

Images Control

The Multi-Purpose Image Management System

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Introduction

Images Control provides indexed and searchable storage structures to help you organize all of your electronic and paper-based data.

The software lets you automatically file, intelligently organize, visually locate, and instantly retrieve all your pictures or documents on-line. *Images Control* sorts, categorizes your images (family pictures, documents, etc.) into groups called "albums" for fast retrieval. Images added to these albums are shrunk to small thumbnail sizes, indexed, and stored as a single file on your hard disk.

The thumbnail images stored in the album files are not the actual of the images. These album files (.ALB) only store the scale-down version of these images. The actual path/file name of the images, their image properties, and any text associated with them are stored in another database. This database uses the Microsoft Access Jet engine and has the same file name with the album file with the extension .MDB.

Photo albums created by *Images Control* can be used in slide show screen savers. From the Windows Control panel, simply choose *Images Control* as your screen saver and select your favorite album for the slide show.

In addition to the above functions, *Images Control* is also a powerful image processing tool able to satisfy the needs of both inexperienced and advanced users. Using the leading LEADTOOLS image processing toolkit, *Images Control* offers a wide choice of advanced processing tools. Please refer to the [*Image processing/enhancement*](#) section for a complete detail of these functions. Besides the opportunity of managing a number of different image formats, including the industry standard JPEG, PNG, PhotoShop PSD, TIFF, WinFAX, and Kodak PhotoCD. The software supports any kind of image format up to 24 bpp full color images, 8 bpp grayscale, and 256 colors.

You can also use *Images Control* to enhance applications such as image databases, printing and drawing programs, video production systems, FAX systems, and systems for transmitting high quality compressed images using phone lines or networks.

Images Control consists of 4 main functions:

- [Creates/displays photo albums.](#)
- [Creates custom screen savers.](#)
- [Performs image format conversion/Image processing.](#)
- [Imports images from TWAIN-compliant devices.](#)

Features

- Stores images/documents in electronic albums/folders.
- Attaches annotation to images/documents.
- Performs multimedia slide show with visual effects and background music.
- Creates custom screen savers using your favorite photo albums.
- Prints hardcopy of images to any Windows-supported printer.
- Imports images from TWAIN-compliant devices.
- Acts as a grayscale/color photocopier and a fax machine.

Differences between shareware & registered versions

The shareware version of *Images Control* is fully functional in the Photo Album, Image Conversion/Processing, Screen Saver, Photocopy, and Fax modes. However, the Microsoft Windows **BMP**, **WMF** (*Windows Metafile*), **AVI**, and IBM OS/2 **BMP** are the only 4 formats available in the shareware version. To access an array of more than 35 different image file formats (including the most popular ones such as **BMP** (*Microsoft Windows and IBM OS/2*), **JPG** (*JPEG*), **PCD** (*Kodak Photo CD*), **TIFF**, (*Tagged Image File Format*), **PNG** (*the new Compuserve Portable Network Graphics*), **PSD** (*PhotoShop 3.0*), **WPG** (*WordPerfect*), **WMF** (*Windows Metafile*), **PCX**, **CMP** (*LEAD 1BIT*), **ICA** (*IBM IOCA*), **MAC** (*MacPaint*), and **TGA** (*Truevision Targa*), etc..) you must register *Images Control* to obtain the latest registered version. The current registration fee is \$25. Please read Supported image file format for a complete list of all image file formats *Images Control* supports.

The capability to import images from TWAIN-compliant devices (scanners, digital cameras, frame grabbers, etc.) is also available for an additional \$19.

Hardware/software requirements

Hardware Requirements

- Windows-based PCs.
- VGA board.
- Mouse or trackball.
- TWAIN-compliant scanner (optional.)
- Printer supported by Windows (optional.)
- Sound blaster card or compatible (optional.)

Software Requirements

- Microsoft Windows 3.1/95/NT workstation.

Images Control was designed and tested under Microsoft Windows 3.1 on an ISA 486DX33-based computer with 8 MB of RAM, a mouse/trackball, and a 1MB ISA Diamond Stealth 24 graphic board under the following video modes: 640x480x16, 640x480x256, 640x480x65536, 800x600x256, 800x600x65536, 1024x768x16, and 1024x768x256.

Images Control was also tested under Windows 95 on a 100 MHz PCI Pentium-based computer with 16 MB of RAM, a 150 MHz PCI Pentium-based computer with 32 MB of RAM, and a 2 MB PCI Diamond Stealth VRAM (S3-968.) under the above resolutions and color depths.

Images Control has not been tested in other environments because I do not have all the time and resources in this rapidly changing computer world. Therefore, unless you have the above tested hardware and software I cannot guarantee that it will work on your system.

Creating photo albums

Images Control allows you to build images into different groups/categories called albums. Each album can consist of one or more pictures. This organizes your image collection and allows you fast access to your image at any time. Images stored in albums as thumbnails. This permits you to see more images and allows the computer to load/display many images at the same time quickly.

To make new albums follow these steps:

1. Click on the **Add images to album** button.
2. Click on the image file(s) you want to add to the album.
3. Click on the **Add Image** button, the number of selected image file(s) and their name(s) will appear in the box in the upper left corner of the menu.
4. Click on the **Done** button, a **Save Image In This Album** menu will come up, type the name of the album you want.

NOTE:

- To select all image files in the directory, click the 1st file, then hold down the SHIFT key and go down to the bottom of the image list box using the down arrow key, then click on the last file name.
- To select non-contiguous image files, hold down the CTRL key and click on the image file(s) you want.
- To remove an image from the selection box, double click on the image file name.

If you add more than 1 image to the album, *Images Control* does not ask you for an annotation of the image to speed up the photo album creating process (in case you add many images at a time, you wouldnt want to be interrupted during the process.) However, you can edit any image annotation at any time by clicking on the text box at the bottom of the screen and enter your text for that image.

When you create new albums, your thumbnails will be saved in a file with an extension .ALB and the thumbnails properties (actual file names, their physical location on your hard drive, their image size, resolution, color depth, and your annotation) will be saved in 2nd file with the same file name but with an extension .MDB. The latter file is a Microsoft Access database file.

Displaying albums

1. Click on the ***Open existing albums*** button.
2. Click on the album file name(s) you want to open.

NOTE:

You can instantly recall one of the last 4 albums you previously opened by clicking on the ***File*** menu and a number from 1..4.

You can click on any thumbnail in an album and *Images Control* instantly displays that picture in its original size.

To turn to the next or previous page, simply click on the page number at the bottom of the page.

Image format conversion

You can easily convert images from one format to another. *Images Control* supports about 40 different image formats including JPEG (**JPG**), Portable Network Graphics (**PNG**), CompuServe Graphics Interchange Format (**GIF**), Tagged Image File Format (**TIFF**), Targa (**TGA**), Windows Bitmap (**BMP**), OS/2 Bitmap (**OS/2 BMP**), Windows Metafile (**WMF**), Kodak PhotoCD (**PCD**), WordPerfect (**WPG**), **MPT**, IBM IOCA (**ICA**), **PSD**, **PCX**, **DCX**, PostScript Raster (**Encapsulated PostScript**), **CALS Raster**, MacPaint (**MAC**), Microsoft Paint (**MSP**), SUN Raster (**RAS**), Macintosh Pict (**PCT**), **LEAD CMP**, and **LEAD 1BIT**.

For a brief description of these formats, please read [Supported image file formats](#).

An array of image processing tools is available to re-touch your photos. The most used ones are available in the toolbar for easy access.

Images processing/enhancement

To facilitate the editing process, the most often used image processing functions are put on the toolbar for easy access. However, you many other functions are also accessible from the pull down menu. The following image processing/enhancement tools are available in Images Control:

- Crop
- Flip
- Mirror
- Rotate
- Shear
- Resize
- Effects
 - * *Posterize*
 - * *Mosaic*
 - * *Average*
 - * *Median*
 - * *Sharpen*
 - * *Add noise*
 - * *Emboss*
 - * *Underlay Edge enhance*
- Spatial filters
 - * *Gradian edge enhance*
 - * *Laplacian edge enhance*
 - * *Sobel filter*
 - * *Prewitt filter*
 - * *Shift and difference filter*
 - * *Line segment filter*
- Binary filters
 - * *Erosion filter*
 - * *Dilation filter*
- Invert
- Brightness
- Contrast
- Histogram contrast
- Hue
- Saturation
- Histogram equalize
- Stretch intensity
- Gamma correct
- Intensity detect
- Fill (black, white, red, green, blue, cyan, magenta, yellow)
- Separate (RGB, CMYK, HSV, HLS, CMY)

Multimedia slide show

One of the interesting features of *Images Control* is you can start a slide show using of your favorite albums in the library. *Images Control* cycles through all pictures in the selected album using its built-in 20-plus wipe patterns for transitional effects between pictures. You can even select pre-defined wipe patterns, random wipe patterns, or delay time between pictures. This feature can also be used as a screen saver.

You may have to adjust the screen wipe delay to get a desirable wipe delay. For fast computers, set a high value to increase the delay time between wipes. I recommend the following settings for the following computers:

	<u>Wipe delay</u>	<u>Wipe interval</u>
100 MHz 486DX100	90	2
100 MHz Pentium	95	2
150 Mhz Pentium	140	2

You probably want to reset these values according to your computer speed to obtain desirable wipe effects for the slide show.

For computers which have a sound card installed, you can choose to have background music starts playing when the slide show starts. Make sure you have an audio CD in the CD-ROM drive before turning on this option.

Import images from scanners, digital cameras, etc.

This feature allows you to expand your albums library by scanning (24-bit) true color images from any devices which support the TWAIN industry standard for image acquisition.

1. Make sure your scanner is turned on and ready.
2. Click on *Images Controls* **scanner** input button.
3. Your scanners data source menu will appear.
4. Adjust the scan area and click **Scan**.
5. Save the scanned image using your desired image format.

NOTE: Saving scanned images is not available in the shareware version of *Images Control*.

About the JPEG format

JPEG is an acronym for **J**oint **P**hotographic **E**xperts **G**roup, a committee composed of leading photographic experts that wrote the standard, and is a standardized image compression mechanism. JPEG is designed for compressing either full-color or gray-scale digital images of "natural," real-world scenes. It does not work so well on non-realistic images, such as cartoons or line drawings. JPEG does not handle black-and-white (1 bit per pixel) images, nor does it handle motion picture compression.

JPEG is "lossy" format which means that the image you get out of decompression isn't quite identical to what you originally put in. The algorithm achieves much of its compression by exploiting known limitations of the human eye, notably the fact that small color details aren't perceived as well as small details of light-and-dark. Thus, JPEG is intended for compressing images that will be looked at by humans. If you plan to analyze your images using computerized equipment, the small errors introduced by JPEG may be a problem for you, even if they are invisible to the eye.

One of the useful properties of JPEG is that the degree of lossiness can be varied by adjusting the compression ratio: the image maker can trade off file size against output image quality. You can get extremely small files if you don't mind poor quality; this is useful for indexing image archives, making thumbnail views or icons, etc. On the other hand, if you find that the output quality after compression is less than acceptable, you can decrease the compression ratio until you are satisfied, and accept lesser compression.

Why use JPEG?

1. To make your image files smaller.
2. To store true color images, 24-bit per pixel color data instead of 8-bit per pixel data.

Making image files smaller is a big advantage for transmitting files across networks such as the internet and for archiving libraries of images. Being able to compress a multi-megabyte full-color image file down to around 100K or so makes a big difference in disk space and transmission time. (If you are comparing GIF and JPEG, the size ratio is more like 4 to 1.)

JPEG images take longer to decode and view than to view simpler formats (GIF, for instance). Thus, using JPEG is essentially a time/space trade-off: you give up some time in order to store or transmit an image more cheaply. The time savings from transferring a shorter file can outweigh the extra time to decompress the file. This is a big benefit for transferring image files over a modem.

One of the reasons why JPEG will gradually replace GIF as a standard format for transmitting or storing images is that JPEG can store full color information: 24 bits/pixel (16 million colors) instead of 8 or less (256 or fewer colors) as in the case of GIF. This may not seem like much of an advantage to people with 8-bit display devices. However, in the near future, 8-bit GIF will look as obsolete as black-and-white format does today. Furthermore, for reasons detailed further on, JPEG is far more useful than GIF for exchanging images among people with widely varying color display hardware. Hence JPEG is considerably more appropriate than GIF for use as a standard format for transmitting or storing images. GIF will gradually phase out as a result of the recent battle between Unisys and graphics software developers over the royalties issue.

When should JPEG be used?

For some types of images, GIF is superior in image quality, file size, or both. One of the first things to learn about JPEG is which kinds of images to apply it to. JPEG is superior to GIF for storing full-color or gray-scale images of "realistic" scenes; that means scanned photographs and similar material. JPEG is superior even if you don't have 24-bit display hardware, and it is a lot superior if you do.

GIF and other formats do significantly better on images with only a few distinct colors, such as cartoons and line drawings. In particular, large areas of pixels that are all exactly the same color are compressed very efficiently indeed by GIF. JPEG can't squeeze these files as much as GIF does without introducing visible defects. This sort of image is best kept in GIF form. JPEG also has difficulty with very

sharp edges: a row of pure-black pixels adjacent to a row of pure-white pixels, for example. Sharp edges tend to come out blurred unless you use a very high quality setting. Again, this problem is not found in scanned photographs, but it shows up fairly often in GIF files: borders, overlaid text, etc. The blurriness is particularly objectionable with text that's only a few pixels high. If you have an image with a lot of small-size overlaid text, don't save it with JPEG but GIF, or better yet, PNG.

Computer-generated images (ray-traced scenes, for instance) usually fall between scanned images and cartoons in terms of complexity. The more complex and subtly rendered the image, the more likely that JPEG will do well on it. The same goes for semi-realistic artwork (fantasy drawings and such). Plain black-and-white (monochrome) images should never be converted to JPEG. You need at least about 16 gray levels before JPEG is useful for gray-scale images. It should be noted that GIF is lossless for gray-scale images of up to 256 levels, while JPEG is not.

Color quantization

Eight-bit video board stores 8 bits per pixel, so it can display 256 or fewer distinct colors at a time. "color quantization" is a process of mapping the image into an appropriate set of representative colors. Color quantization is a lossy process. It turns out that for most images, the details of the color quantization algorithm have much more impact on the final image quality than do any errors introduced by JPEG.

Does image quality degrade with repeated compression/decompression?

Having compressed an image with JPEG, it would be ideal if you could decompress it, manipulate it, and recompress it without any further image degradation beyond what you lost initially. Unfortunately recompressing an altered image loses more information, though usually not as much as was lost the first time around. If you repeatedly compress and decompress, the image will eventually degrade to where you can see visible artifacts from the first-generation output. This is essentially a problem of accumulation of roundoff error. The bottom line is that JPEG is the best format for archival storage and transmission of images, but you don't want to use it as an intermediate format for sequences of image manipulation steps. Use a lossless format while working on the image, then save it as JPEG when you are ready to store it. Aside from avoiding degradation, you will save a lot of compression/decompression time this way, even if you have a fast computer.

JPEG compression/decompression performance issue

Besides a hardware-based JPEG board, the only other choice to speed up the compression or decompression of JPEG images in software is to get a faster computer, more RAM, and a faster hard disk. Although *Images Control* will run on any machine that can run the Windows operating systems, for optimal performance, it is suggested that the ideal platform would be a 133 MHz Pentium-based machine with 32 MB RAM, and a 64-bit Windows accelerated video card with at least 2MB of RAM, and a mode 4 EIDE hard disk.

About GIF and the new the PNG format

Because of Unisys' royalty demand from applications that support GIF (Graphics Interchange Format) in the Winter of 1994, a battle has ensued between graphics software developers and the company holding the patent for LZW compression algorithm which is used in GIF and TIFF formats. Raging anti-Unisys cries about this issue has prompted the development of PNG (Portable Network Graphics) as a replacement for GIF.

In a June 1995 press release, CompuServe, the pioneer of the GIF format, announced their full support for PNG and said that they would begin phasing their GIF libraries to PNG format. Following CompuServe lead, a large number of graphics applications developers also pledged their support for the PNG format.

PNG turned out to be better than it really needed to be to replace GIF. PNG supports the GIF's palette-based graphics, compresses better than GIF, has true color support, and best of all: supporting PNG in commercial applications does not require paying royalties to Unisys!

TWAIN standard

TWAIN is an acronym for **T**oolkit **W**ithout **A**n Interesting **N**ame and defines a standard software protocol and API for communication between software applications and image acquisition devices. Developed by a coalition of industry leaders *Aldus*, *Caere*, *Hewlett-Packard Company*, *Eastman Kodak*, and *Logitech* in the Spring 1992 and reviewed by 175 hardware vendors and software developers, TWAIN devices can include desktop scanners, hand scanners, digital cameras, frame grabbers, image databases or any other compliant source (as of version 1.5, the standard supports only the raster image data type.) The TWAIN specification allows applications written to it to work with any TWAIN compatible image acquisition device and conversely any compliant scanner, digital camera or video capture card to work with any TWAIN compliant application. Scanner manufacturers are even writing TWAIN software for models that were introduced prior to the standard being published.

Customer support

If bugs were found and I could reproduce them on my systems, I usually fixed the bugs within the same day and sent the bug-fixed version to the users who took the time to report them first, next to all registered users, and then to other shareware sites later. My goal is to provide software as bug free as possible to my users.

Please let me know if you found any bugs, glitches, or send your comments, feedback to me on the internet at [**doanc@netcom.com**](mailto:doanc@netcom.com) or [**102425.1613@compuserve.com**](mailto:102425.1613@compuserve.com).

Registration

The registration fee is \$25. The registered version supports over 35 image file formats. A separate TWAIN module is also available for an additional \$19. The TWAIN option adds the photocopy and image scanning capability to Images Control. As of this writing, I only accept money orders, cashiers checks, bank checks, or personal checks. Please fill in the registration form in the REGISTER.TXT file and mail it along with your payment to:

Chris Doan
4891 Clairemont Mesa Blvd., #401
San Diego, CA 92117

For checks or money orders drawn against a non-US bank, please add \$5.00 for bank service charge.

Please refrain from sending cash. But if you have to send cash, please also include a written order so I can keep track of my users.

Registered users will receive a temporary license file through internet e-mail (uuencoded.) The license file will recognize you as a registered user and allow you full access to all *Images Control* features. Your permanent license file registered in your name (or your company name) and the latest version of *Images Control* will be in the mail the next business day.

Those of you have access to CompuServe, you can register *Images Control* on line directly with CompuServe and receive the registered version within 24 hours (SWREG #7437). The latest version of Images Control may be downloaded from WinAV forums graphic utilities library).

International users may transfer \$US 25 directly to my Bank of America account. There will be an additional processing fee of \$10 because thats how much BoA charges my account for Money Transfer Service. You will have to contact me by e-mail to obtain my account number for this type of payment.

A site license is required by a corporation, company, educational institution, or governmental agency for use of *Images Control* software on the total number of computers that will use the software.

Thank you for your interest in *Images Control*.

Chris Doan
doanc@netcom.com
102425.1613@compuserve.com
San Diego, California
May 1996

Warranty/refunds

1. The registered version of *Images Control* is guaranteed to deliver all the features listed in the Features section, if any of these features did not work as stated under the system hardware/software configurations mentioned in the Hardware & software requirements section, you may be entitled to a refund.
2. No refund will be given other than the condition stated in section 1.
3. Absolutely refund will be issued after 3 days from the date of purchase.

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Use of this product for any period of time constitutes your acceptance of this agreement and subjects you to its contents.

Printing images

1. Click on the **Image Processing** button.
2. Open an image file.
3. Click on the printer icon.
4. The image will be displayed in the preview window.
5. Set the left, top, width, height of the image (or use the default parameters.)
6. Click on the **Print** button.

Image enhancement mode +/- switching

The 4 image enhancement buttons in the image processing screen: *brightness*, *contrast*, *hue*, and *gamma correction* can be switch between + and - by clicking those buttons with the right mouse button. A (-) or (+) side will appear accordingly. The increments for these 4 settings can be set in ***Enhancement Increments*** under ***Preferences***.

Start screen saver using of your favorite albums

Windows 3.1/Windows NT:

1. Click on the *Main* group.
2. Click on the *Control Panel* icon.
3. Click on the *Desktop* icon.
4. Click on the *Screen Saver* list box.
5. Click on the down arrow key and choose *Slides Shower*.
6. Click on *Setup* then the albums icon to select your album for the slide show.

Windows 95:

1. Right click anywhere on the desktop.
2. Click on *Properties*.
3. Click on the *Screen Saver* tab.
4. Click on the *Screen Saver* list box.
5. Click on the down arrow key and choose *Slides Shower*.
6. Click on *Settings* then the albums icon to select your album for the slide show.

For computers which have a sound card installed, you can choose to have background music starts playing when the screen saver is invoked. Make sure you always have an audio CD in the CD-ROM drive before turning on this option.

Images Control supported image file formats

Images Control was developed using LEAD Technologies *LEADTOOLS VBX Professional*. Below is the list of image file formats which *Images Control* supports:

AVI. Microsoft Audio/Video Interleave motion video file format.

LEAD. This is the LEAD CMP compressed format for grayscale and color images.

JFIF. This is a JPEG File Interchange Format with full color spacing (YUV 4:4:4).

LEAD1JFIF. This is a JPEG File Interchange Format with YUV 4:1:1 color spacing, to produce a smaller JFIF file.

LEAD2JFIF. This is a JPEG File Interchange Format with YUV 4:2:2 color spacing, to produce the smallest JFIF file.

JTIF. This is a JPEG Tagged Interchange Format with full color spacing (YUV 4:4:4).

LEAD1JTIF. This is a JPEG Tagged Interchange Format with YUV 4:1:1 color spacing, to produce a smaller JTIF file.

LEAD2JTIF. This is a JPEG Tagged Interchange Format with YUV 4:2:2 color spacing, to produce the smallest JTIF file.

TIFF. This is a tag-based file format designed to promote universal interchanges of digital image data. Because TIFF files do not have a single way to store image data, there are many versions of TIFF. LEADTOOLS supports the most common TIFF formats.

MPT. This is a multi-page TIFF format that enables a file to contain more than one image. It is handled the same as a regular TIFF file, except for the multi-page feature.

TIFF LZW. These files use the Tagged Image File Format with LZW compression.

TIFF CCITT. These are compressed TIFF files that are commonly used for FAX transmission and document imaging.

TIFF CCITT Group 3. These are TIFF CCITT files in a format that is more advanced and more compressed than TIFF CCITT. LEADTOOLS supports both 1-dimension and 2-dimension variations of this format.

TIFF CCITT Group 4. These are TIFF CCITT files in a format that is more advanced and more compressed than TIFF CCITT Group 3.

IOCA (ICA). This is the Image Object Content Architecture developed by IBM. LEADTOOLS supports these files in an MO:DCA wrapper with embedded 1-bit CCITT Group 3 or Group 4 images.

WinFAX Group 3. This is a FAX format created by Delrina for Group 3 support.

WinFAX Group 4. This is a FAX format created by Delrina for Group 4 support.

FAX Group 3. This is a raw FAX format (without a header) for Group 3 support. LEADTOOLS supports both 1-dimension and 2-dimension variations of this format.

FAX Group 4. This is a raw FAX format (without a header) for Group 4 support.

Truevision TGA (TARGA). This is a file format created by Truevision Inc. LEADTOOLS supports all uncompressed and RLE compressed TGA file formats.

PNG (Portable Network Graphics). This is a replacement for the GIF format. It is a full-featured (non-LZW) compressed format intended for widespread use without legal restraints.

PhotoShop 3.0 (PSD). This is the format produced by the Adobe PhotoShop graphics editor.

Windows Bitmap (BMP). This is a file format created by Microsoft. Some BMP images are compressed with an RLE type compression.

Windows Metafile (WMF). These files are not bitmap based images. A Windows metafile consists of a collection of device independent functions that represents an image. When a program loads a metafile, these functions are executed to obtain the image.

PCX. This is a file format created by ZSoft. This format compresses its image data with the RLE type compression.

DCX. This is a multi-page PCX format that enables a file to contain more than one image. It is handled the same as a regular PCX file, except for the multi-page feature.

PostScript Raster (Encapsulated PostScript). These files are used primarily on PostScript printers. These printers usually offer more variety of fonts and higher resolution than standard laser printers. EPS files will work on any PostScript compatible printer and any end user application that supports placement of EPS files in its work space.

OS/2 Bitmap (OS/2 BMP). These are files created on an OS/2 operating system. LEADTOOLS supports both 1.x and 2.x formats.

CALS Raster. These are 1-bit CCITT Group 4 CALS raster files. CALS is a United States government standard.

MacPaint (MAC). These Macintosh Paint files are commonly used for monochrome clip art.

GEM Image (IMG). These files are native to the Graphical Environment Manager developed by Digital Research.

Microsoft Paint (MSP). These files from early versions of Windows are used for black-and-white drawings and clip art.

WordPerfect (WPG). These are WordPerfect raster files.

SUN Raster (RAS). These files are native to Sun UNIX platforms.

Macintosh Pict (PCT). These files, produced using Macintosh QuickDraw, are used in desktop publishing and imaging applications.

LEAD 1BIT. These are 1-bit LEAD compressed files.

PCD. These are Kodak PhotoCD files. These read-only files can contain multiple resolutions. You can specify which of the resolutions to read.

Image format terminology

The terminology for image formats can be confusing because there are often several ways of describing the same format.

If an image is 24 bits per pixel, it is also called a 24-bit image, a true color image, or a 16M color image. Sixteen million is roughly the number of different colors that can be represented by 24 bits, where there are 8 bits for each of the red, green, and blue values. (A 32-bit image is a specialized true-color image used for an Alpha channel or CMYK color spacing.)

If an image is 16 bits per pixel, it is also called a 16-bit image, a hi-color image, or a 32K color image. Thirty-two thousand is roughly the number of different colors that can be represented by 16 bits, where there are 5 bits for each of the red, green, and blue values. (Devices that specify 64K color support are also referring to 16-bit images, but they are counting the left-over bit.) If an image is 8 bits per pixel, it is also called an 8-bit image or a 256-color image. Two hundred fifty-six is the number of different colors that can be achieved by using the image data as 8-bit indexes to an array of colors called a palette.

If an image is 4 bits per pixel, it is also called a 4-bit image or a 16-color image. Sixteen is the number of different colors that can be achieved by using the image data as 4-bit indexes to a palette. If an image is 1 bit per pixel, it is also called a 1-bit image, a black and white image, a 2-color image, or a bitonal image. Two is the number of different colors that can be achieved by using the image data as 1-bit indexes to a palette. The palette can contain colors other than black and white, although black and white are most common.

The same terminology is applied to video cards. For example, an 8-bit card is one that is capable of displaying 256 color.

Adding annotation to an image

If you add only 1 image to an album, *Images Control* prompts you to enter an annotation for that image. However, if you add more than 1 image to an album at a time (batch mode,) *Images Control* doesn't ask you to enter annotation for each image. This is because most of you probably don't want to be interrupted to enter annotations during this lengthy process (say like you are adding hundreds of photos to an album, you wouldn't want to be interrupted hundreds of times. It's always easier to go back and add annotations to those photos at a later time.)

However, if you're adding images in batch mode, you can always go back to those images and add annotation at any time by:

1. Click on the image you want to add the annotation.
2. Click on the gray text box under the image and enter the annotation.

Why are my hardcopy printouts smaller than the originals after scanning

Lets say you scan a 8.5x11 image and then print it, the printout will be smaller than the original image. This is because most printers cannot print from edge to edge, the printable area is smaller than the physical page (usually 8x10.5), so youre practically squeezing a 8.5x11 image into a 8x10.5 page. To increase the size of the printout to 1-1 ratio, you must reduce the scan area. Most TWAIN source GUI let you specify the scan area using a rubber-band rectangle. Simply reduce the size of this rectangle and try to print again to obtain the desired print magnification factor. The smaller the scan area, the larger the hardcopy printouts. This setting is usually saved from your last use for most TWAIN source UI. However, if you have more than 1 printer (such as myself, I have an *HP LaserJet 4L* and an *Epson Stylus Color*), you can save one setting for each printer, then every time you switch printer, simply reload the setting for that printer.

NOTE:

Scanning capability is only available with the optional TWAIN module.

How to use the photocopy and fax functions

1. Select **Print Setup** from the main menu. Then choose your local printer for photocopying or a fax printer for faxing.
2. Simply place your document on the scanner, turn it on, then click the **Photocopy** button.
 - For photocopying, as soon as the scanner finishes scanning, it will send the image to the printer.
 - For faxing, as soon as the scanner finishes scanning, your fax driver will appear so you can fill in the fax number, cover page, and other fax information.

Please also take into account the printable areas for your printers. Many printers have a non-printable from the edges of the paper, so if you scan a full page image and want a hardcopy with a 1-1 ratio, you may have to set a smaller scan area using your scanners source UI to compensate for this non-printable area.

NOTE:

Photocopying and faxing capability is only available with the optional TWAIN module.

