PCX files.

Note: PCX file storage is available only to registered users of PolyView.

File Format Conversions

The Format Conversions window is entered by choosing Format Conversions from the File menu. This window provides a method of converting a group of files in various formats to a different output format. All file reading and writing is done by a background thread to insure that these potentially lengthy operations do not prevent the continuation of other image processing in PolyView.

When the Format Conversions command is initially chosen, PolyView activates a modified file open dialog to solicit the list of files to be converted. Drag and drop files from the list of files in each chosen folder to the Input files for conversion list and/or use the supplied buttons to add or remove files from the list. Press the Continue button when the selection of files to convert is complete.

The Format Conversions window contains the following controls:

Source Files List

The list of files which are to be converted. Note: the files in this list will be considered to be read-only during the conversion process. The converted form of the image in each file will always be written to a different file.

Select Files…

Press this button to bring back the file open dialog to change the files in the source file list.

Destination Folder

Presents a tree of the available devices and folders accessible from your computer system. Select the folder where all the output image files should be written.

Destination Format

A drop down list of all the formats available for conversion. Note that not all input formats can be written to all output formats. Refer to the list of supported formats for further information.

Start

Push this button to start the conversion operation.

Stop

Push this button to terminate the conversion process. The process will terminate when the current file read or write has completed.

Replace Existing Files

If checked then files in the destination folder with names that match the name of a converted output file will be replaced by the converted output file. If left unchecked then a warning message will be written to the Conversion Results window and the converted output file will not be written.

Conversion Results

A scrolling window which displays text messages indicating the current progress of the conversion process and informative messages about any errors that might occur.

Scroll Messages

If checked then the Conversion Results window will automatically scroll down as the conversion progresses. Check this box to stop the scrolling so that messages higher up in the list can be viewed during the conversion.

Close

Closes the Format Conversions window. Any conversion in progress will be terminated at the completion of the current file being read or written.

PolyView Version History

2.70.2

Improved the way the thumbnail pane positioning is managed when the Explore window is resized. This also corrects anomalous behavior when the Explore window is maximized.

2.70.1

Fixed a problem which caused an access violation GPF to be generated if a corrupted thumbnail database file was encountered.

Fixed a problem which caused the thumbnail for a renamed file to disappear until the containing folder was refreshed.

Added some additional robustness for dealing with errors encountered while creating thumbnails.

2.70

Created a new Browse menu which has some of the commands that were previously in the File menu, and several new ones (see below).

Added an Open Script choice to the Browse menu for the direct opening of slide show script files.

Added commands to the Browse menu to invoke a browser for directories and files marked during slide shows.

Added the capability to display slide shows (or multiple slide shows) in on-screen windows. (See the Browsing tab of the Properties dialog.)

Added the capability to mark files during slide shows, as well as pause and continue functionality.

Added an option to the Browsing tab of the Properties dialog to expand slide show images to fill the available viewing area.

Added an option to the Files tab of the Properties dialog to force PolyView to interpret multiple command line arguments as a single file name containing spaces.

Added a command to the File menu save a file as wallpaper.

Added the Display Reduction Method option to the General tab of the Properties dialog to control the method used to reduce a large image to a small window.

Added the Background Color command to the Options menu to set the background color used for images.

Added a Tools menu to facilitate selection of the area selection, zooming, and panning tools.

Added an area selection tool to the Tools menu and the associated Crop and Copy Selected Area commands to the Edit menu.

Added a panning tool to the Tools menu to simplify moving the visible window around in a large or zoomed image.

Added a Photo-CD tab to the Properties dialog with options to control the size image to decompress

from a photo-CD image pack file.

Added a splash screen to display the PolyView logo during program startup and initialization, and added an option to the General tab of the Properties dialog to disable it.

Added appearance adjustment commands to the context menu for an image.

The thumbnail position now stays constant after Deleting an open image while the Explore window is open.

Fixed a bug which caused misbehavior if full screen state was interrupted by a pop-up window or screen saver activation.

Corrected the actions of the Tool Bar and Status Bar options in the View menu for the Explore window.

Improved the screen update algorithms to reduce flickering when resizing image windows.

Corrected the consistency of the actions on the thumbnail context menu of the Explore window. The Add to slide show and Delete options now affect all selected images.

Clicking the right mouse button on the thumbnail pane of the Explore window no longer deselects selected images.

Fixed a problem which caused a maximized window to be incorrectly displayed after a full screen slide show or image view operation had taken place.

Fixed a bug in the Soften routine invoked through the Options menu.

Fixed a bug in the Export Image command of the File menu which caused the last save/export directory to not be used.

The splitter bar position in the Explore window is now restored between sessions.

The thumbnail position now stays constant after Delete or Move operations in the Explore window.

Fixed a problem which prevented purging the slide show list if the slide show dialog was closed with an empty list.

2.60.3

Fixed a bug which could leave the last few rows unreachable in the Explore window.

2.60.2

The slide show dialog now uses a device dependent bitmap for display if the corresponding option is checked in the General tab of the Properties dialog, resulting is a faster screen update on displays configured for more than 256 colors.

Fixed a bug which corrupted the output file name during batch file format conversions if the destination directory was the root directory of a drive.

Fixed a bug which caused excessive system resources to be used, and a potential for a stack failure, during the opening of some folders in the Explore window.

2.60

Added Undo operations.

Added variable thumbnail sizes.

Added palette optimization techniques to improve display of thumbnails in 256 color systems.

Added ReCreate Selected and Recreate All options from the Thumbnail menu of the Explore window to simplify recreation of thumbnails after a size change.

Added a progress bar for the thumbnail creation process.

Added a command to stop thumbnail creation.

Added a Sort option on the View menu for the Explore window to sort thumbnails by Name, Type, Size, and Date, with either ascending or descending sort order.

Improved the behavior when moving files in the Explore window so that the thumbnail for the image is retained.

Improved the handling of large folders in the Explore window for better responsiveness.

Added /E:Startup_Folder to the command line options to specify that the Explore window is to start with a specific folder opened. Example: polyview /E:c:\picture\my vacation

Dragging thumbnails to the Recycle Bin icon in the Explore window tree is now supported.

Added display of hidden folders in the Explore window

Added standard length and width options on the dialog presented from the Options:Change Pixel Resolution command.

Added the Gamma Adjustment operation to the Options menu.

Added the Change Color Depth operation to the Options menu.

Changed the layout of the slide show dialog when the screen resolution is 640x480 or 800x600 to achieve a better fit when large fonts have been selected.

Deleting a displayed image from the File menu sends the file to the Recycle Bin on Windows 95 and Windows NT 4.0 system.

Corrected a problem with the decompression of PNG files which are grayscaled and contain 16 bit channel information.

Corrected a scrollbar thumb positioning problem after delete operations in the Explore window.

Corrected the View:Refresh option of the Explore window to correctly update when folder configurations have changed.

Fixed a problem with color map manipulations which caused printing and other difficulties when the number of colors in an image is less than the maximum.

2.53

Fixed problem with interpolating 24 bit per pixel images when the display mode is 8 bit.

2.52

Fixed problem with interpolation algorithm. This change makes minor improvements when interpolating 24 bit images, and major improvements when interpolating 8 bit images.

2.51

Added an option to the General Tab of the Properties dialog to turn off the generation of the device dependent bitmap used to optimize panning images.

Added an option to the General Tab of the Properties dialog to create a new window when some filtering operations are performed.

Added the Neon filter to the Special Effects available for 24 and 8 bit (grayscale) images.

Fixed a problem with the Format Conversions window which incorrectly interpreted the output image type for non-registered users.

2.50

Added the Format Conversions window.

Added edge detection image filters.

Added image appearance commands to sharpen and soften an image.

Added emboss and engrave special effects.

Added the Duplicate Image command.

Added an image appearance command to make the photographic negative of an image.

Restored the behavior of keeping child windows maximized when new images are opened.

Enhanced the internal handling of 1 and 4 bit per pixel images to improve speed and efficiency.

Added numerous export format options for 1 and 4 bit per pixel images.

Further optimized the steps taken during decompression and display of most graphics images to improve overall speed and efficiency.

Removed the Explore window restriction on the number of thumbnails that can be displayed in a single folder.

Added a Refresh option under the View menu of the Explore window. It is mapped to the F5 key for compatibility with Windows 95 and Windows NT. The previous mapping of the F5 key, to the thumbnail create function, is now mapped to F4.

Added a sort button to the slide show dialog.

Corrected a problem with the Add All button of the slide show dialog.

Added a more sophisticated printing algorithm.

Corrected the Print and Print Preview operations which erroneously determined the printed image borders when only the visible regions of an image were printed.

Added several options for specifying a progress bar to be used in lieue of or in addition to the normal progress image display during decompression.

Corrected the behavior of the Slide Show dialog when a file name was double-clicked in the file list box.

2.40

Added support for numerous additional image formats.

Enhanced the operation of the Slide Show dialog under Windows 95.

Added the Flip and Mirror manipulations.

Corrected an error which prevented image appearance adjustments from being written back to 8 bit image formats under some conditions.

2.30

Added the Explore Window.

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.

Image Appearance Manipulation

The appearance of an image can be manipulated using the Appearance, Edge Filters, Rotate, Flip, and Mirror selections of the Options menu, or via the appearance manipulation buttons on the toolbar.

The following selections are available. The actions of many of the 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.)

Negative
Converts the current image to its photographic negative.

Sharpen
Soften
Sharpen or soften the focus of the image. These options are available for all 24 bit images, and 8 bit grayscaled images.

Edge Filters
Several filters which find or enhance the edges of the image. These options are available for all 24 bit images, and 8 bit grayscaled images.

Special Effects
Several filters which perform various special effects on the image. These options are available for all 24 bit images, and 8 bit grayscaled images.

Flip
Flips the current image upside down by rotating it 180 degrees.

Mirror
Converts the current image to a mirror image of itself.

Rotate Clockwise

Rotates the current image clockwise by 90 degrees.

Rotate Counter Clockwise

Rotates the displayed image counter clockwise by 90 degrees.

Choose the new color depth

The first step in changing the color depth of an image is to choose the new depth. This screen offers the following choices for color depth:

1 bit/pixel (monochrome) - 24, 8, and 4 bit/pixel images can be converted to monochrome (black and white) images.

4 bits/pixel (2-16 colors) - 24, 8, and 1 bit/pixel images can be converted to 4 bits/pixel images.

8 bits/pixel(17-256 colors) - 24, 8, 4, and 1 bit/pixel images can be converted to 8 bits/pixel.

24 bits/pixel - 8, 4, and 1 bit/pixel images can be promoted to 24 bit/pixel images.

Choose the depth that best suits your needs and press the Next button and the wizard will take you to the next step in the process.

See Color Depth Wizard

Choose the color palette

Since you have chosen to change to an 8 or 4 bits/pixel image, you must now choose the method that PolyView should use to create the color palette for the new image. The available choices depend on whether an 8 or 4 bits/pixel image has been chosen.

Optimize colors for this image

PolyView will analyze the image and choose the best colors it can for the colors in the new image.

Use the browser standard 216 color palette (8 bit target)

The 216 color palette used for this choice is the same as that used by most popular web browsers when they are displaying images on 256 color systems. Choosing this palette is useful if you are creating images for web pages and want to be certain that they display the same on all systems regardless of their display settings.

Use the VGA standard 16 color palette (4 bit target)

The standard VGA palette can be used as the palette for 16 color images.

Use a palette stored in a file

Choosing this option will match the color of the image to the colors in a previously saved palette. PolyView can read palette files in Windows format and in the format produced by some other popular image manipulation programs.

Press the Next button to go to the next step in the specification process, or press the Back button to change the bit/pixel ratio desired for the output format.

See Color Depth Wizard

Choose the depth reduction method

Several methods are available when an image is to be reproduced using a color palette different from the original:

Use the error diffusion method

The error diffusion method usually creates the best image appearance. It is the slowest method.

Choose the nearest color for each pixel (4 and 8 bit targets)

The nearest or closest color method often creates an acceptable image appearance, and is relatively fast.

Choose an ordered dither pattern (1 bit target)

The patterned dither method is the fastest way to create monochrome images.

Press the Finish button to begin the color reduction operation, or the Back button to change the way the operation has been specified.

See Color Depth Wizard

Choose the number of colors

When you have chosen to let PolyView optimize the color palette for the new image then you must also specify the number of colors you want to be included in the new image.

Press the Next button to choose the reduction method to use, or the Back button to change the method of selecting colors.

See Color Depth Wizard

Choose the palette file

When you have chosen to match an image to the colors saved in a palette file you must specify the name of the file to use. PolyView can read palette files in Windows format and in the format produced by some other popular image manipulation programs. Specify the name of such a file, or press the Browse button and use a standard file open dialog to browse your system for a palette file.

Press the Next button to choose the reduction method to use, or the Back button to change the method of selecting colors.

See Color Depth Wizard

Begin promotion operation

When an image is to be promoted to an increased bit/pixel ratio, its appearance will be unchanged, but its storage size will increase. The current step displays the uncompressed size for the new image.

Press the Finish button to begin the promotion operation, or the Back button to change the specification of the destination bit/pixel ratio.

See Color Depth Wizard

Color Depth Wizard

Images in PolyView can be represented and displayed in 24 bits/pixel (16 million colors), 8 bits/pixel (256 colors), 4 bits/pixel (16 colors), and 1 bit/pixel (2 colors) formats. The Color Depth Wizard provides a guided method of converting the color depth (bit/pixel ratio) to a higher or lower value. The resulting image is stored and displayed in a new window, leaving the original image unchanged. The Color Depth Wizard is invoked by choosing Change Color Depth from the Options menu.

The Color Depth Wizard converts images to the following depths:

1 bit/pixel (monochrome) - 24, 8, and 4 bit/pixel images can be converted to monochrome (black and white) images. Either an error diffusion or a patterned dither method can be chosen to perform the conversion.

4 bits/pixel (2-16 colors) - 24, 8, and 1 bit/pixel images can be converted to 4 bits/pixel images.

8 bits/pixel(17-256 colors) - 24, 8, 4, and 1 bit/pixel images can be converted to 8 bits/pixel.

24 bits/pixel - 8, 4, and 1 bit/pixel images can be promoted to 24 bit/pixel images.

Choosing Fewer Colors

When the number of colors in an image is to be reduced, the Color Depth Wizard offers several choices for determining the colors which will be present in the converted image.

If a 4 bits/pixel image is to be produced, the optimum color set can be produced by analyzing the current image, the standard 16 color VGA color set can be used, or a palette file stored on disk can be chosen. (See Palette Files below.)

If an 8 bits/pixel image is to be produced, the optimum color set can be produced by analyzing the current image, a 216 color palette which matches that used by most World Wide Web browsers can be used, or a palette file stored on disk can be chosen. (See Palette Files below.) Choosing the 216 color palette is useful for creating an image that will be included in a web page and viewed on 256 color displays, guaranteeing that the browser does not create additional image distortions due to the use of its own color approximation algorithms.

Palette Files

Changing the colors in an image to match those of another image is best accomplished by saving the palette for an image to a palette file (see the Save Palette File command on the Options menu), and then choosing the palette file when the Color Depth Wizard offers the choice of methods to determine the output colors for a reduced image. PolyView saves palette files in the Windows standard palette file format, and can read palette files in Windows format and in the format produced by some other popular image manipulation programs.

Reduction Methods

When an image is to be reproduced using a different color palette than originally, PolyView can use either an error diffusion or closest color algorithm. While error diffusion almost always creates an image which more closely approximates the appearance of the original image, the closest color algorithm is faster.

Increasing Color Depth (Promotion)

When the color depth of an 8, 4, or 1 bit/pixel image is increased, the appearance of the image will be unchanged in the resulting image. Only the storage format for the image is changed by this operation.

Error diffusion is a method of reducing the color depth of an image which blends the available palette colors to approximate the appearance of the original image. As an image is scanned, the difference between the desired color and the closest available palette color is calculated for each pixel. This error value is then distributed, or diffused, amongst the pixels that border the pixel being worked on. Error diffusion can achieve outstanding results on many images, but it is the most time consuming of the available color reduction methods.

Patterned dither is a method of reducing the color depth of an image which blends the available colors to approximate the appearance of the original image through the use of a dither matrix. The net effect of patterned dithering is that local regions of an image have the correct color intensity, but a pronounced and regular pattern can be seen in the colors of the individual pixels. Patterned dither is quite fast and achieves acceptable results for many images.

The closest color algorithm chooses the color for a pixel in an image by finding the color in the palette which most closely matches the original color of the pixel. This method often produces acceptable images and is faster than error diffusion.

PolyView Registration Form

Name: _____

Address: _____

Address: _____

City/State/Zip: _____

Email: _____

Comments:

Print this form, fill it out, and mail along with a check or money order for $20.00 US to:

Polybytes
3427 Bever Avenue SE
Cedar Rapids, IA 52403-3161
USA

Please make registration checks payable to **Polybytes**.

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.

Save as wallpaper

Saves the current image as the current wallpaper. Note: the image is saved into the Windows directory as the file “PolyView Wallpaper.bmp”, replacing any file by that name that previously existed.

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.

Format Conversions…

Invokes the Format Conversions window to convert groups of files to a common output format.

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.

Only Image Types

When the Explore Window is active this option controls the files that will be displayed in the thumbnail pane. If Only Image Types is checked, then only files with extensions that match a PolyView supported image file will be shown.

Name Tips

When the Explore Window is active this option controls the display of tool tips style name prompts which can be output when the mouse pointer is positioned over the rectangle for an image file.

Sort

Sorting options for controlling the order of the files displayed in the thumbnail pane of the Explore Window include sorting by file name, by file type, by file size, and by file date. An option on the menu provides for selecting ascending or descending sort order.

Refresh

When the Explore Window is active this option refreshes the current folder view to reflect any file movement or disk change activity that might have occurred.

Options Menu

Image Appearance Adjustments

See Image Appearance Manipulation.

Adjust Gamma

Invokes the Gamma Adjustment dialog to change the display gamma for the current image.

Duplicate Image

Create a new window which contains a duplicate of the current image. This command is useful when image appearance adjustments are to be made which might drastically alter the appearance of the original image. Such is the case, for example, when Edge or Special Effect Filters are used on an image.

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 Pixel 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.

Change Color Depth…

Invokes the Color Depth Wizard which guides the process of reducing or increasing the color depth of the current image.

Save Palette

Saves the current image color map to a Windows palette format file. (Valid only for 8, 4, and 1 bit per pixel images.)

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.

Background Color…

Invokes a color chooser dialog box to specify the background color used for image displays. The chosen color will be displayed outside the actual image boundaries in the directory browser, slide shows, and image windows.

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 Window List

The list of windows currently open. Select a window from this list to make it the current window.

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.

Edit Menu

Undo

Undo the most recent operation on the current image.

See also: Undo Properties

Flush Undo Buffer

Discard all information in the undo buffer.

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.

Copy Selected Area

Copies the currently selected 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.

Select All

Selects all the images in the current folder displayed by the Explore Window.

Unselect

Removes the current area selection.

Crop

Crops the current image to the image within the boundaries of the currently selected area.

Thumbnails Menu

Create Selected

Starts the operations to create thumbnail sketches for the selected images and add them to the current thumbnail database.

Create All

Starts the operations to create thumbnail sketches for all the images in a folder and add them to the current thumbnail database.

ReCreate Selected

ReCreate All

Like their Create counterparts, these commands create thumbnails for all or selected images in a folder. The difference is that the Create commands create thumbnails only for images which do not currently have a thumbnail, while the ReCreate commands will replace existing thumbnails. This is a recommended operation to perform after the size of the displayed thumbnails has been changed through the Thumbnail Size dialog.

Open Database…

Opens an existing or creates a new thumbnail database.

Maintain Database…

Invokes the Thumbnail Database Maintenance dialog to view status and perform maintenance on the current thumbnail database.

Delete Selected Thumbnails

Deletes the thumbnails for the selected images. Note: the sizes of the thumbnail database files are not reduced until the Thumbnail Database Maintenance dialog is used to removed unused space.

Hide Selected

Hides the selected images from viewing via the Explore window by marking them as hidden in the current thumbnail database.

UnHide Selected

Removes the hidden attribute associated with the selected images. Note: After this operation the thumbnails for the images must be recreated.

Show Hidden

Shows both hidden and unhidden images in the Explore window. This command is useful to temporarily display hidden images so that the hidden attribute can be removed.

Thumbnail Size…

Invokes the Thumbnail Size dialog to view or change the dimensions used for creation, storage, and display of thumbnails.

Browse Menu

Slide Show...

Presents a dialog box from which a list of images can be created for use in a 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. On Windows 95 and Windows NT 4.0 systems the order of the slide show presentation can be changed by dragging and dropping image files to new positions in the slide show list, or by dragging and dropping files from the folder list to specific positions in the slide show list.

Open Script…

Open and play a slide show script file.

Play Slide Show

Starts the execution of the current slide show.

Save Slide Show...

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

Add to Slide Show

When the active window is the Explore Window or a browser window this command is available to add selected images to the current slide show.

Empty Slide Show

Sets the current slide show back to empty.

Explore

Invokes the Explore Window.

Browse Directory…

New Directory Browser…

Invokes a new browser window that is useful for perusing the images in a directory.

Change Directory…

Changes the directory viewed by the currently active browser.

Browse Marked Files

Invokes a new browser window to browse the images marked during a previous slide show.

Tools Menu

The Tools menu is displayed when an image window is the currently active window.

Area Selection Tool

Choose the Area Selection Tool when you want to select an area of the displayed image for cropping or copying to the Windows clipboard.

Zoom Selection Tool

Choose the Zoom Selection Tool when you want to zoom in on an area of the currently displayed image.

Panning Tool

Choose the Panning Tool when you want to reposition the currently displayed image by dragging a point on the image to a new location.

The Windows directory has various names and locations on various computers. It might be c:\windows, c:\winnt35, c:\winnt351, etc. PolyView will find the correct directory for your system.

Full Screen Display Modes

The 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 auto-browse mode images will be changed at the rate indicated by the Browsed Image Display Time property of the Browsing Properties Tab of the Properties dialog.

Manual Image Cycling

While browsing images in full screen mode, the left and right mouse buttons and cursor control keys can be used to manually cycle through the selected images, pausing 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. Press the ‘P’ key to resume timed image cycling.

Note: Under Windows 95 and Windows NT 4.0 a right mouse button click near the top of the screen will invoke the standard context 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 any non-controlling key from the keyboard.

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.

Slide Shows

A slide show is a collection of images displayed by PolyView in a sequential fashion that is similar to a traditional slide show done with photographic slides. A slide show can be displayed in a fully automatic mode with a fixed or variable display time for the images, and the order the images are displayed can be randomized. In addition, the individual images in a slide show can be rotated from their default configuration. Slide shows are displayed in a window or using the computer's entire screen. Images that are larger then the display area will be downscaled to fit within the display area boundaries. Many of the characteristics of slide shows can be customized through the Browsing Properties Tab of the Properties dialog.

Automatic Image Cycling

Images are changed at the rate indicated by the Browsed Image Display Time property of the Browsing Properties Tab of the Properties dialog if an individual image display time has not been specified. If Browsed Image Display Time indicates that images are to be cycled manually, then images are changed under keyboard and mouse control.

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.

Note 2: Under Windows 95 and Windows NT 4.0 a right mouse button click near the top of the screen will invoke the standard context 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.

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.

Keyboard Control

The following keyboard and mouse commands are effective during a slide show:

'p' or 'P' pauses or resumes a timed slide show.

'm' or 'M' marks the image that is currently displayed. Marked images can be reviewed and manipulated through the use of the Browse Marked Images command on the Browse menu.

Cursor Keys move the display forward or backwards through the image list. Up or Left keys (left arrow, up arrow, Page Up) moves the display to the previous image in the list. Down or Right keys (right arrow, down arrow, Page Down) move to the next image in the list. Note: when a slide show is displayed in full screen mode the left and right mouse buttons will move the display to the previous and next images respectively.

All other keys cancel the slide show.

Canceling Full Screen Mode

Full screen mode is canceled by entering any key from the keyboard that is not mentioned in the previous section as an active control key.

See also: Slide Show Scripts

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.

File Properties Tab
General Properties Tab
Browsing Properties Tab
JPEG Properties Tab
Photo-CD Properties
MRU File List Properties
Thumbnail Properties
Undo 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.

Write PolyView Signature to GIF

If this option is checked then PolyView will write an information string to all exported GIF files which designates PolyView as the creator of the file.

Assume single command line argument

This option controls the way PolyView interprets its command line arguments. If checked, then multiple arguments separated by spaces are assumed to be a single image file name containing spaces. If unchecked, then multiple arguments are assumed to be the names of multiple files, and names containing spaces must be enclosed in double quote characters.

For example, the command line

polyview my picture

will be interpreted as a request to open the files “my” and “picture” if this option is unchecked, but as a request to open the file “my picture” if checked. The command line

polyview “my first picture” “my second picture”

will be interpreted as a request to open the two files “my first picture” and “my second picture” regardless of whether this option is checked or unchecked.

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, red/green tint, and sharpness. 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.

Enable interpolated zoom

This option controls the way PolyView zooms an image. 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.

Enhance monochrome printing

PolyView has two printing techniques available - sending images directly to the printer with no processing except stretching to fit the specified page size, or a technique that uses error diffusion when sending color images to monochrome printers to insure the best print quality. The former method, used if Enhance monochrome printing is not selected, usually takes significantly less time to produce printed output. The latter method, however, will usually produce much better quality prints when color images are sent to monochrome printers.

Use default WMF size

This option controls the action taken when PolyView opens a Windows metafile. If unchecked, then the WMF Dimensions dialog will be invoked whenever a metafile is opened to allow the specification of the window size for the metafile image. If checked, then the dimensional information contained in the metafile will be used to determine the window size, or 300x200 for metafiles which contain no dimensional information.

Create Device Dependent BMP

If checked, then PolyView will create a device dependent bitmap for each image processed when the display is configured for more than 256 colors. The presence of the device dependent bitmap will enhance panning operations and speed up slide show screen updates at the cost of additional memory usage.

Filter to new window

If checked, then filtering options which drastically change the appearance of an image will write the changes to a new window, leaving the current image unchanged. The operations altered by this

option include some edge filters and the special effects filters.

Disable Splash Screen

Turns off the display of the opening splash screen.

Progress Bar

These options specify the behavior of the Progress Bar that PolyView can optionally display while decompressing an image.

Display Reduction Mode

This property controls the method used to draw images that must be reduced in size to fit the available viewing area.

Color photo mode - pixels eliminated during reduction are simply deleted. This is the fastest method and generally does a very good job with complex color images like photographs.

Favor black pixels - black pixels are favored over white in monochrome images. This method works well for line drawings when black lines are drawn on a white background.

Favor white pixels - white pixels are favored over black in monochrome images. This method works well for line drawings when white lines are drawn on a black background.

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.

Zoom images to fill window or screen

This property controls the behavior when a slide show or full screen image is smaller than the available screen display area. If checked then the image will be expanded to fit the available space, preserving the aspect ratio of the original image.

Select multiple names in dialog

On Windows NT systems prior to version 4.0, this property controls whether or not the slideshow selection dialog is configured to allow the selection of multiple names. If checked, then multiple names can be selected from the file name list box, but names containing spaces in this box and in the directory box will have their DOS compatible short names substituted.

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.

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.

Progress Bar Options

The progress bar is an indicator on the PolyView status bar which graphically displays the progress being made towards the completion of the various activities associated with decompressing image files. These activities include:

- Initial image decompression
- Image color reduction (two passes) on 256 color displays
- Final bitmap production

Depending on the progress bar settings, one or more of these activity states will be reflected in the progress bar. Note: if multiple images are being decompressed simultaneously, only the activity associated with the first image started will be reflected in the progress bar.

The following options control the behavior of the progress bar indicator:

Never

The progress bar is never displayed during file decompression operations.

On Intermediate Ops

The progress bar is displayed while decompression activity is ongoing, but the image data is not yet available for display in the image window. This will occur, for example, when an interlaced image is being decompressed. In this case the entire image is read into memory before the creation of the final display bitmap and the subsequent display of the completed image.

Always

The progress bar is displayed for all activities and the progressive display of the image during decompression is not performed.

Thumbnail Properties Page

The thumbnail properties are available from the Thumbnails tab of the Properties dialog. These properties control the methods by which thumbnail sketches of images are created and stored.

Thumbnail Creation and Storage

Two types of thumbnail bitmaps are created by PolyView: a 256 color bitmap which provides excellent color reproduction when the system display is configured for a mode which provides greater than 256 colors (16, 24, or more bits per pixel), and a 216 color bitmap which uses an error diffusion technique to accurately reproduce colors on 256 color (palette based) systems. The Thumbnail Creation and Storage options control which of these bitmaps will be created and stored in the thumbnail database:

Optimize for 256 color displays - thumbnails will be stored as a 216 color bitmap using error diffusion to most accurately reproduce colors on 256 color (8 bit) display configurations. On systems that will view thumbnails in 8 bit and higher color resolutions, this option is the best compromise between thumbnail database size and color reproduction.

Optimize for greater than 256 color displays - thumbnails will be stored as a 256 color bitmap to most accurately reproduce colors on systems which are configured for more than 256 colors. Color reproduction on 256 color systems is compromised because each image in the thumbnail pane potentially uses a different 256 colors, and at most 256 colors can be displayed at one time on these systems.

Optimize for all displays - both types of bitmaps will be stored in the thumbnail database. The bitmap used for display will be the correct one to best reproduce colors for the display configuration selected. This option results in the largest thumbnail database, but gives the best color reproduction on systems which frequently switch between color resolutions.

Default thumbnail dimensions

PolyView creates and displays thumbnails to fit square regions which are 100, 150, or 200 pixels on each edge. This option controls the size used for the initial creation of a thumbnail database. Note: this option is also updated when the Thumbnail Size dialog is used to change the display size.

Undo Properties Page

The Undo properties are available from the Undo tab of the Properties dialog. These properties control the way PolyView saves information about an image so that a requested operation can be undone and the image restored to its previous appearance.

Undo Policy

The Policy PolyView uses for managing the memory space allocated for saving undo information can be specified to be one of the following:

Disable undo operations - Choosing this operation turns off undo saving entirely. The only recourse for undoing operations is to start over by closing and reopening the image file.

Replace oldest undo block for another image when buffer is full - When the undo buffer is full and another undo block needs to be stored, delete the oldest undo block in the buffer which belongs to an image other than the current image. If the undo buffer contains only blocks for the current image, then delete the oldest block found.

Replace oldest undo block for the current image when buffer is full - When the undo buffer is full and another undo block needs to be stored, delete the oldest undo block in the buffer for the current image. If the undo buffer contains no blocks for the current image, then delete the oldest block found for any image.

Do not save current undo block when buffer is full - When the undo buffer is full then no further undo blocks will be stored.

Undo buffer size

The size to use for the Undo buffer, in megabytes.

Photo-CD Properties

The Photo-CD properties are available from the Photo-CD tab of the Properties dialog.

Photo-CD Sizing Options

These options control the size of the image loaded when a Photo-CD file is opened. The choices include the 5 available sizes, and:

Automatic - PolyView will choose an image size based upon the options selected from the Photo-CD Upsizing properties.

Ask on each PCD - each time a Photo-CD file is opened a dialog box will be invoked from which the image size to be loaded can be chosen.

Photo-CD Upsizing

The Photo-CD Upsizing options control the way PolyView selects the image size to use from a Photo-CD image file. Note: the Photo-CD Upsizing properties are used only when a Photo-CD file is opened with the Sizing Options set to Automatic.

Choose PCD Size

Choose Automatic to load an image size from the Photo-CD file based upon the Photo-CD Upsizing options selected from the Photo-CD Properties tab of the Properties dialog

or

choose from one of the 5 image sizes available from a Photo-CD file.

Choose Directory

The Choose Directory dialog presents an Explorer-like directory tree. Select the directory to use for the chosen operation from the tree presentation, or directly edit the edit box provided for the directory name.