

iPhoto Plus

user guide

U-Lead Systems, Inc.
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Introduction

Welcome to U-Lead System's iPhoto Plus. This image processing and capturing application has been developed specifically to offer you the right combination of image enhancing, editing, and capturing capabilities in an intuitive, user-friendly package.

If you need professional looking results quickly but don't want to spend time learning a complicated package, then iPhoto Plus is right for you. As you will see, iPhoto Plus has many advanced features previously available only in high-end image processing packages. And the best part is that you don't have to be an image processing expert to use iPhoto Plus. iPhoto Plus is easy and fun. So let's get started by explaining this book to you.

About this book

This book is arranged to help you become familiar with iPhoto Plus as quickly as possible. You may already have some idea of what iPhoto Plus can offer. This introduction will complete that picture and provide some basic information about images. At the back of the book there is a glossary which explains the terms we use and an index to help

you find specific information. The chapters in between contain the following:

Chapter 1 *Getting Started* , deals with everything you need to know before you begin to use iPhoto Plus: the system requirements for installing and running, how to install, how iPhoto Plus appears, how to manage image windows, and how to establish preferences and make iPhoto Plus work better for you.

Chapter 2 *iPhoto Plus Basics* , explains all the basic procedures you will use regularly: creating new images, opening images, viewing images, saving images, printing images, and exiting iPhoto Plus. If you are already familiar with other Windows applications, you may want to skip this chapter.

Chapter 3 *Image Input and Stitching* , is about bringing images into iPhoto Plus. This chapter introduces many of the different sources from which you can get images and includes sections on scanning, stitching parts of images together, and capturing screens. If you have a scanner or video capture board, read its documentation in conjunction with the information in this chapter.

Chapter 4 *Converting Images* , deals with converting images from one data type to another, for example from black-and-white to color.

Chapters 5 to 7 deal with the tools and commands that make up the unique combination of image-editing functions provided by iPhoto Plus. Use these chapters to learn about the iPhoto Plus editing, painting, enhancing and filtering functions. These chapters can also be used as a reference when you can't remember how something works.

Features

iPhoto Plus is designed to respond to a wide range of image enhancement needs. From scanning images and capturing screens to outputting images on any Windows-compatible device, iPhoto Plus does it all. Improving any type of image from black-and-white to full-color, producing special effects, or even creating your own images are all possible. You can also open and save images using a wide variety of file formats giving you compatibility with your other applications. Here are just a few of the features available in iPhoto Plus:

- ~ Support for Black & White, Grayscale, Indexed 16 and 256-Color, and RGB True Color data types.
- ~ Conversion from one data type to another.
- ~ Ability to open and save a variety of image file formats including tiff, tga, bmp, eps, pcx, and gif.
- ~ Image input from any scanner, video capture board, or other input device which has a driver compatible with iPhoto Plus.
- ~ Screen capture from any Windows-compatible display adapter (including HiColor and True Color adapters).
- ~ Commands to combine images or parts of images to create new images. In particular a Stitch command for joining parts of scanned images.
- ~ Selection tools and commands to select part of an image and subsequently edit only that part.
- ~ Controls to adjust gamma, hue, saturation, brightness, and contrast – all of which help you to enhance an image or selected area.
- ~ Support for multiple image windows. You can have many images open at the same time. Each window can contain a different image or different views of the same image.
- ~ Painting tools, image processing filters, and transformation commands to help you modify an image or selected area.
- ~ Image printing to any Windows-compatible output device, including pcl and PostScript printers, film-recorders, and high-resolution imagesetters.

What is an image?

An image can be a photograph, a painting, or even a dream, but in the world of computers, it is a collection of dots called “pixels”. These pixels are arranged in rows to form the image.

Each pixel is white or colored. Exactly which color depends upon the “data type” of the image. For the simplest data type, the pixels can only be black or white. For the most powerful data type, each pixel can be any one of 16.7 million colors.

As long as the pixels are small enough, you will not see them as individual dots: you will see groups of pixels which together form areas of color or gray. The size of each pixel is determined by the “resolution” of the image. If an image has a resolution of 100 ppi (pixels per inch) it means that there are 100 pixels in an inch, or that each pixel is 1/100 of an inch in size.

Since the resolution defines the size of pixels in an image, it also defines the size of the image made up of pixels. For example, if an image is 100 pixels in width by 200 pixels in height, with a resolution of 100 ppi, it will be one inch in width by two inches in height when viewed in an “actual size” mode or printed.

Pixels, resolution and the data type of the image all relate to what the image will look like when displayed or printed. If you want to keep an image, you have to save it to disk as a file. To enable you to do this, iPhoto Plus supports the most popular file formats for saving your images. The file formats available and what you might use them for are described after the following section on image data types.

Image data types

The data type of an image determines the colors the image may contain. It also determines the iPhoto Plus functions that can be applied to it.

An image of any data type can be displayed on any type of computer display, but it will not appear the same on all displays. For example, if you display a color image on a black-and-white monitor you will not see the colors. They will be displayed as black or white.

In any description of image data types, you will see mention of “bits”. The number of bits controls the number of colors available. You can work out the number of colors available by raising two to the power of the number of bits. For example, an 8-bit image type gives you 256 different colors ($2^8 = 256$).

This section explains the data types supported by iPhoto Plus. See Chapter 4, *Converting Images*, for information on converting between types.

Black & White

Black & White is a one-bit data type. So, in a Black & White image, each pixel can only be one of two colors: white or black. Shades of gray can be simulated by arranging black and white pixels in such a way that they

appear to be gray. For example, in a square of four pixels by four pixels (sixteen in all), if there are eight black and eight white pixels and they are arranged properly, the square will look gray (a 50% tint of black).

You can apply many iPhoto Plus functions to Black & White images, but to have more editing features available, convert Black & White images to Grayscale.

Grayscale

Each pixel in a Grayscale image can be black, white, or any one of 254 different shades of gray. Grayscale is a 256-color (8-bit) data type.

All the iPhoto Plus tools and commands can be applied to Grayscale images except those which are color specific. Choose this data type when you want to prepare images for publications being printed in a single color. If you want to introduce color into an image, convert the image to RGB True Color.

Indexed 16 and 256-Color

Indexed-color images are images which have a “color table” incorporated into their description. This color table contains all the colors that can appear in the image. For

Indexed 16-Color images, the table has 16 colors (4-bit); for Indexed 256-Color images the table contains 256 colors (8-bit). See Chapter 6, *Painting*, for a description of color tables.

Additional colors can be simulated by using different colored pixels arranged closely together. Using this technique the eye can be tricked into seeing the colors not found in the color table.

Most iPhoto Plus functions will work on indexed-color images but to get full benefit from the more advanced editing features you need to convert indexed-color images to RGB True Color.

You may wish to convert images to indexed-color for use in certain applications (such as Windows Paintbrush or some slide-show programs) and for display on 256-color and 16-color monitors.

RGB True Color

The initials RGB stand for Red, Green, and Blue. The data type bears this name because all available colors are created with different amounts of red, green, and blue. In fact there are 256 shades of each available. When you

mix all of these together you find there are 16.7 million possible colors ($3 \times 8\text{-bit} = 24\text{-bit}$). Hence the term True Color.

All iPhoto Plus tools and commands can be applied to RGB True Color images.

RGB 8-Color

The RGB 8-Color data type is a three-bit data type where each pixel can be one of eight colors. iPhoto Plus supports scanners which scan RGB 8-Color images and will open RGB 8-Color images. RGB 8-Color images are automatically converted to Indexed 16-Color with the same colors retained (plus space for eight more). You cannot, however, convert to, or create new RGB 8-Color images.

Image file formats

Many hardware and software manufacturers have adopted different ways, or file formats, to save images. Each file format has its own benefits, such as smaller file size or enhanced compatibility with other software or hardware.

iPhoto Plus supports the most popular file formats: tiff, tga, bmp, eps, pcx, and gif.

This section gives you information about each file format and what you might use them for. Following the individual descriptions is a table showing the data types you can save with each format and if a compression option is available.

Tagged Image File Format (TIFF)

Developed by Aldus and Microsoft to promote the use of desktop scanners and dtp (desktop publishing), non-compressed tiff is hardware and software independent, but there are many types of compression available which are not. iPhoto Plus will read most compressed tiff images and it can save images with one of the most popular compression schemes (lossless lzw).

Choose this format for compatibility with most other applications and to have the option of file compression. Applications that support tiff images include: ColorStudio, CorelDRAW, PageMaker, PC Paintbrush IV Plus, PhotoShop, PhotoStyler, Picture Publisher Plus, PowerPoint, PrePrint, and Ventura Publisher, to name a few.

Targa (TGA)

Developed by TrueVision for its full-color video boards (in particular the targa board), this is the format used by many specialist systems. If you receive images from a variety of sources you will almost certainly receive some tga files.

Windows Bitmap (BMP)

This is a file format that allows Windows to display an image consistently on different devices (with similar capabilities).

You may want to use this format to save indexed-color images for later use in applications like Windows Paintbrush or in Windows itself (as, for example, your “Wallpaper”).

Encapsulated PostScript (EPS)

Eps is a device-independent file format that retains enough information to be output direct to a printer, or imported into another application. A low resolution tiff preview is included to enable you to view the image when it is imported into other applications (such as Aldus PageMaker).

Graphics Interchange Format (GIF)

Developed by Compuserve to allow device-independent transfer of images, gif supports images up to 64 mb in size with up to 256 colors (8-bit).

Note: GIF files do not record image resolution.

PC Paintbrush (PCX)

Developed by ZSoft Corporation for PC Paintbrush, this is the default format used by some scanning packages and paint programs (including PC Paintbrush).

Note: Some versions of the PCX format do not record the resolution of an image. The version used by iPhoto Plus does. If you import an image with no resolution defined, it will be set at your current display resolution. You can redefine the resolution with the Edit: Resolution command.

Data types	File formats					
	TIFF	TGA	BMP	EPS	PCX	GIF
Black & White	✓ (c)		✓	✓	✓	✓
Grayscale	✓ (c)	✓		✓	✓	
Indexed 16-Color	✓		✓		✓	✓
Indexed 256-Color	✓ (c)	✓	✓		✓	✓
RGB True Color	✓ (c)	✓	✓	✓	✓	

File formats available for saving different data types.

“✓” indicates saving is possible; “c” indicates compression is available.

Chapter 1 *Getting Started*

This chapter explains what you need to install and run iPhoto Plus, introduces the user interface and shows you some ways to get the most out of using iPhoto Plus. Basic Windows functions, common to most Windows applications, are not described in detail. If you are in any doubt as to how to use Windows, we suggest you consult your Windows user documentation before starting iPhoto Plus.

What you need

Before installing and using iPhoto Plus, you need the following:

- ~ Microsoft Windows (version 3.0 or later).
- ~ A PC compatible computer.
- ~ Enough space on your hard drive to install the iPhoto Plus program files (about 2 mb).
- ~ At least 1 mb of system memory.
- ~ Any display adapter supported by Windows.
- ~ A pointing device, such as a mouse. Without a pointing device you can install iPhoto Plus and use most of its commands but other functions will be unavailable.

Starting iPhoto Plus

As with all Windows based applications, you can start iPhoto Plus in a number of ways. The simplest way is to:

1. Run Microsoft Windows.
2. Locate the iPhoto Plus icon.
3. Double click on this icon. The iPhoto Plus window containing the iPhoto Plus initial screen appears.
4. Click anywhere in the iPhoto Plus window to remove the initial screen.



The iPhoto Plus window

Invoking iPhoto Plus opens the application window. All your work with iPhoto Plus will be conducted in this window. Images are presented in individual windows within the central portion of the iPhoto Plus window (the workspace). This section describes the contents of the iPhoto Plus window and how each part relates to the others.

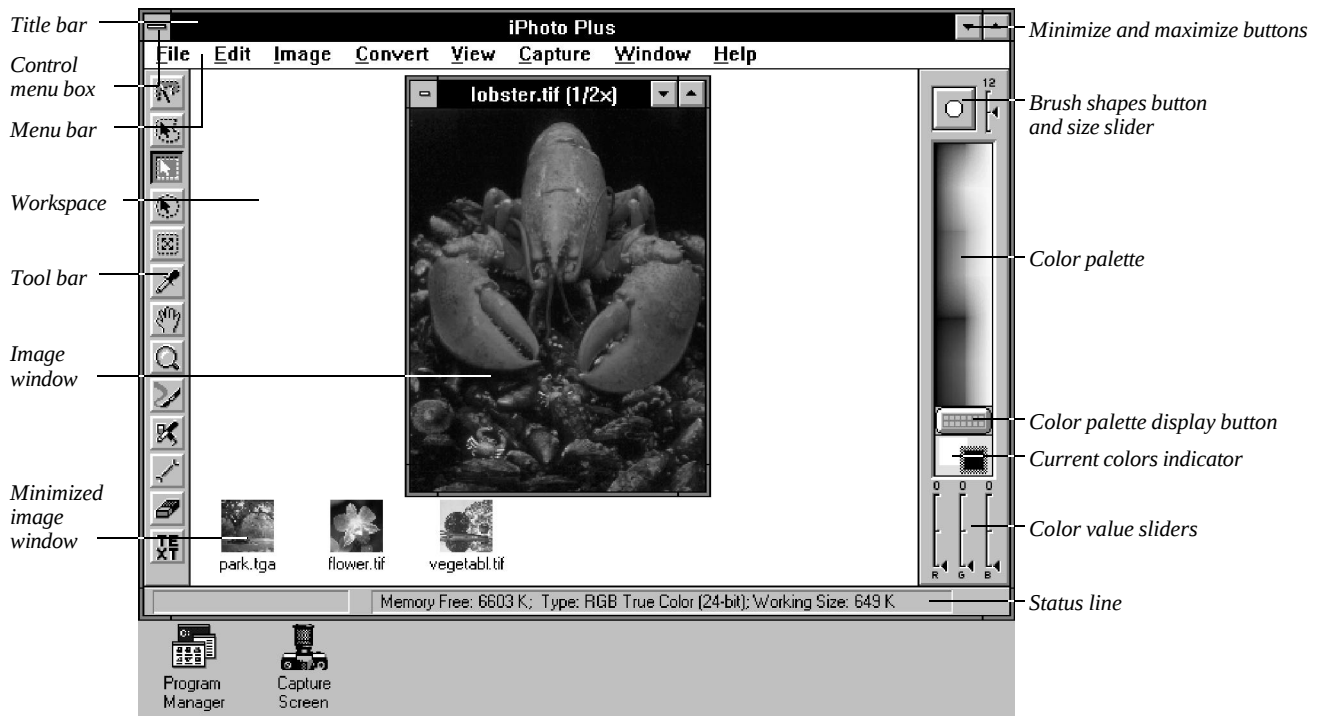
Title bar

Title bars are located along the top of all iPhoto Plus windows. The title bar contains the title or name of a window. For the application window, the title is “iPhoto Plus”. In image windows, the title bar contains the image file name and the current zoom level.

Control menu box



Control menu boxes are found on the far left of window title bars. Clicking on the control menu box of the iPhoto Plus window or an image window displays a control menu. Control menus contain window management commands. The iPhoto Plus window control menu also contains a command to switch to other Windows applications.



The iPhoto Plus window

Minimize and maximize buttons

Minimize and maximize buttons are found on the right side of window title bars. The left button is the minimize button, the right button is the maximize button.



The minimize button reduces a window to an icon. Icons of minimized image windows appear along the bottom of the iPhoto Plus workspace. If you minimize the iPhoto Plus window, the iPhoto Plus icon appears at the bottom of your screen. To restore a window to the size it was before it was minimized, double-click on the icon. Minimizing has no effect on the contents of a window.

The maximize button enlarges a window to make use of all available area. Image windows maximize to fill the iPhoto Plus workspace. The application window maximizes to fill the entire screen. When you click on the maximize button, it becomes the restore button. Click on the restore button to return a window to the size it was before it was maximized.

***Menu bar***

Under the title bar of the iPhoto Plus window is the menu bar. The names of all the iPhoto Plus menus appear in this bar. Click on a menu name to make that menu drop down. To select a command from the menu you have opened, simply click on it.

Workspace

The workspace is the area beneath the menu bar, containing the tool bar, status line, and color palette. Open images appear in this space, either as minimized icons or in windows.

Tool bar

The tool bar, on the left side of the workspace, contains the iPhoto Plus tools. To select a tool, click on the tool icon. Complete descriptions of each of the tools are provided in the relevant chapters, here they are summarized:

Magic wand, Freehand, Rectangular, and Elliptical selection tools make it easy for you to select any part of an image.

Move tool allows you to move the selection marquee without moving its contents.





Eyedropper tool enables you to select colors from an image or, by double-clicking on the icon, from the select color dialog box.



Grabber tool enables you to shift an image within its window.



Zoom tool magnifies or reduces your view of an image with a single click of your mouse.



Paintbrush, **Airbrush**, and **Line** painting tools give you a variety of ways to paint on the active image with the current foreground color.



Eraser tool is similar to the painting tools but changes parts of an image to the current background color.



Text tool allows you to type text onto an image in a variety of fonts and type styles.

Brush shapes button

The brush shapes button, above the color palette on the right of the iPhoto Plus workspace, displays the current brush shape. To change the brush shape or size, click on the button. From the dialog box that appears, select the shape you want to use and specify the size in the Brush size combo box.

Brush size slider

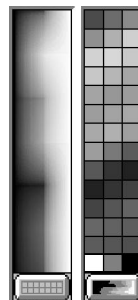
To the left of the brush shapes button is the brush size slider. This slider shows the actual brush size in pixels and allows you to adjust the size quickly. Simply drag the slider arrow up or down to define a new size.

Color palette

The color palette, on the right side of the iPhoto Plus workspace, contains colors that you can apply to the active image. The contents of the palette depend on the data type of the active image. Click on a color to choose it. See Chapter 6 *Painting*, for a complete description of the color palette and how to choose colors.

Color palette display button

When you have no open images, or you are viewing an RGB True Color image, a button appears immediately below the color palette. This is the color palette display button. Use this button to choose whether the color palette displays a continuous spectrum of color or discrete colors in cells. Click on the button to change the display from one to the other. When the active image is not RGB True Color, this button is disabled and does not appear.



***Current colors indicator***

Below the color palette, the current colors indicator displays the current foreground and background colors. The background color is shown in the top left square behind the lower, foreground color square. The active color is shown by a gray border and can be changed by choosing a new color or by adjusting the color value sliders.

Color value sliders

The color value sliders, below the current colors indicator, display the rgb (red, green, blue) or hsb (hue, saturation, brightness) color values of the selected color square in the current colors indicator. Adjust the selected color by dragging the slider triangles up or down.

Image window

Open or new images are displayed in image windows. All image processing occurs in these windows. You can have many windows open in the iPhoto Plus workspace, but only one is active at a time. The active window has a highlighted title bar. Tools and commands can only be applied to the image in the active window. Each image window has its own title bar, minimize and maximize buttons, and control menu box.

Minimized image window

Within the iPhoto Plus workspace, you can minimize image windows just as you minimize application windows under Program Manager. Minimize an image window when you have finished working on it but wish to retain it for later processing. When minimized, the demand on system memory is reduced.

Minimized image windows can be identified by their title string and their icon, which is a miniature version of the image. To restore a window to the size it was before it was minimized, double-click on its icon.

Status line

The status line runs along the bottom of the iPhoto Plus workspace. Within this line, iPhoto Plus provides information that will help you as you work. The information varies according to what you are doing but includes:

- ~ during lengthy operations, the whole length of the status line is used to show the progress of the operation.
- ~ the left portion displays the position of the cursor relative to the top left corner of the active image. It also shows color values when the cursor is in the color palette, or you are using the Eyedropper tool to select a color.
- ~ the right portion displays simple explanations of selected menu items, help messages, and when there are no other messages, the amount of available system memory along with information about the image in the active window.

Managing image windows

iPhoto Plus allows you to work with many images open at the same time. You can work with different images or multiple copies of a single image. This makes it possible to judge the impact of a command or tool directly.

While you can open many images during a session, you can only work on one at a time. One image is always active and is designated by a highlighted title bar. To make a window active, click on its title bar or select it from the list of open images in the Window menu.

iPhoto Plus gives you all the standard Windows techniques to manage image windows – along with a few features unique to iPhoto Plus. The following two sections explain how to resize and arrange image windows. (See Chapter 2, *iPhoto Plus Basics*, for details about opening and closing images.)

Resizing image windows

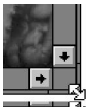
Image windows can be resized in many ways:



~ Click on the minimize button to reduce the window to an icon at the bottom of the iPhoto Plus workspace.



~ Click on the maximize button to make the window fill the iPhoto Plus workspace. When you maximize a window, the maximize button becomes the restore button. Click on the restore button to reduce the window to the size it was before you maximized it. Once maximized, the area in which the image is displayed is resized when you resize the iPhoto Plus window.



~ Drag a corner or an edge of a window to increase or reduce the amount of an image you display. Dragging a corner allows you to change the width and height of a window at the same time. If a window is bigger than a displayed image, the surplus space is shaded.

The Window menu commands

The Window menu contains four commands which you can use to manage images in the iPhoto Plus workspace.

Add a View

Add a View creates a new window containing an additional view (at 1×) of the image from the originally active window. The new window becomes the active window. Up to eight views of a single image can be displayed at one time. These views can all be edited and will *all* display the effects of painting tools or image processing commands applied to *any* of them.

This function enables you to view the same image at different zoom levels. This is particularly useful if you want to work on a detailed part of an image at 8× zoom in one window, and see the effect of your changes at actual view (1×) in another window.

Cascade

Selecting this command “stacks” open image windows so that the title bars and left side of each remain visible.

Tile

If you want to view all open image windows at the same time, select Tile. This command resizes and arranges the windows so that each is the same size and together they fill the iPhoto Plus workspace.

Arrange icons

Select this command to arrange all image icons along the bottom of the iPhoto Plus workspace.

Image windows list

The list at the bottom of the Window menu contains the titles of all image windows in the iPhoto Plus workspace. This list can be used to find an image window if your workspace gets cluttered or to swap between image windows. Click on any title in the list to make the corresponding window active. If the chosen window is minimized, it will be restored.

Preferences

The Preferences command in the File menu opens a dialog box in which you can customize certain aspects of iPhoto Plus. Some of the options will be disabled if they are not applicable to your current display environment.

Calibrating your display

You should calibrate your display before you start working with images for the first time. Recalibrate when you change your monitor, display adapter, or the environment in which you work.

The lighting of your work area and the brightness and contrast settings of your monitor all affect the way images are displayed. Try to keep these variables as constant as possible. This will ensure that images display consistently and accurately. To calibrate your display:

1. Run Windows in Standard or Enhanced mode and open iPhoto Plus.
2. Select “Preferences” from the File menu. The Preferences dialog box appears.
3. Make sure the Monitor gamma check box is unchecked. If it is checked, click on the check box to uncheck it.

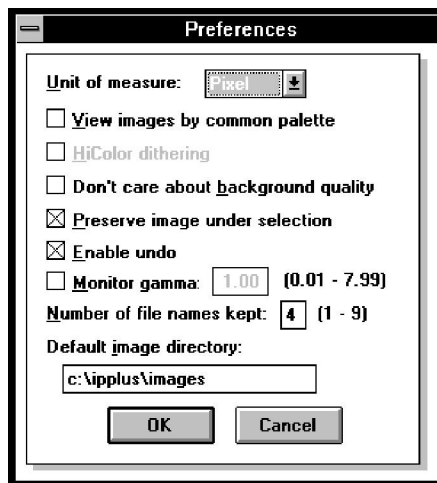
Unit of measure: the available units are pixels, inches, and centimeters. The unit of measure is used by features which require a physical unit of measure, e.g. rulers, resampling, etc.

View images by common palette makes iPhoto Plus display all images using the system's 256-color palette. This is important if you want to view Grayscale images at the same time as color images on a 256-color display.

HiColor dithering improves the display of images on HiColor displays by using a dithering mechanism.

Don't care about background quality affects the speed of display updating on 256-color displays. When this option is selected, iPhoto Plus only updates the active image. Images in the background may appear distorted, blurred, or grayed. The content of the background images is not changed, only the way they are displayed. If you wish to compare two or more images, you should deselect this option.

Preserve image under selection: when this option is not selected and you move or transform a selected area, the original position of the selected area is filled with the background color. With this option selected, moving or transforming a selected area has no effect on the underlying image.



Enable undo causes iPhoto Plus to retain in memory the status of an image immediately prior to a change made to it. After making a change you may recover the previous state by selecting "Undo" from the Edit menu.

Disabling this option frees memory use by the Undo command. You may find performance is slightly faster but changes you make are irreversible.

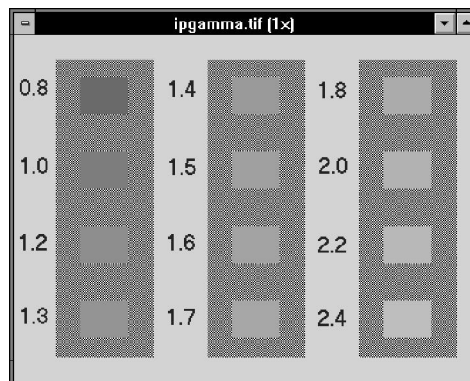
Monitor gamma determines how much iPhoto Plus adjusts the way images are displayed to accommodate for differences in display adapters and monitors.

Use this feature to display images correctly on all types of computer display. When this option is disabled, or set to 1.00, iPhoto Plus does not adjust the display of images.

Number of file names kept specifies the number of files listed at the bottom of the File menu. The list contains the path and filename of your most recently opened images. You can click a name from the list to reopen the corresponding image.

Default image directory determines the default directory shown in Open, Load, and Save dialog boxes when you first access one of them. These dialog boxes show the current directory, which can be changed in any of them. The current default is the directory shown here whenever you restart iPhoto Plus or redefine the Preferences. If you normally work on images from a particular directory, type the full path of the directory in this entry box.

4. Click on OK. The dialog box closes.
5. Select “Open” from the File menu. The Open Image File dialog box appears.
6. Open the file ipgamma.tif. You should be able to find this file in your ipplus directory, or on the iPhoto Plus program diskette.
A new image window opens containing the ipgamma.tif image.
7. Look at this image and identify the gray square that best matches the gray background band. Make a note of the number displayed next to this square. If, for example, the square at the bottom of the middle row looks most like the background, take a note of the number 1.7.
This number can be any value from 0.01 to 7.99. If none of the squares match, you should estimate the best match.
8. Select “Preferences” command from the File menu.
The Preferences dialog box appears.
9. Click on the Monitor gamma checkbox and, in the entry box, type the number you noted in step 7. Click on OK and the Preferences dialog box closes.



When you now look at the ipgamma.tif image, the gray square next to 1.0 should best match the background band. iPhoto Plus will now correctly and consistently display images in your working environment.

Chapter 2 *iPhoto Plus Basics*

Computer-based image processing offers many advantages over traditional methods. You have the ability to save different versions of the same image, undo mistakes, and restore images after unsuccessful changes have been made. This chapter focuses on the basic functions of iPhoto Plus: creating new images, opening existing image files, finding, viewing, saving, and restoring images, as well as undoing mistakes.

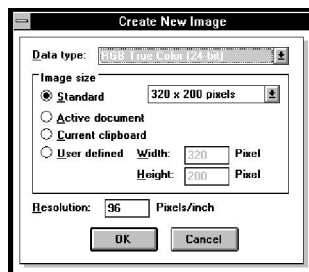
Creating a new image

The New command in the File menu creates an image filled with the current background color in a new window. Use this command to create an “empty” image into which you can paste elements from other images to form a new, composite image. To create a new image:

1. Select “New” from the File menu. The Create New Image dialog box appears.
2. In the Data type combo box, choose the data type of the new image. (For more information see pp. 9–10, *Image data types*.)
3. Select an image size.
4. Enter a value for the Resolution (see note).
5. Click on OK to close the dialog box and create the new image. An untitled image window appears containing the new image filled with the current background color.

Note: When you choose an image size in centimeters or inches, the resolution determines how many pixels are used to create the image: higher resolutions require more memory.

When you define the size in pixels, the resolution determines how large your image will be when printed. The higher the resolution, the smaller your image will print (the memory required to store the image remains the same).



Data type defines the data type of the new image. It can be Black & White, Grayscale, Indexed 16 or 256-Color, or RGB True Color.

Image size

Standard list box gives choices of standard display sizes.

Active document creates an image of the same size as the active image. This is disabled if there are no open images.

Current clipboard creates an image the same size as the image on the Clipboard. If there is no image on the Clipboard, this option is disabled.

User defined allows you to define your own image size.

The unit of measure for this option reflects the default setting in the Preferences dialog box.

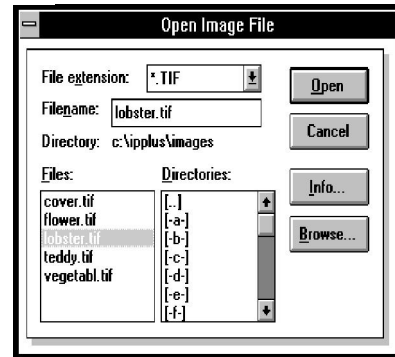
Resolution defines the number of pixels in the image when the size is in centimeters or inches. If the size is in pixels, the resolution determines the image's physical (output) size.

Opening an image file

Before you begin work on an image you must open it in iPhoto Plus. If an image file is on your hard disk, a floppy disk, or network drive, you can open it by using the “Open” command from the File menu. If it is not available as an image file you will need to scan or capture it first (see Chapter 3, *Image Input and Stitching*).

If you want to open an image you have recently worked on, it may be listed at the bottom of the File menu. To open a file on the list, click on its filename. To open an image file which does not appear on the list, follow these steps:

1. Select “Open” from the File menu. The Open Image File dialog box appears.
2. Select the appropriate file extension from the File extension combo box. (See pp. 11–2, *Image file formats*, for an explanation of these extensions.)
3. Locate the directory containing the image file in the Directories list box.
4. Click on the appropriate image filename in the Files list box.
5. Click on Open. The dialog box closes and the image appears in a new window in the iPhoto Plus workspace.



File extension combo box lists the file extensions of images that iPhoto Plus can open.

Filename entry box shows the selected file extension or filename. If you know the name and path of a file you want to open, you can enter it directly in this entry box.

Directory shows the current directory and path.

Files list box shows all the files in the current directory with the file extension selected in the File extension combo box.

Directories list box shows the directories available in the current directory and all the available drives.

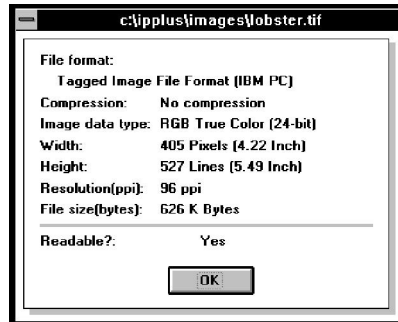
Open button opens the currently selected image file.

Info button opens a dialog box containing information about the currently selected image.

Browse button opens the Browse Disk for Files dialog box. Use this dialog box to search for files.

File information

The Info button in the Open Image File dialog box is available when a filename is selected in the Files list box. Click on this button to display information about the selected image file. A dialog box appears containing the information. The title bar of this dialog box contains the path and filename of the selected file.



File format shows the file format of the selected file.

Compression indicates if the file is compressed and the type of compression.

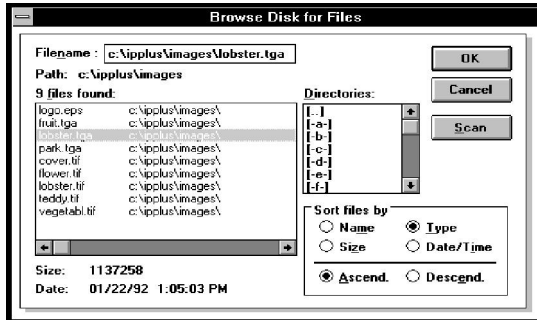
Image data type shows the data type of the selected file and the number of bits the data type supports.

Width and **Height** show the size of the image.

Resolution shows the resolution of the image.

File size shows the amount of space the file occupies on disk. This depends on any compression used to save the file. If the file is not compressed, iPhoto Plus requires slightly more free system memory than this to open and manipulate the file.

Readable? tells you if iPhoto Plus can open and display the selected file.



Filename is used to limit the file search to a specific file or file extension. Enter "*" to list all files in the current path.

Path displays the selected disk drive and directory.

Files found list box displays the filenames, with paths, that match the filename specified, in the selected path. Before sorting, the files are listed in the order they are found.

Directories list box lists the directories in the current directory and all available drives.

Sort files by gives you options by which found files in the Files list box can be sorted. You can sort by Name, Type, Size, and Date/Time. Sorted files can appear in ascending or descending order. Select an option and the files are sorted automatically.

Size shows the amount of memory occupied by the file currently highlighted in the files found list box.

Date shows when the highlighted file was last saved.

Finding files

If you want to open an image file but you do not know or remember where it was saved, use the Browse button in the Open Image File dialog box to find it. To find a file:

1. Choose "Open" from the File menu. The Open Image File dialog box appears.
2. Click on the Browse button. The Browse Disk for Files dialog box appears.
3. Decide on the disk drive and directory you want to browse. Use the Directories list box to access the drive and directory.
4. Click on the Scan button. iPhoto Plus searches the path you have specified for files with a name matching that in the Filename entry box. Files are then listed in the files found list box.
5. Select the file you want to open from the files found list box by clicking on it.
6. Click on OK. The Browse Disk for Files dialog box closes, returning you to the Open Image File dialog box. The File and pathname that you found appear in the Filename entry box. To open the file, click on the Open button.

Duplicating images

You will often want to make a copy of the active image so that you can continue editing without any danger of losing a particular stage in your work. You can also compare copies of images at different stages in your editing to determine the effects of particular commands. iPhoto Plus makes all this easy for you with the Duplicate command in the Edit menu.

When you select this command a new untitled window is created containing a copy of the image from the active window. After it is created, the duplicate image becomes the active image. You can create as many duplicate images as your system memory will allow. Duplicate images are not on disk until you save them there, so if you want to keep a duplicate, remember to save it. (See pp. 34–5, *Saving an image file*, for details about saving images.)

Viewing

This section discusses the Grabber and Zoom tools and the commands available in the View menu. iPhoto Plus allows you to view and display images in many ways, you can:

- ~ zoom-in on an image so that you can work accurately on fine details.
- ~ shift an image when it is larger than its window.
- ~ show rulers around an image to give you an idea of its real size.
- ~ display an image without anything else on the screen.
- ~ view information about an image (and your system) to see if you need to, or can, do some image processing.
- ~ optimize the way images are displayed on your particular computer display (see pp. 22–4, *Calibrating your display*).



Grabber tool

You will often work with images which cannot be fully displayed within their windows. This is most commonly the case when you magnify the view of an image. In this situation, scroll bars appear along the right and bottom edges of the image. To navigate around the image, click on the scroll bars, or place the Grabber tool on the image and drag.

Actual view

Select the Actual View command to display an image with each image pixel being shown by one screen pixel. This is the normal (1×) view of an image; when you open images they are displayed at this view.

Zoom in and out

iPhoto Plus allows you to zoom in and out on an image. Zoom in to work on small details in an image. Zoom out to view large images and compare several images. The available steps are: Zoom-in, 2×, 4×, 8×; Zoom-out, ½×, ¼×, 1/8×.

There are two ways to zoom: the Zoom In and Out commands and the Zoom tool. Zoom command sub-menus allow you to jump directly to a particular zoom level. The center of the current view remains as the center of the new view.

The Zoom tool shifts the zoom level to the next level. To zoom in, simply click on the image. To zoom out, hold down the Shift key and click on the image. The position of the tool determines the center of the new view.



Fit in window

If the whole of the active image cannot be displayed in its window, select “Fit in Window” from the View menu. iPhoto Plus adjusts the view of the image and the size of the window so that the whole image is displayed.

Note: If your iPhoto Plus workspace is too small (or an image is too big), when you select this command, your computer may beep, or you will get an error message from iPhoto Plus. Please increase the size of your workspace or make your image smaller (by resampling) before selecting “Fit in Window” again.

Full screen

If you want to view an image using the whole screen without any border, palettes, title bar, or menu bar, use the Full Screen command. To return to normal screen mode press the esc key.

Image information

The Image Information command displays the Image Information dialog box. This dialog box contains information about the active image.

System information

The System Information command gives you information about your computer, disk space, and version of Windows.

Color table

The Color Table command displays the color lookup table for indexed-color images. This command is disabled for images of other data types. You can use this command to view the colors and to change them. (See Chapter 6, *Painting*, for a full explanation of the use of this function.)

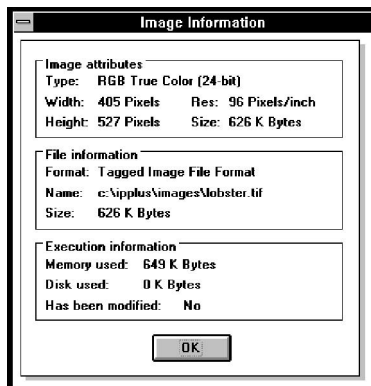
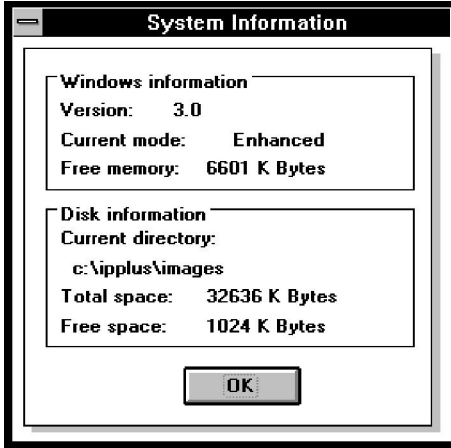


Image attributes contains information about the image data type, width and height of the image, resolution, and the size of the image. The size shown here is calculated from the number of pixels in the image and the image's data type.

File information contains information about the image format, filename and path, and the size of the image file on disk. If the image file is compressed, the size indicated here will be considerably smaller than the size shown in the Image attributes section. No information is displayed here if you have not yet saved the image file.

Execution information contains information about memory and disk space used. It also indicates if the file has been modified or not. The sum of the memory used is shown in the status line as the working size.



Windows information shows the version of Windows, your current Windows mode, and the available system memory.

Disk information shows the current directory (initially chosen in the Preferences dialog box but may be changed in any Open, Load, or Save dialog box), the size of your disk, and the available disk space.

Showing and hiding elements

These four commands allow you to set whether or not the rulers, the tool bar, the color palette, and the status line are displayed in the iPhoto Plus workspace. When the elements are displayed, the commands all begin with “Hide”. If the elements have been hidden, the commands begin with “Show”.

Rulers

The Rulers are displayed on the left and top edges of the window. The unit of measure used by the rulers depends on the unit of measure set in the Preferences dialog box. The intersection point of the rulers contains a letter to indicate the unit of measure being used: P for pixel, I for inch, and C for centimeter.

Tool bar

The tool bar appears on the left of the iPhoto Plus workspace and contains all the iPhoto Plus tools.

Color palette

The color palette is on the right of the iPhoto Plus workspace. This is used to choose colors.

Status line

The status line runs along the bottom of the iPhoto Plus workspace and displays information.

Saving an image file

To retain images for later use you must save them. We recommend you save regularly to avoid the possibility of losing work. When you save you can choose the file format you save your image in and, if the compression option is available, whether or not it is compressed (for an explanation of file formats and the availability of the compression option see pp. 11–2). To save an image for the first time:

1. Select “Save as” from the File menu. The Save Image File dialog box appears.
2. From the Directories list box, choose the drive and directory to which you want to save the active image.
3. Select a format from the File format combo box. For most uses choose “*.TIF”.
4. In the Filename entry box type the name of your file (up to eight characters). You do not need to enter the file extension.
5. Click on Save. The dialog box closes, returning you to the window containing your saved image.

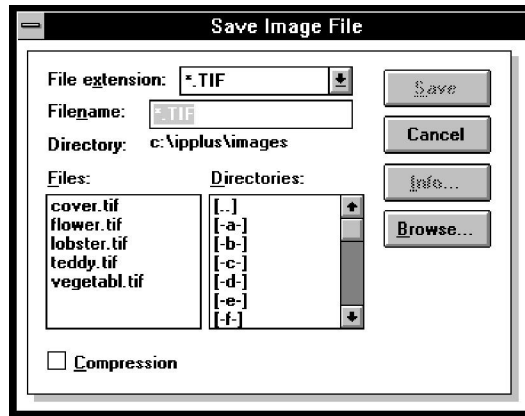
Once you have saved an image, use the Save command from the File menu. Since you have already named the image, the Save command will just update any changes you have made to it. If you select the Save command when the active image hasn’t been saved, the Save Image File dialog box opens.

If you attempt to close an image containing changes which have not been saved, a message box appears asking if you want to save the changes.

Note: In the Save current editing? message box, **Yes** saves the image or the applied changes. If it is a new image, the Save Image File dialog box appears.

No discards an unsaved image or the changes made to a previously saved image.

Cancel closes the message box, returning you to the iPhoto Plus window without saving.



File extension combo box shows all the available file formats by their file extensions.

Filename entry box displays the filename that you enter or have selected from the Files list box. Filenames can be entered with or without a file extension. If no extension is entered, the extension selected in the File extension combo box is automatically added.

Directory shows the current directory and path.

Files list box shows the files in the current directory with the selected file extension.

Compression check-box, when available, allows you to save the file in a compressed format. This will produce a smaller image file size when saved.

Directories list box shows the directories available in the current directory and all the available drives.

Save button saves the image file with the specified filename in the current directory.

Info button opens a dialog box containing information about an image selected in the Files list box. (See p. 28.)

Browse button opens the Browse Disk for Files dialog box. Use this dialog box to search for a directory containing files of the same format, or a specific file you want to update. (See p. 29.)

Restoring and undoing

iPhoto Plus provides you with two ways to recover from mistakes: the Restore command in the File menu and the Undo command in the Edit menu.

Restore

If you are experimenting with an image and you need to return to the last saved version, select “Restore” from the File menu. Before you restore a file, consider carefully because you can’t undo this command.

This function is only useful if you save regularly. We encourage you to save regularly anyway, in case you have a power failure or hardware trouble. You should save whenever you make a major change that you want to retain. If you don’t save regularly and you restore an image, a whole day’s work may be lost.

Undo

If you change your mind about a command you have applied, select “Undo” from the Edit menu. The effect of the command is reversed, restoring the image to its state

prior to the application of the command. Undo will only undo the most recent change. If you need to undo several changes, use the Restore command to return to the last saved version.

Instead of “Undo” at the top of the Edit menu, you may see:

~ **Redo...** after you have “undone” something. This command allows you to undo the undo, in other words redo the change.

~ **Can’t Undo** is displayed when you cannot undo the last action, e.g. immediately after you have saved an image file.

~ **Undo Disabled** means that the Undo facility is disabled in the Preferences dialog box.

When Undo is enabled iPhoto Plus “remembers” what the active image was like before the last change was made. This process takes up memory. Disabling Undo, in the Preferences dialog box, frees this memory allowing you to work with larger images and do some image processing more quickly.

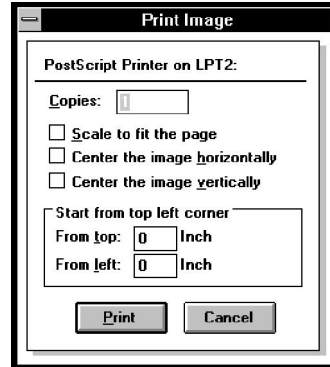
Printing

iPhoto Plus allows you to output images to any Windows-compatible output device. Before you print make sure that your device is turned on, connected and selected in the Windows Printer Setup dialog box. You can access this dialog box with the Printer Setup command in the File menu.

To output the active image, select “Print” from the File menu. Decide how many copies you want and where you want the image to print on the page. Make the necessary entries in the Print dialog box and then click on the Print button.

Exactly what comes out of your printer depends on the image you print and the printer you are using. For example, only color printers will print color images in color: other printers will print them in shades of gray or black on white

Note: If you are printing a Black & White image, you may first wish to change the resolution to be the same as your currently selected printer. (See Chapter 5, *Editing Images*, for information about changing the resolution of an image.)



Printer description line shows the currently selected printer (selected in Printer Setup dialog box).

Copies entry box allows you to enter the number of copies to print, the default is 1.

Scale to fit page scales the image to be as large as possible on the output page while maintaining the aspect ratio of the image. When this option is not selected, the image prints at the size determined by its resolution.

Center the image horizontally and **vertically** allow you to choose where the image is printed on the page. If neither is selected, the image prints starting from the top left corner. If both are selected the image is centered on the page.

Start from top left corner determines where your image is placed relative to the top left corner of the area on the page that your printer can print (most printers cannot print right up to the edge of the paper). This option is disabled when you select a centering option.

Closing an image

When you have finished working on an image, you can close it. Closing images releases system memory and clears the iPhoto Plus workspace. Close an image in one of the following ways:

- ~ select “Close” from the File menu.
- ~ double-click on the image window’s Control menu box.
- ~ select “Close” from the image window’s Control menu.
- ~ use the Close Images dialog box.

When you close an image, it disappears from the iPhoto Plus workspace. If you have not saved it, or you have made changes since you last saved it, you are asked if you want to save the changes: select No to discard them, select Yes to save them.

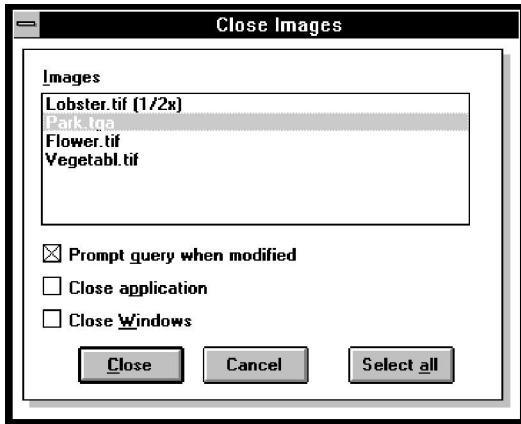
The Close Images dialog box

With iPhoto Plus, you can open as many image files as your system memory will allow. The Close Images dialog box allows you to close some or all of the opened images with one command. To display this dialog box either double click on the status line or in the iPhoto Plus workspace.

The names of all open images are displayed in the Images list box. To close an image, select it and then click on the Close button. There are three ways to select more than one image to close:

- ~ To select a range, click on the first image in the range and then, with the shift key held down, click on the last.
- ~ To select or deselect individual images, hold the CTRL key down and click on the images you want to add to, or delete from, the selected images.
- ~ To select all, click on the Select all button.

Close the selected images by clicking on Close. The dialog box closes and returns you to the iPhoto Plus workspace.



Exiting iPhoto Plus

When you have finished your iPhoto Plus session, you can exit by selecting “Exit” from the File menu or by closing the iPhoto Plus window. With either method, before the iPhoto Plus window closes, you may be asked if you want to save any new images or any changes made to previously saved images.

Images list box gives you a list of all open images.

Prompt query when modified displays a message before closing images which have been modified. When you de-select this option you are not given the chance to save new images or changes made to existing images.

Close application closes iPhoto Plus after all images have been closed.

Close Windows closes iPhoto Plus and Windows after all images have been closed.

Close button closes the selected images and other specified options.

Select all button selects all the images in the Images list box.

Chapter 3 *Image Input and Stitching*

iPhoto Plus allows you to input images from a variety of sources. Until recently only photographs, illustrations, and other image or graphic components could be brought into the desktop computer environment. These were most commonly obtained via image scanners. Now a much wider range of sources is available. These include video frames via a video board, images created with specialist painting and drawing packages, images captured from your screen, and images brought in from other sources such as CD-ROM image libraries. How you actually bring the image in from these sources will depend on individual circumstances.

Some images can be opened directly with the Open command or captured with the Capture Screen command. Others methods of input will require a software driver.

In the first half of this chapter, *Image input*, we describe how you can acquire and scan images. The second part deals with the stitching together of portions of an image to form a complete image. This chapter closes with information about how to capture images from the screen.

Note: All external image sources will involve some sort of hardware and associated software driver. Different sources will probably require different installation procedures and will provide different facilities. In this chapter we describe the software features of only one source. For other sources you should refer to the manufacturer's documentation.

Image input

You can access image input drivers with the scan commands in the Capture menu. The commands available in this menu, and the functions they perform, are dependent on the particular input device and driver you have installed. We cannot describe all the drivers provided by different manufacturers so we have taken one as an example, the spi (Scanner Programming Interface) driver. This driver is used by many hand-held scanners and is one of the drivers provided with iPhoto Plus.

The scan commands

The scan commands are found in the Capture menu. The contents of the Capture menu are determined when you install or update iPhoto Plus. When you want to change a device you must run the iPhoto Plus setup program, setup.exe. This section describes the commands that are present in the Capture menu when you install the SPI driver for color hand-held scanners.

Note: The Screen command allows you to capture images from the screen. The Post Processing and Show Scanning commands are commands to be used with an image input device.

Scanning

To scan an image using the spi driver, simply select “Scan” from the Capture menu. Scanning begins with the options described below. Newly scanned images appear in their own windows. You can then save or edit them as you would any other image.

If you are using a hand-held scanner, we recommend that you pay attention to the following guidelines:

- ~ Scan as slowly and as smoothly as possible. If you have the Show Scanning command enabled, you can see how smoothly you are scanning.
- ~ If possible, run your scanner against a straight edge placed on your image. Mark the beginning and end of your image on the ruler and start scanning a little before the beginning. This will ensure you scan the right portion of an image as straight as possible.
- ~ When scanning loose sheets, or pages of books, make sure that they are firmly secured and as flat as possible.
- ~ Try to give yourself a bit of space above and below the image and mount the image flush with the surrounding surface. It is important that the hand-held scanner’s runners are always in contact with the surface and they don’t have to climb thick edges.

- ~ Don’t have excessively bright lights shining directly on the image to be scanned.
- ~ Keep the hand-held scanner clean, in particular the runners and scanning window.

Scan Size

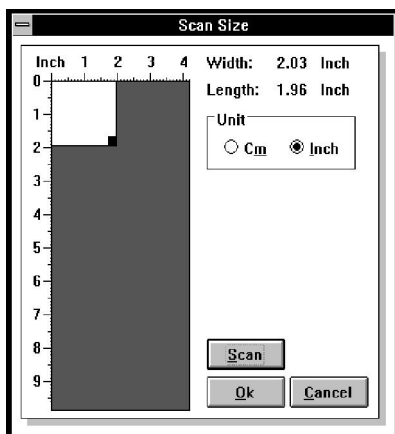
Select this command before you scan to set the area of the image that you want to scan. If you do not select this command first, scanning will proceed with the default settings. Every time you change the settings, you define the new default.

Scan Setting

Select the Scan Setting command to view and adjust some of the more advanced functions provided by the spi driver. Functions not available for the installed device are disabled.

About Scanner

If you want to know more about the scanner you have installed, choose the About Scanner command. The dialog box that appears contains information about your scanner.



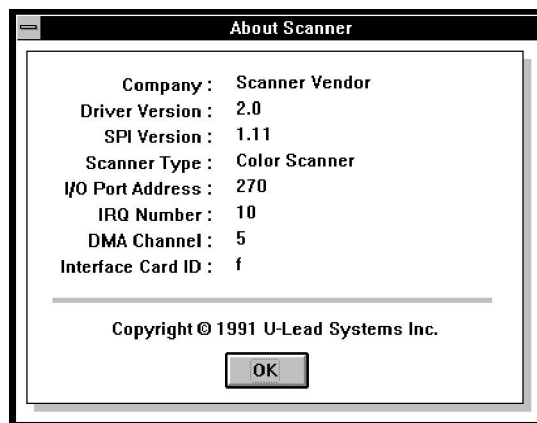
Scan area is shown in white. Adjust the area to be scanned by dragging the handle at the bottom right corner of the scan area in any direction.

Width and **Length** indicators show the current size of the scan area. As you adjust the scanning area you will notice these change. The unit of measure used is specified in the Unit selection box.

Unit selection box gives you the choice of centimeters (Cm) or inches (Inch). This unit is used for the Width and Length indicators and the rulers on the edge of the scan area.

Scan button closes the dialog box and begins scanning.

OK button closes the dialog box, retaining the settings for the next time you scan.



Company shows your scanner board manufacturer's name.

Driver Version shows the version of the software driver.

SPI Version shows the version of the SPI standard that your scanner driver conforms to.

Scanner Type gives a general description of your scanner.

I/O Port Address shows the address of the scanner interface adapter.

The last three items give the IRQ number, the DMA channel, and the ID of your interface card. For more information on these items, refer to your hardware documentation.

Scan Mode gives you the choice of different image types. Choose the mode appropriate to your scanner and image.

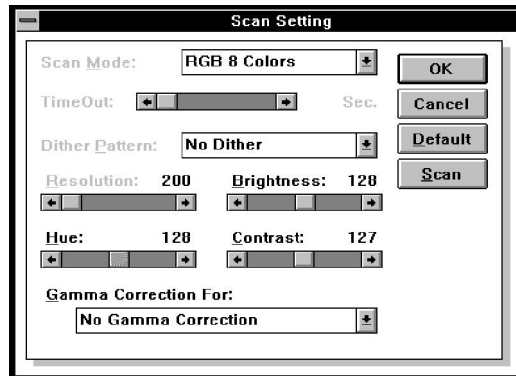
Note: If you choose the RGB 8-Color or RGB 4-bit color Scan Mode, the scanned image is automatically converted to Indexed 16-Color.

TimeOut gives you a choice of time out values from 0 to 120 seconds. This value is used to abort the scanning operation if no input is received from the scanner within the specified time. A value of 0 means that iPhoto Plus never stops waiting for input from the scanner.

Dither Pattern lets you choose how the scanner reproduces colors or grays that it does not recognize. It does this by dithering available colors to create areas of color that appear like unavailable colors. When you scan black-and-white line art, you should select No Dither. Otherwise, experiment with each of the options until you get the best effect.

Resolution slider bar sets the resolution of the scanned image. The higher the resolution, the slower you should scan.

Brightness slider bar adjusts the brightness of an image during scanning.



Hue slider bar adjusts the hue of an image during scanning.

Contrast slider bar adjusts the contrast of an image during scanning.

Gamma Correction For: combo box contains different options for applying gamma correction to an image during scanning. This sort of correction is useful when you want to make an image darker or lighter but still

maintain detail in highlight or shadow areas of an image.

OK button closes the dialog box, retaining the settings for the next time you scan.

Default button reverts all settings to their default values.

Scan button closes the dialog box and begins scanning.

Note: We suggest you leave the Brightness, Hue, Contrast, and Gamma Correction options at their default settings. After scanning an image, you can use the corresponding iPhoto Plus commands to achieve the same effects with more control. (Use Tone Adjustment: Midtone option to make adjustments similar to those shown in the Gamma Correction For combo box.)

Post processing commands

Selecting a Post Processing command causes iPhoto Plus to do something to the image *after* the scanner driver has brought it in.

Auto Tone Adjustment

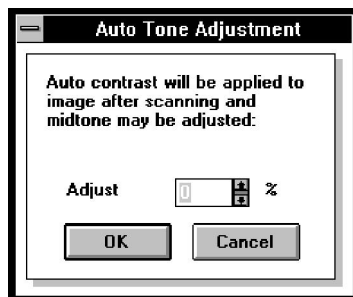
Use the Auto Tone Adjustment command to automatically adjust the midtones and remap the scanned image onto the full range of available colors, improving the contrast in the image.

Brightness & Contrast and Tone Adjustment

These two commands open the corresponding iPhoto Plus dialog box after an image has been scanned. If you select both, the Brightness & Contrast dialog box appears first.

Show scanning

This command enables you to monitor the scanning process in an image window. When this option is disabled, scanning may be a bit faster, but images are not displayed until they are completely scanned. You will not know if the correct portion of an image has been scanned until it is finished. Refer to the status line to see the progress of the scanning when the Show Scanning command is disabled.



Adjust value specifies how the midtones of the image are treated. The value can be from -100% to 100%. Negative values darken the midtones, positive values lighten them. Select a value of 0 if you only want to remap the image to use the full range of colors available.

Stitching image strips

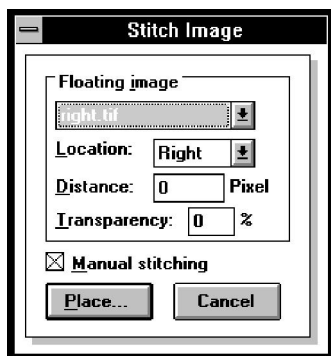
If your scanner cannot scan the whole of a picture in one pass, you will need to scan more than once and then join the resulting images to form the complete picture. Most hand-held scanners can only scan images up to about four inches wide. For these scanners, the ability to join images is essential. iPhoto Plus provides this function with the Stitch command in the Edit menu.

Once an image is open, you can stitch it to itself or to another image. You can only stitch images that are both of the same data type, either Grayscale or RGB True Color. If you want to stitch images of other data types, first convert them to Grayscale or RGB True Color. Images are combined with a selected image placed on top of the active image. You can stitch images together:

- ~ automatically by specifying which edges to join.
- ~ manually by moving one image until it aligns with the other.

To stitch two images automatically:

1. Select one of the images you wish to join as the active image by clicking on its title bar.
2. Choose “Stitch” from the Edit menu. The Stitch Image dialog appears.
3. In the Floating image combo box, choose the image you want to merge with the active image.
4. In the Location combo box, choose the edge of the active image to which you want to join the selected image.
5. In the Distance dialog box, enter the distance you want between the edges of the images. You can enter a positive or negative value.
Note: If you enter a positive value, the gap between the upper and lower images is filled with the current background color. If you enter a negative value, the images overlap.
6. Deselect the Manual stitching option.
7. Click on the Place button. A new window containing the stitched images appears.



Floating image is the image to be stitched to the active image.

Location of the floating image relative to the active image. The default location is on the right side of the active image.

Distance from the edge of the active image to the edge of the floating image. The units depend on your choice in the Preferences dialog box.

Transparency defines the transparency of the floating image in the area that it overlaps the active (lower) image. Increase this to see the lower image when you are placing the floating image by dragging, and to make the overlapping edges of the images blend together smoothly after stitching.

Manual stitching option allows you to place the images together manually. If this option is not selected the images are stitched automatically.

Stitching manually

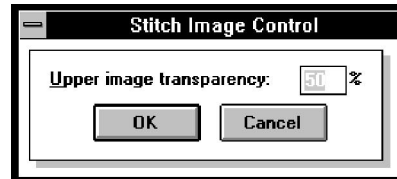
When you select the Manual stitching option in the Stitch Image dialog box, the iPhoto Plus window clears with only the images to be stitched remaining. The iPhoto Plus menus, in the menu bar, are replaced by menu bar stitch commands. These commands operate in the same way as normal commands contained in menus: simply click on a command to choose it.

Aligning images

iPhoto Plus gives you a number of ways to align images when stitching manually. In addition to dragging the floating image you can also mark a point in each image and align the images on these points. To mark the points, hold the shift key down and click first in one of the images and then in the other. Likewise you can move the floating image one pixel at a time by holding down the left mouse button and pressing the arrow keys.

To stitch two images manually:

1. Make one of the images you wish to join the active image. This image will be the lower image in the stitching.
2. Choose “Stitch” from the Edit menu. The Stitch Image dialog box appears.
3. In the Floating image combo box, choose the image you want to merge with the active image. The chosen image will be the floating image in the Stitch operation.
4. In the Location combo box, choose the edge of the active (lower) image around which you want to place the floating image.
5. Make sure the Manual stitching option is selected.
6. Click on the Place button. The contents of the iPhoto Plus window are cleared. A new menu bar appears containing stitch commands and the two images are displayed in the workspace.
7. Drag the upper image until you are satisfied with its position.
8. Double-click on the image or select the Stitch! menu bar command. A new window appears containing the stitched images.



Transparency defines the transparency of the floating image. While you are placing the floating image use a transparency of 50%, enabling you to see both images equally. Before you stitch, choose another transparency which will define how the area of overlap appears after stitching. 0% causes the floating image to obscure the active image in the area of overlap. 50% causes the area of overlap to be blended. 100% causes the active image to obscure the floating image.



Stitch! stitches the two images together. The iPhoto Plus window reappears as it was before stitching with an additional window containing the newly stitched image. Double-clicking on one of the images has the same effect.

ZoomIn! zooms in on the images by one step. This operates in the same way as the Zoom tool. Use the zoom commands if you want to view a magnified portion of the two images to enable you to stitch more accurately.

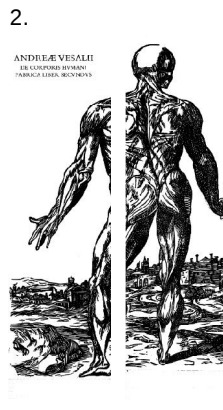
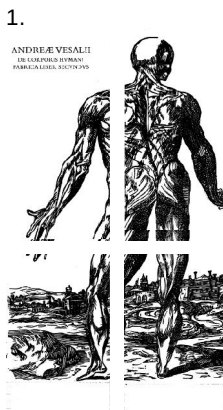
ZoomOut! zooms out from the images by one step. This operates in the same way as the Zoom tool with the SHIFT key held down.

Transparency... opens the Stitch Image Control dialog box. This dialog box allows you to specify the transparency of the floating image.

Abort! cancels the operation, restoring the iPhoto Plus window. (Pressing the ESC key has the same effect.)

Help! provides you with direct access to help.

Note: If you try to close this window with the Close command in the control menu you are actually trying to close iPhoto Plus and you will receive a message, "Please finish the iPhoto Plus operation first". Please press OK and then, if you want to return to the normal iPhoto Plus window without stitching, select the Abort! menu bar command.

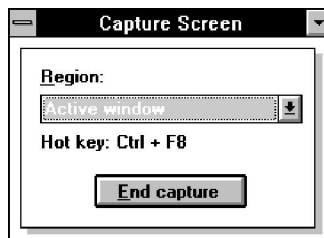


1. Original image scanned in four parts (each approx. 3.5"x7").
2. Vertical strips stitched together.
3. Image completely stitched. The interface between the vertical strips has been touched-up with the Paintbrush, noise around the edges has been removed, and the cropping has been adjusted.

Screen capture

With the Screen command in the Capture menu, iPhoto Plus allows you to capture any Windows screen or any part of a Windows screen. Once captured, the screen is placed in a new image window in the iPhoto Plus workspace. You can choose the area to capture in the Capture Screen dialog box that appears when you select the Screen command. Capture a dialog box from an application as follows:

1. Open iPhoto Plus.
2. Select “Screen” from the Capture menu. The Capture Screen dialog box appears.
3. Choose “Active window” from the Region combo box.
4. Take a note of the hot key shown and then minimize the dialog box. The dialog box disappears and the Capture Screen icon is placed at the bottom of your screen.
5. Minimize iPhoto Plus.
6. Open the application from which you want to capture the dialog box and access the dialog box.
7. Press the hot key combination. The dialog box is captured and when you restore iPhoto Plus it will be present in an image window.



Region:

Active window captures the window with a highlighted title bar. Use this option to capture dialog boxes, application windows, or minimized application icons.

Application under cursor captures the area occupied by the application window under the cursor. (If another window overlaps the capture area, the part of that window that overlaps is captured.)

Window under cursor captures the part of the screen on which the cursor is placed. Position the cursor on the title bar of a window to capture the window or on part of a window to capture the part. Parts of windows include: buttons, palettes, icons, entry boxes, etc.

Full screen captures the entire screen.

Hot Key shows the key combination used to capture a screen. (This cannot be changed.)

End capture button closes the dialog box, disabling capturing until you select the Screen command again.

Note: Captured images are always placed in new image windows in iPhoto Plus. The windows may, however, be minimized and placed at the bottom of the workspace.

Chapter 4 *Converting Images*

You will often need to convert images to make use of iPhoto Plus features which can only be applied to specific image data types, improve the quality of an image, or before you save an image with the intention of opening it in another application.

Converting an image, with one of the commands in the Convert menu, creates a new window containing a version of the original image in the new data type. The title bar of this new window contains the name of the original file without the file extension.

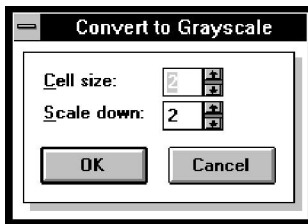
While it is possible to convert from one data type to any other, there may not be a direct conversion path and you will need to convert the image in two steps. When a conversion is not available for a particular image, that data type is disabled in the Convert menu. Conversion paths are listed in the table on the right.

Additionally, options are available for certain conversion paths. Set these options in conversion dialog boxes which appear when you select a Convert command. The rest of this chapter describes all the conversion options available.

Source Format	Can convert to:	Options
Black and White	Grayscale	✓
Grayscale	Black and White	✓
	Indexed 16-Color	✓
	Indexed 256-Color	✓
	RGB True Color	
Indexed 16-Color	Grayscale RGB True Color	
Indexed 256-Color	Grayscale RGB True Color	
RGB True Color	Grayscale	
	Indexed 16-Color	✓
	Indexed 256-Color	✓

Conversion paths between data types.

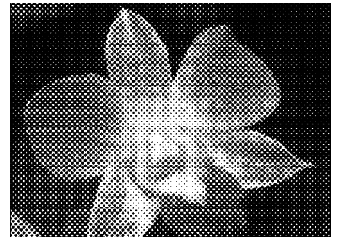
Black & White to Grayscale



Cell Size defines the size of the cell used to convert the black and white pixels of a Black & White image to shades of gray. The higher the number, the more shades of gray will be introduced and the smoother the transitions of tone in the image will be. For line-art images, use a cell size of one. For a photo scanned with a black-and-white hand-held scanner, choose a cell size from three to eight (depending on the settings of the scanner). If the result of this command shows visible grids in the image, the cell size is not correct. Undo the conversion and try a different cell size.

Scale Down defines how much the image will be scaled down during conversion. A scale-down value of one results in no scaling. A scale-down value of two reduces the width in pixels, height in pixels, and resolution of the image by half.

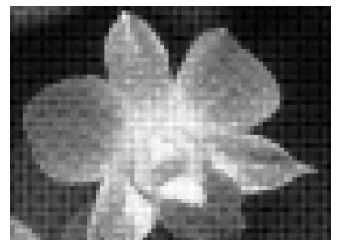
*360 ppi, 600 × 440 pixels,
Black & White image.*



*Convert to Grayscale:
Scale Down of 5 creates
72 ppi, 120 × 88 pixels,
Grayscale image.
(Cell Size 4.)*

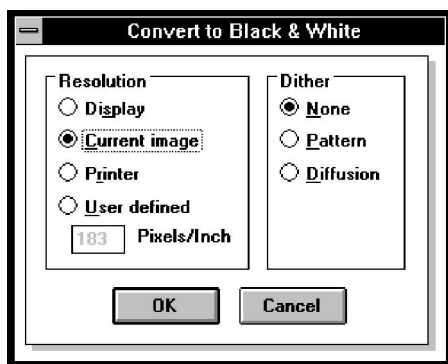


*Convert to Grayscale:
Scale Down of 8 creates
45 ppi, 75 × 55 pixels,
Grayscale image.
(Cell Size 4.)*



Grayscale to Black & White

When you convert an image from Grayscale to Black & White, none of the original gray shades can be shown or represented in the new image. To simulate the grays with only black and white pixels you may choose to dither the original grayscale values.



Resolution

Display defines the resolution of the new Black & White image to be that of your display.

Current Image defines the resolution of the new image to be the same as that of the active Grayscale image.

Printer defines the resolution as that of the printer selected in the Printer Setup dialog box. If you have a high resolution printer selected, this will produce a very large (in memory) Black & White image and the conversion may take a long time.

User Defined allows you to choose a value. The shown unit of measure is dependent on the unit chosen in the Preferences dialog box.

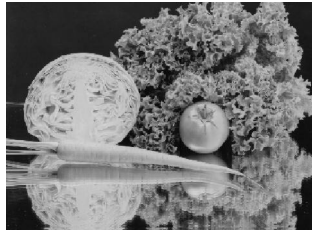
Dither

None does simple grayscale value mapping to translate original gray shades into black or white. This tends to result in sharp transitions between black and white in the image.

Pattern arranges pixels in patterns to simulate gray shades.

Diffusion uses a less structured method than that used with the Pattern option to dither gray shades. This option generally results in the most accurate conversion.

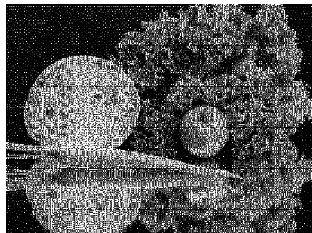
Grayscale image.



Convert to Black & White:
Current image resolution
No Dither (None)

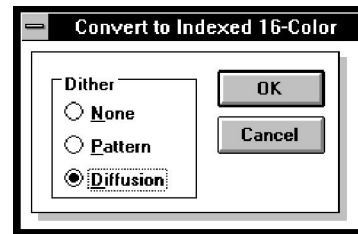


Convert to Black & White:
Current image resolution
Diffusion Dither



Grayscale to Indexed 16-Color

When you convert from Grayscale to Indexed 16-Color, iPhoto Plus use the 16 grays that most closely match the range of grays in the Grayscale image. The Dither options allow you to choose how iPhoto Plus converts the missing gray shades to the 16 available ones.



Dither

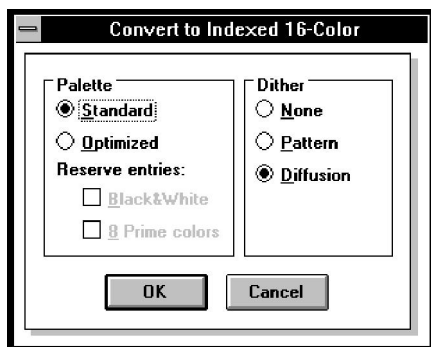
None does not dither the image. Instead, iPhoto Plus uses the gray in the color table that is closest to the gray in question. This tends to result in sharp transitions between shades of gray in the image.

Pattern arranges pixels in patterns to simulate the grays that are not in the color table.

Diffusion uses a less structured method than the method used with the Pattern option to dither grays not found in the color table. This option generally results in the most accurate conversion.

RGB True Color to Indexed 16-Color

When you convert from RGB True Color to Indexed 16-Color, you are converting a possible 16.7 million colors to only 16. To get the most effective result you need to decide how the 16 colors are chosen and how they are arranged (dithered) to simulate the millions of colors from the original.



Palette

Standard uses the system's default 16-Color (4-bit) table. This color table contains the 16 colors displayable on a CGA or EGA display device.

This option is useful when you transfer iPhoto Plus images to other Windows applications, or when you need to ensure that the same color table is used for different images, e.g. if you are creating images for an animation sequence to be generated in another application.

Optimized creates a color table that is the closest adaptation of the colors used in the image. If your RGB True Color image only contains green and blue and you select the optimized option, the resulting color table will be made up primarily of the colors that appear in the image (that is, green and blue). Because the colors in most images are concentrated in particular areas of the color spectrum, the optimized option normally gives the best conversion.

Reserve Entries allows you to reserve some entries in an optimized palette. For example, if your image is largely green and blue, you may not have any black in the image, but you may need black to add text at a later time. Select the Reserve Entries: Black & White option and the color table will contain greens, blues, black and white. The 8 Prime colors are red, green, blue, cyan, magenta, yellow, black, and white.

Dither

None does not dither the image. Instead, iPhoto Plus uses the color in the table that is closest to the color under analysis. This tends to result in sharp transitions between shades of color in the image.

Pattern arranges pixels in patterns to simulate the colors that are not in the color table.

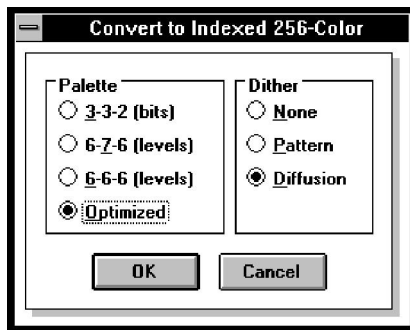
Diffusion uses a less structured method than the method used with the Pattern option to dither colors. This option generally results in the most accurate conversion.

RGB True Color to Indexed 256-Color

When you convert from RGB True Color to Indexed 256-Color, you are converting a possible 16.7 million colors to 256. To get the most effective result you need to decide how the 256 colors are chosen and how they are arranged (dithered) to simulate the millions of original colors.

Note: To preview a True Color image on a 256-color display, you should convert the image with the Optimized Palette and Diffusion Dither options selected.

If you want to transfer an Indexed 256-Color image to another application, you should use the palette option supported by that application.



Palette

3-3-2 (bits) uses the system's default 256-color (8-bit) table. This color table is based on an arrangement of eight (3-bit) reds, eight (3-bit) greens, and four (2-bit) blues.

6-7-6 (levels) gives a palette which offers six levels (shades) of red, seven levels of green, and six levels of blue. This is the standard palette used by ZSoft Paintbrush IV Plus.

6-6-6 (levels) gives the most balanced use of palette color. This palette offers six levels (shades) of red, six levels of green, and six levels of blue. This is the standard palette used by the Apple Macintosh computer.

Optimized creates a color table that matches the range of colors used in the image as closely as possible. If your RGB True Color image only contains green and blue and you select the adaptive option, the resulting color table will be made up primarily of the colors that appear in the image (that is, green and blue). Because the colors in most images are concentrated in particular areas of the color spectrum, this option normally provides the most accurate conversion.

Dither

None does not dither the image. Instead, iPhoto Plus uses the color in the table that is closest to the color in question. This tends to result in sharp transitions between shades of color in the image.

Pattern arranges pixels in patterns to simulate the colors that are not in the color table.

Diffusion uses a less structured method than the method used with the Pattern option to dither colors. This option generally results in the most accurate conversion.

Chapter 5 *Editing Images*

This chapter deals with the basic image editing functions iPhoto Plus provides. These editing functions include transformations such as rotate, slant, and flip; clipboard operations, such as cut, copy, and paste; and whole image operations, such as crop and resample. Most of these functions can be applied to entire images or, if there is a selection made, to only the selected area.

Before discussing the functions themselves, it will be helpful to look at the ways you can make and manipulate selections.

Selecting areas of an image

To edit a specific area within an image, you must first select it. Unless a selection has been made, any editing you do may affect the whole image.

Selections are shown by an animated dotted line around the edge of the selected area. This dotted line is called the selection marquee. The marquee may *beselect* part of an image or it may be floating and *contain* part of any image.

Floating selections are selected areas which are not part of an image. You can create a floating selection by moving or transforming a selected area, or by pasting a new selection into an image.

Image selections, whether floating or not, remain selected until you deselect them. To deselect a selection, i.e. to make the marquee disappear, click on a selection tool and then click once anywhere on the image outside the selection marquee. You can also press the right mouse button anywhere in the image or select “Select: None” from the Edit menu. The selection marquee disappears and its contents are left where they are, as part of the image.

Note: The selection marquee can be moved around the image with or without its contents (see Moving selected areas).

Selection commands

The Edit menu provides four selection commands contained in the Select sub-menu. These commands allow you to deselect, invert, and find the border of a selected area, and discard a floating selection. As already mentioned, the Select: None command removes a selection marquee. The other selection commands are described below.

Select: Invert

Use this command when you want to protect a small area from an editing function. Select the small area with a selection tool and then choose “Select: Invert” from the Edit menu. The small area is deselected, the rest of the image becomes selected.

Select: Border

The Select: Border command selects a line around the currently selected area. You can define the width of the line, from 1 to 64 pixels, in the Select Border dialog box which appears when you select the command. After selecting the border, you can fill it to create a line around the originally selected part of your image.

Select: Discard Floating

The Select: Discard Floating command in the Edit menu is enabled when you create a floating selection. This command removes the floating selection without affecting the underlying image.

Selection tools

iPhoto Plus provides several tools for making selections. To select one of these tools, click on the tool icon in the tool bar. The selection tools are:

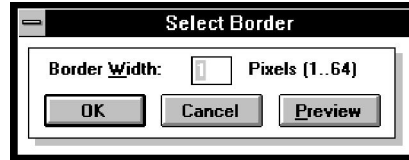
**Magic Wand**

The Magic Wand selects an area in an image which contains similar colors or grays. You can define how similar the colors and grays are. This way you can select a very specific portion of an image without having to use the freehand selection tool.

Double-click on the Magic Wand icon in the tool bar to define the color similarity, the Magic Wand Option dialog box appears.

Freehand selection

The Freehand selection tool selects an irregular shaped area in an image. Drag the tool to select irregular shapes; click to define the end-points of straight line segments; and double-click to close the area.



Border defines the width of the border to be selected. The border is centered on the selection marquee, i.e. half the specified width is placed on the inside of the marquee and half on the outside.



Color Similarity defines the range of grays or colors that are selected in the image. When you click on a pixel, all neighboring pixels that come within the defined range are selected.

- ~ A value of 0 selects neighboring pixels of exactly the same gray or color.
- ~ 255 selects pixels of all colors and grays and so the whole image will be selected.
- ~ 50 selects neighboring pixels that have values which differ from the pixel you clicked on by ± 50 , e.g. if you click on a pixel with values R25, G60, B190, neighboring pixels with values between R0, G10, B140, and R75, G110, B240 will be selected.



Rectangular selection

The Rectangular selection tool selects a rectangular area in an image. The Rectangular selection tool can be used in different ways. To view or change the tool settings, double click on the icon in the tool bar. The Select Area dialog box appears. Hold the shift key down as you define the selection to constrain the area to a square.



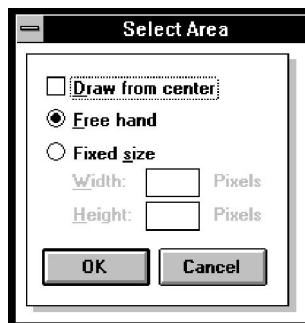
Elliptical selection

The Elliptical selection tool allows you to select an elliptical area of an image. The Elliptical selection tool provides the same options as the Rectangular selection tool. Double click on the tool icon in the tool bar to bring up the Select Area dialog box. Hold the Shift key down as you define the selection to constrain the area to a circle.

Eyedropper



The Eyedropper tool allows you to select the current foreground and background colors. You can use the Eyedropper on the active image or in the color palette. This tool also displays the color value of pixels it passes over, in the left corner of the status line.



Draw from Center defines a selection area from the center outward. If this is not selected, the area is defined from corner to corner.

Free Hand allows you to select an area of any size.

Fixed area selects an area of predefined width and height. In the entry boxes, enter the width and height of the area you want to select (the units are chosen in the Preferences dialog box).

Moving selected areas

Selection marquees, whether floating or not, can always be moved around an image. If you have just selected an area and the selection tool is still selected, click in the selection area and then drag it to a new position. To move the selection marquee alone, use the Move tool.



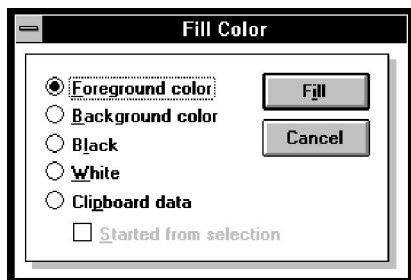
Using the Move tool moves only the selection marquee. If the selection area was floating, the contents of the area combines with the underlying image.

Using a selection tool to drag a selection area moves the marquee and its contents. This is known as a floating selection. Depending on the setting of “Preserve image under selection” in the Preferences dialog box, the area under the floating selection remains unchanged or is filled with the current background color.

Clearing and filling

The Clear and Fill commands in the Edit menu have similar effects. When these commands are applied, the selected area is filled with a color. If no selection is made, the whole image is filled.

When you select the Clear command the selected area is cleared to the background color. Selecting the Fill command opens the Fill Color dialog box. Choose the color to fill the selected area in this dialog box.



Foreground and **background** color defined in the current colors indicator.

Black or **white** fill color

Clipboard data can be used to fill the area. If the area is larger than the contents of the clipboard, the data is repeated to fill the area. If the area is smaller, the clipboard image is cropped.

Started from selection causes the clipboard image's top left corner to be placed on the top left corner of the selected area (or top left corner of the bounding box of a non-rectangular selection area). When not selected, the first copy of the clipboard image is pasted in the top left corner of the active image; subsequent copies are tiled to the right and below it, until the image or selected area is filled. If you are filling several areas in an image and you want the clipboard images to align, do not select this option.

Note: If you want to put a large clipboard image into a small area and be able to choose which part shows, use the Paste: Into Selection command from the Edit menu.

Using the clipboard

Many commands in iPhoto Plus make use of the clipboard. The clipboard is a temporary storage area where an image or part of an image can be placed. This stored image can then be pasted from the clipboard for as long as it remains there.

The clipboard can contain only one image at a time. Clipboard images remain on the clipboard until you Cut, Copy or Load from File to bring a new image onto the clipboard. These commands automatically replace the current contents of the clipboard. If you don't want to lose an image from the clipboard, you can Paste it into an image or Save to File. And, if you cannot remember what is on the clipboard, you can Display the current clipboard image. iPhoto Plus provides these commands in the Clipboard sub-menu in the Edit menu.

Cut and copy

Regardless of the image data type you are working with, the Cut and Copy commands are always available. Copy places a duplicate of a selected area onto the clipboard.

Cut removes the selected area from the active image and moves it to the clipboard. The removed area is filled with the current background color. If no area is selected, both Cut and Copy are applied to the whole image. To cut or copy:

1. Select the area of the image you want to place on the clipboard. If you don't make a selection, the whole image will be put on the clipboard.
2. Choose "Cut" or "Copy" from the Edit menu. Cut removes the selected area from your image and replaces it with the current background color. Copy does not affect the image.

Paste

The Paste commands allow you to copy the contents of the clipboard onto an image. The Paste commands are disabled when:

- ~ the clipboard is empty.
- ~ your active image is indexed-color.
- ~ your active image is Black & White and the clipboard data is not.
- ~ the contents of the clipboard is from another, incompatible Windows application and cannot be pasted into iPhoto Plus images.

To paste a selection:

1. Choose Paste from the Edit menu. The Paste submenu appears.
2. Decide whether you want the clipboard contents to be pasted as a floating selection (As Selection), or into a previously made selection (Into Selection). Select the appropriate command and the clipboard image will be pasted accordingly.
3. Make sure the current tool is a selection tool and then click and drag the pasted area to the point you want to leave it.
4. With the selection tool still selected, click the right mouse button. The pasted area will become part of the image.

Note: Once pasted, move a pasted area around by dragging it with one of the selection tools.

The Paste: Into Selection function is only available if you have selected an area in your active image. Choosing this command pastes the clipboard contents into the selected area.

If the selected area is smaller than the clipboard image, the clipboard image is cropped by the area. By dragging the pasted area around with a selection tool, you can choose the area to be cropped by the originally selected area.

The Clipboard sub-menu

iPhoto Plus provides a Clipboard sub-menu in the Edit menu which contains commands to load, save, and display clipboard images.

Load from File

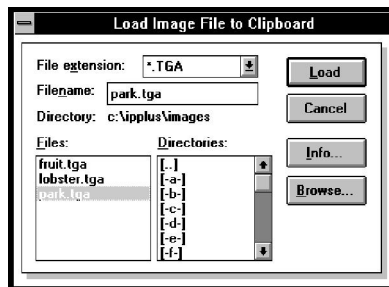
Any image file or previously saved clipboard image can be loaded onto the clipboard at anytime. To load a file onto the clipboard, select “Load from File”. This command is similar to the Open command, but rather than opening a file and placing it in a new image window, Load from File places the file onto the clipboard.

Save to File

To save an image from the clipboard to disk, select “Save to File”. After saving, you can open this image as you do other images, or bring it back onto the clipboard with the Load from File command.

Displaying clipboard images

You can view the current clipboard image by selecting “Display”. The clipboard window appears containing the image fitted in a window (if possible).



File extension combo box lists the file extensions of images that iPhoto Plus can bring onto the clipboard.

Filename entry box shows the selected file extension or filename. If you know the name and path of the file you want to open, you can enter it directly in this entry box.

Directory shows the current directory and path.

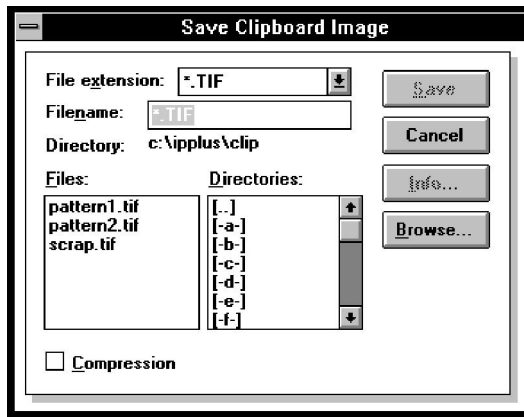
Files list box shows all the files in the current directory with the file extension selected in the File extension combo box.

Directories list box shows the directories available in the current directory and all the available drives.

Load button opens the currently selected image file.

Info button opens a dialog box containing information about the currently selected image. (See p. 28.)

Browse button opens the Browse Disk for Files dialog box. Use this dialog box to search for files. (See p. 29.)



File extension combo box shows all the available file formats by their file extensions.

Filename entry box displays the filename that you enter or have selected from the Files list box. Filenames can be entered with or without a file extension. If no extension is entered, the extension selected in the File extension combo box is automatically added.

Directory shows the current directory and path.

Files list box shows the files in the current directory with the selected file extension.

Compression check-box, when available, allows you to save the clipboard image in a compressed format. This will produce a smaller file size when saved.

Directories list box shows the directories available in the current directory and all the available drives.

Save button saves the clipboard image with the specified filename in the current directory.

Info button opens a dialog box containing information about an image selected in the Files list box. (See p. 28.)

Browse button opens the Browse Disk for Files dialog box. Use this dialog box to search for a directory containing files of the same format, or a specific file you want to update. (See p. 29.)

Cropping

Cropping is a method of trimming the edges of an image. Use Crop when you only wish to keep a particular part of an image. The edges cropped from your image cannot be retrieved again, unless you immediately undo the Crop command. To crop:

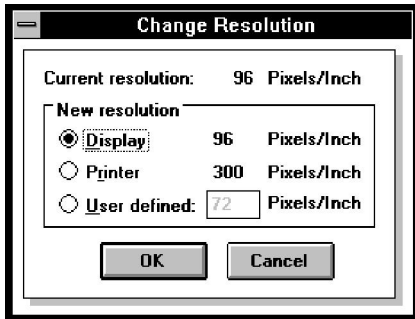
1. Use one of the selection tools to select the area of the image you wish to retain.
2. Choose “Crop” from the Edit menu. The areas outside the selection marquee are discarded. Only the area you selected is retained.

Note: If you select a non-rectangular area, the image is cropped to the smallest rectangle that can contain the selected area. Areas outside the selected area, within the new image, are filled with the current background color.

Changing resolution

The resolution of an image determines its physical size. You may want to change the resolution of an image before you print it. By doing this, you can resize an image without actually changing the number of pixels in the image. To change the resolution of the active image:

1. Choose “Resolution” from the Edit menu. The Change Resolution dialog box appears.
2. Decide what resolution you want to use: Screen, Printer or User defined. If you choose User defined, enter the new resolution in the entry box.
3. Click on OK to change the resolution of the active image and close the dialog box. There is no change to the appearance of the image in iPhoto Plus.



Current resolution of the active image.

New resolution

Display defines the resolution to be that of your display adapter.

Printer defines the resolution to be that of the printer selected in the Printer Setup dialog box.

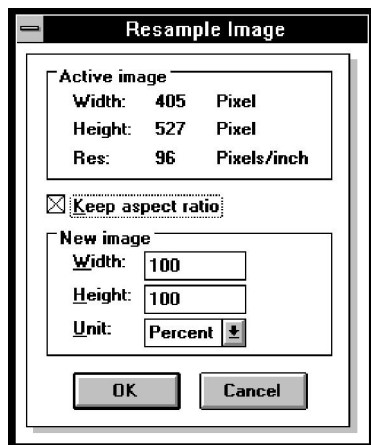
User defined needs to be specified by you. The unit of measure used is dependent on the default chosen in the Preferences dialog box.

Resampling

Images can be almost any size. Resampling lets you change the size and proportions of an image. To resample the active image:

1. Choose “Resample” from the Edit menu.
The Resample dialog box appears containing information about the current width and height of the image.
2. Enter the new width or height for the image.
3. Click on the Keep Aspect Ratio check box to maintain the proportions of the active image. If you enter the width, the height is automatically generated; if you enter the height, the width is generated.
4. Click on OK. A new image appears with the new width and height you specified.

Note: If you enter a new width and height of 100 percent, the active image is duplicated.



Active image section shows the width, height, and resolution of the active image.

Keep Aspect Ratio determines if the image is resampled retaining the proportions of the active image. When this option is not selected, the image can be distorted by adjusting either the width or height disproportionately. This results in the image being stretched horizontally or vertically.

New image section allows you to enter the width and height you want the image to be after resampling. The Units combo box allows you to choose between resampling to a percentage of the original size or to a physical size. The unit of measure is set in the Preferences dialog box.

Transformations

One of the most valuable features of iPhoto Plus is the ability to transform images to achieve a desired effect. iPhoto Plus provides four such transformations: Flip, Rotate, Free Resize, and Slant. Transformations can be applied to entire images or selected areas within an image.

Note: If “Preserve image under selection” is not enabled in the Preferences dialog box, sections of an image may be filled with the background color after applying a transformation command.

Flip

The Flip command in the Edit menu allows you to horizontally or vertically mirror all or part of an image. Select an area before choosing Flip to mirror the selected area. Choose Flip without an area selected to mirror the entire image. To Flip:

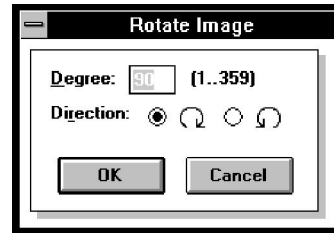
1. Select the part of the image to flip. To flip the entire image, do not make a selection.
2. Flip horizontally or vertically by selecting “Horizontal” or “Vertical” from the Flip sub-menu in the Edit menu. The active image is updated to include the mirrored part.

Rotate

The Rotate sub-menu, in the edit menu, provides a range of commands which allow you to rotate the current image or selected area to any angle. Choose the way you rotate a selection or image from the six commands:

- ~ **Left 90°** (counter-clockwise)
- ~ **Right 90°** (clockwise)
- ~ **180°**
- ~ **Freely** allows you to define the rotation of a selected area by dragging
- ~ **Degree** opens a dialog box in which you specify the angle and direction of the rotation.
- ~ **By Horizontal line** allows you to define a line in the active image which will then be rotated to become horizontal.
- ~ **By Vertical line** allows you to define a line in the active image which will then be rotated to become vertical.

Note: If you use one of the commands to directly rotate an image, by anything other than 90°, 180° or 270°, an extra space is introduced around the image. This space is filled with the background color.



Degree of the rotation to apply. You can rotate an image from 1° to 359°.

Direction of the rotation. You can rotate an image clockwise or counter-clockwise.

Rotating freely and by line

These commands give you the ability to interactively rotate your image or selected area. You can use them to rotate an image by a small amount or to straighten images which have been scanned at an angle.

Rotate Freely works on selected areas. Select the Rotate: Freely command after you have selected an area and handles appear at the corners of the area. To rotate the area, drag the handles in the desired direction. If any of your selected area is rotated outside the bounds of the active image then that portion is cropped.

Rotating by a horizontal or vertical line rotates entire images. If your image has strong horizontal elements, use “By Horizontal line”; if it has strong vertical elements, use “By Vertical line”. Both commands allow you to define a line which will then be rotated to the horizontal or vertical.

The Rotate by line options work in a similar way:

1. Make the image you want to straighten active.
2. Choose “By Horizontal line” or “By Vertical line” from the Rotate sub-menu in the Edit menu. A line, with a handle at each end, appears on the image.
3. Identify a horizontal or vertical element in the image and drag the closest handle to one end of this element.
4. Drag the other handle to the other end of the element so that the joining line aligns with the element.
5. Double-click on one of the handles. The image is rotated so that the chosen line becomes horizontal or vertical.

Note: See p. 76 for an illustration of the Rotate: By Horizontal line command.

Free resize

With the Free Resize command, you can make a selected area bigger or smaller. To resize a selected area:

1. Select the portion of the image you want to resize.
2. Choose “Free Resize” from the Edit menu.
A box, with handles at each corner and on each side, appears containing the selected area.
3. Drag a handle to set the new size for the selected area. To resize two sides of the selection at the same time, drag a corner handle. The contents of the selected area are resized as you drag the handle. When you reach the desired size release the mouse button.
4. To merge the resized portion with the image, click once outside the selected area.

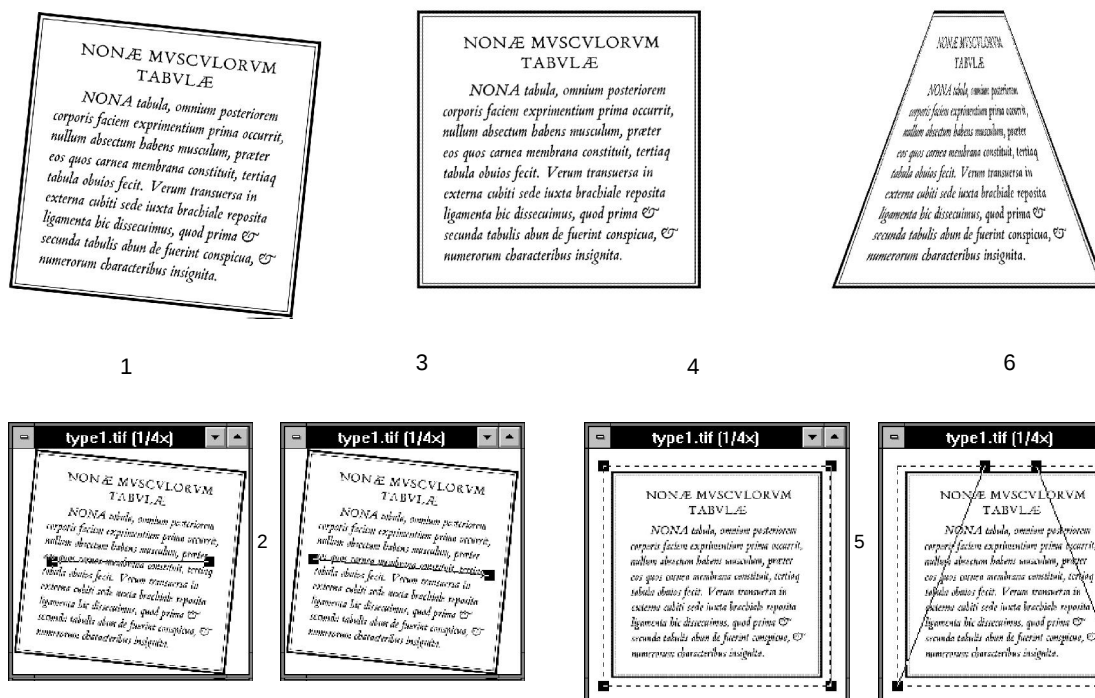
Note: If you resize a selected area with the SHIFT key held down, you maintain the original proportions of the area.

Slant

The Slant command allows you to horizontally or vertically slant a selected portion of an image. To slant a selected area:

1. Select the portion of the image you want to slant.
2. Choose “Slant” from the Edit menu. A box with four handles, one at each corner, appears around the selected area.
3. Click and drag one of the handles in the direction you want to slant.
4. When you reach the desired degree of slant, release the mouse button.
5. To merge the slanted portion with the image, click once outside the selected area.

Note: If you slant a selected area with the SHIFT key held down, you can move a single handle of the area. To create a perspective effect, slant two adjacent corners of an area in opposite directions. (See p. 76 for an illustration of a perspective effect achieved in this way.)



1. Select "Rotate by Horizontal line" from the Rotate sub-menu in the Edit menu.
2. Identify an element that should be horizontal.
3. Rotate to horizontal

4. Select an area and choose "Slant" from the Edit menu.
5. With SHIFT held down slant the top left and right corners independently.
6. Perspective effect created.

Chapter 6 *Painting*

The painting tools available in iPhoto Plus enable you to apply colors to images. These painting tools include the Paintbrush, Airbrush, Eraser, and the Line tool. The effects painting tools have on the current image depend on the current brush shape, size, and the current foreground and background colors. In this chapter, you will learn how to choose colors, what the painting tools can do, and how you can change painting tool options. Adding text with the Text tool is explained at the end of this chapter.

Choosing colors



The color palette, on the right of the iPhoto Plus workspace, contains all the colors you can apply to an image. The range of colors displayed is dependent on the type of image you are currently working on. For Grayscale images, the color palette displays varying shades of gray. Changing to an indexed-color image switches the color palette to display the 16 or 256 colors from the image's color table. For RGB True Color images, a wide range of colors is displayed in discrete cells or as a continuous spectrum.

Before you can apply a specific color, you must select it as the current foreground or background color. These colors are displayed in the current colors indicator. Before changing a color, you must choose which to change by clicking on the foreground or background color square. The color to be changed is surrounded by a gray border. You can change the colors in different ways:



- ~ Double click on the Eyedropper tool icon, or on the background or foreground color square to display the select color dialog box.
- ~ Click on any color in the color palette.
- ~ Click and drag the color value slider arrows.
- ~ Use the Eyedropper tool to choose a color from either the color palette or the active image.

Note: When the foreground color is highlighted, press the SHIFT key to change the background color and vice versa.

Color

The “colors” available in Grayscale images are predefined: 254 evenly spaced shades of gray between black and white (256 altogether including black and white).

For color images the situation is quite different. The human eye can normally distinguish many thousands of colors more than we can accurately describe. Because of this, color models have been created. All color models try to represent as many colors as possible in such a way as to make it easy to choose one. iPhoto Plus provides two color models: the red, green, blue (rgb) model and the hue, saturation, and brightness (hsb) model.

RGB color model

This color model is not especially easy to visualize, but it is the model most commonly used by computer monitors and color image data types to specify color. Out of all the available colors there are three from which we can create all other colors: red, green, and blue. These are called the “primary” colors.

In the rgb color model the primary colors are plotted in a three-dimensional chart which looks like a cube. Red, green, and blue are found on the x, y, and z axes of the chart. The axes start at the origin as black and increase in intensity as they move away from the origin. At the furthest point from the origin (the diagonally opposite corner of the cube) is white. The line through the center of the cube, from the origin to the white point, is of varying shades of gray and represents equal amounts of red, green, and blue.

HSB color model

We can visualize the colors available on each face of the rgb cube, but it is hard to imagine all the color combinations available inside. It is easier to imagine ranges of color (hue), such as reds, yellows, blues, violets; varying from a dull gray shade to a bright pure color (saturation); and whose brightness can vary from very light (white) to very dark (black). This is visualized in the hsb color model.

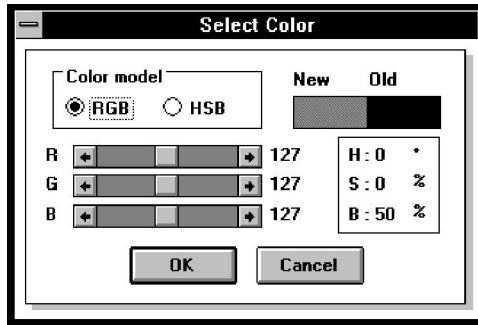
The hsb color model takes the form of an upside-down cone. Looking at the top of the model you can see the colors arranged in a circle. The position of each color is always defined relative to red. Green is at 120° to red, and blue is at 240°. Opposite each of these primary colors is the color's complementary color: opposite red there is cyan (180°), opposite green there is magenta (300°), and opposite blue there is yellow (60°). If you follow a color band from the center out, you will see the color goes from white to an intense color. This is how the model visualizes color saturation. The brightness is visualized vertically. At the tip of the cone, at the bottom, the point is black. Between this point and the top the brightness gradually increases.

Use this model to adjust existing colors by making them darker or lighter (adjusting their brightness), or making them more or less intense by increasing or decreasing their grayness (saturation).

The Select Color dialog box

If you have tried all the options to select colors, you may have noticed that when a dialog box appears it is always the same. The only thing that differs is the title bar. Regardless of what color you want to change, whether foreground, background, or cell color (for indexed-color images), the basic method you use for selecting a color is the same.

When the dialog box appears, the current color is displayed on the right side. To change the current color, you first must specify the color model to use: rgb or hsb. Your choice determines the function of the three slider bars in the center of the dialog box. Drag the slider bars to change the value of each color component. Adjustments you make are reflected in the new color area.



Color model can be RGB or HSB.

New is the color which will replace the current (old) color.

Old is the color to be changed. This may be the foreground or background color, or a cell color.

Slider bars are used to adjust the color components of the color. The components you adjust depend upon the color model you have chosen.

Color table

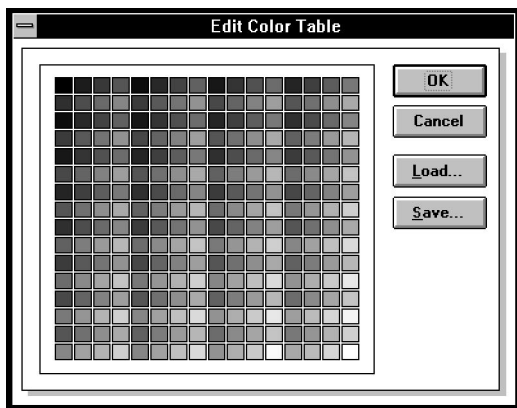
The Color Table command in the View menu is only available for Indexed 16 and 256-Color images. When you choose this command, the active image's color table appears. Use this color table to view, choose, or change the colors in the active image.

To change the color contained in a cell, click on the cell. The Select Cell Color dialog box appears. This is the standard select color dialog box described on the left. Once you have chosen a new color, click on OK and it is inserted into the color table.

To close the color table, you can:

- ~ choose "Close" from the control menu.
- ~ click on OK to close and save any changes.
- ~ click on the Cancel button to close, discarding any changes made.

iPhoto Plus also allows you to load and save color tables. This feature allows you to optimize a color table for one type of image, and then apply this color table to other images. When you load a new color table, the old one is lost and the pixels in the image assume the new values.



Color squares show the colors contained in the color table. To change a color, click on a square. Choose a new color in the Select Cell Color dialog box that appears.

OK button closes the dialog box, saving any changes you have made to the contents of the color table.

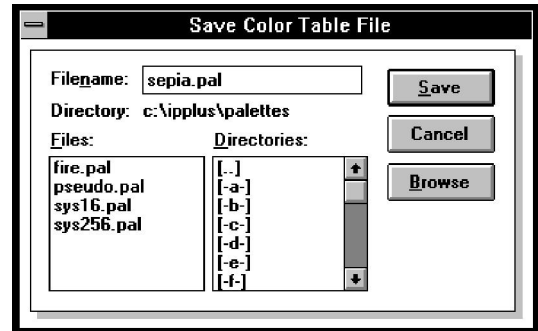
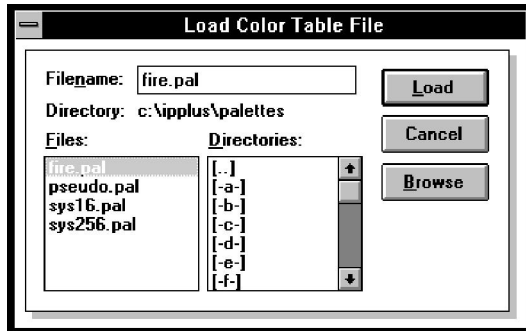
Load button accesses the Load Color Table dialog box.

Save button accesses the Save Color Table dialog box.

Loading and saving color tables

You can save a color table from one image and subsequently load it into another image or back into the original image. You load and save color tables in a similar way to opening and saving images. Simply select the Color Table command from the View menu. The Edit Color Table dialog box appears (your active image must be indexed-color). Click on the Load button to display the Load Color Table dialog box or on the Save button to display the Save Color Table dialog box.

Note: You can only load color tables containing 16 colors into Indexed 16-Color images. Likewise color tables containing 256 colors can only be loaded into Indexed 256-Color images.



Filename of the color table you want to load. File extension defaults to *.PAL.

Directory shows the current directory and path.

Files list box shows all the files contained in the current drive and directory with the name and extension shown in the Filenames entry box.

Directories list box shows the sub-directories in the current directory and the available drives.

Load button places the selected image file on the clipboard.

Browse button displays the Browse Disk for Files dialog box. Use this dialog box to search for color tables. (See p. 28.)

Filename entry box displays the filename to which the color table is saved. The normal file extension is *.PAL (you do not have to enter the file extension).

Directory shows the current directory and path.

Files list box shows all the files contained in the selected drive and directory with the name and extension shown in the Filenames entry box.

Directories list box shows the sub-directories in the current directory and the available drives.

Save button saves the image file with the specified filename in the current directory.

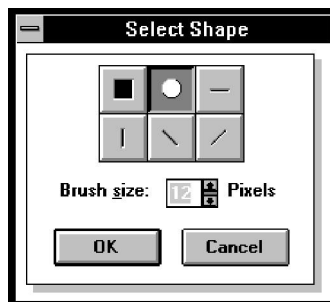
Browse button displays the Browse Disk for Files dialog box. Use this dialog box to search for a directory containing other color tables or a specific color table you want to update. (See p. 28.)

Brush shapes

The painting tools make use of a range of brush shapes and sizes. The Brush shape button, at the top of the color palette, displays the current brush shape. Next to the button, the Brush size slider displays and allows you to change the brush size. The current brush settings are used by all the painting tools.

Both the brush shape and size can be adjusted in the Select Shape dialog box. To access this dialog box click once on the Brush shape button.

iPhoto Plus provides six different brush shapes and 24 brush sizes. Click on one of the six shapes displayed to choose a new brush shape. Enter a new value in the Brush size entry box, or click on the up or down cursor arrows to define a new brush size. After making your changes, click on OK to apply them.



Brush shape buttons display and allow you to select one of the six available shapes.

Brush size shows the size of the brush in pixels. The range of sizes is from 1 to 24. To change the brush size, click on the up or down cursor arrows or enter a number directly into the entry box.

Painting tools

The painting tools all behave in a similar way. Simply select a tool by clicking on the appropriate tool icon in the tool bar, move the tool to the point you want to paint and click. All the painting tools apply the foreground color, except the Eraser tool which applies the background color. You continue to apply paint for as long as you hold the mouse button down. You can paint on any type of image, but your choice of colors is more limited with some types of images.

Paintbrush



With the Paintbrush tool, each time you click the mouse button, you apply dots of the foreground color. The dots are the shape and size of the current brush. If you drag the paintbrush around, you draw a freehand line.

Airbrush



The Airbrush tool produces a sprayed area of the foreground color. The color applied with the Airbrush gradually builds up as you drag it back and forward over a point.

Line

Use the Line tool to create straight lines in an image. Press the Shift key while drawing a line to constrain it to an angle of 0°, 45°, or 90°.



Eraser

The Eraser tool replaces areas of an image with the current background color. You can choose if it will replace everything it passes over or just the foreground color. Use the Eraser to change one color in an image to another (by replacing the foreground color) as follows:



1. Choose the color you want to change as the foreground color, the replacement color as the background color.
2. Double-click on the Eraser tool in the tool bar. The Eraser Options dialog box appears.
3. Select “Erase foreground to background color” and then click on OK to close the dialog box and return to your image.
4. Click in the image and drag across an area in the image which contains some foreground color. The foreground color in the area changes to the background color without affecting any other colors.



Erase foreground to background color changes only those pixels which are colored with the foreground color, and that the eraser tool is applied to, to the background color.

Erase all colors to background color changes all pixels, that the eraser tool is applied to, to the background color.

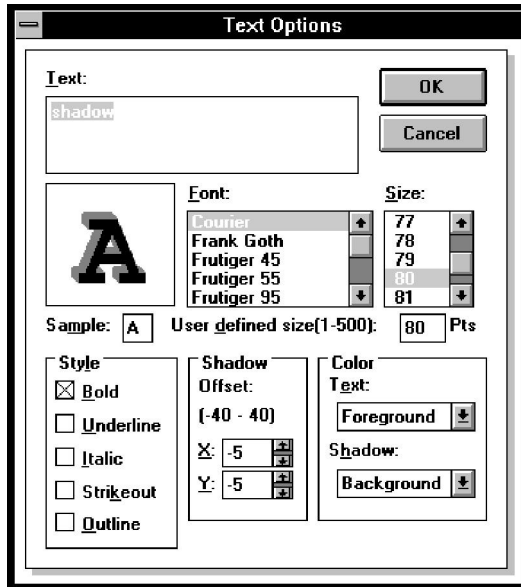
Texttool



The Text tool allows you to enter text onto an image. Apart from just entering text in a variety of fonts and styles, the Text tool allows you to create text with a 3-d shadow. To insert text:

1. Click on the Text tool icon in the tool bar.
2. Click on the area in the image where you want your text to start. The Text Options dialog box appears.
3. Enter the text to insert in the Text entry box at the top of the dialog box.
4. Select the font, size, and style for the text. Set shadow and color effects as desired.
5. Click on OK. The dialog box closes and the text appears on the image as a floating selection filled with the selected color.
6. To combine the text with the image, with the selection tool still selected, click on the right mouse button. The selection marquee disappears leaving the text as part of the image.

Note: If you type some text and then want to remove it, select the Discard Floating command from the Select sub-menu in the Edit menu. To move text, select one of the selection tools from the tool bar and then drag the text to the desired position.



Text entry box allows you to type the text you wish to enter on the image. The amount of text entered is limited by the size of the entry box. To start a new line press CTRL + M. You can also paste text into this entry box from the Windows clipboard by pressing SHIFT + INS.

Font list box contains all the available typefaces.

Size list box displays the sizes available for the selected font. For typefaces with bitmap screen fonts, the range of sizes will be limited to the bitmap sizes you have available.

Sample display area and text box allow you to view and change a sample character. The displayed character will show all the attributes you choose.

User defined size entry box allows you to enter a specific size for typefaces with vector screen fonts and, when you are running an outline font interpreter (such as ATM), for typefaces with outline printer fonts resident on your hard disk. The size is specified relative to the resolution of your display.

Style options box lists the different styles text may be produced in.

Shadow options box allows you to create a 3-D text effect.

Color options box lets you specify the colors for the text and text shadow. This option is disabled for Grayscale and indexed-color images.

Chapter 7 *Enhancing Images*

The iPhoto Plus Image menu provides commands which change the color or gray shades in an image. The first five commands allow you to invert images and adjust the shadows, highlights, midtones, brightness, contrast, hue, saturation, and number of levels in an image. The other commands are filters that can be used to modify images and create special effects. This chapter describes these commands in two sections: Adjusting image values and Applying filters.

Adjusting image values

This section describes the first five commands in the Image menu: Tone Adjustment, Brightness & Contrast, Hue & Saturation, Invert, and Level Adjustment. For most images, these commands can be applied to selected areas or, if there is no current selection, to the whole image. However, some of the commands are not applicable to some data types, or they cannot be applied to selected areas in certain data types. The table on the right shows which commands are available for particular data types and if they can be applied to selected areas.

The Tone Adjustment, Brightness & Contrast, and Hue & Saturation commands all operate in a similar manner. To apply these commands:

1. Select the area for which you want to make corrections or adjustments. If no area is selected the change applies to the entire image.
2. Choose “Tone Adjustment”, “Brightness & Contrast”, or “Hue & Saturation” from the Image menu. The appropriate dialog box appears.

Command	Data type			
	RGB True Color	Indexed 16 & 256-Color	Grayscale	Black & White
Tone Adjustment	✓ (s)	✓	✓ (s)	
Brightness & Contrast	✓ (s)	✓	✓ (s)	
Hue & Saturation	✓ (s)	✓		
Invert	✓ (s)	✓	✓ (s)	✓
Level Adjustment	✓ (s)	✓	✓ (s)	

Availability of enhancement commands for different data types. “✓” indicates availability for whole images; “s” for selected areas.

3. Adjust the options by dragging the slider bar to the left or to the right. If necessary, preview your changes by pressing the Preview button.
4. After completing the enhancing, click on OK to apply your changes.

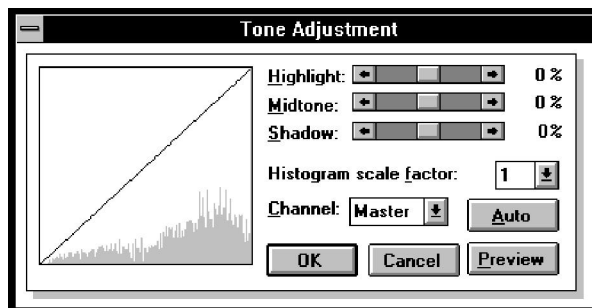
The Preview button

The Tone Adjustment, Brightness & Contrast, and Hue & Saturation dialog boxes all provide a preview button. This button allows you to view the effects of adjustments without affecting the image. You can then continue performing corrections if the effect doesn't satisfy you.

Note: If your display adapter has a color lookup table, iPhoto Plus can simulate the adjustments you make by using a color palette animation technique. However, the whole image will reflect the enhancements as they occur even if you are only enhancing a selected area. To preview an effect on a selected area, leaving the rest of the image unchanged, use the Preview button. When you do use the Preview button, color animation is disabled. To re-enable the animation hold down the SHIFT key and click on Preview.

Tone adjustment

The Tone Adjustment command provides some of the most powerful enhancement features in iPhoto Plus. Use this command to adjust the shadows, midtones, or highlights of an image without affecting other parts of the image. This is the command to use when you have a dark image with fine detail in the highlight areas and adjusting the brightness would improve the look of the image but lose the detail. Using this command allows you to both improve the look and retain the detail.



Histogram on the left of the dialog box displays the number of pixels in the image with different pixel values (colors). The left side of the histogram represents black; the right represents white or a solid color (red, green, or blue if they are chosen in the Channel combo box). The diagonal line from bottom left to top right shows the function being applied to the image values.

Highlight slider bar enables you to increase or decrease the highlights. Dragging to the right (a positive percentage) expands the highlights, dragging to the left (a negative percentage) decreases the highlights making the whole image appear darker.

Midtone slider bar adjusts the “gamma” of the image. This is a way of adjusting the midtones without affecting the highlights and shadows too much. You will notice that the function line becomes a curve when this function is applied. Drag to the right to lighten the midtones or to the left to darken them.

Shadow slider bar makes shadows lighter or deeper. To make the shadows lighter drag the slider to the right. To make them deeper drag the slider to the left.

Histogram scale factor enables you to zoom in on the histogram and magnify the number of pixels with each value. Use this if you need to see the distribution of light pixels in a dark image or vice versa.

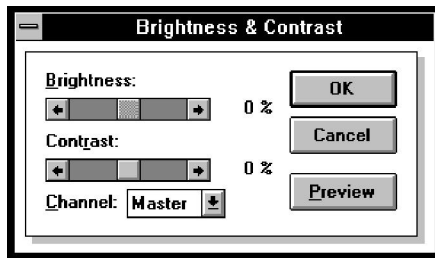
Channel combo box allows you to specify the channels (colors) to edit. Use this to adjust the red, green, and blue channels individually to remove an odd color cast from highlights or to create special effects. The Master option applies adjustments equally to each of the channels.

OK button closes dialog box and applies the adjustments to the image.

Auto button remaps the pixels so that they use all the available values. This is a standard way to ensure you are making full use of the color capabilities of your image data type.

Brightness and contrast

The Brightness & Contrast command allows you to adjust the lightness, darkness, and difference between areas of light and dark colors in an image. By using the Channel option provided, you can selectively edit the rgb channels of an RGB True Color image.



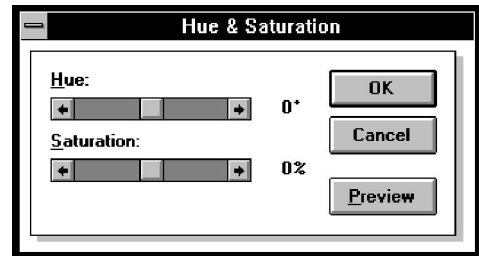
Brightness represents the lightness or darkness of an image. The lower the value, the darker your image will become.

Contrast refers to the difference between light and dark pixels. A low contrast value makes colors tend towards a midtone gray.

Channel combo box allows you to specify the channels (colors) to edit. Use this to adjust the red, green, and blue channels individually. The Master option applies adjustments equally to each of the channels.

Hue and saturation

You can correct the hue and saturation of an image without affecting its brightness. Hue distinguishes one color from another while saturation describes the purity (or grayness) of color. By adjusting the hue slightly, you can correct the color of a whole image or a selected part of an image.



Hue distinguishes one color from another. Adjusting the hue angle shifts the colors in the image in relation to the hue circle (see p. 15 for an illustration of the Hue circle).

Saturation describes the purity of colors. A negative saturation value (dragging to the left) washes out the colors in an image until, at -100%, they are gray. A positive value (dragging to the right) makes the colors more intense.

OK closes the dialog box and applies changes to the image.

Invert

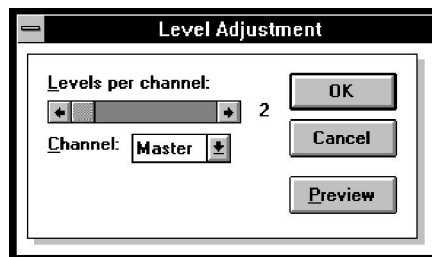
The Invert command from the Image menu reverses the brightness and color in the image. If your image has shades of black, they will be inverted to reflect shades of white. For images with colors, each pixel will change to its complementary color (e.g. blue will change to yellow). If you want to return to your original image, you can use the Undo command or apply the Invert command again.

Level adjustment

The Level Adjustment command in the Image menu reduces the number of color or gray shades in an image or selected area.

When you select this command, the Level Adjustment dialog box appears. You need to specify the new number of levels in this dialog box. This command is useful when you want to reduce the number of shades globally or in the individual channels of an RGB True Color image.

The number of levels is the number of shades available in each channel, e.g. an RGB True color image has 256 levels per channel. The default value of 2 will produce a dramatic effect in an image of any data type (except Black & White).



Levels per channel specifies the number of gray/color values that will be used in the image.

Channel combo box allows you to specify the channels to adjust. Use this to change the red, green, and blue channels individually. The Master option adjusts all channels equally.

OK closes the dialog box and applies changes to the image.

Applying filters

The iPhoto Plus filters modify an image by selectively adjusting the color or gray values of each pixel relative to its neighbors. The filter commands let you smooth, sharpen or apply special effects to an image or selected area.

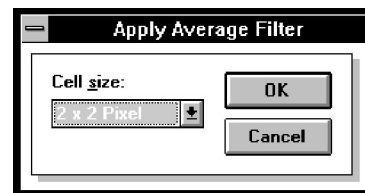
You can apply the filters to RGB True Color and Grayscale images. To apply filters to Black & White or indexed-color images you must first convert them to Grayscale or RGB True Color.

If no selection has been made within an image, iPhoto Plus automatically filters the entire image. The filter commands all appear in the Image menu. The commands are discussed here in the order they appear in the menu.

Average

The Average filter recalculates the value of a pixel in an image by averaging its value with the values of the surrounding pixels. You specify the number of pixels with which each pixel is averaged. The averaged value then replaces the original value of the pixel resulting in a smoother image.

When you select “Average” from the Image menu, the Apply Average Filter dialog box appears in which you can specify the number of pixels (cell size) to be used in the operation. For example, a cell size of 4×4 pixels means a cell containing 16 pixels will be used for calculating the average pixel values. The larger the size of the cell, the greater the number of pixels and so the greater the smoothing effect. If you choose a cell size which is too large, you may lose fine detail from your image.



Cell size to be used to calculate the value of the pixel at the center of the cell from the average value of the other pixels in the cell.

Blur

The Blur commands allow you to reduce the contrast of pixel values in an image to create a softer image. The new pixel values are calculated in the same way as the Average filter. The difference between the Blur filters and the Average filter is that these filters use a set cell size and a weighting function (the Average has a user-definable cell size and no weighting function).

Images can be blurred in three different ways: Slightly, More, and Heavily. These functions follow the same procedure for calculating pixel values but create different effects in the image.

Sharpen

The Sharpen commands increase the contrast at the interface between light and dark areas in an image. When contrast between pixel values is increased in this way, it can result in a sharper and clearer image.

Images can be sharpened in three ways: Slightly, More, and Strongly. Sharpen: Strongly creates a stronger effect compared to the other two commands.

Emphasize edge

An edge in an image is defined as the part of an image where a significant change in color occurs. The Emphasize Edges function outlines the edges of an image. It increases the contrast along the edges making them harder and more sharply defined.

Find edge

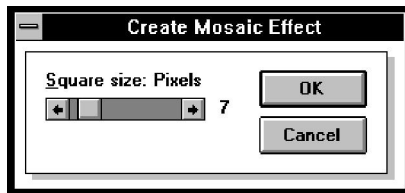
The Find Edges command outlines the edges in an image and marks them with lines, obscuring the rest of the image with black. The color of the lines will vary depending on the image format you are working on. Grayscale images will produce lines of white and varying shades of gray. RGB True Color images will produce either white or colored lines.

Mosaic

This filter breaks the image into blocks containing the same gray/color value of pixels. The pixels within each block are averaged together to produce the color value for all the pixels in the block. This is similar to the technique some television companies use to obscure the faces of people who wish to remain anonymous.

Mosaic differs from the Average filter in that here a value is calculated for a block of pixels, whereas the Average filter calculates values for each pixel.

When you select the Mosaic command from the Image menu, the Create Mosaic Effect dialog box appears in which you need to specify the size of the square blocks.

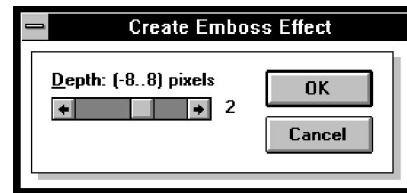


Square size the number of pixels along the side of each of the square blocks the image will be divided up into.

Emboss

The Emboss filter makes an image appear to be stamped out of paper of a particular color. The most commonly used color is gray which looks a like stamped metal. With the iPhoto Plus Emboss filter the color used is the foreground color and you can define how deeply the image is "stamped".

When you select the Emboss command from the Image menu the Create Emboss Effect dialog box appears.



Depth defines how much the image will be embossed.

Glossary

Aspect ratio

The ratio of width to height of a pixel, a selected area, or an image.

Averaging

A filter which takes the gray/color value of each pixel and averages it with the values of surrounding pixels. The value of each pixel is then replaced with the averaged value.

Bit

The smallest element in a computer's memory. Bits are used to record the color values of pixels in an image. The more bits used for each pixel, the greater the number of possible colors.

Bounding box

The smallest rectangle that can contain a non-rectangular shape. This is often referred to when describing irregular selection areas

Brightness

The brightness of an image is a description of how much light appears to be emitted from it. An absence of light, black, has no brightness; pure light, white, has maximum brightness.

Channel

Refers to one of the components of a color model. Different color models use different components to represent image colors. The rgb color model uses red, green and blue color component channels. The hsb color model uses hue, saturation and brightness color component channels. Grayscale images can be thought of as single-channel images.

Clipboard

A temporary storage area used to hold images or portions of images during cut, copy, and paste operations.

Color model

A color model is a way to visualize colors and the way they relate to each other. Many different color models exist, each of which has a specific purpose, e.g. the rgb model is used to specify colors on computer monitors, and the hsb model provides us with a model that is easy for us to imagine.

Complementary color

Complementary colors are colors that are opposite in value to other colors. We often refer to cyan, magenta, and yellow as being the complementary colors of red, green, and blue.

Contrast

Contrast describes the difference between light and dark in the image. In an image with high contrast, the transition from dark to light is very clear. In an image with low contrast, the difference between light and dark is less distinct.

Data type

The way an image is internally described and represented by a computer. iPhoto Plus reads and writes five different image data types: Black & White, Grayscale, Indexed 16 and 256-Color, and RGB True Color. RGB 8-Color images can also be read but they are converted to Indexed 16-Color.

Diffusion dither

An ordered dithering technique which calculates pixel values from areas of surrounding pixels and distributes the difference between the calculated values and the original values to adjacent pixels. The resulting pixel values produce smoother transitions in tone than other dithering techniques but this technique is a bit slower because of the extra calculations involved.

Dithering

Any one of a number of techniques which can give the illusion of near-continuous changes in tone. By arranging pixels of different colors close together, dithering can simulate colors not directly supported by an image data type. The various dithering techniques differ in the way they calculate new pixel values and arrange the new values. When converting from a complex data type to a more limited data type, dithering is essential if you want to achieve a good conversion.

File format

The ways in which a computer stores image information on a disk. iPhoto Plus has the ability to open and save the following image file formats: tiff, pcx, tga, bmp, eps, and gif.

Filters

A set of iPhoto Plus commands which allow you to enhance images and create special effects. iPhoto Plus filters include Average, Blur, Sharpen, Edge Enhancement, Find Edge, Mosaic, and Emboss.

Grayscale

Something that consists solely of shades of gray. For an image, this normally means 254 different grays plus black and white: 256 “grays” in all.

Halftoning

A method of using a pattern of black and white dots to produce what appears to be a shade of gray. This is a common type of dithering.

HiColor

For images, this normally means a 16-bit data type that can contain up to 64,000 colors. The tga file format supports images of this type, other file formats will convert a HiColor image into True Color. For displays, HiColor normally refers to 15-bit display adapters that can display up to 32,000 colors.

HSB

A color model that specifies colors in a way that is easier for us to visualize than the rgb model. H represents hue or basic color; S represents saturation or purity of color; and B represents brightness or the amount of light the color appears to emit.

Hue

The hue of a color describes whether the color is basically red, orange, yellow, green, etc.

Image

A reproduction or picture of something. In iPhoto Plus, we use this term to describe pictures consisting of pixels which can be shown and manipulated by image enhancement software.

Pixel

The smallest unit in an image. Computer images are made up of rows of pixels, each of which can be a different color. Pixels are normally small enough that we don't see them as individuals. What we see is the image created by a collection of pixels.

Primary colors

The primary colors are the basis of the RGB color model: red, green, and blue. With different amounts of each of these colors, on screen, it is possible to create any other color.

Resolution

The resolution of an image determines the size of the individual pixels in an image and thus the size of the whole image. Resolution is shown in pixels per inch (ppi) or dots per inch (dpi).

Saturation

Saturation defines the purity of a color. A color with high saturation appears very intense and strong. Low saturation colors appear washed-out.

Transformation

The iPhoto Plus transformation commands allow you to create special effects in images or selections. These commands include Flip, Rotate, Free Resize and Slant.

True Color

True Color is the closest you can get to color in real life. This is 24-bit color, with 16.7 million colors available.

Index

The index has been separated into two sections: an alphabetical index to all terms and topics; and a quick look-up guide to the menu commands, dialog boxes, and tools. Pages which contain dialog box descriptions or illustrations are shown in italic type. Terms included in the glossary are also italicized.

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Note: Shortcuts and references contained in parenthesis are for sub-menu commands. Pages containing dialog box descriptions are in italic type.

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Note: Shortcuts and references contained in parenthesis are for sub-menu commands. Pages containing dialog box descriptions are in italic type.

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